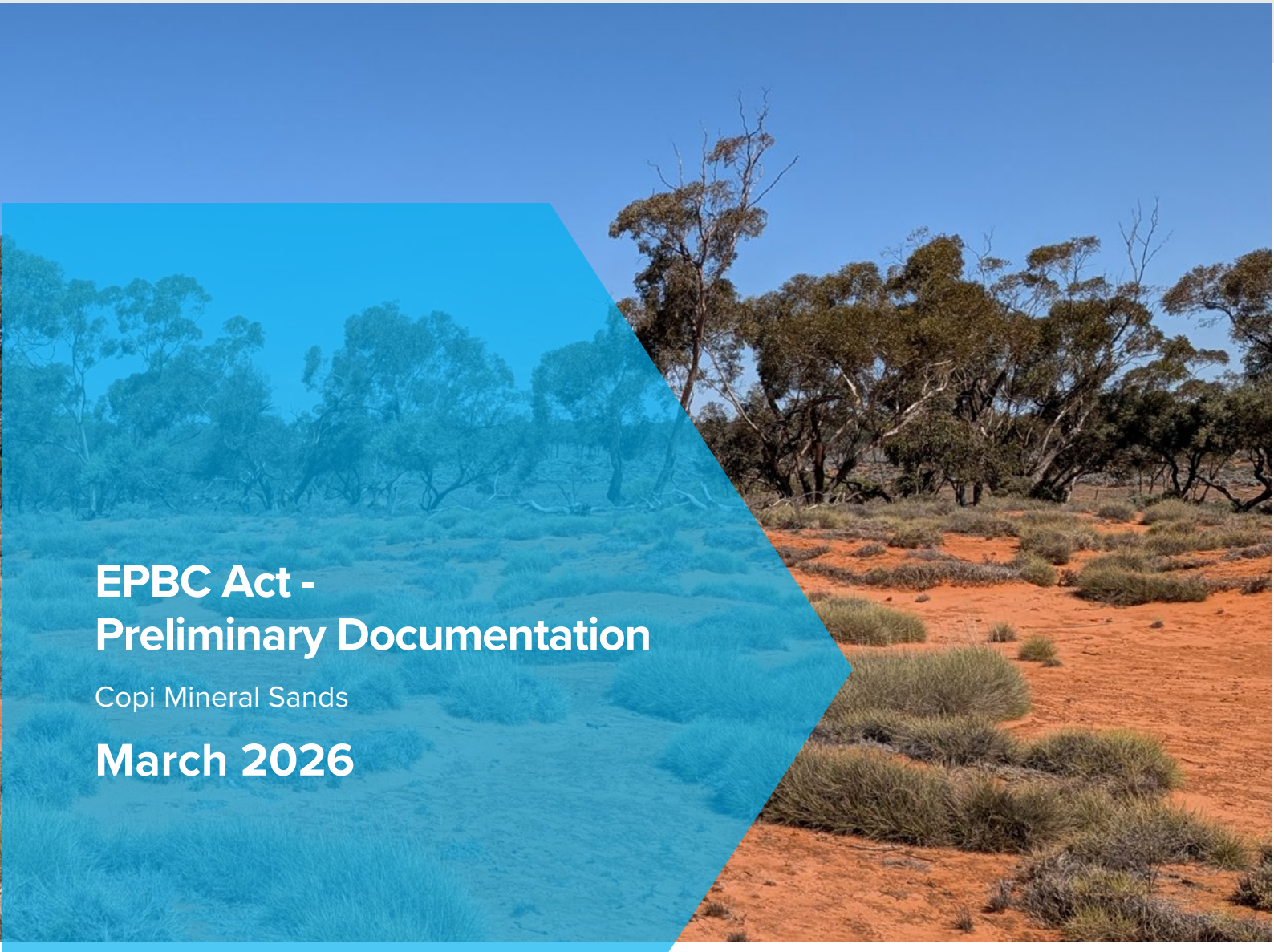
Biodiversity AUSTRALIA

SUSTAINABLE PARTNERSHIPS DEDICATED TO ACHIEVING ECOLOGICAL AND ECONOMICAL BALANCE

LEADING THE WAY IN ENVIRONMENTAL MANAGEMENT



EPBC Act - Preliminary Documentation

Copi Mineral Sands

March 2026

Biodiversity Australia
ABN 81127154787

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Document Control Page

Version Control

Version	Purpose	Author	Reviewed / approved by	Date
Rev 0.1	Draft Report	John Foster, Courtney Smith	Cheryl O'Dwyer	9/03/2026
Rev 1.0	Draft Report	John Foster, Courtney Smith	Karl Robertson	12/03/2026
Rev 2.0	Final Report	John Foster	Cheryl O'Dwyer	20/03/2026

Distribution Control

Copy	Purpose	Method	Issued to:	Name	Date
1	File Copy	Electronic/Email	Biodiversity Australia	Karl Robertson	20/03/2026
			R. W. Corkery & Co.	Georgina Thompson	

Accredited Assessor Authorisation

Assessor Name	Accreditation number	Signature	Date
Cheryl O'Dwyer	BAAS18153		20/03/2026

Project Number: ENS6872
Our Document Reference: ENS6872-RPT-RWCorkery_CopiMineralSands_PD-rev2.0

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Abbreviations

ALA	Atlas of Living Australia
AOO	Area of Occupancy
BAM	NSW Biodiversity Assessment Method 2020
BDAR	Biodiversity Development Assessment Report
BC Act	NSW Biodiversity Conservation Act 2016
Bio Aus	Biodiversity Australia
BOS	Biodiversity Offset Scheme
CE	Critically Endangered
CM	Centre meter
DAWE	Department of Agriculture, Water and the Environment
DBH	Diameter at Breast Height
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DotE	Department of the Environment
DSEWPC	Department of Sustainability, Environment, Water, Population and Communities
E	Endangered
EOO	Extent of Occurrence
EPBC Act	Environment Protection and Biodiversity Conservation Act
ha	Hectare
HBT	Hollow Bearing Tree
IBRA	Interim Biographic Regionalisation for Australia
km	Kilometre
KTP	Key Threatening Process
LGA	Local Government Area
M	Million
MBC	Mallee Bird Community of the Murray Darling Depression Bioregion
MNES	Matters of National Environmental Significance
NSW	New South Wales
OEH	Office of Environment and Heritage
PCT	NSW Plant Community Type
PMST	Protected Matters Search Tool
SA	South Australia
TBDC	Threatened Species Database Collection
TSSC	Threatened Species Scientific Committee
TEC	Threatened Ecological Community
tpa	Tonnes per Annum
V	Vulnerable
WA	Western Australia

1. Executive Summary

The Proposed Action for the Copi Mineral Sands Project is to construct, operate and rehabilitate a mineral sands mine and associated infrastructure to extract critical minerals 75 km northwest of Wentworth, and to undertake intersection upgrades required for materials transport in Broken Hill, New South Wales.

Biodiversity Australia was requested to prepare a Biodiversity Development Assessment Report (BDAR) for the proposed Copi Mineral Sands Project (The Project) and subsequently to prepare this report in response to further information required for preliminary documentation.

On 4 December 2025, a delegate of the Minister for the Environment and Water decided that the Proposed Action is a controlled action and that it will be assessed by preliminary documentation. Further information was required to assess the relevant impacts of the proposed Action under s95A(2) of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The following items have been requested by the Department of Climate Change, Energy, the Environment and Water to be addressed in this Preliminary Documentation:

- Overview – Information provided in your referral documentation,
- Description of the Proposed Action – Illustrated with maps and figures,
- Description of direct and indirect impacts, proposed avoidance, management and mitigation measures, and proposed compensation (offset) measures for each of these listed threatened species and ecological communities:
    - Mallee Bird Community of the Murray Darling Depression Bioregion – Endangered
    - Pink Cockatoo (eastern) (*Lophochroa leadbeateri leadbeateri*) – Endangered
    - Hooded Robin (south-eastern) (*Melanodryas cucullata cucullata*) – Endangered
    - Corben's Long-eared Bat (*Nyctophilus corbeni*) – Vulnerable
    - Southern Whiteface (*Aphelocephala leucopsis*) – Vulnerable
- Impact Assessments,
- Avoidance, mitigation, and management measures,
- Compensation measures (offsets), and
- Economic and social matters.

The BDAR prepared for the Project by Biodiversity Australia (Biodiversity Australia, 2025) and submitted in December 2025, provides details of the Biodiversity Values that occur within the Subject Land. The BDAR describes the efforts made to avoid these Biodiversity Values where possible, the minimisation and mitigation strategies employed to reduce the effects of residual impacts and a qualitative and quantitative description of the Biodiversity Credits that would be required to offset all residual impacts in line with the *Environmental Planning and Assessment Act 1979 and Biodiversity Conservation Act 2016.* It is acknowledged that the Biodiversity Assessment Method 2020 has been established under Section 6.7 of the BC Act and authorised by the NSW Minister for the Environment as an appropriate method to deliver "No Net Loss". Whilst the Biodiversity Assessment Method (BAM) 2020 and associated Biodiversity Offset Scheme (BOS) are primarily a function of the New South Wales Government, the method has been formally acknowledged under Bilateral Agreement as an appropriate mechanism to assess impacts on Matters of National Environmental Significance (MNES). Whilst formal triggering of the Bilateral Agreement was not undertaken for this Proposed Action, this Preliminary Documentation seeks to provide information on how the BAM 2020 and BOS has successfully achieved

the objectives of the Commonwealth *Environment Protection Biodiversity Conservation Act 1999* (EPBC Act).

This Preliminary Documentation has been prepared in response to the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) Request For Information regarding the Copi Mineral Sands Project which has been declared a controlled action under the EPBC Act. The Proposed Action Area is comprised of two assessment areas, a Linear Corridor containing a proposed haul road and the non-linear assessment area containing the PAA. The Proposed Action is located within a broader landscape containing potential habitat for the threatened ecological community and threatened species listed under the EPBC Act. All five entities; the Mallee Bird Community, Pink Cockatoo, Hooded Robin, Corben's Large-eared Bat and Southern Whiteface will be impacted by the Proposed Action in varying degrees. All entities will be impacted directly with the loss of potential suitable habitat:

- Mallee Bird Community –16.72 ha loss of potential breeding and foraging habitat,
- Pink Cockatoo - 2,746.57 ha loss of foraging habitat,
- Hooded Robin - 686.62 ha loss of breeding and foraging habitat,
- Corben's Large-eared Bat - 662.03 ha loss of breeding and foraging habitat, and
- Southern Whiteface - 2,845.65 ha loss of breeding and foraging habitat.

While the loss of potential suitable habitat for each species represents significant impacts and reductions in the species resources for foraging and breeding, the reduction is not significant when viewed in terms of the broader landscape, and temporally when considering the long-term plan to revegetate and rehabilitate the Proposed Action Area in a staged manner over the 26 years of the project.

2. Introduction

On 4 December 2025, a delegate of the Minister for the Environment and Water reached the decision that the Copi Mineral Sands Project Proposed Action (PA) is a Controlled Action; and that it will be assessed by Preliminary Documentation.

Under s95A(2) of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), further information is required to assess the relevant impacts of the PA; to construct, operate and rehabilitate a mineral sands mine and associated infrastructure to extract critical minerals 75 km northwest of Wentworth, NSW. There will also be a requirement to undertake intersection upgrades required for materials transport to Broken Hill, NSW.

Biodiversity Australia (Bio Aus) was requested by RZ Resources to address the Preliminary Documentation (PD) additional information request from the Minister under Section 95A of the EPBC Act to adequately assess the impacts of the PA (refer to Appendix A-4).

2.1 Profiles of all contributing staff

2.1.1 R. W. Corkery

Mitch Bland - Managing Director / Principal
Matt Ayre - Senior Environmental Consultant
Georgina Thompson - Environmental Consultant
See Appendix A-6

2.1.2 Biodiversity Australia

Karl Robertson – Principal Ecologist - BAM Accredited Assessor
Dr Cheryl O'Dwyer– Principal Ecologist - BAM Accredited Assessor
Daniel Joyce – Principal Ecologist & Environmental Scientist
Nigel Cotsell – Principal Ecologist - BAM Accredited Assessor
John Foster – Senior Ecologist - BAM Accredited Assessor
Dr Dusty Mclean – Ecologist & Conservation Biologist
Nathan Eshraghi – Geospatial Specialist
Courtney Smith – Ecologist
See Appendix A-6

2.2 Project Background and Site Description

RZ Resources Limited (the Applicant) proposes to develop and operate the Copi Mineral Sands Project (The Project), a critical minerals mine and processing facility, in the Far West Region of NSW. The PAA (described as the PAA in the BDAR (Bio Aus 2025; refer to Appendix A-5), hereafter referred to as the PAA) illustrated in Figure 1, is located 75 km northwest of Wentworth and 180 km south-southwest of Broken Hill, within the Wentworth Local Government Area (LGA) of New South Wales (NSW). The Project will extract a range of minerals containing titanium, zirconium, and rare-earth elements, all of which are listed by the NSW and Commonwealth governments as Critical Minerals. These minerals are vital for producing advanced electronics, telecommunications, defence infrastructure, and medical devices and are necessary to help drive the transition towards renewable energy.

The PAA is situated within a relatively flat area of the central Murray Darling Basin. Regional topography is characterised by sequences of ridges and lunettes that rise to elevations between 50 m and 70 m AHD. These ridges are interspersed with broad swales and drainage depressions with elevations between 30 m and 40 m AHD. Within the PAA there are four depressions, the largest being the centrally situated Eastern and Western Salt Pans with two lesser depressions, the central and eastern depressions (Figure 1).

The PAA is characterised by three main landscapes being the Scotia Groundwater Basin, Scotia Linear Dunes and Scotia Sandplains. The landscape is characterised by the Scotia Linear Dunes. Five soil types have been identified within the PAA as follows.

- Dunefields and Sand Plains – primarily occupying areas of higher elevation,
- Blanchetown Clay – primarily occupying low lying areas,
- Lunettes – primarily comprising wind-blown material to the east of the Salt Pans,
- Lunettes with Copi – primarily occupying areas near or downwind of the Salt Pans, &
- Lake Floor East - primarily occupying the Eastern Salt Pan. The soil is clayey and sufficiently saline to be toxic to plants.

Biodiversity Australia (Bio Aus 2025a) identified 13 Plant Community Types (PCTs) present within the Proposed Action Area (PAA) (includes the Mine Site and Linear Corridor), however one PCT is not associated with any of the MNES entities assessed. The PAA has undergone substantial historical grazing, and the region has also been subject to drought conditions sporadically throughout the past 40 years. The majority of Native Vegetation within the PAA is assessed as being in Low to Moderate Broad Condition State. (Bio Aus 2025a) identified a range of fauna on the PAA including 82 bird species, 29 reptile species, 17 mammal species and three amphibian species.

The PAA is comprised of two assessment areas, a Linear Corridor containing a proposed haul road and a non-linear assessment area containing the PAA.

The PAA is located wholly on, and is surrounded by, land zoned under the Wentworth Local Environmental Plan 2011 (Wentworth LEP) as RU1 – Primary Production. Open Cut mining is permissible with consent in this zone. The site access road and the section of Anabranch Mail Road to be upgraded occurs on land zoned as follows:

- RU1 – Primary Production, &
- SP2 – Infrastructure (Silver City Highway).

Roads are permitted without consent within Zone RU1 – Primary Production and Zone SP2 – Infrastructure. Existing land uses within the PAA include agriculture, namely low intensity grazing.

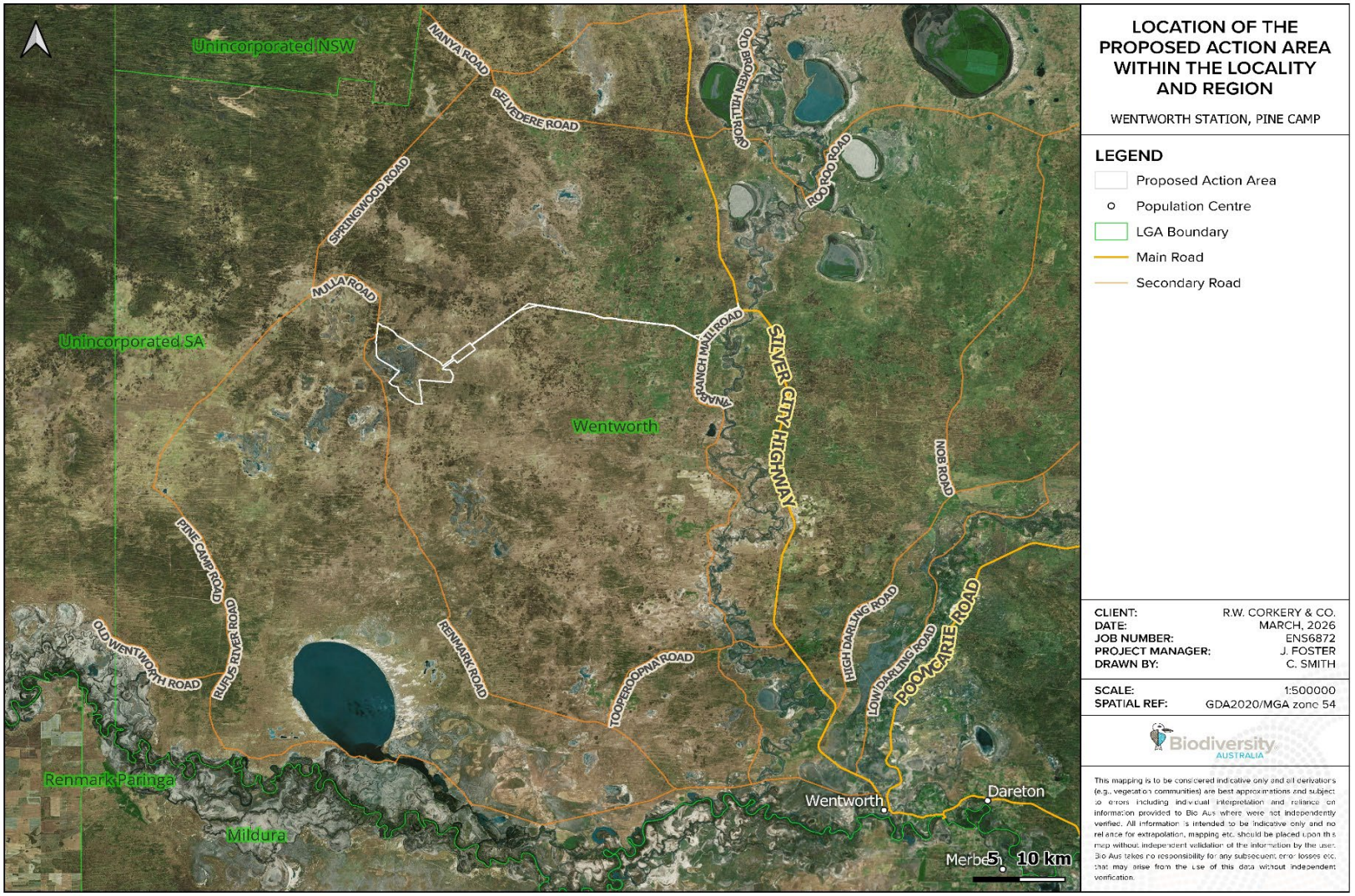

Figure 1: Location of the Proposed Action Area in the locality and region

2.3 Project Approval Background

The EPBC Act establishes a process for environmental assessment and approval of proposed Actions that have, will have or are likely to have, a significant impact on Matters of National Environmental Significance (MNES) or on Commonwealth land. Under the EPBC Act, a referral to the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) is required if the project has the potential to cause a 'Significant Impact' on MNES.

A referral for the PA under Section 68 of the EPBC Act was lodged with Commonwealth DCCEEW on 22 July 2024 (EPBC 2024/09955)(refer to Appendix A-1). On 4 December 2025, the delegate of the Minister for the Environment determined the project a 'Controlled Action' under the EPBC Act due to potential significant impacts on 'listed threatened species and ecological communities' which are protected under Section 18 and 18A of the EPBC Act.

The PA will be assessed through the Preliminary Documentation (PD) assessment pathway with additional information. This PD addresses the Request for Information (RFI) issued by DCCEEW on 18 December 2025 and provides the information necessary to enable the Minister (or delegate) to make an informed decision under Part 9 of the EPBC Act, regarding whether to approve the PA in relation to each controlling provision.

2.4 Relevant Legislation/Policies – EPBC Act Approval Context

A meeting with DCCEEW was held on 13 January 2026 to discuss the additional information request and clarify the requirements of the PD.

This PD includes responses to the RFI issued by DCCEEW. The PD will be subject to review in accordance with Section 95A(3) of the EPBC Act.

The EPBC Act is the Federal Government's key environmental legislative instrument, enacted to protect and manage MNES. The EPBC Act establishes a national framework for the environmental assessment and approval of actions that are likely to have a significant impact on protected matters. These include listed threatened species and ecological communities, nationally and internationally important wetlands, World Heritage properties, and places of national heritage significance.

Through this framework, the EPBC Act supports the conservation of biodiversity while promoting ecologically sustainable development. It provides a regulatory mechanism to ensure that environmental considerations and integrated into decision-making processes undertaken by government agencies, proponents, and other stakeholders whose actions may affect protected environmental values.

Significant Impact assessment process and decision-making framework

According to the guidelines outlined in DOE 2013 "a significant impact is described as an effect that is important, notable, or of consequence". This definition is inherently multidimensional. It requires considering the sensitivity, value, and quality of the environmental component being affected, along with detailed attributes of the impact itself. Key factors that determine whether an impact is significant include:

- Intensity of the Impact:
  - Actions that cause substantial changes to the physical or biological components of the environment.
- Duration and Persistence:
  - Whether the change is temporary or long-lasting, including irreversible damage.
- Geographic Extent:
  - The spatial scale of the impact, which can range from a localised event to widespread ecological disturbances.
- Frequency and Cumulative Effects:
  - The likelihood of repeated or cumulative impacts from multiple actions.

The guidelines note that a significant impact is where there is a "real or not remote chance or possibility" (Strathbogie 2024 FCA 317) that adverse environmental consequences may occur. This concept is inherently risk-based and involves environmental risk assessments. Environmental factors are to be evaluated guided by questions from the guidelines to systematically consider each variable, ensuring that the potential harm is neither underestimated nor ignored within the broader economic or development pressures.

The process reflects a commitment to transparency and precaution. It ensures that decisions are not made lightly and that environmental considerations are integrated into the planning and execution stages of potentially disruptive projects. The systematic approach encouraged by the guidelines helps guard against overt and subtle risks that might compromise critical environmental assets.

In a related context under section 139(2)(b) of the EPBC Act, the term "significant" has been taken to operate as a limitation to "*exclude impacts which are minor or negligible on a listed threatened species" (Northern Inland Council for the Environment Inc v Minister for the Environment (2013) 218 FCR 491 at [92] (Cowdroy J)*.

As Dowsett J observed in Krajniw v Brisbane City Council (No 2) [2011] FCA 563 at [10], the purpose of the EPBC Act "*would not be achieved if any possibly adverse effect upon a species, however minor and however unlikely, was sufficient to engage either of ss 18 and 18A*". Whether a proposed action is likely to have a significant impact under s 18 of the EPBC Act is a question of fact*: (Greentree at [192] (Sackville J); Australian Brumby Alliance at [230] (O'Bryan J)).* Accordingly, this assessment has relied on data-driven decision making to demonstrate and draw its conclusions.

Severity of Action

The EPBC Act does not define the term "Significant Impact." In the case of Save Our Strathbogie Forest Inc v Secretary to the Department of Energy, Environment and Climate Action [2024] FCA 317 (hereby referred to as Strathbogie) the parties accepted that a Significant Impact is one that is "*Important, notable or of consequence, having regard to its context or intensity*". This was also accepted in Vic Forests v Friends of the Leadbeater's Possum Inc (2021) 285 FCR 70 at [62].

In a related context under s 139(2)(b) of the EPBC Act, the term "significant" has been taken to operate as a limitation to "*exclude impacts which are minor or negligible on a listed threatened species*" Northern Inland Council for the Environment Inc v Minister for the Environment (2013) 218 FCR 491 at [92]. As Dowsett J observed in Krajniw v Brisbane City Council (No 2) [2011] FCA 563 at [10], the purpose of the EPBC Act "*would not be achieved if any possibly adverse effect upon a species, however minor and however unlikely, was sufficient to engage either of ss 18 and 18A*".

In reflection of the precedent stated above, and Strathbogie [343, 344, 345 etc], it is important to assess whether there is "*a real or not remote chance, or possibility of a significant impact, being one that is Important, notable or of consequence, having regard to its context or intensity*" on the balance of probabilities (Strathbogie [339, 340].

An important step in determining the balance of probabilities, is assessing the severity of The Action in regard to the context of the population. This Assessment of Significance report has adopted the Severity Assessment Matrix framework included within the *DSEWPC – 2013 Significant Impact Guideline 1.2.* whilst it is acknowledged that the guideline 1.2 applies to actions on, or impacting upon, Commonwealth land, and actions by commonwealth agencies, it remains acutely appropriate educating the balance of probabilities and ultimately the likelihood of a significant impact in relation to The Action.

Stakeholder Engagement

The interplay between statutory provisions and judicial interpretation means that the EPBC Act continually evolves through case law debates and stakeholder inputs. Whether through formal submissions or influential commentaries that environmental assessments are not underestimated regarding long-term biodiversity risks. Their insistence on adherence to strict avoidance criteria reinforces the broader policy initiative: Australia's development pathways must integrate environmental

sustainability at every stage, without compromising on the protection of unique natural and cultural heritage assets. The collaborative pressure from engaged stakeholders has prompted law court to adopt more robust standards when evaluating proposals, pushing decision-makers toward greater precaution and transparency.

Matters of National Environmental Significance

Under the EPBC Act, certain environmental elements are classified as MNES. These form the basis of federal review and protection mechanisms. The EPBC Act lists seven (7) key types of protected matters, including:

- World Heritage Properties: Sites of outstanding universal value that merit preservation for future generations,
- National Heritage Places: Areas recognised by the nation due to their significant historical, cultural, or environmental attributes,
- Ramsar Wetlands: Wetlands of international importance designated under the Ramsar Convention,
- Threatened Species and Ecological Communities: Species and ecosystems in jeopardy of extinction or significant degradation,
- Migratory Species: Species that rely on transboundary habitats and require international conservation efforts,
- Nuclear Actions: Actions related to uranium mining, reflecting the high risks associated with nuclear materials and activities, and
- The Commonwealth Marine Environment: Marine areas are protected due to their biodiversity and ecological roles.

The above ensures that any action that has a likelihood of causing a Significant Impact the seven (7) diverse elements automatically triggers a careful federal scrutiny process. By defining these categories, the Act provides clear benchmarks and triggers for environmental assessments. It not only protects the "what" in terms of specific sites and species but also the "why" by maintaining the integrity of Australia's environmental assets for both national and global benefit.

This assessment has considered relevant EPBC Act policies, guidelines and technical standards applicable to matters of national environmental significance (MNES), including but not limited to:

- Significant Impact Guidelines 1.1 – Matters of National Environmental Significance,
- Significant Impact Guidelines 1.2 – Actions on, or impacting upon, Commonwealth land and Actions by Commonwealth Agencies,
- Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities Working Draft November (NSW DEC 2004),
- Field survey methods for environmental consultants and surveyors when assessing proposed developments or other activities on sites containing threatened species. (NSW DEC 2008),
- Survey guidelines for Australia's threatened birds (DEWHA 2017) - Guidelines for detecting birds listed as threatened under the EPBC Act,
- 'Species credit' threatened bats and their habitats - NSW guide for the Biodiversity Assessment Method. (DPIE 2021),
- Conservation Advice for *Nyctophilus corbeni* (South-eastern Long-eared Bat) Threatened Species Scientific Committee (EP&BC Act) (2015),
- Conservation Advice for *Melanodryas cucullata cucullata* (hooded robin (south-eastern)) (EP&BC Act) (2023),
- Conservation Advice for *Mallee Bird Community of the Murray Darling Depression Bioregion* (EP&BC Act) (2021),
- Conservation Advice for *Lophochroa leadbeateri leadbeateri* (eastern Major Mitchell's cockatoo)(EP&BC Act) (2023),

- Conservation Advice for *Aphelocephala leucopsis* (southern whiteface) (EP&BC Act) (2023),
- *Manorina melanocephala* (noisy miners). Threatened Species Scientific Committee (EPBC Act) (2013),
- Removal of dead wood and dead trees - key threatening process listing - Final determination (OEH 2003),
- Threat Abatement Plan for predation by the European red fox. (DEWHA 2008),
- Threat Abatement Plan for predation by feral cats. (DoE 2015),
- Threat Abatement Plan for competition and land degradation by rabbits. (DEE 2016),
- Threat Abatement Plan for competition and land degradation by unmanaged goats (DEWHA 2008),
- EPBC Act environmental offsets policy,
- MNES Offsets Assessment Guide – (EPBC Act 1999) DCCEEW 2023,
- NSW Biodiversity Offset Scheme, and
- DCCEEW Protected Matters Search Tool (PMST).

There is currently no recovery plan published for the Pink Cockatoo, Southern Whiteface and Hooded Robin. It has been decided that a recovery plan is not required for Mallee Bird Community (MBC).

These policies and guidance documents inform the approach to identifying potential impacts to MNES, assessing the significance of those impacts and determining appropriate avoidance, mitigation and offset measures.

MNES with potentially relevance to the PA were identified through a search of the PMST and a review of existing ecological information. Field assessments were also undertaken. Details are provided in Section 4 of this PD. The MNES relevant to The Project are:

- *Mallee Bird Community of the Murray Darling Depression Bioregion* – Endangered,
- Pink Cockatoo (eastern) (*Lophochroa leadbeateri leadbeateri*) – Endangered,
- Hooded Robin (south-eastern) (*Melanodryas cucullata cucullata*) – Endangered,
- Corben's Long-eared Bat (*Nyctophilus corbeni*) – Vulnerable, and
- Southern Whiteface (*Aphelocephala leucopsis*) – Vulnerable.

2.5 Preliminary Documentation – Structure & Content

The purpose of this report is to respond to DCCEEWs RFI.

See Table 1 below for a list of requested information and our response within the PD.

Table 1: Request for information and response

Information Required	Response
4.2.1 Impact Assessment (Table 3 Impact assessment checklist)	
1. Identify the nature and extent of the **likely short-term and long-term impacts** from the activities, elements, or stages of the proposed action. When identifying impacts, refer to the significant impact criteria for threatened species and ecological communities in the Matters of National Environmental Significance Significant impact guidelines 1.1, noting that the impact criteria differ among threatened ecological communities and threatened species with different listing statuses.	See Sections 4, 5 & 6.
2. Quantify the area of direct and indirect impacts for each species and community including the total area of impact in hectares, and the number of individuals impacted, if known (most likely to be relevant for threatened plants identified during survey).	Consulted all survey guidelines, all relevant conservation advice, recovery plans, threat abatement plans and policy statements. See Section 4.
3. Provide an analysis of the likely impacts and the long-term viability of the species/community if the Proposed Action was to proceed, at a:	See Section 4.

Information Required	Response
3a.Local (site level) scale – discuss impacts to connectivity.	See Section 4.
3b. Regional scale – discuss impacts to connectivity, potential cumulative impacts within the broader region.	See Section 4.
4. Provide details on whether any impacts are likely to be unknown, unpredictable or irreversible and what confidence is placed on the predictions or relevant impacts.	See Section 4.8
5. Provide justification for any conclusions regarding potential impacts in relation to specific needs and characteristics of each species and/or community, including references to conservation advices, listing advices, recovery plans, and any other technical data or information. If these are not applicable, a brief statement to this effect must be included.	See Section 4.9
4.2.2 Avoid, mitigate, manage (Table 4 Avoidance, mitigation, and management checklist)	
1. Provide a consolidated list of all avoidance/mitigation measures proposed to be undertaken to prevent, minimise or compensate for the relevant impacts of the Action.	See Sections 4 & 5, 30 through to 9
2. For each of the mitigation measures proposed:	
2a. Discuss the likely cost effectiveness of proposed measures.	See Section 9.2 Cost and Benefit
2b. Provide an assessment of the predictive effectiveness for each protected matter.	See Section 4
2c. Discuss any statutory or policy basis for the measures.	See Section 5 Table 28
2d. Discuss the relationship, if any, with measures identified in the department's conservation advices, recovery plans and threat abatement plans.	See Sections 4
2e. Discuss the relationship, if any, with measures proposed by state and/or local governments relevant to minimising the impacts of the action on protected matters.	See Section 4.11
2f. Identify the roles and responsibilities associated with implementation.	See Section 6, Table 30
3. Provide conclusions about the likely residual significant impacts to each threatened species and/or community after proposed avoidance and/or mitigation measures are considered.	See Section 4. Controlling Provisions /Matters of National Environmental Significance (MNES) See Section 6.
4. Provide proposed environmental management plans if available. If not available, at minimum set out the framework for ongoing management, mitigation, and monitoring programs for the relevant impacts of the Action.	In appendix of Operations Environment Management Plan (OEMP) See Appendix 3 – Action Management Plan
5. Clearly state and discuss and variables or assumptions made in the assessment.	No variables or assumptions have been stated.
6. Discuss the extent to which limited availability of relevant information has the potential to influence the conclusions of the assessment.	See Section 4.9
4.2.3 Compensation measures (Table 5 EPBC Act Environmental Offsets checklist) The offset strategy must:	See Section 7. Proposed Offsets and Compensation Measures
1. Meet the principles specified in the EPBC Act Environmental Offsets Policy;	See Section 7, 7.1, 7.2, 7.3

Information Required	Response
2. Directly contribute to the ongoing viability of the relevant protected matters to deliver an overall conservation outcome that improves or maintains the viability of the protected matter in the region, as compared to what is likely to have occurred under the status quo, i.e., if neither the Action nor the offset had taken place; and	See Section 7, 7.1, 7.2 and 7.3
3. Compensate for the impacts over the entire duration of the proposed Action (should impacts be in perpetuity, the offsets must also be delivered in perpetuity);	See Section 4 Proposed avoidance, mitigation and management, Section 5, 6 and Section 7
4. The preliminary documentation must also provide and clearly justify the scores entered into the Offset assessment guide.	See Section 7, 7.1, 7.2, 7.3
5. Economic and social matters (Table 6 Economic and social matters checklist)	See Section 8.
5.0 Economic and Social Matters (Table 6 Economic and social matters checklist)	See section 9
1. Consideration of negative impacts (e.g., disruption to existing community infrastructure, environmental features, and/or cultural and traditional activities).	See Section 9, specifically Section 9.1.4. Key feedback
2. Consideration of positive impacts (e.g., increased housing, employment, or social amenity).	See Section 8.1 and 8.3
3. Consideration of different scales of impact (e.g., local, regional, and national).	See Section 9.3 Cost and Benefits
4. Estimated capital value and ongoing economic value, using specific dollar or other numerical values where relevant.	See Section 9.2. Section 9.2.1. Economic Section 9.2.2 Social and Environmental
5. Discussion of relevant public consultation undertaken, including any issues raised in objection or support of the proposed action.	See Section 9.1
6. Discussion of any contributions (for example, government funding, or 'gifting' of land to the NSW Government under a voluntary planning agreement, as discussed in the referral information).	See Section 8.3. Social and Equitable outcomes

This PD is supported by the following technical documentation provided in the appendices:

1. EPBC Act Referral (A-1),
2. Surface Water Modelling and Assessment (A-2),
3. Preliminary Observations of Groundwater Dependent Ecosystems - Greenloaning Biostudies (A-3),
4. Preliminary Request for Information (A-4),
5. Revised Copi Mineral Sands Project BDAR Rev 6.0 (A-5)
6. Profiles of all contributing Staff (A-6),
7. Habitat Summary Table (A-7), and
8. MNES Significant Impact Report (A-8).

This PD builds on information already provided in the Biodiversity Australia Copi Mineral Sands project BDAR and MNES Impact Assessment Report (Bio Aus 2025) and subsequent information provided in the Referral (02515) as the assessment reporting has progressed since lodgement.

3. Description of Action

3.1 Proposed Action Area, Avoidance Area and Disturbance Area

The Project is an open cut mineral sands mine. The PA is the extraction and processing of heavy mineral ore to produce a heavy mineral concentrate. The Action includes construction, mining, primary processing, and rehabilitation of a single deposit located 75 km northwest of Wentworth in NSW. The Action will extract a range of minerals containing titanium, zirconium, and rare earth elements, all of which are listed by the NSW and Commonwealth governments as Critical Minerals. These minerals are vital for producing advanced electronics, telecommunications, defence infrastructure and medical devices and are necessary to help drive the transition towards renewable energy.

The Action includes the following components:

- Mining using a combination of traditional dry (excavate, load and haul) and wet (dredging) mining techniques to extract up to 46.8 million (M) tonnes per annum (tpa) of overburden, 44.1 M tpa of interburden and 27.1 M tpa of ore,
- On-site processing to produce up to 475,000 tpa of mine products,
- Transportation of mine products in sealed containers from the PAA to an existing rail facility in Broken Hill, and
- Progressive re-establishment and rehabilitation of a final landform with ecosystem function.

The life of The Project would be 26 years, comprising an initial three-year construction operations period, followed by 18 years of mining operations and a further period of five years of rehabilitation.

The PA will result in the removal of 3,883.08 hectares (ha) of Native Vegetation from the PAA (3,692.92 ha from the Mine Site and 190.16 ha from the Linear Corridor areas). An additional 28.11 ha of roads, tracks and other cleared land within the Linear Corridor, and 108.30 ha from the Mine Site, will be cleared due to the PA, resulting in a total of 4019.49 ha of land cleared. No further Native Vegetation loss will be required through the operational phase of The Project.

The explanation above provides a detailed definition of “The Action.”

The avoidance area is that land beyond the boundary of the PAA and within the boundary of the Subject Land.

3.2 Location and Description of Study Area

The Subject Land comprises 72,344.52 ha. The properties are located 75 km northwest of Wentworth, New South Wales, within the Wentworth LGA. The entire area is zoned RU1 Primary Production under the Wentworth Local Environmental Plan 2011 (The LEP). The list of the Subject Land Lot Plans where the PAA – Mine Site and Linear Corridor intersect is provided in Table 2 below.

Table 2: List of the lot / plans within the Subject Land

Proposed Action Area – Mine Site	Proposed Action Area – Linear Corridor
1907//DP763791	4068//DP766543
1//DP1255308	4117//DP766622
1940//DP763792	3421//DP765710
4068//DP766543	3422//DP765711
	3423//DP765712
	1908//DP763764

Proposed Action Area – Mine Site	Proposed Action Area – Linear Corridor
	1910//DP763766
	3248//DP765453

The Subject Land is within the Murray Darling Depression Interim Biogeographic Regionalisation for Australia (IBRA) Region and South Olary Plain IBRA Subregion. The PAA is compounded by Scotia Linear Dunes, Scotia Groundwater Basins and Scotia Sandplains Mitchell Landscapes (Figure 3).

The Subject Land has undergone substantial historical grazing disturbance over decades from ongoing pastoral activity including sheep and goats. The area had regular drought records over the past 40 years which has likely exacerbated these grazing pressures. However, native vegetation still dominates the ground and shrub layer where 13 Plant Community Types (PCTs) have been confirmed.

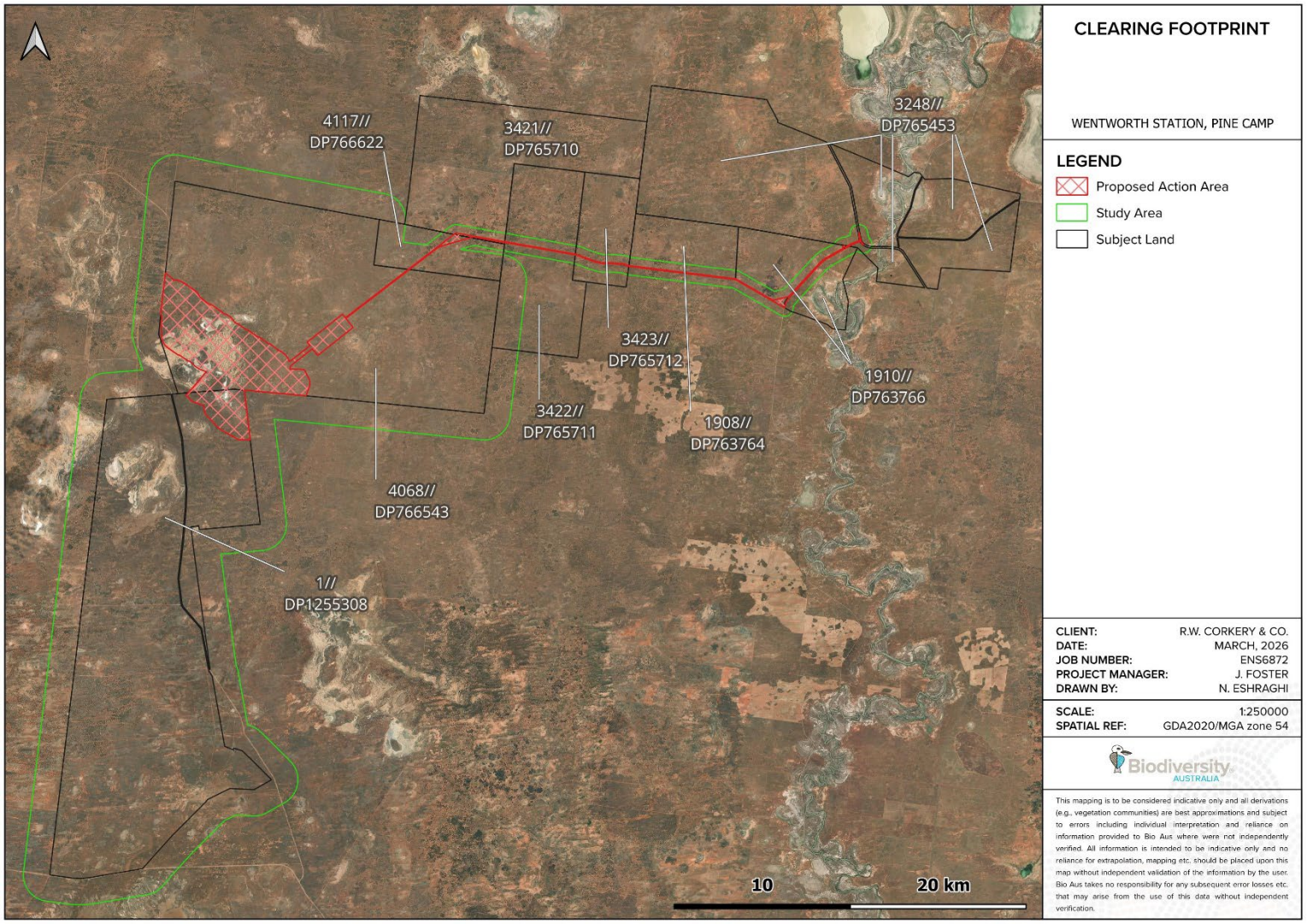

Figure 2: Proposed Action Area showing the construction/clearing footprint boundary

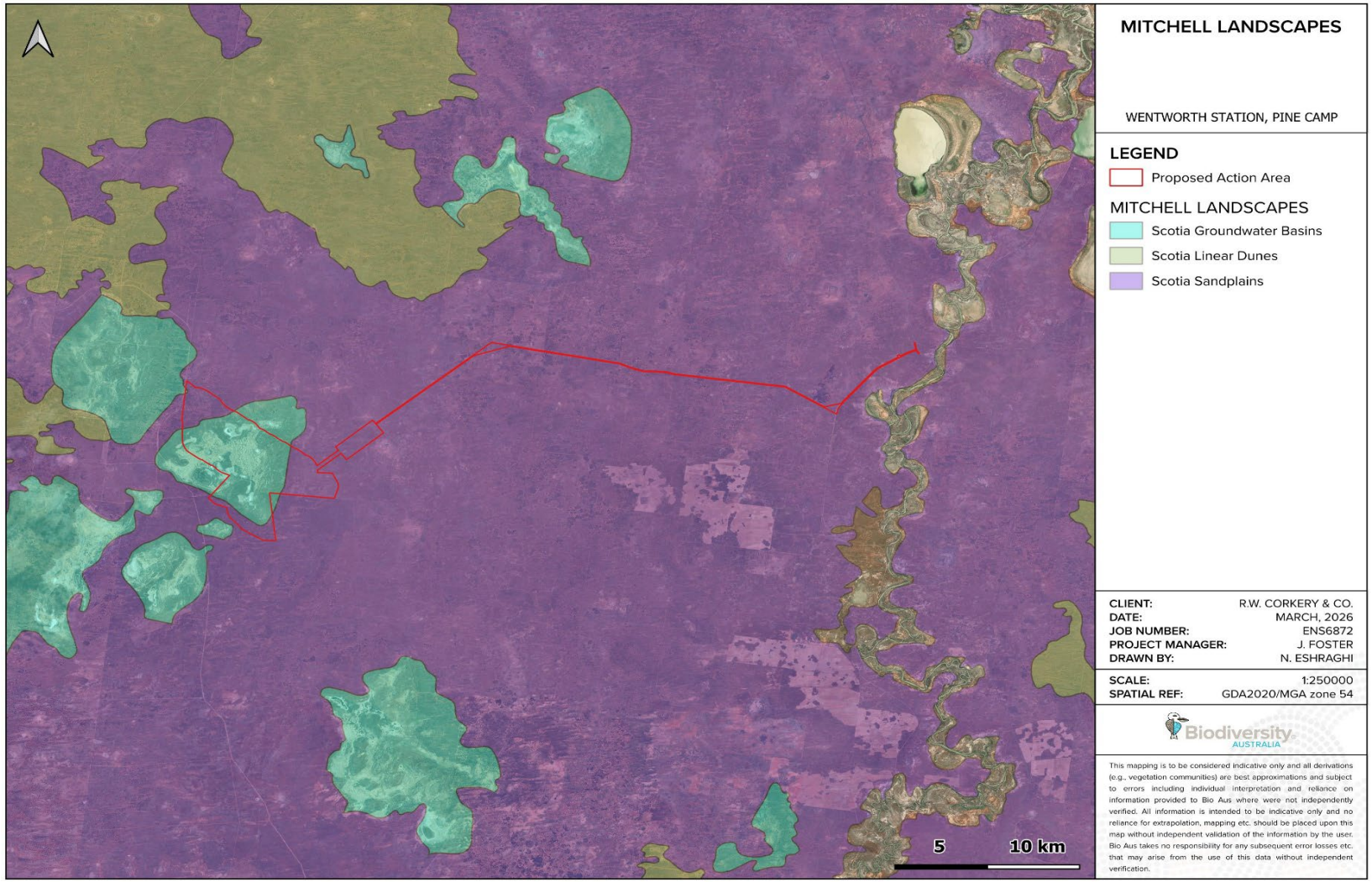

Figure 3: Mitchell landscapes

3.3 Scope of Works

Section 3.1.1 of the Environmental Impact Statement (EIS) prepared for the Project (RWC, 2024) presents a detailed overview of The Project. Figure 4 presents a schematic overview of the proposed activities. The PAA comprises the following:

- Open cut mining using a combination of traditional dry (excavate, load and haul) and wet (dredging) mining techniques to extract up to 28.2 million tonnes per annum (Mtpa) of overburden, 48.0 M tpa of interburden and 27.7 M tpa of ore,
- On-site processing of extracted ore using a floating Wet Concentrator and land-based Rare Earth Concentrate Plant to produce up to 511,000 tpa of mine products,
- Transportation of mine products in sealed containers from the Mine Site to the Rail Facility via a Site Access Road, an upgraded Anabranch Mail Road and the Silver City Highway to Broken Hill,
- Initial placement of overburden and reject into an Off Path Storage Facility until sufficient area within the dredge pond has been established. Following this, reject would be placed within completed sections of the dredge pond, with overburden used to cap the placed material and for construction of the final landform,
- Progressive establishment of a final landform, including a realigned Nulla Road, that would, to the extent practicable, mimic the existing landform and revegetation of that landform with native species to re-establish ecosystem function and agricultural productivity within the Mine Site,
- Use of the existing Rail Facility in Broken Hill for the purposes of loading of mine product containers onto trains, and
- Construction and use of a range of ancillary infrastructure.

The Life of Mine (LoM) is estimated to be 26 years, comprising an initial three-year construction period, followed by 18 years of mining operations and a further period of five years of rehabilitation. The following subsections provide a more in-depth description of the details related to the LoM.

3.4 Timing, Duration and Description of Project Phases

The pre-development phase includes completion of the Definitive Feasibility Study (DFS) and detailed engineering design (FEED), followed by procurement, construction and commissioning of key infrastructure, including the Wet Concentrator Plant (WCP), Rare Earth Concentrate Plant (RECP), mine site infrastructure and transport connections.

Upon completion of construction, operations will involve conventional dredge mining and on-site processing of mineral sands, with progressive rehabilitation undertaken as mining advances. The current mine life may be extended under Phase 1 (Expansion), with additional longer-term potential through development of a second mine (Phase 2), subject to further drilling, approvals and investment decisions. Progressive rehabilitation would be undertaken throughout the life of The Project.

Following completion of mining operations, a period of rehabilitation would be required, including shaping and rehabilitation of the final disturbance areas. Final rehabilitation operations are expected to take 7 years, due to the time needed to establish vegetation on the final landform and monitor it for a sufficient period to determine that the rehabilitation completion criteria have been or will be achieved.

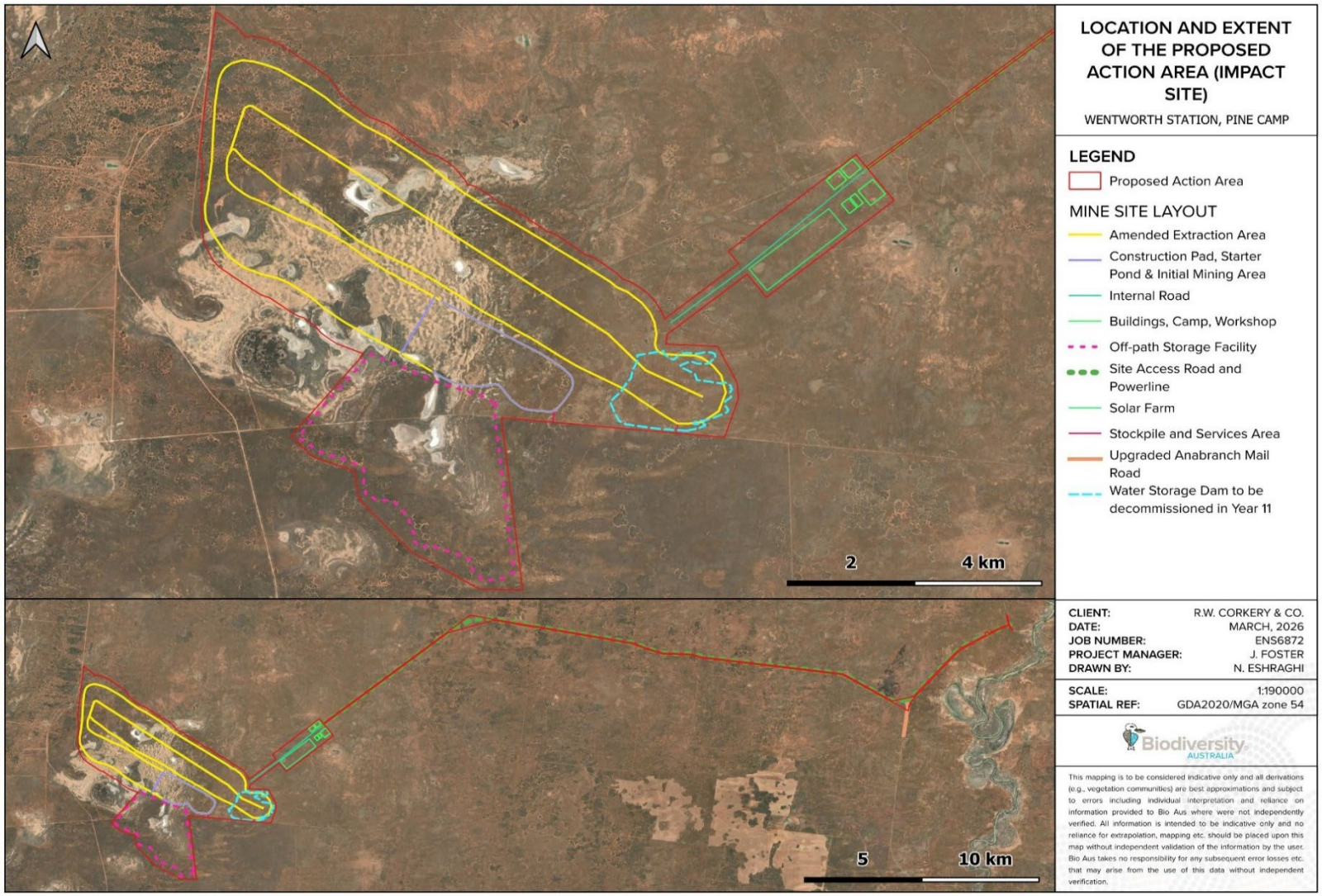

Figure 4: Location and Extent of the Proposed Action Area

3.5 Construction Phase

The site establishment and construction activities for all key components for The Project would be sequenced to achieve the commencement of ore processing 2.5 years after the commencement of the site establishment and construction stage. The following subsections provide a brief description of general preparatory activities for all components of the Project:

- Survey and mark out of key boundaries - The boundaries of all areas to be disturbed during the site establishment and construction stage would be surveyed and marked out prior to the commencement of disturbance. Key boundaries and locations would be marked with painted pegs and recorded on relevant site construction plans and documents,
- Fencing, site security and communications - All existing pastoral station fencing associated with the Mine Site will be reviewed and upgraded if required to prevent stock / animals from entering the mining area. Site gates, secure fencing and monitoring cameras will be installed prior to clearing activities. Basic site communications systems will be installed prior to earthworks on the site to ensure adequate communication systems are in place prior to construction activities,
- Installation of erosion and sediment controls - A program of initial earthworks would be undertaken to establish erosion and sediment controls for each operational area in accordance with the Erosion and Sediment Control Plan to be prepared for the Project post-approval. No substantial earthworks would commence until all required erosion and sediment controls are in place,
- Installation of construction infrastructure - Infrastructure required for construction operations would be established initially, including the following:
    - Access track between Anabranch Mail Road and the Infrastructure Area following the route of the Site Access Road,
    - Construction staging areas, including laydown/hardstand areas, a range of transportable building, temporary workshops and materials management facilities,
    - Power station to supply electricity for construction until the 66kV tr Construction of the Mine camp as described in Section 3.3.2.1 of R.W. Corkery & Co. Pty Limited (RWC) - Environmental Impact Statement (EIS), prepared for RZ Resources Limited (RZ), March 2024 (RWC 2024),
    - Transmission line is established, and
    - Internal roads required for site establishment and construction activities.
- Vegetation clearing - Larger vegetation would be removed prior to soil stripping to permit the establishment of annual or groundcover species and setting of seed. Cleared vegetation would be mulched for later inclusion in stripped topsoil. Groundcover vegetation would be removed with the topsoil to maximise the establishment of annual or groundcover species and associated development of a seed bank, to minimise opportunities for erosion and dust lift-off between removal of the larger vegetation and soil stripping, and
- Soil associations, stripping depths and inventory - Soils within areas of proposed disturbance would be stripped and either directly used for rehabilitation or placed into stockpiles for subsequent use in rehabilitation as described in Section 6.4.5 of the amended EIS report No. 928/15 (RWC 2025).

3.5.1 Excavation and Earthmoving

Soils within areas of proposed disturbance would be stripped and either directly used for rehabilitation or placed into stockpiles for subsequent use in rehabilitation as described in Section 6.4.5 of the amended EIS report No. 928/15 (RWC 2025). Two classifications of “built” soils on the final landform are as follows:

- Hydrosols – or "wet' soils. The Hydrosols would occupy the floor of the Eastern Salt Pan and the backfilled final void within the Year 17 mining area. These soils would be in close proximity to the regional water table, and
- Calcarosols – or soils containing calcium salts. The Calcarosols would occupy more elevated sections of the final landform and would comprise a loamy topsoil and a clayey subsoil.

R.W. Corkery & Co. Pty Limited Amendment Report, prepared for RZ Resources Limited (RWC 2025) contains Table 6.4.3 which presents the recommended soils stripping and placement depths as well as a life of Project soil balance. In summary, adequate soil resources are available over the life of the Project for rehabilitation operations.

3.5.2 Water Gathering

Water gathering lines and pipelines will be monitored, inspected and maintained during operation. This will include inspection of low point drains as part of routine field maintenance activities, removal of build-up from within pipelines, and vegetation slashing within operational rights-of-way.

3.5.3 Roads and Access Tracks

Infrastructure required for construction operations would be established initially, including an Access track between Anabranch Mail Road and the Infrastructure Area following the route of the Site Access Road. This will enable the transportation of mine products in sealed containers from the Mine Site to the Rail Facility will occur via a Site Access Road, an upgraded Anabranch Mail Road and the Silver City Highway to Broken Hill. Internal roads will also be required for site establishment and construction activities.

3.5.4 Supporting Infrastructure and Activities

A range of infrastructure components are required to be constructed and installed across the PAA including the following:

- Construction of the Mine camp as described in Section 3.3.2.1 of the EIS (RWC 2024),
- Construction staging areas, including laydown/hardstand areas, a range of transportable building, temporary workshops and materials management facilities, and
- Power station to supply electricity for construction until the 66kV transmission line is established.

3.6 Operation Phase

Three classes of material would be extracted within the Mine Site as follows:

- Overburden – comprising material with insufficient heavy mineral to justify processing,
- Interburden – comprising material from below the water table with insufficient heavy mineral to justify processing, and
- Ore – comprising material with sufficient heavy mineral to justify processing.

Overburden would be extracted using dry mining techniques to expose the interburden and allow the starter dredge to establish the dredge pond. Once the dredge pond has been established and the dredges and Wet Concentration Plant commissioned, the dredge pond would progressively move along the mine path, with overburden, interburden and ore extracted from the leading edge of the dredge pond. The trailing edge of the dredge pond would be backfilled with reject using floating reject and interburden stackers, with overburden placed over the placed reject and interburden to re-establish the final landform.

3.6.1 Excavation and Earthmoving

The Extraction Area comprises an area 9.5 km long and up to 3.0 km wide. The Extraction Area would be mined using a series of mine paths up to 1 km wide that would double back on themselves throughout the life of the Project, with a total length of 25 km. Only a small section of the Extraction Area would be active at any one time, with vegetation cleared, soil stripped, overburden, interburden and ore progressively extracted, reject and interburden placed behind the dredge pond and the final landform rehabilitated progressively. See Section 3.5 of the amended report (RWC 2025) for further detail regarding the extraction area layout and design.

3.6.2 Water Gathering

There are four surface water catchments either wholly or partly within the PA boundary (refer to Appendix A-2). The local drainage networks of the catchment's direct runoff internally, with no catchment outlet or downstream linkages. These internal drainage networks are also indistinct and discontinuous, terminating in dams that were historically constructed to support stock watering. The Mine Site is located in an arid environment that experiences a significant water deficit with annual average rainfall of 235 mm and annual average pan evaporation of 2,073 mm.

Three Groundwater aquifers exist within the Mine Site, an Upper, Middle and Lower Aquifer. These aquifers are not connected, and the Project will disturb only the Upper Aquifer. The Upper Aquifer is hosted by the Loxton-Parilla Sands, an unconsolidated porous sand unit. The water table is largely flat, between 24.2 m AHD and 24.8 m AHD. Groundwater is hypersaline with the concentration of total dissolved solids 61,000 mg/L, or just under twice that of sea water. The BDAR (Bio Aus 2025a) for the Project is presented as Appendix 5 of RWC, 2025. (Greenloaning Biostudies 2022 Appendix A-3) states that the most salt tolerant species on site, *Halosarcia pergranulata* subsp. *pergranulata*, would be unlikely to utilise groundwater with such extreme salinity levels.

3.6.3 Roads and Access Tracks

The Site Access Road and section of Anabranch Mail Road to be upgraded occurs on land zoned as follows:

- RU1 – Primary Production, and
- SP2 – Infrastructure (Silver City Highway).

Roads are permitted without consent within Zone RU1 – Primary Production and Zone SP2 - Infrastructure. Existing land uses within the PAA include agriculture, namely low intensity grazing.

3.6.4 Supporting Infrastructure and Activities

Construction and use of a range of ancillary infrastructure (Figure 4), including the following:

- An Infrastructure Area comprising:
  - A Mine Camp for 200 people,
  - A diesel-powered Power Station (for construction operations and emergency backup only),
  - Offices and administration facilities; and workshops and stores,
  - A Site Access Road between the Infrastructure Area and Anabranch Mail Road,
  - A 66 kV powerline adjacent to the Site Access Road from the 220 kV Buronga to Broken Hill Transmission Line to an onsite substation, as well as associated power distribution infrastructure,
  - A Water Storage Dam for managing pond water levels during the initial mining operations, and
  - Internal roads, stockpiles and related infrastructure.

3.7 Decommissioning and Rehabilitation

Given the nature of the mining operations, emphasis would be placed upon progressively rehabilitating and backfilling the dredge pond and creating final landforms using reject material and overburden. Similarly, the Off Path Storage Facility and Water Storage Dam would not be required once in-pit placement of reject material commences. As a result, rehabilitation of those areas would also be undertaken early in the life of the Project. By contrast, other sections of the Mine Site, including the Infrastructure Area, Site Access Road and internal roads would not be available for rehabilitation until completion of mining operations. Further detail regarding the rehabilitation can be found in Section 3.12 of EIS (RWC 2024).

3.8 Assessments Informing this Report

The following reports were reviewed to prepare the Referral for the PA:

- Biodiversity Australia (2025a) Copi Mineral Sands Biodiversity Development Assessment Report, prepared by Bio Aus for R.W. Corkery & Co Pty. Ltd on behalf of RZ Resources Limited. Final Report. Rev 5.0,
- Biodiversity Australia (2025b) Copi Mineral Sands MNES Significant Impact Assessment Report, prepared by Bio Aus for R.W. Corkery & Co Pty. Ltd on behalf of RZ Resources Limited. Final Report. Rev 4.0, and
- EnviroKey (2024) Revised Biodiversity Development Assessment Report: Copi Mineral Sands Project. A report prepared by S. Sass for R.W. Corkery & Co Pty. Ltd on behalf of RZ Resources Limited. Report No. 24.BDAR-063. Final Report. Version 1.

All threatened fauna species were surveyed in accordance with NSW BAM (Biodiversity Assessment Method 2020) survey guidelines and conducted during the recommended survey periods as detailed in the BioNet TBDC, specific threatened fauna species survey guidelines, and/or other resources (see Section 4 below for specific sources). Results from targeted threatened fauna surveys and methods are shown in Bio Aus BDAR Rev 6.0 (Bio Aus 2025)(Table 3). All incidental fauna species observed, recorded, heard calling, or otherwise detected based on tracks or signs, are presented in the total species list in the BDAR. Targeted habitat surveys were conducted within each fauna species respective PCTs. VI Scores were recorded within each PCT via BAM plots which were conducted within each Vegetation Zone are displayed in Table 4.

Table 3: Biodiversity Australia Copi Mineral Sands Project BDAR Rev 6.0 Fauna Survey Results

Common Name	Scientific Name	Survey conducted	Survey timing constraints met?	Habitat components met?	Species detected?	Method
Crowned Gecko	*Lucaslum stenodactylum*	Dec - Jan	Y	Y	N	Nocturnal spotlight, physical habitat searches, Elliot trapping, pitfall trapping
Painted Burrowing Frog	*Neobatrachus-pictus*	All Year	Y	N	N	Acoustic recording after flooding rain. Flooding rain has not occurred.
Pink Cockatoo	***Lophochroa leadbeateri***	**Aug – Feb**	**Y**	**Y**	**Y**	**Diurnal bird survey, HBT watch, Opportunistic**
Black-eared Miner	*Manorina melanotis*	Nov – Feb	Y	Y	N	Diurnal bird survey, Opportunistic
Red-lored Whistler	*Pachycephala rufogularis*	Nov – Feb	Y	Y	N	Diurnal bird survey, Opportunistic
South-eastern Hooded Robin	***Melanodryas cucullata***	**Nov – Feb**	**Y**	**Y**	**Y**	**Diurnal bird survey, Opportunistic**
Southern Whiteface	***Aphelocephala leucopsis***	**Nov – Feb**	**Y**	**Y**	**Y**	**Diurnal bird survey, Opportunistic**
White-fronted Chat	*Epthianura albifrons*	Nov – Feb	Y	Y	Y	Diurnal bird survey, Opportunistic
Black-breasted Buzzard	*Hamirostra melanosternon*	Nov – Feb	Y	Y	N	Diurnal birds of prey survey, Opportunistic
Square-tailed Kite	*Lophoictinia isura*	Nov – Feb	Y	Y	N	Diurnal birds of prey survey, Opportunistic
Little Eagle	*Hieraaetus morphnoides*	August	Y	Y	N	Diurnal birds of prey survey, at hottest time of day.
White-bellied Sea-Eagle	*Haliaeetus leucogaster*	Nov – Feb	Y	Y	N	Diurnal birds of prey survey, Opportunistic

Common Name	Scientific Name	Survey conducted	Survey timing constraints met?	Habitat components met?	Species detected?	Method
Bush Stone-curlew	*Burhinus grallarius*	Nov – Feb	Y	Y	N	Diurnal birds of prey survey, Nocturnal spotlight, Opportunistic
Australian Bustard	*Ardeotis australis*	Nov – Feb	Y	Y	N	Diurnal birds of prey survey, Opportunistic
Southern Hairy-nosed Wombat	*Lasiorhinus latifrons*	Feb	Y	Y	N	Nocturnal spotlight
Masked Owl	*Tyto novaehollandiae*	Jan	Y	Y	N	Nocturnal call
Desert Mouse	*Pseudomys desertor*	Dec	Y	Y	N	Elliot trapping, pitfall trapping/ Nocturnal spotlight
Southern Myotis	*Myotis macropus*	Jan	Y	Y	N	Acoustic survey

Table 4: Vegetation Zone and Vegetation integrity Score within the PAA

PCT	Associated MNES Entities	Condition Class	No. of plots	Patch Size	Area Impacted (ha)	VI Composition	VI Structure	VI Function	VI Total
Mine site									
58	Pink Cockatoo, Southern Whiteface, Hooded Robin, Corben's Long-eared Bat	Mod	20	≥100 ha	189.82	45.3	62.8	54.9	53.8
152	Pink Cockatoo, Southern Whiteface	Mod	7	≥100 ha	249.82	65	38.1	-	49.8
154	Pink Cockatoo, Southern Whiteface	Mod	42	≥100 ha	1564.73	84.9	13.8	-	34.2
157	Southern Whiteface	High	2	≥100 ha	3.58	65.6	90.5	-	77.1

PCT	Associated MNES Entities	Condition Class	No. of plots	Patch Size	Area Impacted (ha)	VI Composition	VI Structure	VI Function	VI Total
157	Southern Whiteface	Mod	8	≥100 ha	492.12	52.5	93.4	-	70
170	MBC, Pink Cockatoo, Southern Whiteface, Hooded Robin, Corben's Long-eared Bat	Mod	7	≤5 ha	1.98	45.5	16.2	24.1	26.1
171	MBC, Pink Cockatoo, Southern Whiteface, Hooded Robin, Corben's Long-eared Bat	Mod	7	≤5 ha	5.57	76.1	75.2	43.6	63
215	Pink Cockatoo, Southern Whiteface, Hooded Robin	High	1	≥100 ha	0.82	43.3	23.1	-	31.6
215	Pink Cockatoo, Southern Whiteface, Hooded Robin	Mod	3	≥100 ha	5.07	14.7	27.6	-	20.1
221	Pink Cockatoo, Hooded Robin, Corben's Long-eared Bat	High	2	≥100 ha	3.12	52.2	81.9	55.6	62
221	Pink Cockatoo, Hooded Robin, Corben's Long-eared Bat	Mod	7	≥100 ha	391.85	31.4	69.1	86.9	57.3
253	Pink Cockatoo, Southern Whiteface	Mod	7	≥100 ha	140.14	43.2	68.1	-	54.3
254	Pink Cockatoo, Hooded Robin	Mod	1	≥100 ha	1.16	45.2	81.1	-	60.5
Linear Corridor									
28	Pink Cockatoo, Southern Whiteface, Hooded Robin, Corben's Long-eared Bat	Mod	2	≥100 ha	0.77	80.8	94.2	21.4	54.6
58	Pink Cockatoo, Southern Whiteface, Hooded Robin, Corben's Long-eared Bat	Mod	20	≥100 ha	48.82	45.3	62.8	54.9	53.8
143	Pink Cockatoo, Southern Whiteface, Hooded Robin	Mod	3	≥100 ha	17.2	71.5	89.9	-	80.2

PCT	Associated MNES Entities	Condition Class	No. of plots	Patch Size	Area Impacted (ha)	VI Composition	VI Structure	VI Function	VI Total
154	Pink Cockatoo, Southern Whiteface	Mod	42	≥100 ha	102.09	84.9	13.8	-	34.2
170	Pink Cockatoo, Southern Whiteface, Hooded Robin, Corben's Long-eared Bat	Mod	7	≥100 ha	13.6	45.5	16.2	24.1	26.1
171	Pink Cockatoo, Southern Whiteface, Hooded Robin, Corben's Long-eared Bat	Mod	7	≥100 ha	6.56	76.1	75.2	43.6	63

4. Controlling Provisions – Direct and Indirect Impacts to MNES Entities

The greatest risk of potential impacts on threatened species and biodiversity values from The Project will occur during the construction and operational phases. Construction activities will span 18 years to support the installation of the standard operational mining infrastructures (PAA – Mine Site) and the 46 km Haul Corridor Road (PAA – Linear Corridor). These activities will be undertaken concurrently with mining operations and involve ground disturbance, vegetation clearing, earthworks and stockpiles, and construction of hydrological and drainage features (e.g. culverts and establishment of temporary construction compounds and laydown areas). The direct impacts associated with these phases are described below.

The removal of vegetation within the PAA will result in direct and indirect impacts to Habitat for MBC, Pink Cockatoo, Hooded Robin, Corben's Long-eared Bat and Southern Whiteface. The PA will directly require the removal of 3,883.08 ha of vegetation within the Subject Land. Of the vegetation proposed to be removed within the PAA, 3,241.95 ha is identified as a PCT associated with the five MNES entities assessed in this PD. This vegetation clearance represents direct impacts, whilst indirect impacts will affect 176.72 ha of PCTs associated with the five MNES entities. Associated with the impacted habitat are 39 hollow bearing trees suitable for the smaller birds and bats, while 12 of the impacted HBTs may potentially be suitable for Pink Cockatoos, despite no records of the species utilising them currently.

4.1 EPBC Act - Offsets Mitigation Hierarchy

The EPBC Act Offsets Mitigation Hierarchy is a tool that is used to limit the amount of damage an action, such as a development, will have on the environment. There are four steps which must each be followed in order, and to the greatest extent possible, before moving on to the next. The four offset mitigation steps are: Avoid, Mitigate, Repair, and Offset. The four steps were closely considered and applied in relation to impacts to each of the five MNES entities assessed in this PD.

4.2 EPBC Act – Ten Offset Policy Principles

The EPBC Act Offset policy principles provides explanations and guidance regarding offset proposals.

1. Suitable offsets must deliver an overall conservation outcome that improves or maintains the viability of the aspect of the environment that is protected by national environment law and affected by the proposed action.
2. Suitable offsets must be built around direct offsets but may include other compensatory measures.
3. Suitable offsets must be in proportion to the level of statutory protection that applies to the protected matter.
4. Suitable offsets must be of a size and scale proportionate to the residual impacts on the protected matter.
5. Suitable offsets must effectively account for and manage the risks of the offset not succeeding.
6. Suitable offsets must be additional to what is already required, determined by law or planning regulations or agreed to under other schemes or programs (this does not preclude the recognition of state or territory offsets that may be suitable as offsets under the EPBC Act for the same action).
7. Suitable offsets must be efficient, effective, timely, transparent, scientifically robust and reasonable.
8. Suitable offsets must have transparent governance arrangements including being able to be readily measured, monitored, audited and enforced.

9. In assessing the suitability of an offset, government decision-making will be informed by scientifically robust information and incorporate the precautionary principle in the absence of scientific certainty.
10. In assessing the suitability of an offset, government decision-making will be conducted in a consistent and transparent manner.

This PD has carefully considered the ten offset policy principles when addressing the project offsets.

4.3 Threatened Ecological Communities - Endangered

The MNES Significant Impact Criteria for Endangered Threatened Ecological Communities has been considered and applied in the assessment of the MBC.

An action is likely to have a significant impact on a critically endangered or endangered ecological community if there is a real chance or possibility that it will:

1. *Reduce the extent of an ecological community.*
2. *Fragment or increase fragmentation of an ecological community, for example by clearing vegetation for roads or transmission lines.*
3. *Adversely affect habitat critical to the survival of an ecological community.*
4. *Modify or destroy abiotic (non-living) factors (such as water, nutrients, or soil) necessary for an ecological community's survival, including reduction of groundwater levels, or substantial alteration of surface water drainage patterns.*
5. *Cause a substantial change in the species composition of an occurrence of an ecological community, including causing a decline or loss of functionally important species, for example through regular burning or flora or fauna harvesting.*
    a. *Cause a substantial reduction in the quality or integrity of an occurrence of an ecological community, including, but not limited to: assisting invasive species, which are harmful to the listed ecological community, to become established, or*
    b. *Causing regular mobilisation of fertilisers, herbicides or other chemicals or pollutants into the ecological community which kill or inhibit the growth of species in the ecological community, or*
6. *Interfere with the recovery of an ecological community.*

Sourced from MNES Significant Impact Guidelines 1.1 (EP&BC Act 1999)

4.3.1 Mallee Bird Community (MBC) of the Murray Darling Depression Bioregion (Endangered)

4.3.1.1 Overview

The MBC refers to a group of bird species that are closely associated with mallee ecosystems in semi-arid and arid regions of southern and eastern Australia. Mallee vegetation is characterised by multi-stemmed eucalypt species, often on sandy or loamy soils, with a dense understorey of shrubs and hummock grasses. It comprises bird species that are dependent on intact mallee woodland such as dense shrub layer, fallen timber and mature mallee trees for foraging, nesting and breeding.

The MBC has been identified as a threatened ecological community under the EPBC Act due to habitat loss from clearing for agriculture or development, fragmentation of woodland remnants, reducing connectivity and altered fire regimes which can eliminate understory shrubs and nesting sites. This community is considered ecologically important because it supports species that are sensitive to habitat

disturbance and have limited distribution. Loss or degradation of mallee vegetation can therefore result in significant impacts to multiple MNES species simultaneously.

Upgrades to the existing linear corridor track, which is 10 m wide at its narrowest single-track form and 25 m wide at its widest double-track form with a fence between the tracks, will remove narrow strips of previously cleared and impacted roadside vegetation, between 8.5 – 16 m wide. These strips of low quality heavily grazed vegetation have minimal groundcover and extremely sparce shrub layer, having been disturbed for a long period of time by vehicle activity, and more recently as high traffic areas for domestic and feral grazers. The current gap in vegetation along the track varies from 10 m where vegetation has been cleared, to >100 m wide where the cleared track meets open areas devoid of canopy trees. The track upgrade will increase the vegetation gap marginally; however, it will not increase the vegetation gab by more than 16m on each side, and it will not cause gaps which increase fragmentation, separation or create new patches more than 100m from the nearest patch.

Except from DCCEEW RFI PD – Copi Mineral Sands Project - MBC

The Approved Conservation Advice for the Mallee Bird Community of the Murray Darling Depression Bioregion (MBC Conservation Advice) outlines the MBC threatened ecological community (TEC) comprises an assemblage of 20 bird species associated with specific mallee vegetation found in the Murray Darling Depression Bioregion

The Copi Mineral Sands Project MNES referral identified 16.72 ha of mallee-dominated Plant Community Type (PCT) 170 and 171 which met the patch size criteria within the PAA along the linear corridor site.

The department has applied the key diagnostics from the MBC Conservation Advice to the survey results in the referral and considers there are at least three species of any mix of MBC TEC specialists or dependents observed within 20 km of the site within the last 10 years. As such, the department has determined that suitable habitat for the MBC TEC is present within the PAA as Category A, which indicates the PAA is good bird habitat for the MBC at this time and/or has the best potential to support even more of the MBC birds in the future if managed and/or restored appropriately.

RZ Resources is upgrading the existing access track to the linear corridor site, which will create a permanent gap of 42 m. The department has reviewed the recommendations in the MBC Conservation Advice, scientific descriptions for PCTs 170 and 171 as per the BioNet Vegetation Classification, and the referral information, and considers the 16.72 ha of MBC habitat proposed to be cleared along the linear corridor site will likely form part of an established larger, extensive contiguous MBC habitat. The large areas of native vegetation are likely to provide greater biodiversity value.

The department considers the PA will clear up to 16.72 ha of MBC foraging, breeding, roosting and dispersal habitat. The department has determined the PA is likely to have a significant impact on the MBC.

4.3.1.2 Likely Presence in the PAA - Survey Method

Diurnal bird surveys were conducted for 5 consecutive days across 42 sites for 21 hours resulting in over 45.8 km of surveys being completed. Two species belonging to the MBC were found within the PAA during the targeted surveys.

Only two of the required bird species from the Mallee Bird Community were recorded in mallee on and adjacent to the PAA (Linear Corridor) where vegetation meets the patch size criteria. These birds are:

- Crested Bellbird (*Oreoica gutturalis*), and
- Jacky Winter (*Microeca fascinans*).

The following six MBC mallee species were recorded within a 20 km radius of the proposed mine and linear corridor sites:

- Chestnut Quail-thrush *(Cinclosoma castanotum) – mallee specialist,*

- Crested Bellbird *(Oreoica gutturalis) – mallee dependent,*
- Grey-fronted Honeyeater *(Ptilotula plumula) – mallee dependent,*
- Jacky Winter *(Microeca fascinans) – mallee dependent,*
- Splendid Fairy-wren *(Malurus splendens) – mallee dependent, and*
- Yellow-plumed Honeyeater *(Ptilotula ornata) – mallee dependent.*

Although six of the MBC species were recorded within 20 km of the PAA, the vegetation present within the PAA is located within 20 m of cleared tracks. The track consists of a single and double farm track used commonly and frequently to transport domestic and feral animals in a B-Double livestock trailer hauled by a semi-trailer truck. This track also requires regular maintenance with large earth-moving equipment which generates dust and noise disturbance. In addition, the vegetation along the track is inhabited by a population of Noisy Miner (*Manorina melanocephala*) which impacts populations of MBC where it is resident. Therefore, we conclude that although the MBC records in the area reflect broader populations in higher quality vegetation, the same density of MBC is not likely in the vegetation along the Linear Corridor track.

4.3.1.3 Potential Direct Impacts

Avoid

Direct Impacts to PCTs associated with the MBC (PCT 170 and 171) will occur within vegetation along the Linear Corridor. Avoidance measures were incorporated during the project planning phase, including careful consideration of the location of the Linear Corridor to minimise impacts to native vegetation. The alignment of the corridor with existing tracks and fencelines was selected to reduce disturbance to MBC vegetation communities where feasible.

The PA (track upgrade) along the Linear Corridor will not create a new permanent gap of 42 m, rather it will extend the existing cleared land on either side of the boundary/fenceline by an additional 6 m. At no point in the linear corridor will the gap be more that 21 meters from the mid-line. Effectively, an existing gap, of varying width, already exists within the potential MBC habitat patch. The action will increase the width of the gap from 30 m to 42 meters; this is 58 m less than the 100 m gap which defines the gap between two separates patches (DAWE, 2021). When it comes to defining a patch of habitat, allowances are made for “breaks” up to 100 metres between areas that meet the habitat description. The 100 m gap or less allows for the ability of many birds in the MBC to traverse this distance. Such breaks may be the result of watercourses or drainage lines, water bodies e.g. farm dams, tracks, paths, roads, gaps made by exposed areas of soil (DAWE 2021). The vegetation within the clearing area has already been cleared in the past and impacted by edge effects. The quality of vegetation in this thin strip is of a lower quality than the vegetation occurring in the surrounding area because of edge effects.

In accordance with the Approved Conservation Advice for the *Mallee Bird Community of the Murray Darling Depression Bioregion*, the project has been planned to avoid the need to offset. Although these impacts cannot be totally avoided, they will be minimised and mitigated.

The MBC will be subject to direct impacts within the PAA, totalling 16.72 ha. State Vegetation Type Map (SVTM) mapping indicates that the Subject Land surrounding the PAA contains 3,406.22 ha of retained native vegetation that provides habitat associated with the MBC. Accordingly, the proposed direct disturbance represents 0.49% of the total mapped extent of the MBC within the Subject Land. The result is the retention of 99.51% of the associated vegetation. See Figure 8 for direct impacts to the MBC.

No Threat Abatement Plan has been published for this ecological community. The Conservation Advice states that a Recovery Plan is not required. Implementation of the priority actions set out in the Conservation Advice is considered sufficient to prevent extinction and guide recovery (DAWE 25/11/2021).

The avoided and retained vegetated land area containing PCTs associated with the MBC TEC within the Subject Land (3,406.22 ha), along with the directly impacted land area (16.74 ha) is shown in Table 5 below. This directly impacted area equates to 0.49% of the Subject Land.

In addition to the above, see two italicised excerpts below from DAWE 2021 Threatened Species Scientific committee – Approved Conservation Advice for the *Mallee Bird Community of the Murray-Darling Depression Bioregion,* which discuss practical conservation objectives and minimisation actions for the MBC.

Conservation of the ecological community

Principles and standards

In undertaking priority actions to achieve the conservation objective, the overarching principle is that it is preferable to maintain existing habitat areas for the Mallee Birds that are relatively intact and of medium to high quality. There are good, practical reasons to do so. It is typically more successful and cost-effective to retain an intact occurrence and habitats than to allow degradation and then attempt to restore it or another area. The more disturbed and modified the ecological community is, the greater the recovery effort that is required. Also, intact habitat remnants are likely to retain a fuller suite of birds, viability and ecological functions. Certain species and habitat features (e.g. large trees, a diverse understorey) may not be easy to recover in practice, if lost from a site.

One of the aims of the project, is to protect the MBC TEC from resource losses including foraging and breeding habitat. This conservation of resources will be actively pursued by applying the mitigation measures outlined in the BDAR, this PD and the range of Biodiversity management plans prepared as part of the approval process. In addition, the active restoration of the ecological community will be achieved by active abatement of threats, appropriate management, restoration of habitats and other conservation initiatives.

Mitigate

Manage actions to minimise impacts

Apply the mitigation hierarchy to sequentially avoid, then mitigate, then offset potential impacts on the ecological community from development or other actions. The priority is to avoid further loss of bird populations or critical/important habitats. Offsetting is a last resort and may be difficult to apply to a bird community.

In circumstances where impacts cannot be totally avoided, they will be minimised by:

- Minimising the spatial footprint of the action and planning its location to affect low-quality, rather than high-quality patches of mallee vegetation,
- Retaining and avoiding damage to high quality mallee vegetation, which will be managed to retain their benchmark state,
- Protecting specific and important habitat features, such as old growth mallee trees, including stags with hollows as these take many decades to develop and cannot be quickly replaced, as well as logs, food plants, areas of diverse native understorey and well-developed organic litter layers, and
- Remove or reduce artificial water access.

Artificial watering points in the mallee may negatively affect the bird community and can affect grazing pressure up to 10 km away. They impact on native vegetation and habitats by maintaining high numbers and densities of introduced pests and native herbivores. Consider decommissioning at least some artificial water points to reduce numbers of pest animals and allow regeneration of native habitats.

- Care must be taken to avoid adverse outcomes, particularly where water may be used for firefighting, or where grazing pressure might keep fuel levels low. Further, at a landscape scale,

lack of water may force some species into altered landscapes where that may face new threats (i.e. bird control around orchids near river systems). Use of sealed water reservoirs is recommended as a more reliable way of supplying water for firefighting,

- Fence off habitat adjacent to cleared grazing land,
- Inform graziers of impacts of grazing in mallee, and when grazing is/isn't suitable (i.e. might be suitable for fuel control during good years). In perpetuity contracts, stewardship schemes and incentives aimed at reducing or removing grazing from critical/important habitat areas are recommended, and
- Manage feral herbivore numbers on public land and work with private land holders to do the same.

It is important that any monitoring is planned before management commences and considers what data are required to address management outcomes and research questions. Monitoring must be resourced for management activities, especially for those using a novel approach, and applied during and following management actions.

- Monitor for new incursions or spread of weeds and pest animals,
- Promote long-term monitoring of species by Traditional custodians, citizen scientists and volunteers to bird databases collated by Birdlife Australia, Atlas of Living Australia and others,
- Evaluate available datasets for signs of decline of individual and collective bird species,
- Use the information on trends in bird abundance coupled with observations on the status of habitat features to inform recommendations for future management,
- Monitor the impacts of fires, especially in severe fire seasons, at sites recovering from fire. Community involvement in recovery is particularly beneficial where it contributes to long-term monitoring, and
- Monitor herbivore numbers across the landscape to inform actions.

Repair

The 16.74 ha of land within the PAA on which the MBC associated PCTs are proposed to be cleared will be subject to pre-clearance surveys and post-clearance remediation. These reparation actions include rehabilitation, revegetation and restoration of environmental and ecological values. The vegetation and habitat in all repaired areas will be restored to an equal or higher value to that of the preclearance vegetation and habitat values within the PAA and the surrounding Subject Land. This repair of vegetation and habitat values will be achieved by monitoring Vegetation integrity scores at predetermined locations described in the Biodiversity and vegetation Management Plans.

Offset

Direct impacts to the MBC have been identified as 16.74 ha of associated PCTs in the form of mallee vegetation. This 16.74 ha area of potential MBC habitat, shown in Table 5 below, and shown as a percentage (0.49%) in the following table (Table 6), is required to be offset under the EPBC Act.

See section 6.3 and Table 32 and Table 33 for the direct impact offset PCTs, areas and credit calculations for the PAA.

Where impacts are unavoidable, offsets will be used as a last resort because many mallee bird species are now threatened, and old growth mallee habitats are rare. The outcomes of offsetting activities are generally highly uncertain and may involve considerable risk of failure. Any proposals considering offsets for this ecological community will:

- Minimise the need to offset the ecological community by designing development around occurrences of the ecological community,
- Avoid impacting high quality occurrences and habitats, especially old growth stands with mature trees and diverse native understoreys; these would now be difficult to offset, and

- Demonstrate they can be managed in perpetuity as areas dedicated for conservation purposes, with monitoring and management to ensure they deliver biodiversity benefits for the ecological community over the long-term.

The field Survey effort for the MBC is illustrated in Figure 5 and Figure 6, whilst all local records for the species, within a 20 km radius of the PAA in the last 10 years, are shown in Figure 7.

Table 5: PCTs associated with Mallee Bird Community retained, impacted directly and impacted indirectly

Associated PCT	Subject Land (ha)	Retained Habitat (ha)	Direct Impact (ha)	Indirect impact (ha)
170	1,131.86	1,116.27	10.18	6.264
171	2,302.06	2,289.95	6.56	3.571
Total	**3,433.92**	**3,406.22**	**16.74**	**9.83**

Table 6: Direct impacts to the Mallee Bird Community

Direct Impacts (ha)	Retained Veg (ha)	Direct Impacts (%)	Retained Vegetation (%)*
16.74	3406.22	0.49	99.51

* Percentage of Retained Vegetation within the Subject Land

4.3.1.4 Potential Indirect Impacts

Avoid

The Project will primarily avoid indirect impacts to the MBC by positioning the proposed Haul Road within a narrow linear corridor which will require a minimal amount of clearing on either side of an existing track. The two thin strips of vegetation cleared on either side of the track will vary in width from 6 m to 16 m wide. This thin strip of disturbance is preferable to an alternative 42 m wide disturbance corridor where indirect impacts on either side of the wider single strip would be much greater, avoiding impact to the MBC.

The indirectly impacted land area (9.93 ha) within the 30 m indirect impact buffer surrounding the PAA is shown in Table 7 below. This indirectly impacted land area equates to 0.29% of the overall Subject Land. This area will be at risk of indirect impacts from construction activities which produce dust, noise and vibration during the initial construction of the Haul Road and for the life-of-Mine (LoM) due to traffic which will travelling in both directions along the haul road..

Mitigate

Mitigation measures for the MBC will be achieved by establishing ecological community integrity protection buffer zones around the entire PAA. The details of this precautionary measure to mitigate indirect impacts is featured in 5.1.1.

Repair

The 9.83 ha of land outside the PAA on which the MBC associated PCTs are at risk of indirect impacts will be subject to post-clearance habitat relocation. This will result in an increase in the environment and

ecological values. The vegetation and habitat values within this area will be equal to or higher than the pre-PA values.

Offset

The PA will affect 9.83 ha of vegetation within the indirect impact buffer surrounding the PAA. Excluding the PAA, the Subject Land surrounding the buffer contains 3,396.39 ha of retained vegetation associated with the MBC. The potential indirect impact therefore represents 0.29% of the retained vegetation within the Subject Land, with 99.71% remaining preserved. See Figure 9 for Indirect Impacts to the Mallee Bird Community.

A buffer zone will be installed around the entire PAA which will protect the integrity of the ecological communities present. This is designed to minimise the risk of indirect impacts by physically separating the ecological community from direct impacts and by identifying it to land managers. This buffer zone will help protect the root zone of nearby trees and other elements of the neighbouring ecological communities from weed invasion, spray drift (fertiliser, pesticide or herbicide sprayed in adjacent land), polluted water runoff and other potential damaging processes. The DCCEEW 2026 RFI states that the most effective buffer zones are comprised of native vegetation. The majority of the vegetation within the buffer zone is native, therefore the buffer zone when implemented will be effective..

The department considers the retained patches of neighbouring ecological communities will be effectively avoided if the design of the PA includes a vegetation integrity protective buffer zone, which does not require an offset (DCCEW RFI EPBC2024/09955). This buffer will also protect species habitat within 30 m of the PAA mine site area and within 10 m of the PAA Linear Corridor area.

The details of this precautionary measure to mitigate indirect impacts is featured in 5.1.1.

Table 7: Indirect Impacts to the Mallee Bird Community

Indirect Impacts (ha)	Retained Veg (ha)	Indirect Impacts (%)	Retained Vegetation (%)
9.83	3,396.39	0.29	99.7

** Retained vegetation for indirect impacts exclude the buffer area within the Subject Land

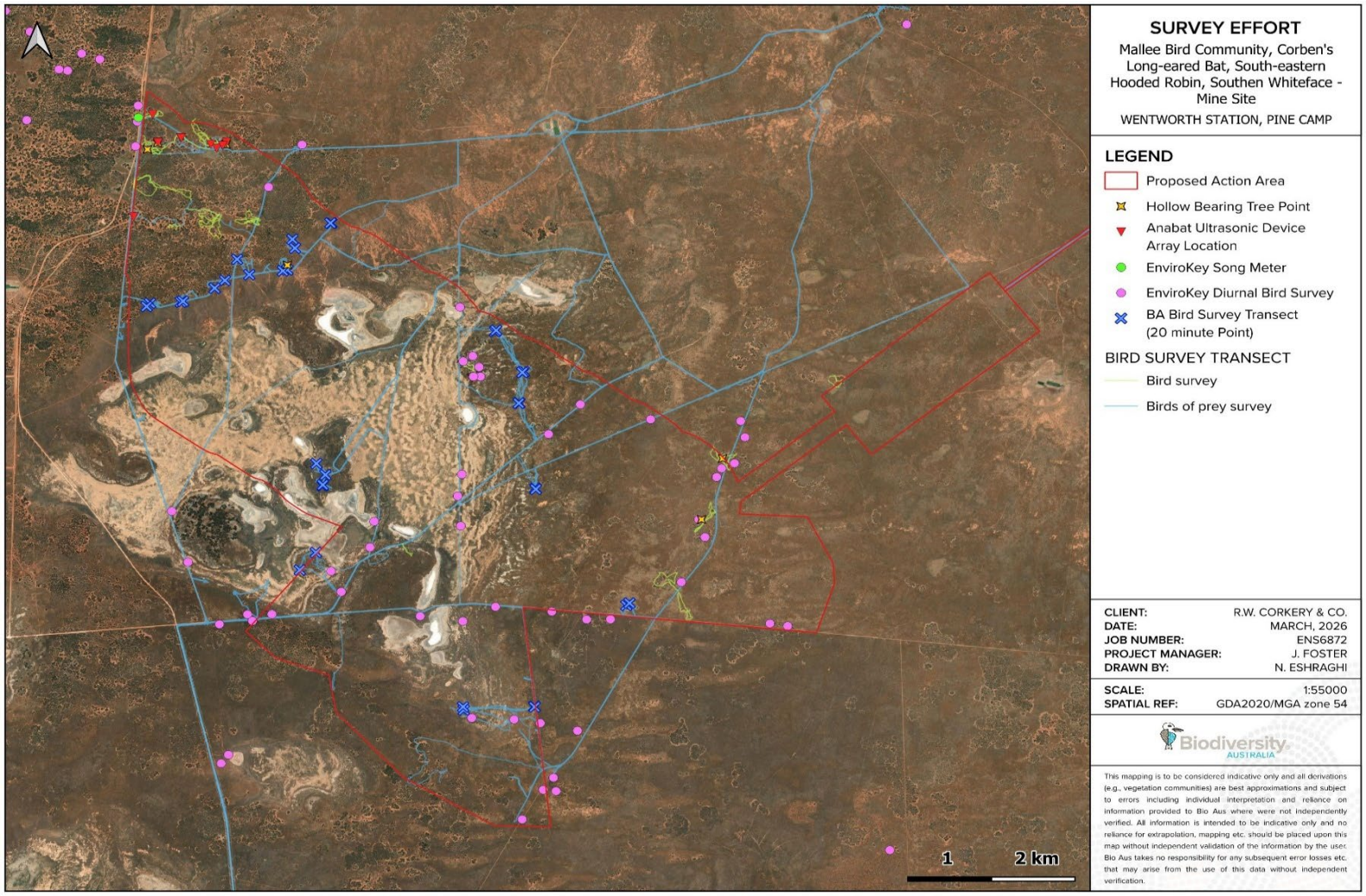

Figure 5: Field Survey Effort for the Mallee Bird Community, Corbens Long-eared Bat, South-eastern Hooded Robin and Southern Whiteface across the Mine Site.

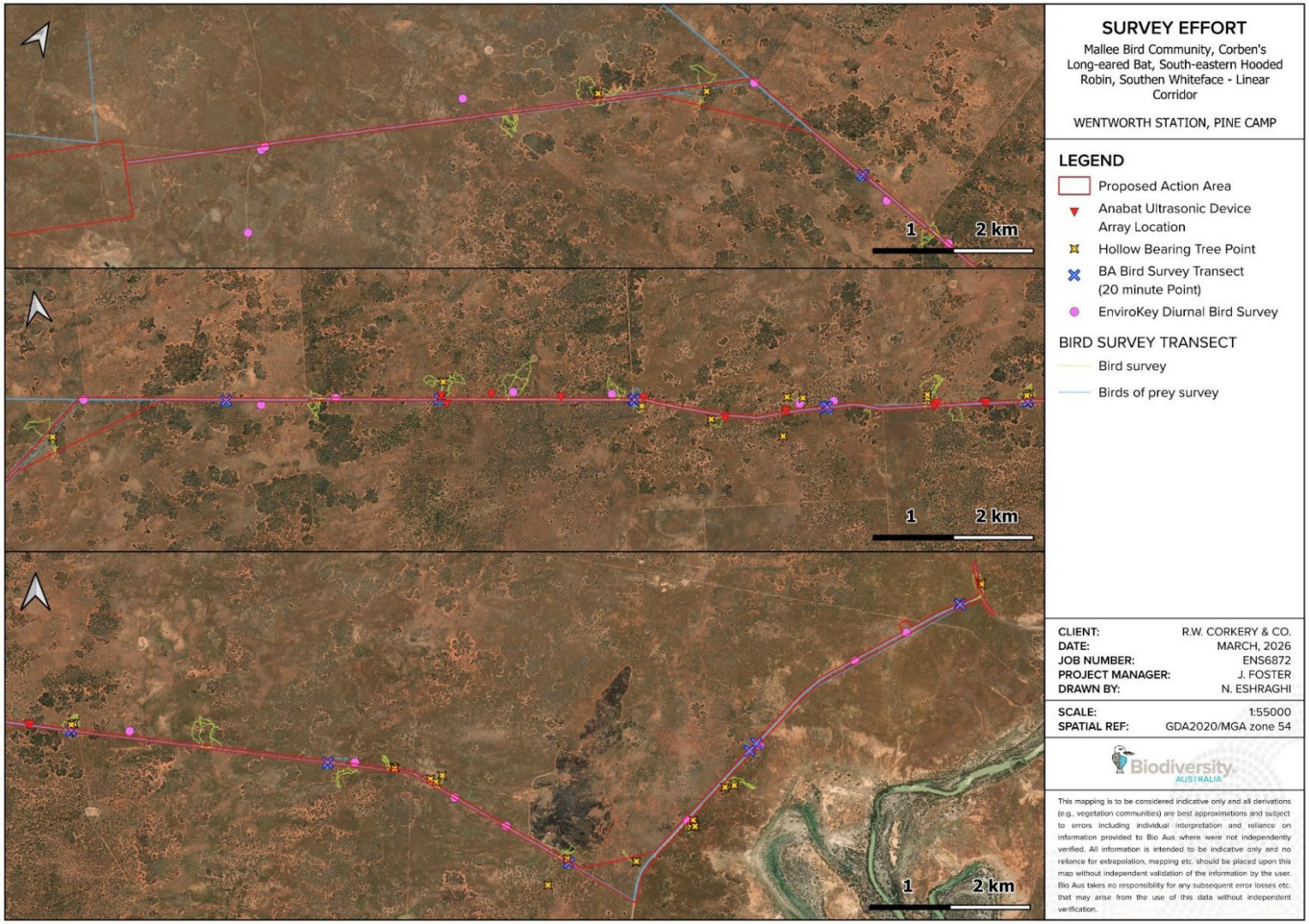

Figure 6: Field Survey Effort for the Mallee Bird Community, Corbens Long-eared Bat, South-eastern Hooded Robin and Southern Whiteface

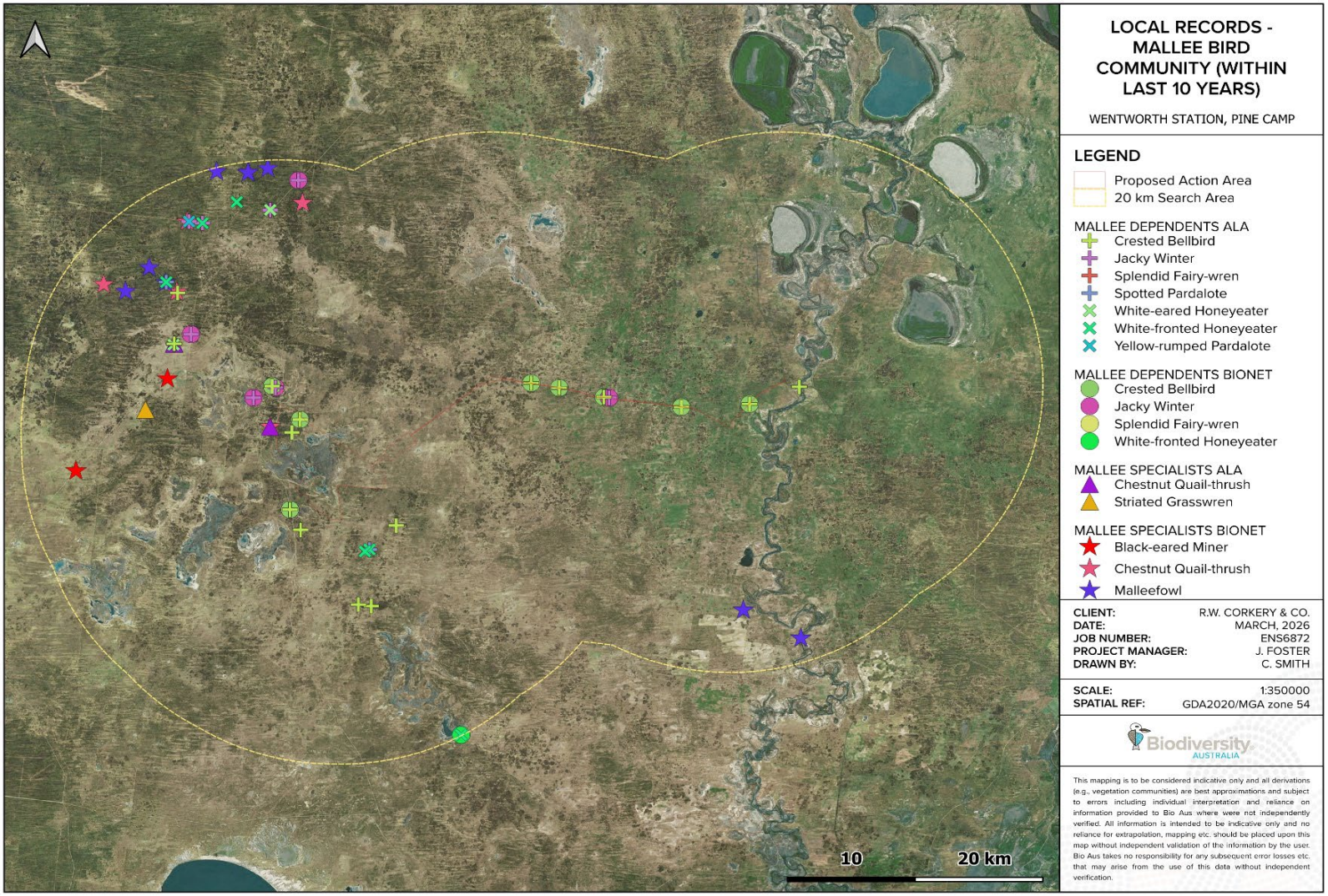

Figure 7: Local Records - Mallee Bird Community (within the last 10 years)

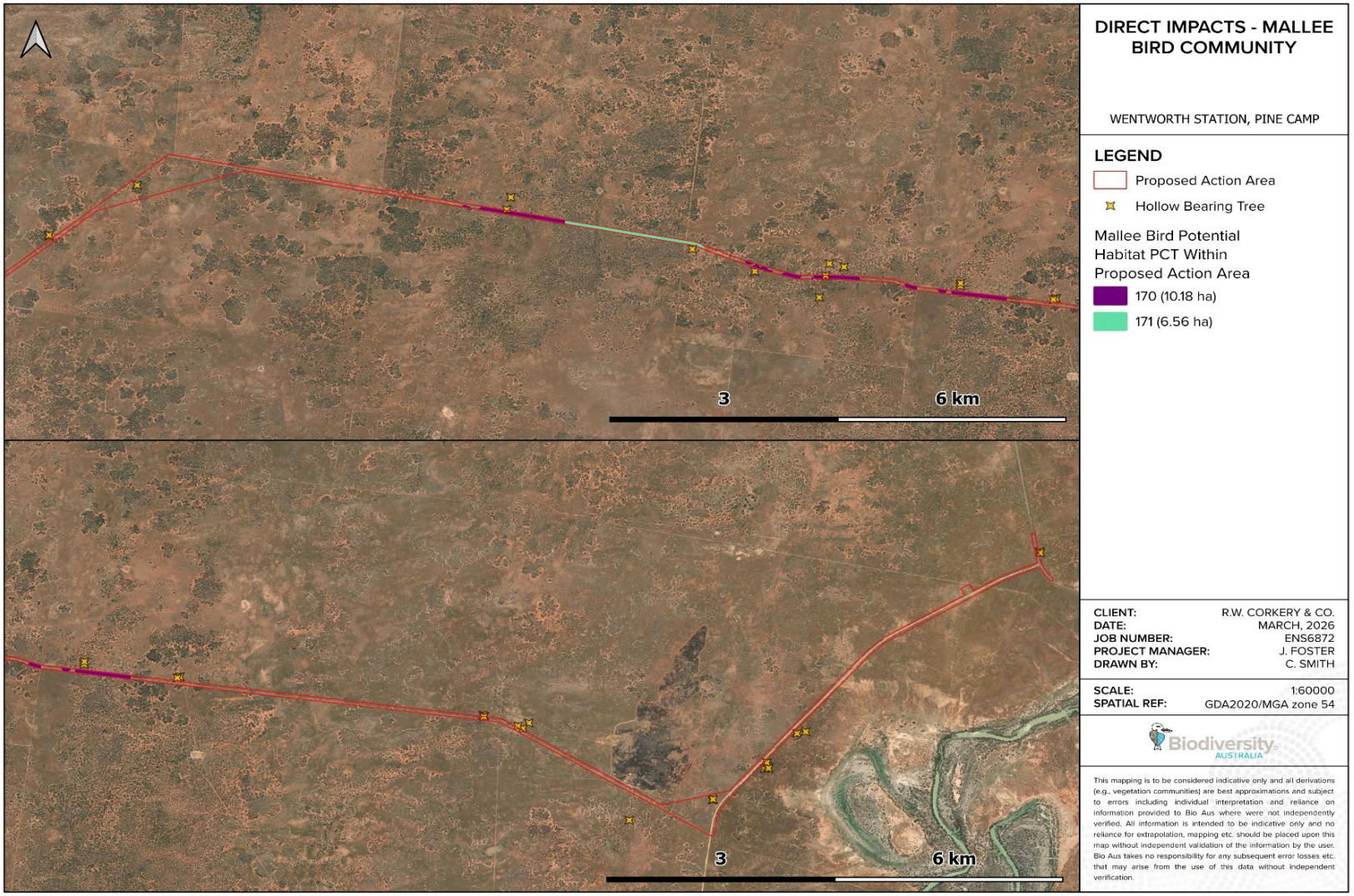

Figure 8: Area of Direct Impact for Mallee Bird Community (patches of vegetation above 5 ha)

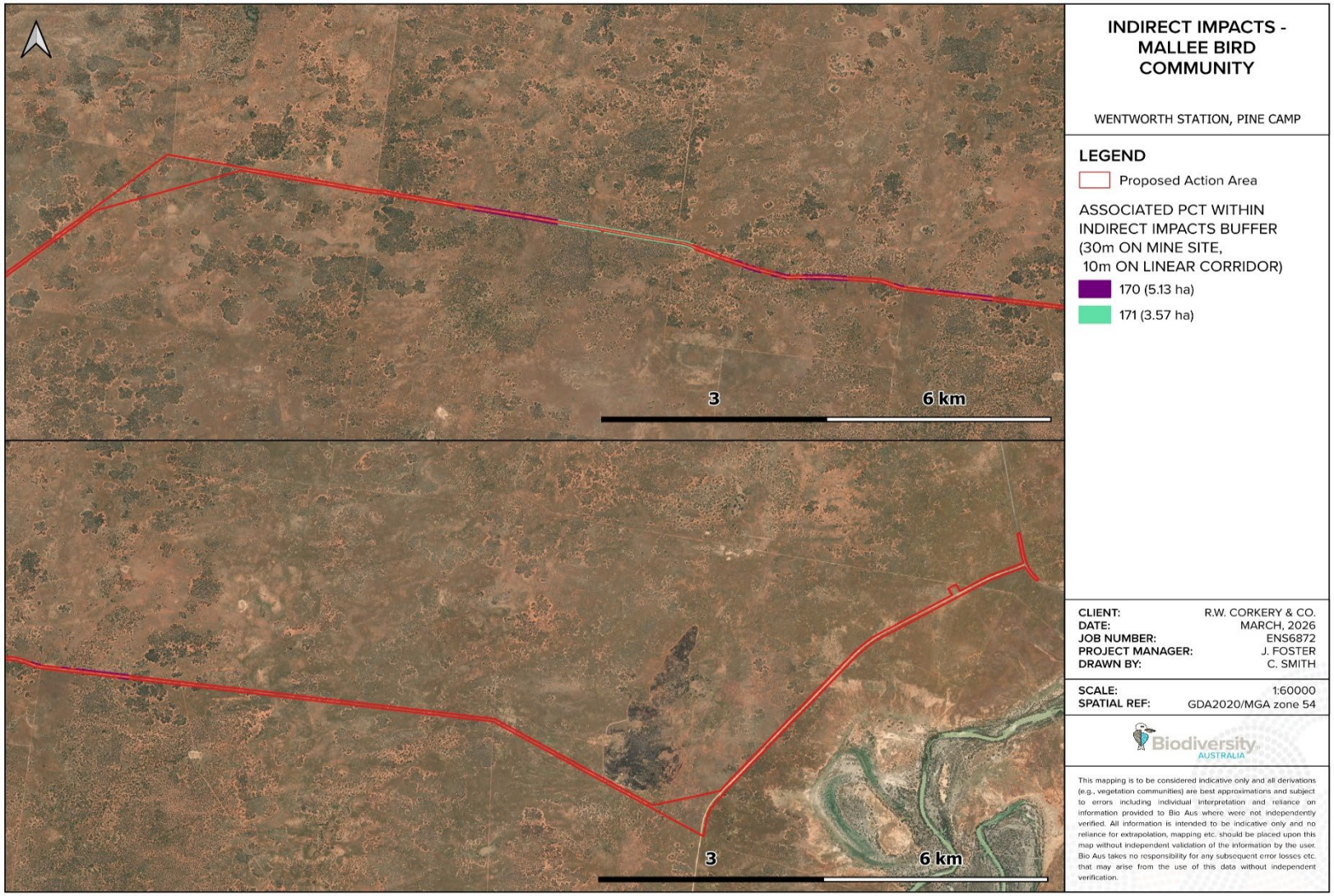

Figure 9: Area of indirect Impact for Mallee Bird Community

4.4 Threatened Species - Endangered

The MNES Significant Impact Criteria for Endangered Threatened species has been considered and applied in the assessment of the Pink Cockatoo and Hooded Robin below.

An action is likely to have a significant impact on a critically endangered or endangered species if there is a real chance or possibility that it will:

1. *Lead to a long-term decrease in the size of a population.*
2. *Reduce the area of occupancy of the species.*
3. *Fragment an existing population into two or more populations.*
4. *Adversely affect habitat critical to the survival of a species.*
5. *Disrupt the breeding cycle of a population.*
6. *Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.*
7. *Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat.*
8. *Introduce disease that may cause the species to decline, or*
9. *Interfere with the recovery of the species.*

4.4.1 Pink Cockatoo (eastern) (*Lophochroa leadbeateri leadbeateri*) (Endangered)

4.4.1.1 Overview

The Pink Cockatoo (*Lophochroa leadbeateri leadbeateri*) is listed as a threatened species under the EPBC Act 1999. It inhabits arid and semi-arid regions, relying on dead or alive Eucalypt species mature hollow-bearing trees with a diameter at breast height (DBH) >40 cm, containing at least one hollow > 15cm diameter and located >5m above ground (NSW BioNet TBDC 2026, DCCEEW 2023; Higgins 1999) for nesting and open woodland or shrubland for foraging.

The species Conservation Advice (DCCEEW 2023) describes arid and semi-arid woodlands containing large mature trees with suitable hollows, always in easy reach of surface water, as habitat critical to the survival of the species. Key threats include habitat loss, clearing of mature trees, and fragmentation.

Except from DCCEEW RFI PD – Copi Mineral Sands Project – Pink Cockatoo

The proposed mine site is located within the known distribution of the Pink Cockatoo. Targeted surveys identified individuals and pairs of the species within the PAA on multiple occasions. Additionally, a flock of about 40 Pink Cockatoos were observed feeding to the south of the linear corridor within associated habitat for the species (PCT 58).

The proposed mine site contains suitable breeding habitat for the species. Targeted surveys undertaken in February 2025 identified 39 hollow bearing trees, with 34 hollows greater than 10 cm in diameter which have the potential to provide suitable nesting habitat.

The referral states that the PAA could support upwards of two pairs of Pink Cockatoos at a density of one pair per 3,000 ha. No breeding was observed during hollow bearing tree surveys, however the department notes that the surveys were conducted outside the optimum nesting period (August to November), per the Conservation Advice for Lophochroa leadbeateri leadbeateri (Eastern Major Mitchell's Cockatoo). Breeding was observed nearby north of the PAA in January 2024, when a pair of Pink Cockatoos and their single begging young was recorded north of the PAA.

The department concluded that habitat critical to the survival of the species is present within the mining Action area in the form of suitable foraging and breeding habitat including the presence of 34 suitable nesting hollows.

The department considers the Proposed Action will clear up to 802.15 ha of Pink Cockatoo suitable foraging and breeding habitat. The department has determined the proposed Action is likely to have a significant impact on the Pink Cockatoo.

4.4.1.2 Likely Presence in PAA - Survey Method

The Proponent does not agree with the Department's conclusion that the Proposed Action is likely to result in a significant impact on the Pink Cockatoo, particularly in relation to breeding habitat. Firstly, the PAA is dominated by vegetation assessed as being in moderate ecological condition, with very few mature hollow-bearing trees remaining. Hollow Bearing Trees within the PAA were assessed for breeding suitability during targeted habitat searches, general area searches, and opportunistically while conducting large and small area vegetation surveys, diurnal bird surveys and nocturnal spotlighting surveys within and adjacent to the PAA between 11-30 November, 1-14 December 2024, 7-16 January, 5 – 23 February, 6-11 August, 27-29 October, and 4-12 November 2025.

The Biodiversity Australia team of ten experienced ecologists mobilized to Warwick station (Near pine Camp NSW) on 10th November 2024, where their accommodation was located. The team lived within the assessment area for 5 weeks conducting daily habitat, flora and fauna field surveys across the entire PAA; from the eastern end of the haul road, west across the Mine Site, where the property shares a boundary with Nulla Road. The team demobilised in the 2nd last week of 2024 before a smaller team of 7 ecologists returned to the site in the 1st week of January 2026. This team remained onsite for seven weeks conducting fauna surveys in both the Linear Corridor and Mine Site areas. During this time living within the assessment area and travelling to and from survey locations across the PAA, the Biodiversity Australia ecology team became intimate with the landscape and the habitat and animals residing therein. After the targeted habitat surveys were completed, all staff were acutely aware of the location of both potential suitable Pink Cockatoo breeding trees located within the PAA, and of the importance of targeted surveys and opportunistic surveys within a 200 m radius of the two HBTs. All staff who worked on the project encountered Pink Cockatoos during their work rotation on site. Every Pink Cockatoo encounter included an observation and then tracking the animals when they became mobile. All of the encounters were recorded on a GPS unit and photographs taken. The express goal of each encounter was to track the Cockatoo/s back to a HBT, however none of the encounters resulted in Pink Cockatoos being tracked back to a HBT. Cockatoos were tracked during targeted surveys as well as from opportunistic observations. In addition to the effort outlined above, a pair of experienced ecologists returned to the project PAA on three further field surveys: in August (1 week), October (3 days) and November (2.5 weeks) 2025 to conduct further targeted surveys for Pink Cockatoo along the Linear Corridor and within the Mine Site area. On the three separate field trips conducted in late 2025 within the breeding season, Pink Cockatoos were encountered on a daily basis, however the majority of the encounters were experienced outside the PAA within high quality habitat. On almost every occasion the birds were observed eating *Cucumis myriocarpus* on the verge of Nulla Road between Wentworth and Warwick station. The encounters within the PAA never resulted in tracking the species back to a HBT.

Where tree hollows were located, the number, size, and height above ground of hollows, as well as the DBH and species of the trees in which hollows were located were recorded. Additionally, the coordinates of Hollow Bearing Trees were recorded using a hand-held Global Positioning System (GPS).

Thirty-nine (39) Hollow Bearing Trees were located within the assessment/study area, bearing a total of 65 tree hollows. Of these HBTs none are suitable for the Pink Cockatoo. Based on the breeding habitat criteria for Pink Cockatoo in the NSW BioNet TBDC, the PAA provides no nesting habitat for the Pink Cockatoo.

Targeted Pink Cockatoo surveys were conducted in November 2024 and then again from August to November 2025 during the required survey period. Surveys were conducted in the associated PCTs and

focussed on areas where suitable potential hollow-bearing nest trees were identified. At the time of the targeted surveys the TBDC stated that suitable potential breeding trees were >10 cm) Based on this original criterion, 12 HBTs with at least one hollow > 10 cm, which is located > 2m above the ground, were identified within the PAA or within 300 m of the boundary. Two of the HBTs were located within the PAA. The breeding season for the Pink Cockatoo currently listed in the Survey Comments within the NSW BioNet TBDC, is August to November. While individuals may occasionally forage within the area, no nesting activity, breeding pairs or signs of occupation were observed. The site is not considered critical habitat for the species and is unlikely to support breeding or long-term population persistence.

At the time of the original targeted surveys for Pink Cockatoos in 2024, the Threatened Biodiversity Data Collection (TBDC) listed the suitable nest tree criteria as: Living or dead tree with hollows greater than 10cm diameter. Paddock trees with hollows greater than 10 cm diameter. Experienced Biodiversity Australia fauna ecologists conducted extensive habitat surveys across the entirety of the PAA, both within and outside the breeding season Aug-Nov. These thorough habitat surveys identified 12 Hollow bearing trees (HBTs) that matched these criteria. All 12 trees were included in the survey effort regardless of DBH, as there was no DBH criterion listed in the TBDC at the time. There was also no criterion listed for Hollow Height in the TBDC at the time, so in the absence of survey guidance, a hollow heigh of 2m was adopted after reviewing research which lists minimum hollow height of 2.2 m for Pink Cockatoos in Victorian research field survey results (Higgins 1999). Based on the above criteria both Eucalypt and non-eucalypt tree species were included which conformed to the TBDC suitable nest tree metrics, at the time. Only two of the 12 HBTs were within the PAA, and therefore only two were subject to clearing; HBT1 and HBT11.

In the interest of consistency and accuracy Biodiversity Australia have regularly monitored the TDBC Threatened Species survey methodology criteria to ensure our survey methodology is both current and accurate. The current TBDC (BioNet March 2026) lists the criteria for Pink Cockatoo suitable nest trees as: Living or dead Eucalypt tree species with hollows at least 5 m above the ground, tree stems with a DBH of >=40cm, and hollow diameter >=15 cm. Based on these current criteria, there are no suitable nest trees located with the PAA. HBT 1 has a hollow height of 2 m, and HBT 11 has a DBH of 37. Therefore, although signs of breeding are present within the PAA (presence of lone individuals and groups of birds during the breeding season (Aug-Nov)), without identification of suitable potential nest trees, no actual nest trees can be confirmed. If actual nest trees are not confirmed within the PAA, species polygons cannot be drawn. Therefore, a species polygon for Pink Cockatoos is not required and no credit obligation can be estimated for the project.

In addition to this, while individuals and pairs of Pink Cockatoos were observed foraging within the PAA, these observations are consistent with the species known wide-ranging and opportunistic foraging behaviour. The recorded use of the site represents part of a broader foraging landscape, rather than habitat critical to the survival of a local breeding population. The removal of foraging habitat will be appropriately accounted for and offset through the BOS via the application of ecosystem credits.

Furthermore, although breeding has been recorded in the broader locality, including north of the PAA, this does not substantiate that the PAA itself supports breeding habitat or is critical to the species' reproductive success. The absence of breeding evidence within the PAA, despite targeted surveys, indicates that the site does not currently function as an active breeding area. Accordingly, while the Proposed Action will result in the removal of some suitable foraging habitat, this impact is not considered significant in the context of the species' regional distribution, mobility, and availability of comparable habitat in the surrounding landscape. The impact has been appropriately quantified and will be managed through established offsetting mechanisms.

The amount of retained vegetated containing PCTs associated with the species within the Subject Land, along with the directly and indirectly impacted land areas are shown in Table 8 below.

Figure 10 and Figure 12 demonstrates the extent of the field survey effort conducted for the Pink Cockatoo, whilst Figure 13 shows all local records, within a 20 km radius of the PAA, for the species. Table 9 demonstrates, in detail, the survey effort conducted for the Pink Cockatoo within the PAA.

Table 8: PCTs associated with Pink Cockatoo retained, impacted directly and impacted indirectly

Associated PCT	Subject Land (ha)	Retained Habita (ha)	Direct Impact (ha)	Indirect impact (ha)
28	1,728.02	1,727.25	0.77	0.21
58	11,386.30	11,147.88	238.42	19.38
143	542.81	525.29	17.52	2.06
152	264.43	14.0	250.43	8.89
154	41,572.5	39,902.7	1,669.8	91.07
170	1,131.86	1,116.27	15.59	6.264
171	2,302.06	2,289.95	12.11	3.571
215	759.76	753.85	5.91	0.434
221	3,285.62	2,890.49	395.14	13.750
253	153.84	14.12	139.72	0.743
254	6.08	4.93	1.16	0.000
Total	**63,133.31**	**60,386.74**	**2,746.57**	**146.372**

Table 9: Survey Effort – Pink Cockatoo

Search Area	SMV (Km)	SMV (Hr)	Walking (Km)	Walking (hr)	Total SMV & Walk (Km)	Survey Pt (Hrs)	Total Hrs	Survey Days
HBT 1	15.76	0.79	46.62	10.36	62.38		11.15	34
HBT 2	33.79	1.69	12.15	2.70	45.94	2.66	7.05	37
HBT 3	25.72	1.29	11.94	2.65	37.66	2.66	6.60	35
HBT 4, 5, 6	28.44	1.42	26.54	5.90	54.98	2.66	9.98	38
HBT 7	19.38	0.97	12.50	2.78	31.88		3.75	33
HBT 8	14.86	0.74	3.61	0.80	18.48		1.55	27
HBT 9	14.37	0.72	10.38	2.31	24.74		3.02	34
HBT 10	17.24	0.86	13.57	3.02	30.81	2.66	6.54	27
HBT 11	9.05	0.45	9.33	2.07	18.39		2.53	19
HBT 12	9.71	0.49	3.97	0.88	13.69		1.37	19
Total	188.32	9.42	150.62	33.47	338.94	10.64	53.53	303.00

4.4.1.3 Potential Direct Impacts

Avoid

Avoidance measures for the Pink Cockatoo were incorporated during the project planning phase, including careful consideration of the location of the Linear Corridor to minimise impacts to native vegetation. The alignment of the corridor with existing tracks and fencelines was selected to reduce disturbance to vegetation communities, including PCTs 28, 58, 143, 152, 154, 170, 171, 215, 221, 253 and 254 where feasible.

The PA will remove 2,746.57 ha of Pink Cockatoo foraging habitat from within the Subject Land, however 60,386.73 ha of associated Pink Cockatoo PCTs within the Subject Land will be avoided and retained. As a percentage, 4.35% of the Pink Cockatoos potential foraging habitat will be affected directly by impacts within the Subject Land. The PA avoids Pink Cockatoo breeding trees; no Pink Cockatoo Breeding trees will be cleared as a result of the PA.

Mitigate

Conservation management priorities including habitat loss and degradation caused by livestock grazing which poses a major threat to Pink Cockatoos. The PAA has been highly impacted by agricultural practices including grazing over many decades, and as a result the value of the habitat is generally low. Areas of potential foraging habitat in the surrounding Subject Land will undergo protection via separation from grazing, to increase the areas of higher quality open woodlands and shrublands.

Habitat loss, degradation and fragmentation are threats to Pink Cockatoo especially for actions like agriculture. This tends to be a long-term impact which is not rehabilitated to its precleared state. The Project will affect 2,746.57 ha of Pink Cockatoo potential suitable habitat for foraging however, the Proponents are proposing a staged approach with smaller areas of vegetation will be impacted at one time and then rehabilitated, reducing the potential for permanent habitat loss, degradation, and fragmentation. Habitat degradation caused by domestic livestock grazing can be managed via the fencing off of surrounding Pink Cockatoo habitat within the Subject Land to provide increasingly better habitat, minimising distance between patches as per the Conservation and recovery actions (DCCEEW, 2023).

Repair

During the sequential project phases, progressive rehabilitation will be undertaken as mining activities advance. This will ensure habitat is being rehabilitated, including the planting of vegetation, relocation of habitat features and installation of mechanically created artificial hollows and nest boxes into rehabilitated areas.

The 2,746.57 ha of land within the PAA on which Pink Cockatoo associated PCTs are proposed to be cleared will be subject to pre-clearance surveys and post-clearance remediation. These reparation actions include rehabilitation, revegetation and restoration of environment and ecological values. The vegetation and habitat values will be restored to equal or higher than that of the preclearance values.

Offset

Pink Cockatoo associated PCTs (28, 58, 143, 152, 154, 170, 171, 215, 221, 253, and 254) will be subject to direct impacts within the PAA, totalling 2746.57 ha. State Vegetation Type Map (SVTM) mapping indicates that the Subject Land surrounding the PAA contains 60386.74 ha of retained native vegetation that provides habitat associated with the Pink Cockatoo. Accordingly, the proposed direct disturbance represents 4.35% of the total mapped extent of the Pink Cockatoo potential habitat within the Subject Land, resulting in the retention of 95.65% of the associated vegetation. See Figure 13 for direct impacts to the Pink Cockatoo. No breeding habitat was found within the PAA.

See section 6.3 and Table 32 and Table 33 for the direct impact offset PCTs, areas and credit calculations for the PAA.

Table 10: Direct Impacts for Pink Cockatoo

Direct Impacts (ha)	Retained Veg (ha)	Direct Impacts (%)	Retained Vegetation (%)*
2746.57	60386.74	4.35	95.65

* Percentage of Retained Vegetation within the Subject Land

4.4.1.4 Potential indirect impacts

Avoid

The PA will cause 146.39 ha of indirect impacts to Pink Cockatoo associated PCTs, within the 30 m indirect impact buffer surrounding the PAA, within the Subject Land. However, 60,240.35 ha of associated PCTs will be avoided and retained and not be impacted within Subject Land. This equates to 0.24% of potential Pink Cockatoos foraging habitat being potentially indirectly impacted by the PAA within the Subject Land (Table 11). No suitable Pink Cockatoo breeding habitat will be indirectly impacted by the PAA.

Mitigate

Mitigation measures to prevent and monitor rubbish dumping will be promoted, implemented, and regularly audited as part of the Biodiversity Management Plan (BMP). These measures aim to minimise environmental degradation and protect local flora and fauna from the adverse effects of litter and waste.

The BMP and the Construction Environmental Management Plan (CEMP) will also include a Noise and Vibration Management Plan, providing a structured framework for managing and mitigating potential construction-related noise and vibration impacts. Detailed construction noise and vibration impact statements will outline both standard and additional mitigation measures, tailored to predicted noise levels, to ensure minimal disturbance to surrounding habitats and communities.

A Waste Management Plan (WMP) will be prepared, implemented, and audited as part of the BMP, Operational Environmental Management Plan (OEMP), and CEMP. The WMP will identify site-specific mitigation measures designed to reduce the impacts of waste generated by increased anthropogenic activities in the region, supporting both environmental protection and sustainable project operations.

The PAA avoids all suitable breeding habitat for this species, therefore mitigation measures will focus on foraging habitat belonging to the 11 PCTs associated with the Pink Cockatoo.

Repair

The 2,746.57 ha of land within the PAA on which the Pink Cockatoo associated PCTs are proposed to be cleared will be subject to pre-clearance surveys and post-clearance remediation. These reparation actions include rehabilitation, revegetation and restoration of environment and ecological values. The vegetation and habitat values will be restored to equal or higher than that of the preclearance values.

Rocks, fallen timber and logs will be retained on site, and the collection of wood for campfires will not be permitted. This measure will ensure that important ground features remain available as habitat for species such as the Pink Cockatoo, which rely on these physical attributes for shelter and foraging.

Vegetation research plans will also be undertaken to assess the effectiveness of plant translocation, as well as the propagation and growth of vegetation from seeds. The findings will help inform revegetation and rehabilitation strategies, supporting the successful restoration of native vegetation within the project area.

Offset

The PA will indirectly impact 146.39 ha of vegetation within the 30 m indirect impact buffer surrounding the PAA. Excluding the PAA, the Subject Land surrounding the buffer contains 60240.35 ha of retained vegetation associated with the Pink Cockatoo. The potential indirect impact therefore represents 0.24%

of the retained vegetation within the Subject Land, with 99.76% preserved. See Figure 14 for Indirect Impacts to the Pink Cockatoo.

A buffer zone will be installed around the entire PAA which will protect the integrity of the ecological communities present. This is designed to minimise the risk of indirect impacts by physically separating the ecological community from direct impacts and by identifying it to land managers. This buffer zone will help protect the root zone of nearby trees and other elements of the neighbouring ecological communities from weed invasion, spray drift (fertiliser, pesticide or herbicide sprayed in adjacent land), polluted water runoff and other potential damaging processes. The effectiveness of this buffer zone depends on the vegetation type being native.

The department considers the retained patches of neighbouring ecological communities will be effectively avoided if the design of the PA includes a vegetation integrity protective buffer zone, which does not require an offset (DCCEW RFI EPBC2024/09955). This buffer will also protect species habitat within 30 m of the PAA mine site area and within 10 m of the PAA Linear Corridor area.

The details of this precautionary measure to mitigate indirect impacts is featured in 5.1.1.

Table 11: Indirect Impacts for Pink Cockatoo

Indirect Impacts (ha)	Retained Veg (ha)	Indirect Impacts (%)	Retained Vegetation (%)
146.39	60240.35	0.24	99.76

**Retained Vegetation for Indirect Impacts excludes the buffer area from the Subject Land

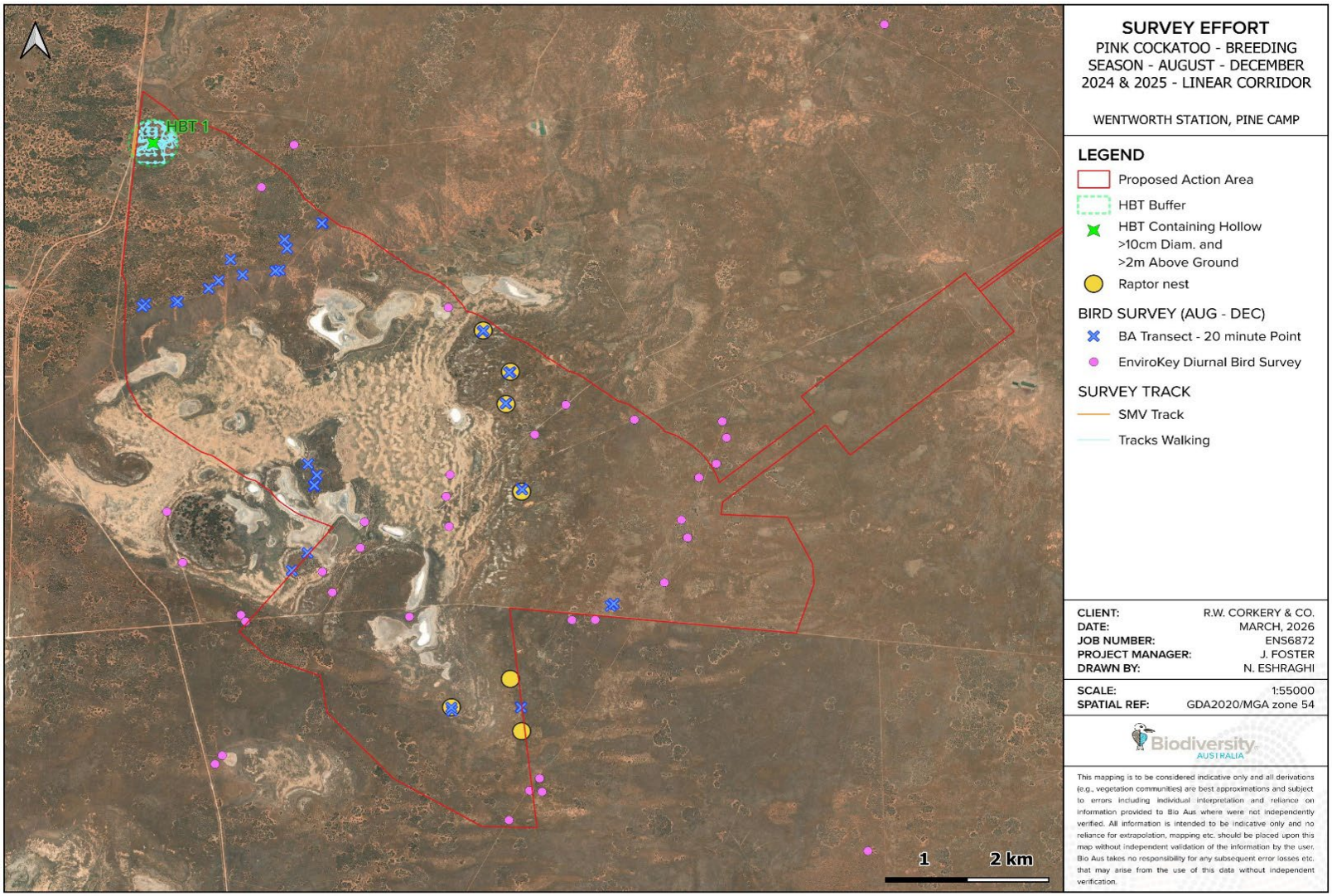

Figure 10: Pink Cockatoo Survey Effort - Mite Site

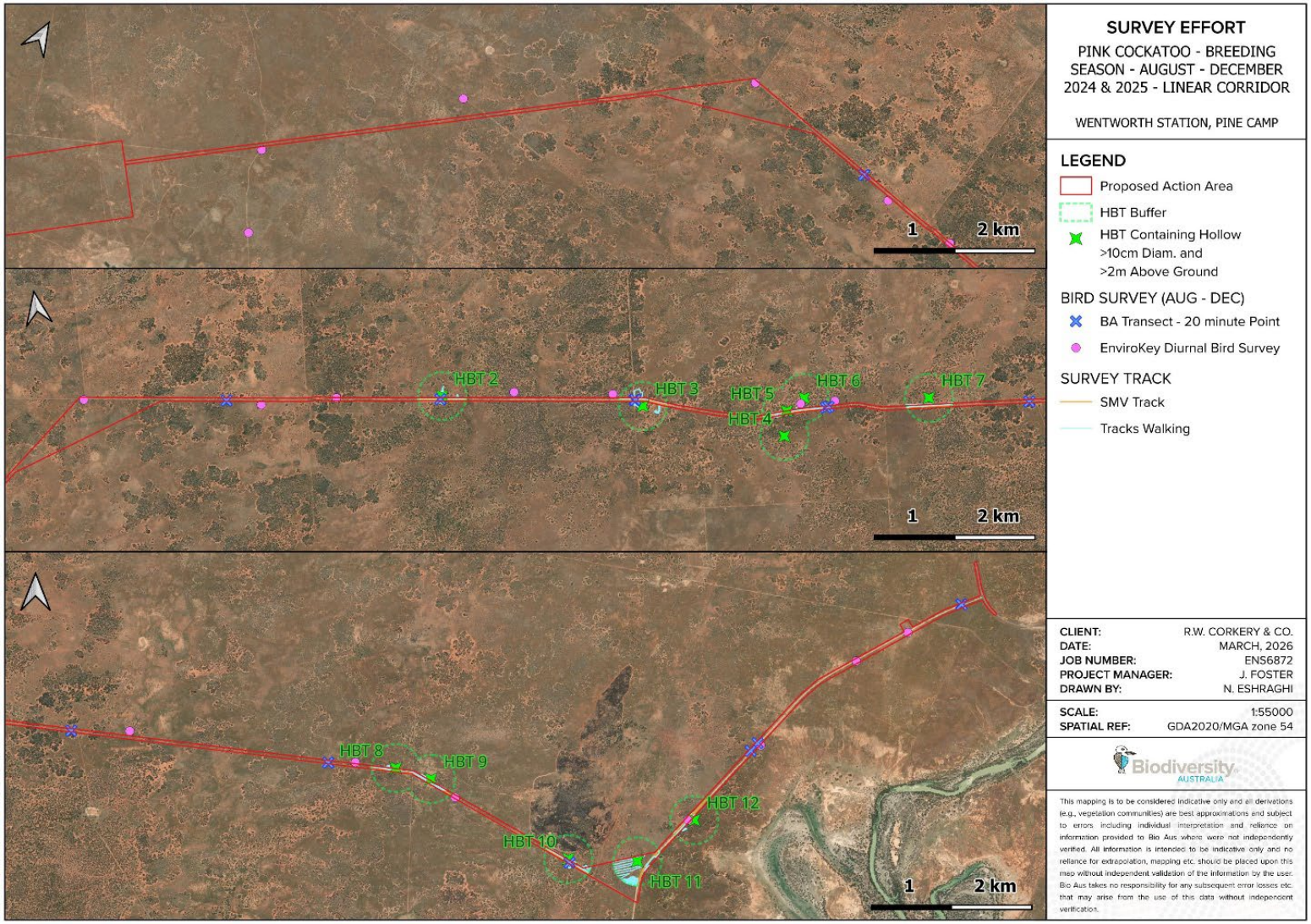

Figure 11: Pink Cockatoo Survey Effort - Linear Corridor

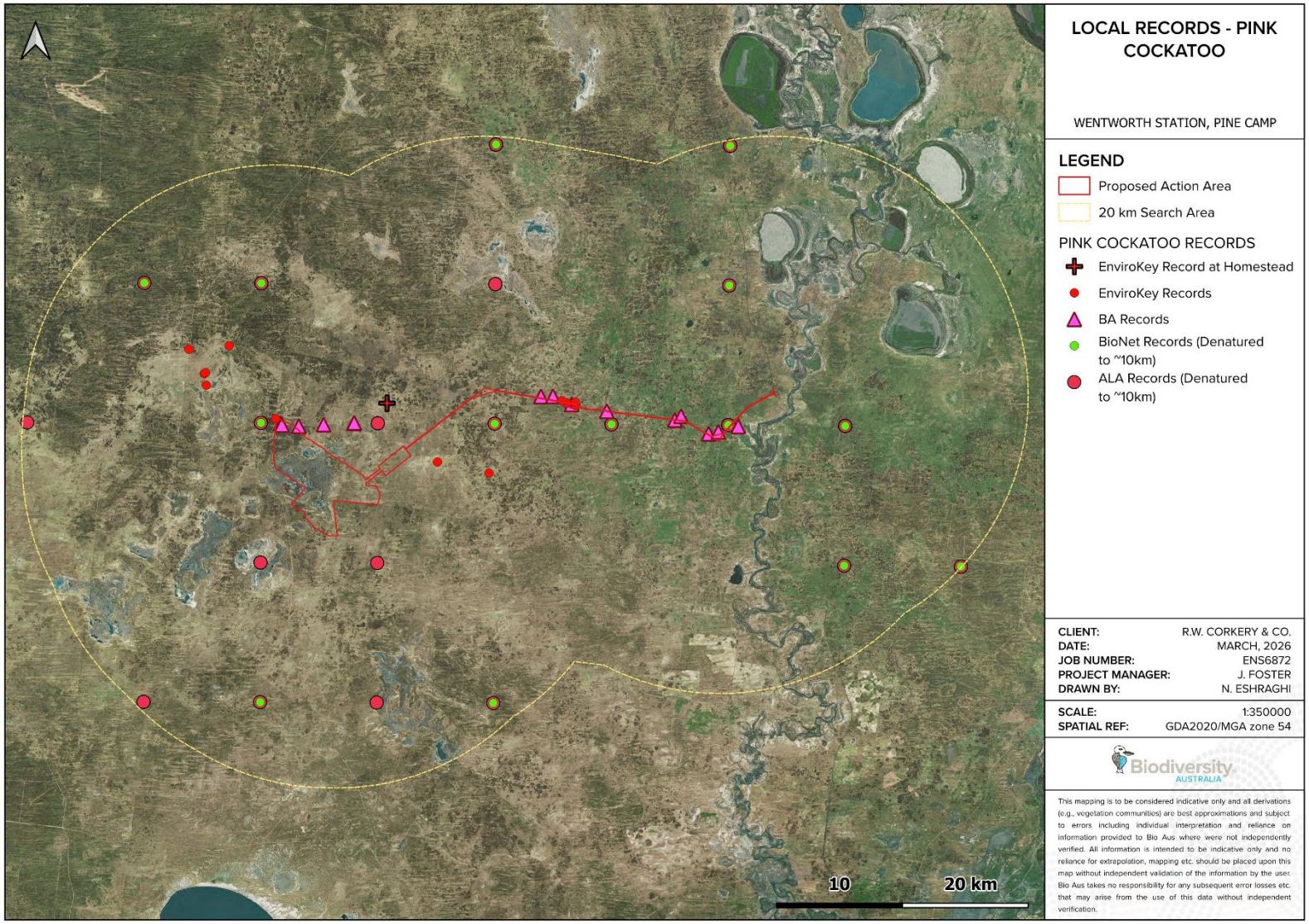

Figure 12: Local Records of Pink Cockatoo

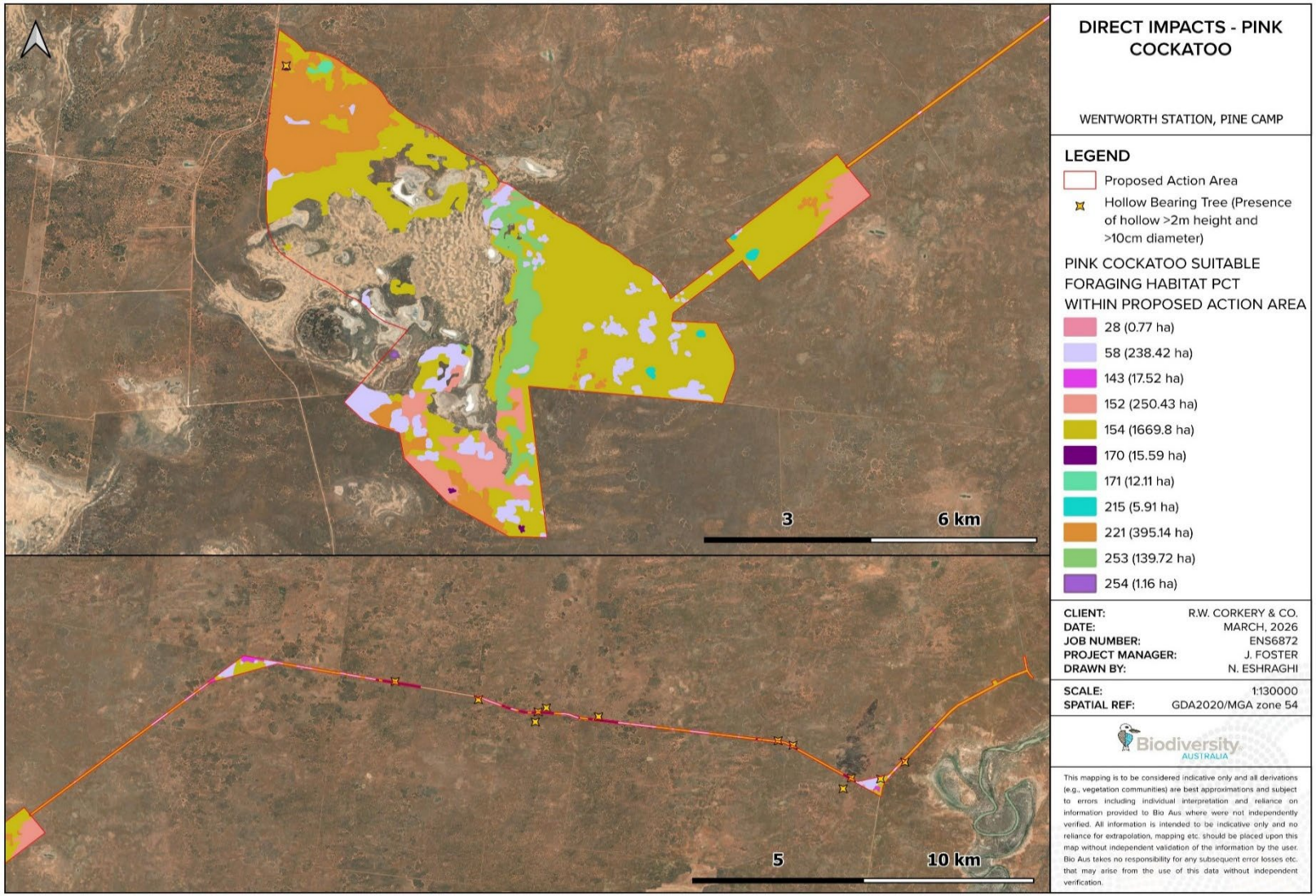

Figure 13: Area of Direct Impact for Pink Cockatoo

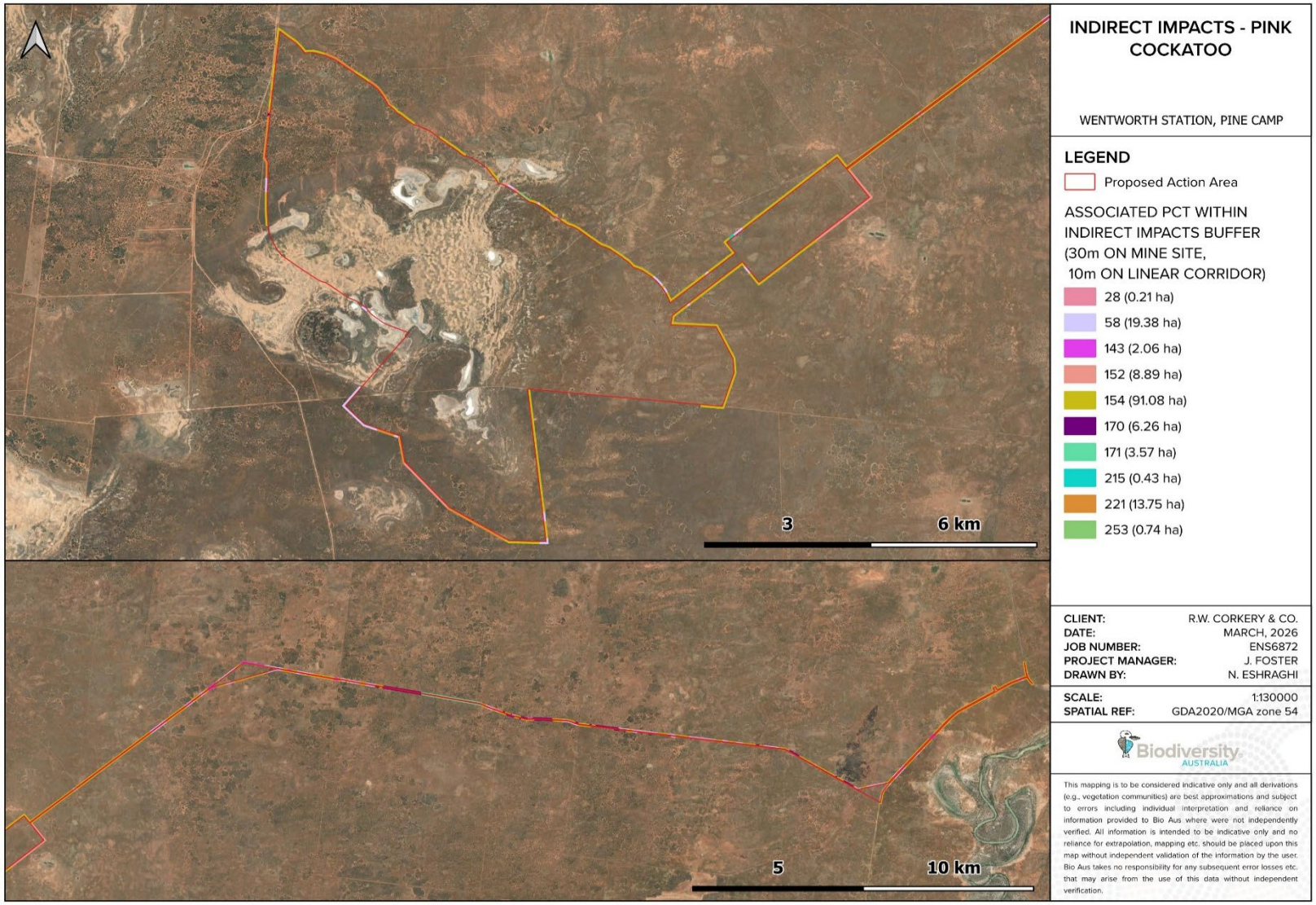

Figure 14: Area of Indirect Impact for Pink Cockatoo

4.4.2 Hooded Robin (south-eastern) (*Melanodryas cucullata cucullata*) (Endangered)

4.4.2.1 Overview

Except from DCCEEW RFI PD – Copi Mineral Sands Project – Hooded Robin

The species was recorded during the mining action area on multiple occasions during field surveys undertaken between 2018 and 2025. The MNES Impact Assessment states that the vegetation proposed to be cleared provides forage, refuge habitat, suitable roosting and nesting habitat for the Hooded Robin (south-eastern), in the form of scattered logs, dead and alive hollow bearing trees, grassy ground cover, fallen timber and moderate prey abundance.

The referral states that none of the habitat within the mining action area meets the criteria for habitat critical. The department disagrees, as the species has been observed multiple times, and as it is generally sedentary, must therefore be utilising the habitat within the site for survival. Further, the Conservation Advice for Melanodryas cucullata cucullata (hooded robin (south-eastern)) states that any known or likely habitat should be considered as habitat critical to the survival of the subspecies.

The department considers the Proposed Action will clear up to 662.43 ha of Hooded Robin (south-eastern) suitable foraging and breeding habitat. The department has determined the Proposed Action is likely to have a significant impact on the Hooded Robin (south-eastern). DCCEEW RFI PD – Copi Mineral Sands Project

The Department's conclusion that all suitable habitat within the PAA constitutes habitat critical to the survival of the Hooded Robin is not supported in a landscape context. Whilst the Conservation Advice adopts a precautionary position that known or likely habitat may be considered important, this guidance is intended to be applied in consideration of the availability, extent and configuration of habitat at local or regional scales, rather than assuming all habitats within the impact area is critical.

Targeted surveys confirmed the presence of Hooded Robin. Hooded Robin records were located within areas of vegetation that is highly contiguous to large swathes of native vegetation with extensive areas of similar habitat extending well beyond the PAA. This indicates that the habitat within the PAA does not represent an isolated or limiting resource for the species. The presence of individuals therefore does not, in itself, demonstrate that the impacted habitat is critical to the survival of the local population.

The conservation advice currently available for the Hooded Robin does not contain detailed information regarding the habitat critical to the survival of the species, is not site specific and is provided as precautionary advice rather than specific actionable measures. It's important to note that not all known or likely habitat for the Hooded Robin is critical at a population level. Rather, the site should be assessed in the context of habitat availability in the wider landscape, the population distribution and its connectivity. Potential suitable hooded Robin habitat occurring within the PAA is not isolated or limiting; there are extensive swathes of similar suitable Hooded Robin habitat retained locally and regionally. Therefore, the impacted habitat within the PAA is not considered critical to the persistence of the local Hooded Robin population.

The amount of retained vegetated land containing PCTS associated with the species within the Subject Land, along with the directly and indirectly impacted land areas are shown in Table 12 below. Whilst is it acknowledged that Hooded Robins are functionally sedentary, individuals occupy small territories within broad habitat and are not confined to restricted areas within the impact area.

The field survey effort for Hooded Robin is illustrated in Figure 5 and Figure 6,along with surveys for the other bird species. All local records for the species, within a 20 km radius of the PAA, are shown in Figure 15.

Table 12: PCTs associated with Hooded Robins retained, impacted directly and impacted indirectly

Associated PCT	Subject Land (ha)	Retained Habita (ha)	Direct Impact (ha)	Indirect impact (ha)
28	1728.02	1727.25	0.77	0.21
58	11386.30	11147.88	238.42	19.38
143	542.81	525.29	17.52	2.06
170	1131.86	1116.27	15.59	6.26
171	2302.06	2289.95	12.11	3.57
215	759.76	753.85	5.91	0.43
221	3285.62	2890.48	395.14	13.75
254	6.08	4.92	1.16	0.00
Total	21,142.53	20,455.91	686.62	45.67

4.4.2.2 Likely Presence in PAA - Survey Method

Hooded Robin (*Melanodryas cucullata*) surveys were conducted in suitable habitat (28, 58,1 70, 171, 215, 221 and 254) in and adjacent to the PAA between 5 – 24 February 2025.

Surveys consisted of a 30-minute area search of an area covering 2 ha. During each survey, observers identified and recorded all bird species seen and heard. Surveys were conducted in the early morning (dawn) or late afternoon (dusk) when bird activity was highest. The dawn surveys commenced at daybreak, once lighting was sufficient to adequately identify species (15 minutes after sunrise), and concluded when bird activity waned (2.5 hours after sunrise). The dusk surveys commenced 2 hours before sunset and concluded when either light was insufficient to identify species or when bird activity waned.

A total of 42 surveys were conducted for the MBC, including Hooded Robin, a combined 1,258 minutes (21 hours) over 45.8 kms, see Figure 5 and Figure 6. Areas where paddock trees were resent were targeted during the surveys as per the TBDC.

No species-specific survey guideline requirements for the Hooded Robin exist.

4.4.2.3 Potential Direct Impacts

Avoid

Avoidance measures for the Hooded Robin were incorporated during the project planning phase, including careful consideration of the location of the Linear Corridor to minimise impacts to native vegetation. The alignment of the corridor with existing tracks and fencelines was selected to reduce disturbance to vegetation communities, including PCTs 28, 58, 143, 170, 171, 215, 221 and 254 where feasible.

Hooded Robin (south-eastern) associated PCTs will be subject to direct impacts within the PAA, totalling 686.62 ha. The proposed clearing of up to 662.43 ha of suitable habitat must also be considered in context. Substantial areas of comparable habitat will be retained within the Subject Land and persist across the surrounding landscape, maintaining habitat connectivity and availability for the species.

Similar habitat to that found within the PAA for the Hooded Robin is located across the local and regional landscape. State Vegetation Type Map (SVTM) mapping indicates that the Subject Land surrounding the PAA contains 20455.91 ha of retained native vegetation associated with the species that provides suitable habitat for the Hooded Robin (south-eastern). Accordingly, the proposed direct disturbance represents 3.25% of the total mapped extent of Hooded Robin (south-eastern) potential habitat within the Subject Land, resulting in the retention of 96.75% of the associated vegetation. As such the impact is not expected to result in a measurable decline in the local population or disrupt key ecological functions. See Figure 16 for direct impacts to the Hooded Robin (south-eastern).

Mitigate

The Conservation and recovery plan for Hooded Robin list conservation and management priorities which are included in the mitigation measures for this species. These include habitat fragmentation caused by land clearing for agriculture, Habitat degradation caused by domestic livestock grazing, invasive weeds, Noisy miner territorial competition, Altered fire regimes and Unintentional effects of firewood collection. Each of these elements will be mitigated against as outlined in the mitigation Table 25 and detailed in the project adaptive management plan.

Exclusion fencing will be installed to mitigate the spread of weeds into adjacent retained vegetation. Prepare, implement and audit a Traffic Management Plan for the movement of vehicles within the Subject Land. This Plan must identify mitigation measures and adaptive management actions to mitigate the impacts of increased traffic within the Subject Land including Speed Restrictions, Fauna movement devices, Fauna awareness signage, Identification of Fauna hotspots, Speed control devices.

Repair

During the sequential project phases, progressive rehabilitation will be undertaken as mining activities advance. This will ensure habitat is being rehabilitated, including the planting of vegetation, relocation of habitat features and installation of mechanically created artificial hollows and nest boxes into rehabilitated areas.

The 686.62 ha of land within the PAA on which Hooded Robin associated PCTs are proposed to be cleared will be subject to pre-clearance surveys and post-clearance remediation. These reparation actions include rehabilitation, revegetation and restoration of environment and ecological values. The vegetation and habitat values will be restored to equal or higher than that of the preclearance values.

Offset

Direct impacts to the Hooded Robin have been identified as clearing of 686.62 ha of associated PCTs. This area of potential habitat, shown in Table 13 below, and shown as a percentage (3.25%) of the overall Subject Land, is required to be offset under the EPBC Act.

See Section 6.3 and Table 32 and Table 33 for the direct impact offset PCTs, areas and credit calculations for the PAA.

Table 13: Direct Impacts to the Hooded Robin (south-eastern)

Direct Impacts (ha)	Retained Veg (ha)	Direct Impacts (%)	Retained Vegetation (%)*
686.62	20455.91	3.25	96.75

* Percentage of Retained Vegetation within the Subject Land

4.4.2.4 Potential Indirect Impacts

Avoid

The PA will cause 45.67 ha of vegetation within the 30 m indirect impact buffer surrounding the PAA to be affected by indirect impacts (Table 14). The Subject Land surrounding the PAA and buffer contains 20,410.24 ha of vegetation associated with the Hooded Robin (south-eastern). The potential indirect impact therefore equates to 0.22% of the retained vegetation within the Subject Land, with 99.78% of the remaining vegetation avoided and retained. See Figure 17 and for Indirect Impacts to the Hooded Robin (south-eastern).

Mitigate

Mitigation measures to prevent and monitor rubbish dumping will be promoted, implemented, and regularly audited as part of the Biodiversity Management Plan (BMP). These measures aim to minimise environmental degradation and protect local flora and fauna from the adverse effects of litter and waste.

The BMP and the Construction Environmental Management Plan (CEMP) will also include a Noise and Vibration Management Plan, providing a structured framework for managing and mitigating potential construction-related noise and vibration impacts. Detailed construction noise and vibration impact statements will outline both standard and additional mitigation measures, tailored to predicted noise levels, to ensure minimal disturbance to surrounding habitats and communities.

A Waste Management Plan (WMP) will be prepared, implemented, and audited as part of the BMP, Operational Environmental Management Plan (OEMP), and CEMP. The WMP will identify site-specific mitigation measures designed to reduce the impacts of waste generated by increased anthropogenic activities in the region, supporting both environmental protection and sustainable project operations

Repair

The 686.62 ha of land within the PAA on which the Hooded Robin's associated PCTs are proposed to be cleared will be subject to pre-clearance surveys and post-clearance remediation. These reparation actions include rehabilitation, revegetation and restoration of environment and ecological values. The vegetation and habitat values will be restored to equal or higher than that of the preclearance values.

Rocks, fallen timber and logs will be retained on site, and the collection of wood for campfires will not be permitted. This measure will ensure that important ground features remain available as habitat for species such as the Hooded Robin, which rely on these physical attributes for shelter and foraging.

Vegetation research plans will also be undertaken to assess the effectiveness of plant translocation, as well as the propagation and growth of vegetation from seeds. The findings will help inform revegetation and rehabilitation strategies, supporting the successful restoration of native vegetation within the project area.

Offset

The PA will affect 45.65 ha of vegetation within the indirect impact buffer surrounding the PAA. Excluding the PAA, the Subject Land surrounding the buffer contains 20,410.24 ha of retained vegetation associated with the Hooded Robin. The potential indirect impact therefore represents 0.22% of the retained vegetation within the Subject Land, with 99.78% remaining preserved. See Figure 17 for Indirect Impacts to the Hooded Robin.

A buffer zone will be installed around the entire PAA which will protect the integrity of the ecological communities present. This is designed to minimise the risk of indirect impacts by physically separating the ecological community from direct impacts and by identifying it to land managers. This buffer zone will help protect the root zone of nearby trees and other elements of the neighbouring ecological communities from weed invasion, spray drift (fertiliser, pesticide or herbicide sprayed in adjacent land),

polluted water runoff and other potential damaging processes. The effectiveness of this buffer zone depends on the vegetation type being native.

The department considers the retained patches of neighbouring ecological communities will be effectively avoided if the design of the PA includes a vegetation integrity protective buffer zone, which does not require an offset (DCCEW RFI EPBC2024/09955). This buffer will also protect species habitat within 30 m of the PAA mine site area and within 10 m of the PAA Linear Corridor area.

The details of this precautionary measure to mitigate indirect impacts is featured in 5.1.1.

Table 14: indirect Impacts to the Hooded Robin (south-eastern)

Indirect Impacts (ha)	Retained Veg (ha) **	Indirect Impacts (%)	Retained Vegetation (%)
45.67	20410.24	0.22	99.78

**Retained Vegetation for Indirect Impacts excludes the buffer area from the Subject Land

While the PAA contains suitable habitat and supports individuals of the species, it does not constitute habitat critical to the survival of the subspecies, nor is the Proposed Action likely to result in a significant impact when assessed in a regional context.

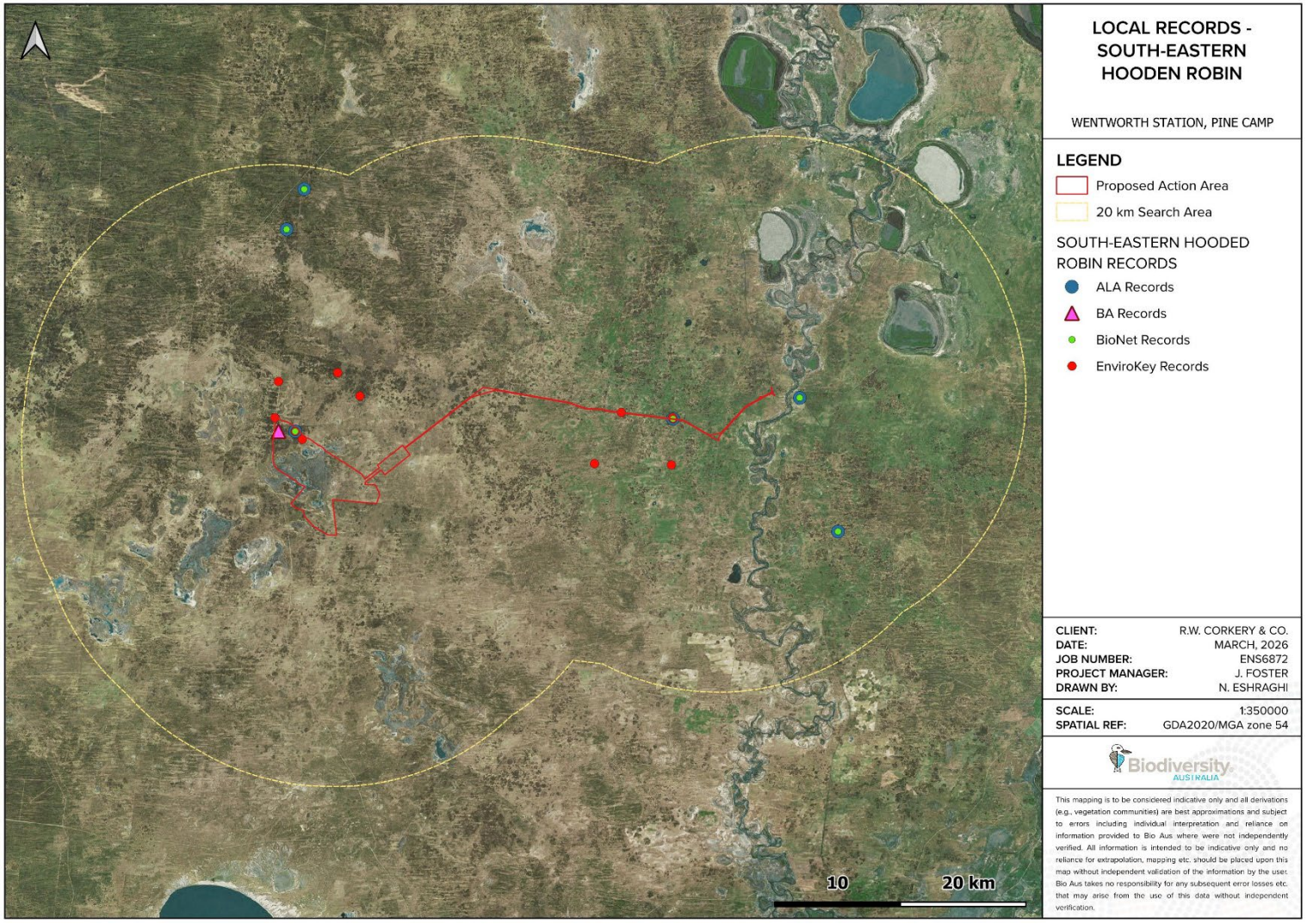

Figure 15: Local records for South-eastern Hooded Robin

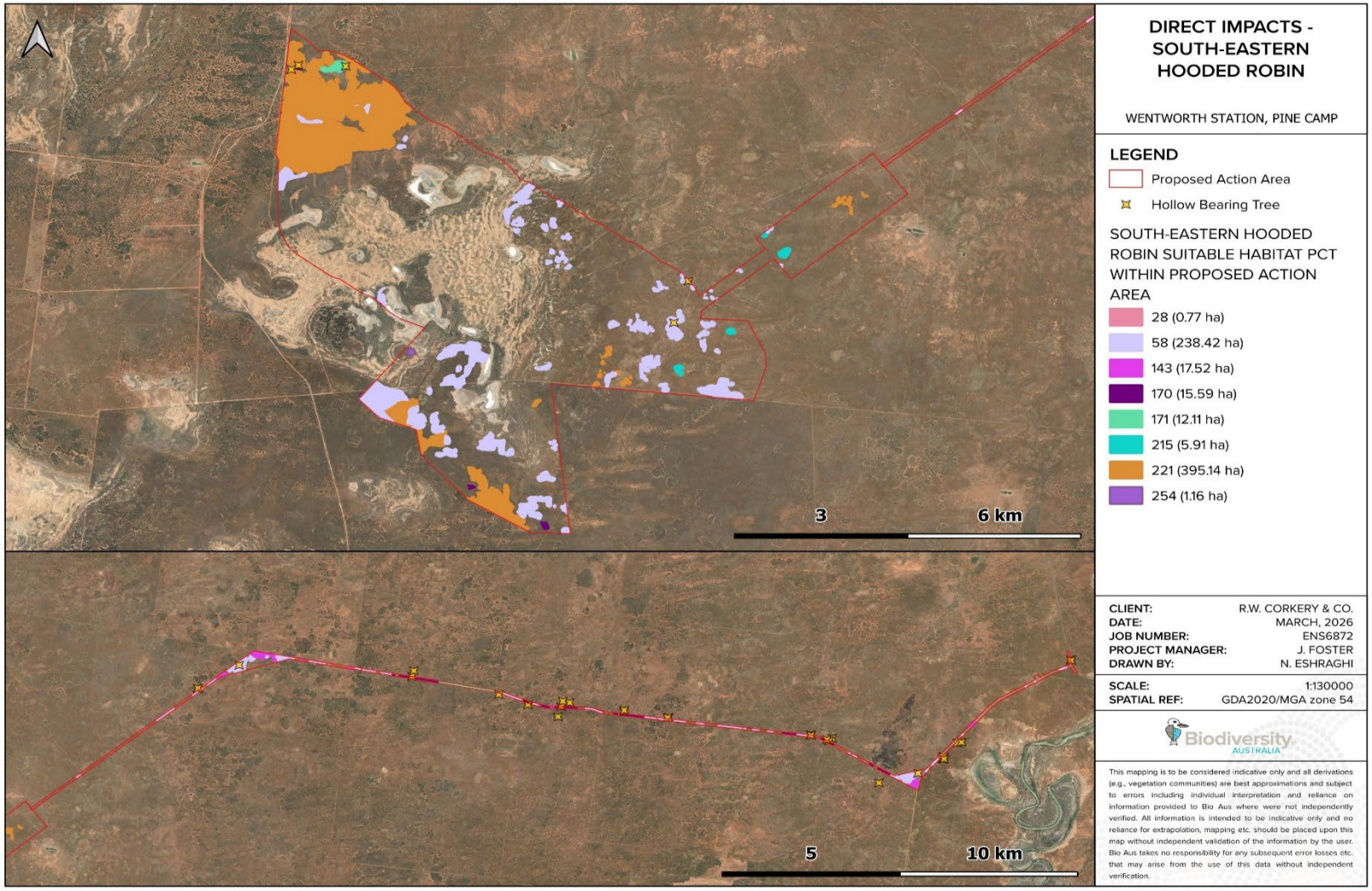

Figure 16: Area of Direct Impact for South-Eastern Hooded Robin

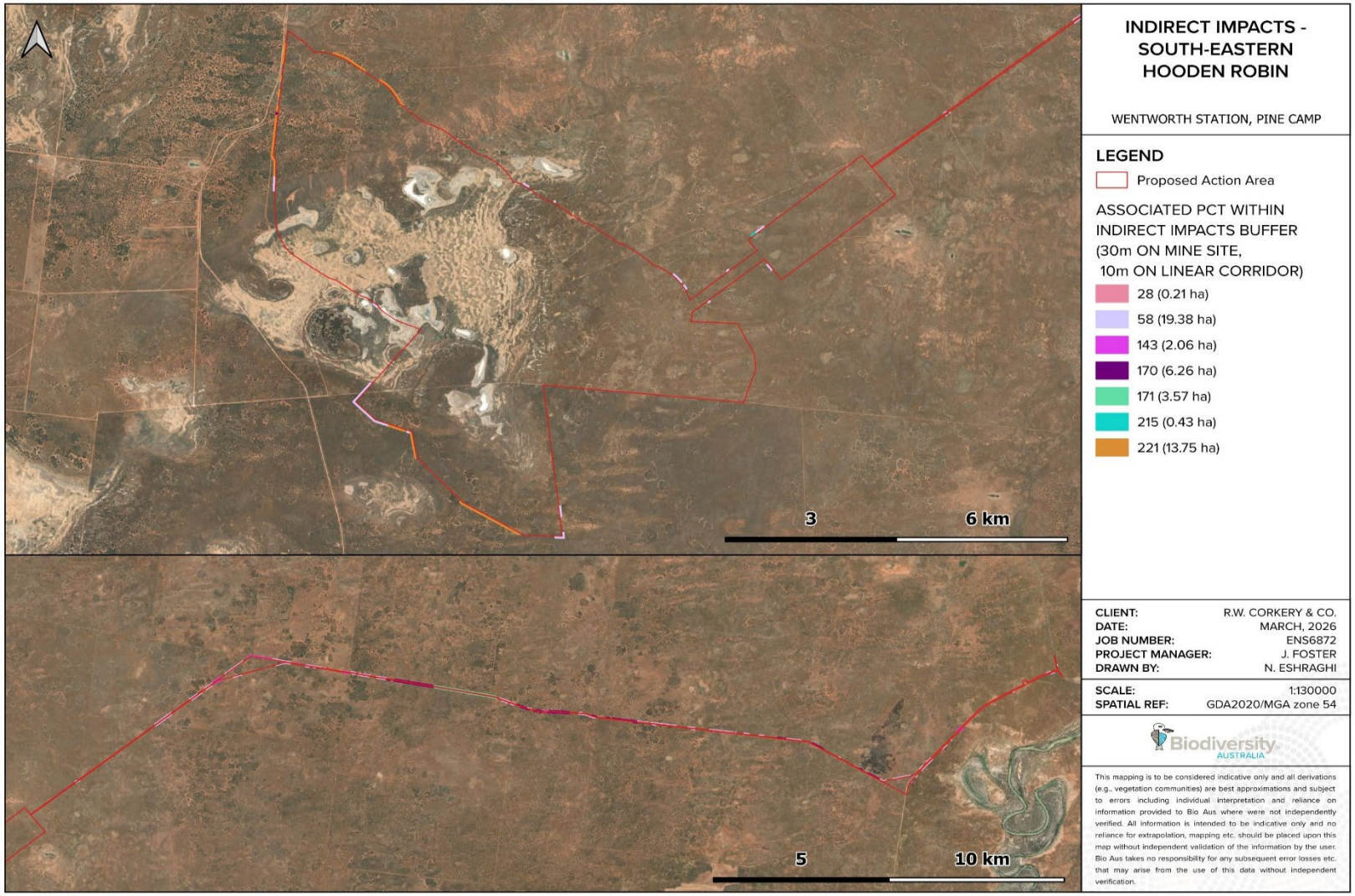

Figure 17: Area of Indirect Impact for South-eastern Hooded Robin

4.5 Threatened Species - Vulnerable

The MNES Significant Impact Criteria for Vulnerable Threatened species has been considered and applied in the assessment of Corben's Long-eared Bat and the Southern Whiteface below.

An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:

1. *Lead to a long-term decrease in the size of an important population of a species.*
2. *Reduce the area of occupancy of an important population.*
3. *Fragment an existing important population into two or more populations.*
4. *Adversely affect habitat critical to the survival of a species.*
5. *Disrupt the breeding cycle of an important population.*
6. *Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.*
7. *Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat.*
8. *Introduce disease that may cause the species to decline, or*
9. *Interfere substantially with the recovery of the species.*

4.5.1 Corben's Long-eared Bat (*Nyctophilus corbeni*) (Vulnerable)

4.5.1.1 Overview

Except from DCCEEW RFI PD – Copi Mineral Sands Project – Corben's Long-eared Bat

RZ Resources Ltd has assumed presence of the species based on the presence of suitable PCTs, hollow bearing trees, and Anabat survey results.

Anabat surveys undertaken in January and February 2025 recorded 28,687 acoustic sequence files, with 92 calls attributable to Nyctophilus species. The referral states that Nyctophilus species cannot be reliably differentiated using call characteristics, therefore detected calls may belong to Corben's Long-eared Bat, Lesser Long-eared Bat (N. geoffroyi), or both species. The Conservation Advice Nyctophilus corbeni south-eastern long-eared bat (hereafter referred to as Corben's Long-eared Bat), does not define habitat critical to the survival of the species or important populations of the species (DCCEEW 2015).

RZ Resources have precautionarily concluded, and the department agrees, that based on the SIG 1.1, any population within the mining action area may be regarded as an important population.

The department considers the Proposed Action will clear up to 661.27 ha of Corben's Long-eared Bat suitable breeding, roosting and foraging habitat. The department has determined the Proposed Action is likely to have a significant impact on Corben's Long-eared Bat.

The Department's conclusion that the Proposed Action is likely to have a significant impact on the Corben's Long-eared Bat is not supported when the survey results and habitat context are considered in detail. Anabat surveys recorded 92 Nyctophilus calls from a total of 28,687 acoustic sequence files, representing a very low level of activity across the Study Area. As acknowledged, Nyctophilus species cannot be reliably distinguished using call characteristics; therefore, these recordings may correspond to Corben's Long-eared Bat, the Lesser Long-eared Bat, or both species. Accordingly, the presence of

Corben's Long-eared Bat within the PAA cannot be confirmed, and there is no evidence to indicate that the area supports a discrete or significant population.

According to the Threatened Species Scientific Committee (TSSC) Conservation Advice, the limited availability of data on population trends for Corben's Long-eared Bat constrains a detailed assessment of the threats to the species' survival (TSSC, 2015). However, the conservation advice indicates the species' area of occupancy is likely to be declining due to habitat loss, particularly in New South Wales and Queensland, as well as habitat degradation associated with altered fire regimes, timber extraction, mining activities, and other land-use pressures (Woinarski *et al.* 2014). Habitat loss and fragmentation are identified as known threats in the conservation advice, with additional potential threats discussed in relation to these primary pressures (TSSC, 2015).

While a precautionary approach has been adopted in considering that any population may represent an important population, this does not in itself demonstrate that the habitat within the PAA is critical to the persistence of the species at a local or regional scale. Corben's Long-eared Bat is known to occur across a broad range of inland woodland vegetation communities. Documented habitat types include box–ironbark–cypress pine woodlands, Buloke woodlands, Brigalow woodland, Belah woodland, smooth-barked apple woodland, river red gum forest, black box woodland, and a variety of tree mallee communities (Duncan *et al.* 1999; Schulz & Lumsden, 2010; Woinarski *et al.* 2014).

Although habitat loss and fragmentation is considered to be a major factor in the decline of Corben's Long-eared Bat, the species requires large areas of land (TSSC, 2015). Habitat within the PAA is contiguous with large areas of similar vegetation, including more mature and higher-quality woodland and mallee communities beyond the impact footprint. The proposed clearing of up to 661.27 ha will not result in the fragmentation of habitat or the isolation of habitat patches, and substantial areas of suitable habitat will remain available within the Subject Land and the broader region. Areas of Mallee which are being impacted by the development are not only of a lesser quality to the surrounding older, better-quality Mallee, but are not being removed in a way to cause separation between vegetation large enough to cause fragmentation between patches of vegetation.

The availability of suitable roosting habitat, particularly hollow-bearing trees, is a key factor for the species. The development has been designed to retain hollow-bearing trees where practicable and to support their ongoing recruitment. As such, the proposal will not result in a meaningful reduction in critical roosting resources.

Recommended conservation and management actions for habitat loss disturbance and modifications for this development has, and will continue to, retain hollow-bearing trees where possible and support their recruitment, and to incorporate key population locations into the planning of major infrastructure, including roads, pipelines, and extractive activities (TSSC, 2015).

As per the TSSC Conservation Advice for Corben's Long-eared Bat, predation by introduced species, such as the Feral Cat or Red Fox, has not been demonstrated and therefore the risk to the species is unknown. Schulz and Lumsden (2010) note that predation is a possible threat for the sympatric Lesser Long-eared Bat and the impact of predation by feral animals needs to be assessed for this species (TSSC, 2015). Management actions during Development will incorporate fencing and the removal of introduced species, resulting in a reduction of possible threats.

Grazing within the habitat of the South-eastern Long-eared Bat is considered a potential threat in uncleared areas, as it may reduce foraging habitat through the removal of shrubs, limit vegetation regeneration, and alter habitat structure and diversity (Duncan *et al.* 1999; Schulz and Lumsden, 2010). Although the relative impact of grazing on the species remains uncertain and requires further investigation, management measures will be implemented to minimise potential adverse effects. These measures include collaboration with relevant landowners and managers to ensure appropriate grazing regimes and stock densities that do not detrimentally affect foraging habitat, and where necessary the

management of total grazing pressure at identified important sites through exclusion fencing and the removal of stock (TSSC, 2015).

The amount of retained vegetated land containing PCTs associated with the species within the Subject Land, along with the directly and indirectly impacted land areas are shown in Table 15 below.

The field survey effort for Corben's Long-eared Bat is illustrated in Figure 5 and Figure 6, whilst all local records for the species, within a 20 km radius of the PAA, are shown in Figure 18.

Table 15: PCTs associated with Corben's Long-eared Bat retained, impacted directly and indirectly

Associated PCT	Subject Land (ha)	Retained habitat (ha)	Direct Impact (ha)	Indirect Impact (ha)
28	1,728.02	1,727.25	0.77	0.21
58	11,386.31	11,147.89	238.42	19.38
170	1,131.86	1,116.27	15.59	6.26
171	2,302.06	2,289.95	12.11	3.57
221	3,285.63	2,890.49	395.14	13.75
Total	**19,833.87**	**19,171.84**	**662.03**	**43.18**

Given the low level of recorded activity, the uncertainty in species identification, the extensive availability of habitat in the surrounding landscape, and the retention of key habitat features, the Proposed Action is unlikely to adversely affect the viability of any local population or disrupt important lifecycle processes.

Accordingly, the Proposed Action is not considered likely to have a significant impact on Corben's Long-eared Bat.

4.5.1.2 Likely Presence in PAA - Survey Methodology

Microchiropteran bat calls were recorded using Anabat Swift, Anabat Chorus, and Anabat Express detectors over four deployment periods in 2025 in suitable habitat (PCTs 58, 170, 171, 221) within the PAA. The first deployment was within the PAA – Mine Site, occurred between 9 – 12 January, and consisted of one Swift, two Chorus and five Express detectors. Eight (8) recorders were deployed from 9-12 January within the mine site area and six (6) recorders deployed from 13-16 January. Four (4) recorders were deployed from 5-8 February and another three (3) recorders from 9-12 February within the linear corridor. However, due to unit failure, only 6 units for a total of 24 nights were recorded in the Mine Site area and 7 units for a total 28 nights were recorded in the linear corridor. The detectors were fixed to trees at a height of 1.5 metres. In total, 52 survey nights of data were recorded from 6 sites across the two survey areas (PAA - Mine Site and PAA - Linear Corridor).

Although Corben's Long-eared Bat were not the targeted species for microbat call recordings, the Nyctophilus genus was recorded, which may have been Corben's Long-eared Bat (*Nyctophilus corbeni*).

4.5.1.3 Potential Direct Impacts

Avoid

Avoidance measures were incorporated during the project planning phase, including careful consideration of the location of the Linear Corridor to minimise impacts to native vegetation. The alignment of the corridor with the existing tracks, fenceline was selected to reduce disturbance to vegetation communities, including PCTs 28, 58, 170, 171 and 221, where feasible.

Vegetation communities associated with habitat for Corben's Long-eared Bat will experience some direct impacts within the Project Assessment Area (PAA), totalling 662.03 ha (Figure 19). However, the broader

surrounding landscape retains a substantial area of suitable habitat. State Vegetation Type Map (SVTM) mapping indicates that 19,171.84 ha of native vegetation associated with Corben's Long-eared Bat occurs within the Subject Land surrounding the PAA. As such, the proposed direct disturbance represents 3.34% of the mapped extent of this vegetation, resulting in the retention of 96.66% of the associated habitat. This indicates that the majority of vegetation communities supporting potential habitat for Corben's Long-eared Bat will remain intact within the surrounding landscape (refer to Figure 24).

Mitigate

A Biodiversity Management Plan must be prepared to identify the flora and fauna mitigation measures required for each phase of the project. This plan will include protocols to ensure that project activities do not create additional threats to fauna habitats, including risks associated with exotic species such as weeds and pests, road incidents, and bushfires. In addition, vehicle operations will be limited during dawn and dusk periods to reduce the likelihood of collisions with nocturnal animals when visibility is reduced. Where operations during these periods are unavoidable, vehicle speeds must be reduced by at least 50% to increase driver response time and minimise the risk of fauna collisions.

Repair

Temporary construction areas will be rehabilitated sequentially and as soon as practicable after clearing activities are completed. Where immediate rehabilitation is not possible, temporary fencing will be installed to prevent fauna injury or mortality within disturbed areas. Revegetation, rehabilitation, restoration, and remediation activities will also be undertaken to ensure that the environmental values of the Project Area of Activity (PAA) are returned to an equal or improved condition. These efforts will include vegetation research plans designed to assess the effectiveness of plant translocation, as well as the propagation and growth of native species from seed.

Offset

Direct impacts to the Corben's Long-eared Bat have been identified as clearing of 662.03 ha of associated PCTs. This area of potential habitat, shown in Table 16 below, and shown as a percentage (3.34%) of the overall Subject Land is required to be offset under the EPBC Act.

See section 6.3 and Table 32 and Table 33 for the direct impact offset PCTs, areas and credit calculations for the PAA.

Table 16: Direct Impacts for Corbens Long-eared Bat

Direct Impacts (ha)	Retained Veg (ha)	Direct Impacts (%)	Retained Vegetation (%)*
662.03	19171.84	3.34	96.66

* Percentage of Retained Vegetation within the Subject Land

4.5.1.4 Potential Indirect Impacts

Avoid

In addition to direct impacts, 43.18 ha of vegetation within the 30 m indirect impact buffer surrounding the PAA has the potential to be affected (Figure 20). Excluding the PAA, the Subject Land surrounding the buffer contains 19128.66 ha of retained vegetation associated with the Corben's Long-eared Bat. The potential indirect impact therefore represents 0.23% of the retained vegetation within the Subject Land, with 99.77% remaining preserved. See Figure 20 for Indirect Impacts to Corben's Long-eared Bat (Table 17).

Mitigate

Protocols will be implemented to ensure that the project does not introduce or exacerbate threats to fauna habitat. These protocols will address risks associated with exotic species, including weeds and pests, as well as potential impacts from road incidents and bushfires. In addition, an Unpredictable Threatened Species Find Procedure will be established. This procedure will outline the required actions if a threatened species is encountered during works, including immediately stopping works in the affected area, engaging a qualified ecologist to confirm the species' presence, notifying the relevant government regulators, obtaining any required approvals, and only recommencing work once appropriate authorisation has been granted.

Mitigation measures to prevent and monitor rubbish dumping will be promoted, implemented, and regularly audited as part of the Biodiversity Management Plan (BMP). These measures aim to minimise environmental degradation and protect local flora and fauna from the adverse effects of litter and waste.

The BMP and the Construction Environmental Management Plan (CEMP) will also include a Noise and Vibration Management Plan, providing a structured framework for managing and mitigating potential construction-related noise and vibration impacts. Detailed construction noise and vibration impact statements will outline both standard and additional mitigation measures, tailored to predicted noise levels, to ensure minimal disturbance to surrounding habitats and communities.

A Waste Management Plan (WMP) will be prepared, implemented, and audited as part of the BMP, Operational Environmental Management Plan (OEMP), and CEMP. The WMP will identify site-specific mitigation measures designed to reduce the impacts of waste generated by increased anthropogenic activities in the region, supporting both environmental protection and sustainable project operations.

Repair

The 662.03 ha of land within the PAA on which Corbens Long-eared Bat associated PCTs are proposed to be cleared will be subject to pre-clearance surveys and post-clearance remediation. These reparation actions include rehabilitation, revegetation and restoration of environment and ecological values. The vegetation and habitat values will be restored to equal or higher than that of the preclearance values

Rocks, fallen timber and logs will be retained on site, and the collection of wood for campfires will not be permitted. This measure will ensure that important ground features remain available as habitat for species such as the Southern Whiteface, which rely on these physical attributes for shelter and foraging.

Vegetation research plans will also be undertaken to assess the effectiveness of plant translocation, as well as the propagation and growth of vegetation from seeds. The findings will help inform revegetation and rehabilitation strategies, supporting the successful restoration of native vegetation within the project area.

Offset

The PA will affect 43.18 ha of vegetation within the indirect impact buffer surrounding the PAA. Excluding the PAA, the Subject Land surrounding the buffer contains 19,128.66 ha of retained vegetation associated with the Corben's Long-eared Bat. The potential indirect impact therefore represents 0.23% of the retained vegetation within the Subject Land, with 99.77% remaining preserved. See Figure 20 for Indirect Impacts to the Corben's Long-eared Bat.

A buffer zone will be installed around the entire PAA which will protect the integrity of the ecological communities present. This is designed to minimise the risk of indirect impacts by physically separating the ecological community from direct impacts and by identifying it to land managers. This buffer zone will help protect the root zone of nearby trees and other elements of the neighbouring ecological communities from weed invasion, spray drift (fertiliser, pesticide or herbicide sprayed in adjacent land), polluted water runoff and other potential damaging processes. The effectiveness of this buffer zone depends on the vegetation type being native.

The department considers the retained patches of neighbouring ecological communities will be effectively avoided if the design of the PA includes a vegetation integrity protective buffer zone, which does not require an offset (DCCEW RFI EPBC2024/09955). This buffer will also protect species habitat within 30 m of the PAA mine site area and within 10 m of the PAA Linear Corridor area.

The details of this precautionary measure to mitigate indirect impacts is featured in 5.1.1.

Table 17: Indirect Impacts for Corbens Long-eared Bat

Indirect Impacts (ha)	Retained Veg (ha) **	Indirect Impacts (%)	Retained Vegetation (%)
43.18	19128.66	0.23	99.77

**Retained Vegetation for Indirect Impacts excludes the buffer area from the Subject Land

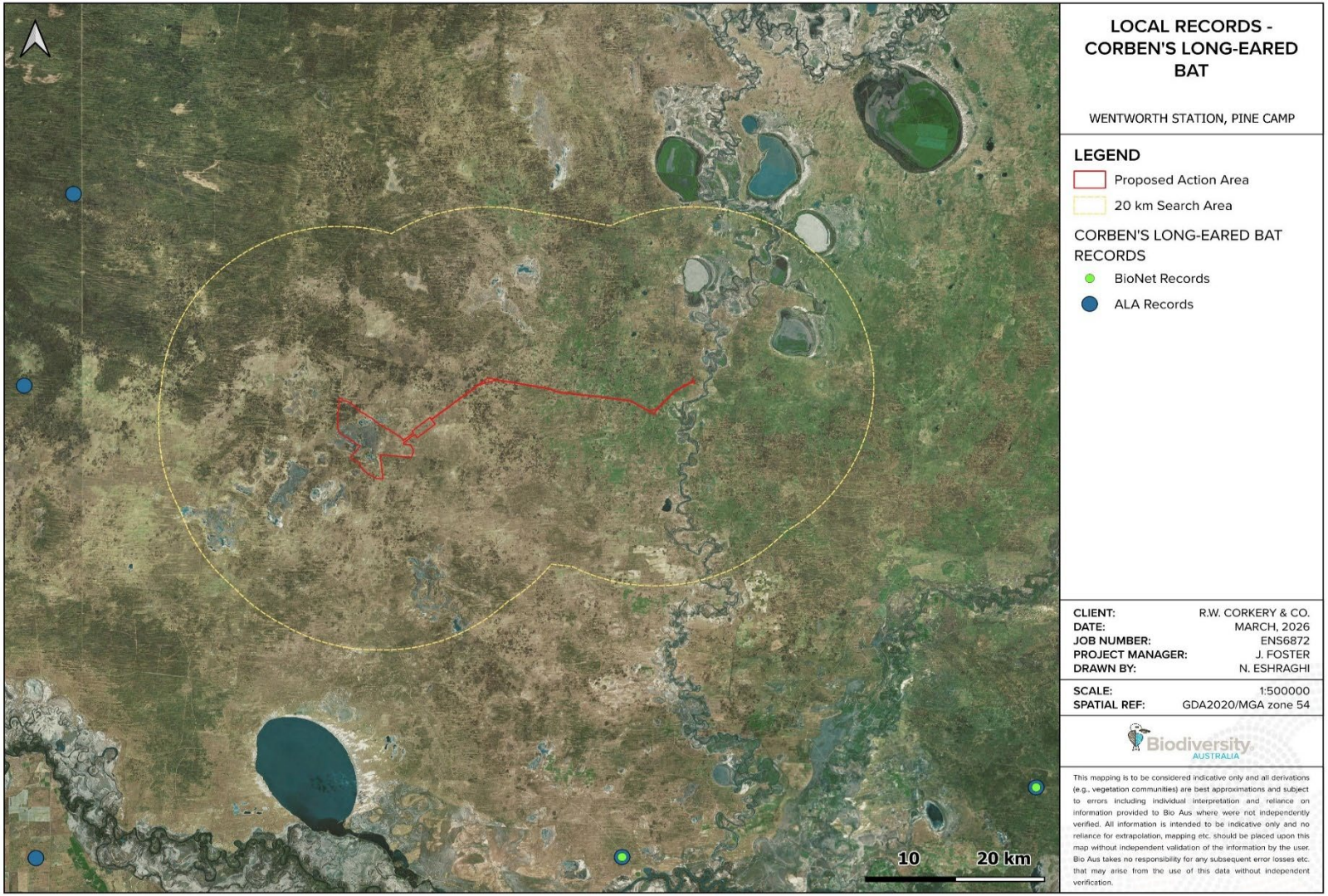

Figure 18: Local Records of Corben's Long-eared Bat

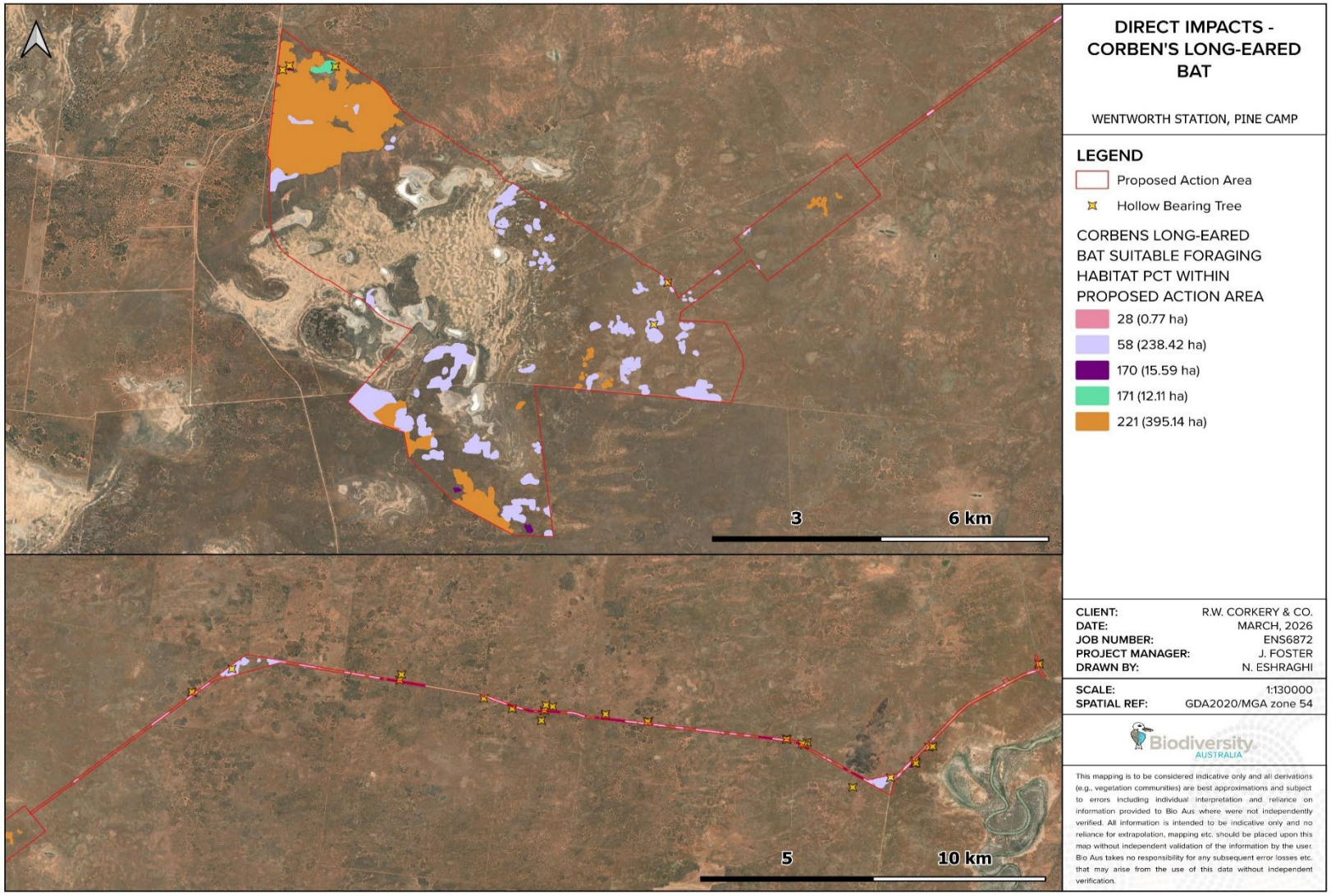

Figure 19: Corben's Long-eared Bat Direct Impacts

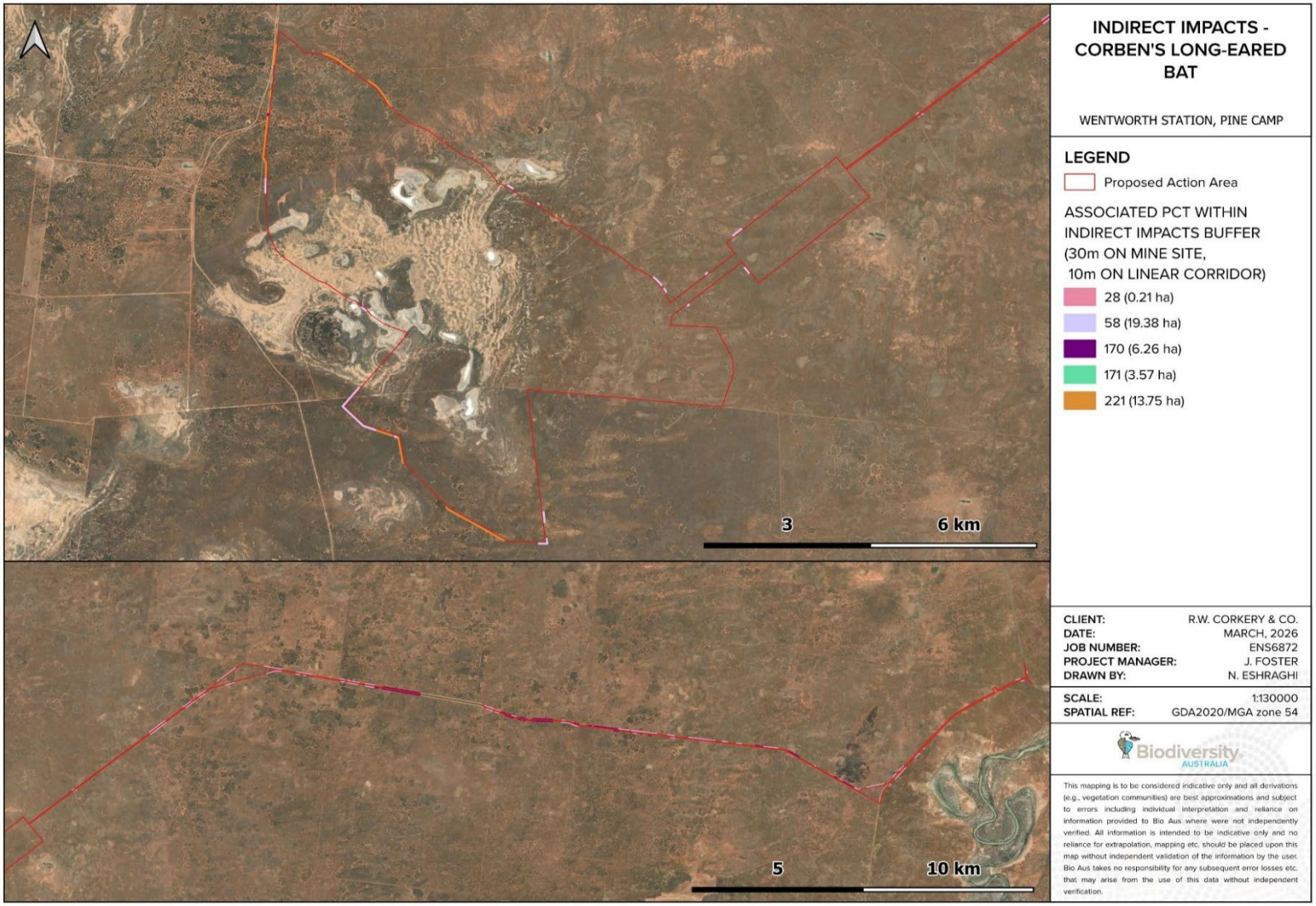

Figure 20: Area of Indirect Impact for Corben's Long-eared Bat

4.5.2 Southern Whiteface (*Aphelocephala leucopsis*) (Vulnerable)

4.5.2.1 Overview

The Southern Whiteface is known to occur in the locality and was recorded on multiple occasions within the PAA. Habitat critical to the survival of the species is identified in the Conservation Advice for Aphelocephala leucopsis (Southern Whiteface). The referral states that there are open woodlands and shrublands with grassy or shrubby understorey or herbaceous understory litter cover (associated with PCTs 28, 58, 143, 152, 154, 157, 170, 171, 215 and 253) and hollow bearing trees. The department considers that there is suitable critical habitat for foraging, roosting, breeding and dispersal for the Southern Whiteface.

The department considers the Proposed Action will clear up to 2,845.55 ha of Southern Whiteface suitable foraging, roosting, breeding and dispersal habitat. The department has determined the Proposed Action is likely to have a significant impact on the Southern Whiteface. DCCEEW RFI PD – Copi Mineral Sands Project

The Department's conclusion that the Proposed Action is likely to have a significant impact on the Southern Whiteface is not supported when the condition, extent, and landscape context of habitat are considered. Consistent with the Conservation Advice for *Aphelocephala leucopsis* (Southern Whiteface), habitat critical to the survival of the species comprises relatively undisturbed open woodlands and shrublands with a grass and/or shrub understorey, low tree densities with an herbaceous understorey litter layer. This provides essential foraging habitat, and the presence of living and dead trees with hollows and crevices required for roosting and nesting (DCCEEW, 2023).

While vegetation within the PAA includes Plant Community Types associated with the species, a substantial proportion of this vegetation is degraded or of low condition, lacking the structural complexity, understorey composition, and litter layer required to meet the definition of habitat critical to survival. These areas provide only marginal foraging and dispersal opportunities and are unlikely to support key lifecycle functions such as breeding. Targeted surveys recorded Southern Whiteface within the PAA; however, records were obtained within a highly connected landscape comprising extensive areas of similar and higher-quality habitat beyond the impact footprint. The species is widespread across inland woodland systems and is not confined to discrete habitat patches within the PAA. Accordingly, the presence of individuals does not indicate that the site supports a discrete or important population.

The Department considers that the proposed Action will result in the clearing of up to 2,845.55 ha of habitat considered suitable for foraging, roosting, breeding, and dispersal by the Southern Whiteface. All of this area comprises potential foraging and dispersal habitat, including 845 ha of wooded habitat with the potential to provide roosting and breeding opportunities (DCCEEW, 2023; Woinarski *et al.* 2014).

Although the PAA contains vegetation considered part of the habitat identified as critical for the species, some vegetation zones within the mapped PCTs are classified as low quality or degraded and do not meet the criteria for habitat critical to the survival of the Southern Whiteface, such as relatively undisturbed open woodlands or the presence of an herbaceous understorey litter layer (DCCEEW, 2023). These areas are highly disturbed, with a sparse understorey and limited herbaceous litter, and therefore provide reduced suitability for foraging, roosting, and breeding compared with intact critical habitat.

In the context of the EPBC Act Significant Impact Criteria, the Proposed Action is not expected to result in a long-term decrease in the size of an important population, reduce the area of occupancy of an important population, fragment an existing important population, disrupt breeding cycles, or interfere with recovery of the species (DCCEEW, 2023; Woinarski *et al.* 2014).

Importantly, substantial areas of suitable and higher-quality habitat will be retained within the Subject Land and persist throughout the surrounding landscape, maintaining habitat availability and connectivity

for the species. The proposed clearing will not result in the isolation or fragmentation of habitat patches, and movement pathways will remain intact.

The species is widespread across inland woodland systems and is not confined to discrete habitat patches within the PAA. Accordingly, the presence of individuals does not indicate that the site supports a discrete or important population. Land adjacent to the PAA within the Subject Land will continue to provide dispersal habitat and will be enhanced through the implementation of conservation management measures. The availability of nesting and roosting resources will also be maintained through the retention of hollow-bearing trees where practicable and the implementation of measures such as nest box installation and progressive rehabilitation, exclusion of intensive grazing from high-value habitats, and the protection of occupied habitat patches with a patchy distribution through fencing and removal of grazing stock. Habitat fragmentation is not expected to increase over the life of the project, as the PAA remains contiguous with surrounding vegetation and the staged mining approach will enable progressive rehabilitation following completion of each mining stage.

The amount of retained vegetated land containing PCTS associated with the species within the Subject Land, along with the directly and indirectly impacted land areas are shown in Table 18 below.

All local records for the species, within a 20 km radius of the PAA, are shown in Figure 21.

4.5.2.2 Likely Presence in PAA - Survey Methodology

Targeted Diurnal bird surveys for Southern Whiteface were conducted in suitable habitat (28, 58, 143, 152, 154, 157, 170, 171, 215 and 254) in and adjacent to the PAA between 5 – 24 February 2025.

Surveys consisted of a 30-minute area search of an area covering 2 ha. During each survey, observers identified and recorded all bird species seen and heard. Surveys were conducted in the early morning (dawn) or late afternoon (dusk) when bird activity was highest. The dawn surveys commenced at daybreak, once lighting was sufficient to adequately identify species (15 minutes after sunrise), and concluded when bird activity waned (2.5 hours after sunrise). The dusk surveys commenced 2 hours before sunset and concluded when either light was insufficient to identify species or when bird activity waned.

The field Survey effort for Southern Whiteface is illustrated in Figure 5 and Figure 6. A total of 42 surveys were conducted for the Southern Whiteface, a combined 1,258 minutes (21 hours) over 45.8 kms.

Additional opportunistic surveys were conducted) within and adjacent to the PAAs From 25-28 November & 4–14 December 2024, 6-11 August, 27-29 October and 4-11 November 2025.

4.5.2.3 Potential Direct Impacts

Avoid

Avoidance measures have been incorporated into management plans for the during of the project via the planning phase, particularly through consideration of the Project's location in relation to the surrounding environment. Key avoidance strategies include limiting vehicle operations during dawn and dusk, when visibility is reduced and fauna movement is higher. Restricting activities during these times reduces the risk of collisions with wildlife active within the traffic areas. Where vehicle operations during these periods are unavoidable, vehicle speeds will be reduced by at least 50% to increase driver response time and further minimise potential for fauna collisions.

Additional avoidance measures include mapping and retaining remnant native vegetation patches that provide potential suitable habitat. While vegetation associated with the Southern Whiteface vegetation community (PCTs) within the PAA (2,845.65 ha) will experience direct impacts, the broader surrounding landscape retains a substantial extent of suitable habitat of a high quality. State Vegetation Type Map (SVTM) mapping indicates that 57,603.47 ha of native vegetation associated with the Southern Whiteface occurs within the Subject Land surrounding the PAA. As such, the proposed direct disturbance represents 4.71% of the mapped extent of this vegetation, with 95.29% retained. This high level of

retained habitat associated with the Southern Whiteface ensures that local populations of the species will have access to an abundance of high quality intact habitat within the surrounding landscape (refer to Figure 24).

Mitigate

Conservation management priorities including habitat degradation caused by livestock grazing poses and a major threat to Southern Whiteface. The PAA has been highly impacted by agricultural practices including grazing over many decades and as a result the value of the habitat is low. Areas of potential habitat in the surrounding Subject Land will undergo protection via separation from grazing, to increase the areas of higher quality open woodlands and shrublands; with an understorey of grasses and/or shrubs, which Southern Whiteface depend on for habitat critical to survival (DCCEEW 2023).

Habitat loss, degradation and fragmentation are threats to Southern Whiteface especially for actions like agriculture. This tends to be a long-term impact which is not rehabilitated to its precleared state. The Project will affect 2,845.65 ha of Southern whiteface potential suitable habitat for roosting, nesting and foraging but due to the staging of the Project, smaller areas of vegetation will be impacted at one time and then rehabilitated, reducing the potential for permanent habitat loss, degradation, and fragmentation. Habitat degradation caused by domestic livestock grazing can be managed via the fencing off of surrounding Southern whiteface habitat within the Subject Land to provide increasingly better habitat, minimising distance between patches as per the Conservation and recovery actions (DCCEEW, 2023).

Repair

During the sequential project phases, progressive rehabilitation will be undertaken as mining activities advance. This will ensure habitat is being rehabilitated, including the planting of vegetation, relocation of habitat features and installation of mechanically created artificial hollows and nest boxes into rehabilitated areas.

The 2,845.65 ha of land within the PAA on which Southern Whiteface associated PCTs are proposed to be cleared will be subject to pre-clearance surveys and post-clearance remediation. These reparation actions include rehabilitation, revegetation and restoration of environment and ecological values. The vegetation and habitat values will be restored to equal or higher than that of the preclearance values.

Offset

Direct impacts to the Southern Whiteface have been identified as clearing of 2,845.65 ha of associated PCTs. This area of potential habitat, shown in Table 18, and shown as a percentage (4.71%) of the overall Subject Land in Table 19, is required to be offset under the EPBC Act.

See Section 6.3 and Table 32 & Table 33 for the direct impact offset PCTs, areas and credit calculations for the PAA.

Where impacts are unavoidable, offsets will be used as a last resort.

Table 18: PCTs associated with Southern Whiteface retained, impacted directly and indirectly

Associated PCT	Subject Land (ha)	Retained habitat (ha)	Direct Impact (ha)	Indirect Impact (ha)
28	1,728.02	1,727.25	0.77	0.21
58	11,386.31	11,147.89	238.42	19.38
143	542.81	525.29	17.52	2.06
152	264.43	14.00	250.43	8.89
154	41,572.50	39,902.70	1,669.80	91.08
157	607.52	112.14	495.38	7.85
170	1,131.86	1,116.27	15.59	6.26

Associated PCT	Subject Land (ha)	Retained habitat (ha)	Direct Impact (ha)	Indirect Impact (ha)
171	2,302.06	2,289.95	12.11	3.57
215	759.76	753.85	5.91	0.43
253	153.84	14.12	139.72	0.74
Total	**60,449.12**	**57,603.47**	**2,845.65**	**140.49**

Table 19: Direct impacts to Southern Whiteface

Direct Impacts (ha)	Retained Veg (ha)	Direct Impacts (%)	Retained Vegetation (%)
2,845.65	57,603.47	4.71	95.29

* Percentage of Retained Vegetation within the Subject Land

While the PAA contains habitat utilised by Southern Whiteface, it does not represent habitat critical to the survival of the species at a local or regional scale, and the Proposed Action is not considered likely to have a significant impact.

4.5.2.4 Potential Indirect Impacts

Avoid

In addition to direct impacts to Southern Whiteface, 140.49 ha of vegetation within the 30 m indirect impact buffer surrounding the PAA has the potential to be affected. Excluding the PAA, the Subject Land surrounding the buffer contains 5,7462.98 ha of retained vegetation associated with Southern Whiteface. The potential indirect impact therefore represents 0.24% of the retained vegetation within the Subject Land, with 99.76% remaining preserved. See Table 20 for Indirect Impacts to Southern Whiteface.

Rehabilitation of temporary construction areas is to be undertaken sequentially and as soon as practicable after clearing. If areas cannot be rehabilitated, temporary fencing is to be erected to avoid fauna injury/mortality.

Mitigate

Mitigation measures to prevent and monitor rubbish dumping will be promoted, implemented, and regularly audited as part of the Biodiversity Management Plan (BMP). These measures aim to minimise environmental degradation and protect local flora and fauna from the adverse effects of litter and waste.

The BMP and the Construction Environmental Management Plan (CEMP) will also include a Noise and Vibration Management Plan, providing a structured framework for managing and mitigating potential construction-related noise and vibration impacts. Detailed construction noise and vibration impact statements will outline both standard and additional mitigation measures, tailored to predicted noise levels, to ensure minimal disturbance to surrounding habitats and communities.

A Waste Management Plan (WMP) will be prepared, implemented, and audited as part of the BMP, Operational Environmental Management Plan (OEMP), and CEMP. The WMP will identify site-specific mitigation measures designed to reduce the impacts of waste generated by increased anthropogenic activities in the region, supporting both environmental protection and sustainable project operations.

Repair

The 2,845.65 ha of land within the PAA on which the Southern Whiteface associated PCTs are proposed to be cleared will be subject to pre-clearance surveys and post-clearance remediation. These reparation actions include rehabilitation, revegetation and restoration of environment and ecological values. The vegetation and habitat values will be restored to equal or higher than that of the preclearance values.

Rocks, fallen timber and logs will be retained on site, and the collection of wood for campfires will not be permitted. This measure will ensure that important ground features remain available as habitat for species such as the Southern Whiteface, which rely on these physical attributes for shelter and foraging.

Vegetation research plans will also be undertaken to assess the effectiveness of plant translocation, as well as the propagation and growth of vegetation from seeds. The findings will help inform revegetation and rehabilitation strategies, supporting the successful restoration of native vegetation within the project area.

Offset

Where impacts are unavoidable, offsets will be used as a last resort.

The PA will affect 140.49 ha of vegetation within the indirect impact buffer surrounding the PAA. Excluding the PAA, the Subject Land surrounding the buffer contains 57,462.98 ha of retained vegetation associated with the Southern Whiteface. The potential indirect impact therefore represents 0.24% of the retained vegetation within the Subject Land, with 99.76% remaining preserved. See 23 for Indirect Impacts to the Southern White Face.

A buffer zone will be installed around the entire PAA which will protect the integrity of the ecological communities present. This is designed to minimise the risk of indirect impacts by physically separating the ecological community from direct impacts and by identifying it to land managers. This buffer zone will help protect the root zone of nearby trees and other elements of the neighbouring ecological communities from weed invasion, spray drift (fertiliser, pesticide or herbicide sprayed in adjacent land), polluted water runoff and other potential damaging processes. The effectiveness of this buffer zone depends on the vegetation type being native.

The department considers the retained patches of neighbouring ecological communities will be effectively avoided if the design of the PA includes a vegetation integrity protective buffer zone, which does not require an offset (DCCEW RFI EPBC2024/09955). This buffer will also protect species habitat within 30 m of the PAA mine site area and within 10 m of the PAA Linear Corridor area.

The details of this precautionary measure to mitigate indirect impacts is featured in 5.1.1.

Table 20: Indirect impacts to Southern Whiteface

indirect Impacts (ha)	Retained Veg (ha) **	Indirect Impacts (%)	Retained Vegetation (%)
140.49	57462.98	0.24	99.76

**Retained Vegetation for Indirect Impacts excludes the buffer area from the Subject Land

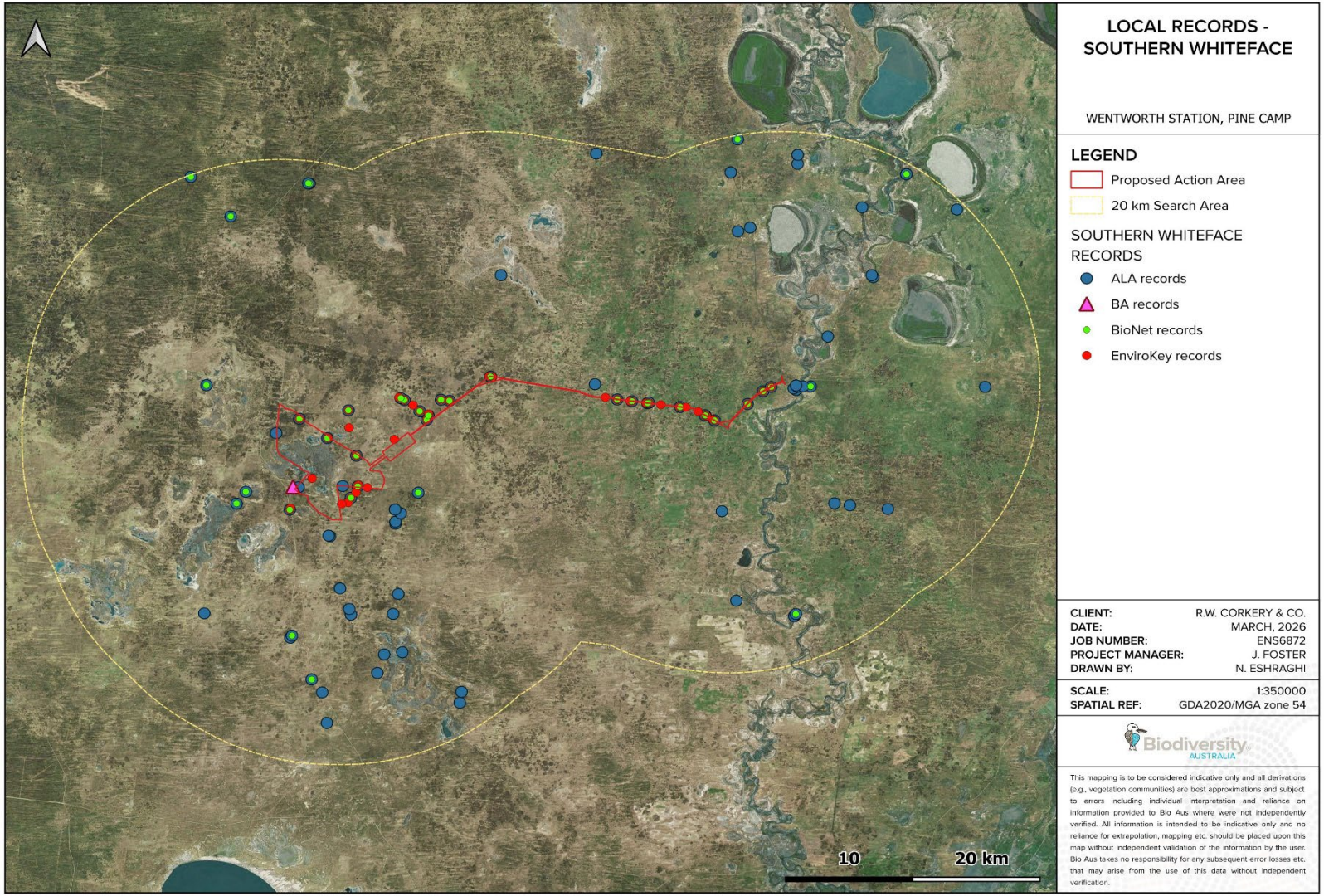

Figure 21: Local Records - Southern Whiteface

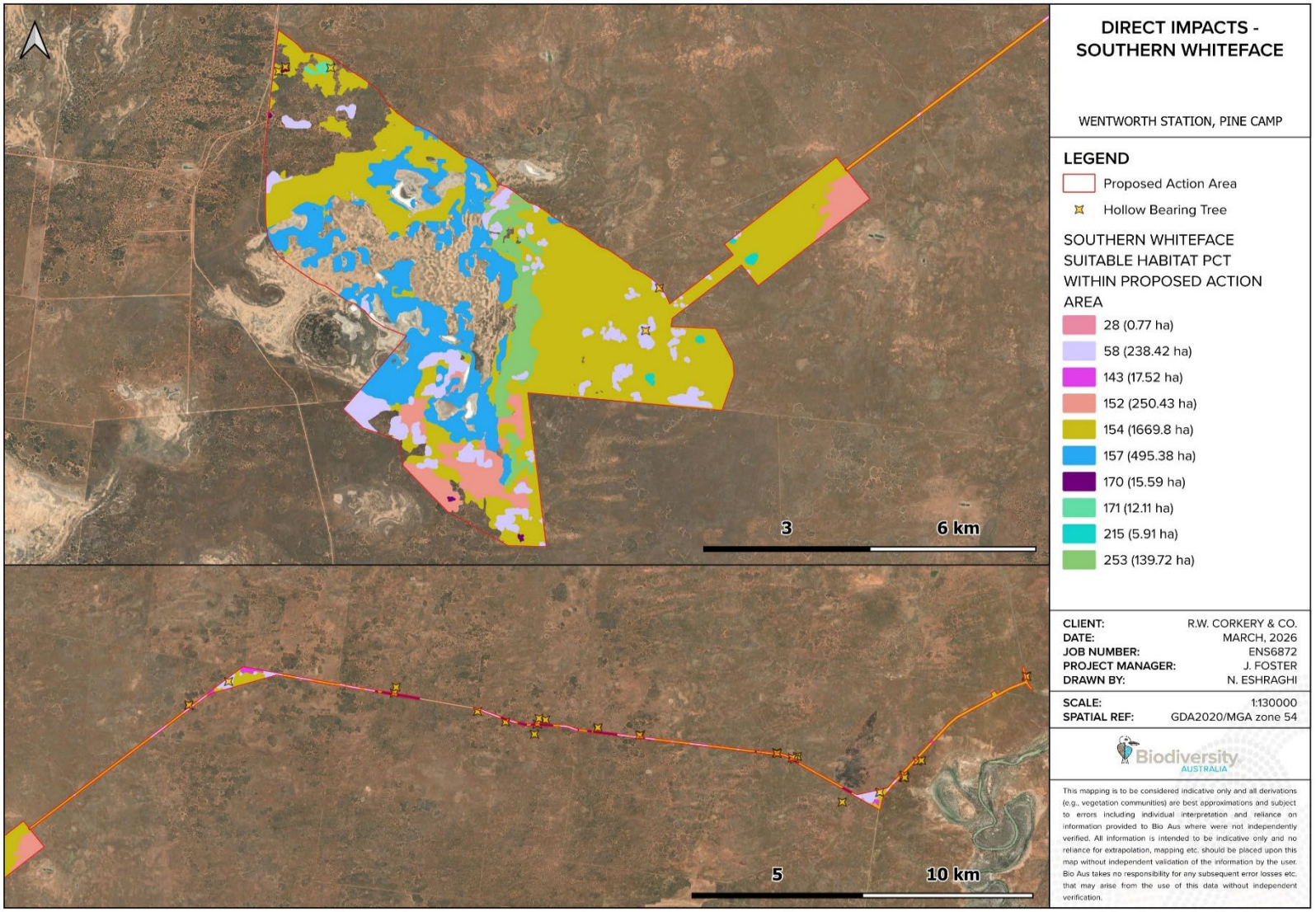

Figure 22: Area of Direct Impact for Southern Whiteface

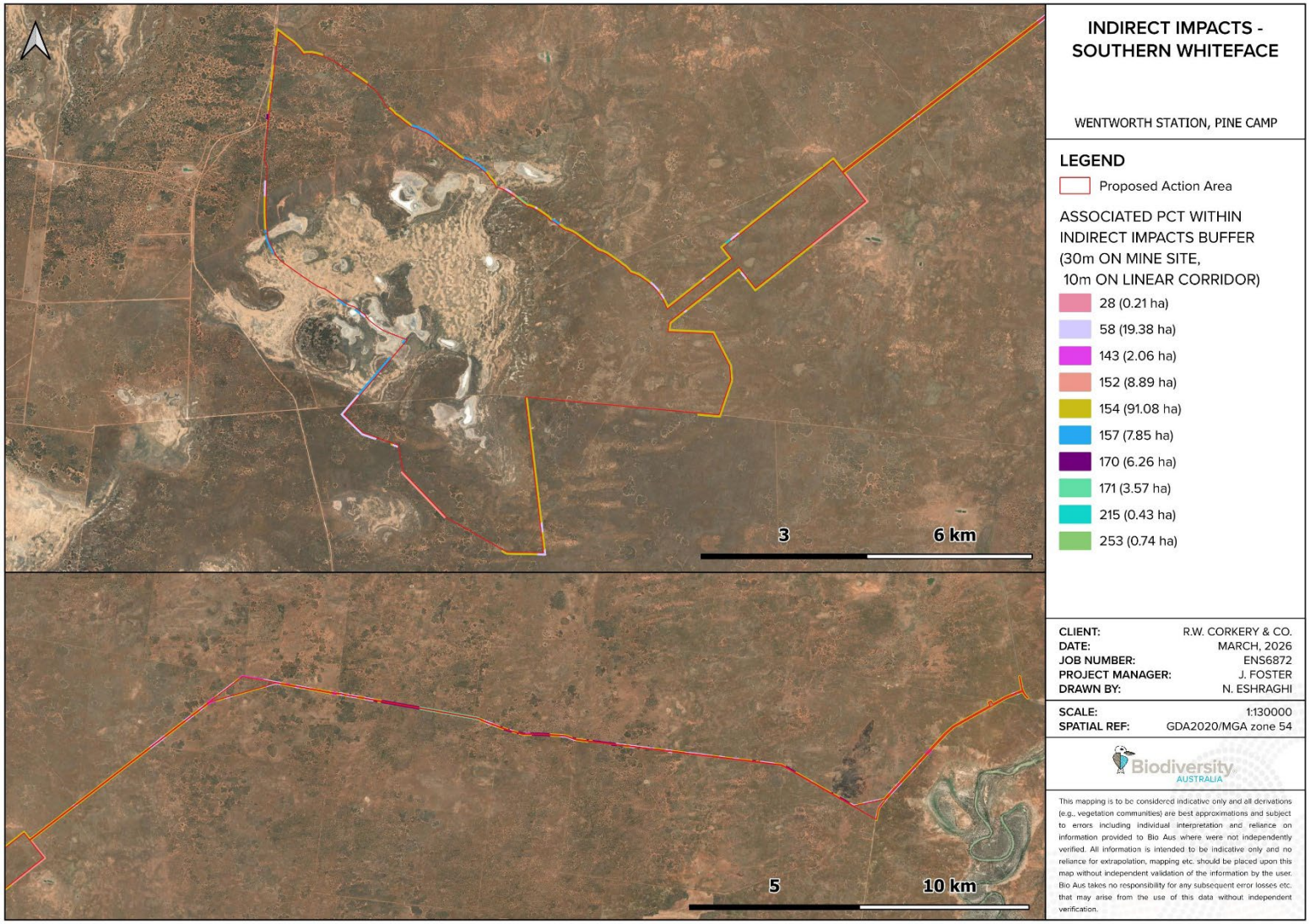

Figure 23: Area of Indirect Impact for Southern Whiteface

4.6 Vegetation Clearing and Habitat Removal

The Project will result in the removal of 3,883.08 ha (3,692.92 ha from the PAA - Mine Site and 190.16 ha from the PAA - Linear Corridor) of native vegetation. An additional 28.11 ha of roads, tracks and other cleared land within the PAA - Linear Corridor, and 108.30 ha from the PAA - Mine Site, will be cleared due to the proposed works, resulting in a total of 4019.49 ha of land cleared. The Project will also result in the removal of a 3.84 ha scattered patch of *A. nullanulla* from the central section of the PAA – Mine Site. The loss of native vegetation will be offset through the BOS as outlined in this BDAR. No BOS listed EEC will be subject to clearing. No further vegetation loss will be required through the operational phase of The Project.

The vegetation to be affected provides forage, refuge, and nesting habitat for a variety of fauna species, including birds and reptiles. At least one of the Hollow Bearing Trees identified within the PAA as having potential to provide nesting/denning habitat for hollow-obligate fauna species will be removed from within the PAA – Mine Site and one from the PAA – Linear Corridor.

4.7 Indirect Impacts

Indirect impacts associated with The Project, include habitat modification from subsidence and may include localised dieback of native vegetation that provided habitat connectivity, particularly along the Linear Corridor. For example, increasing dust suspension, noise and light, especially during construction works, may impact on breeding, foraging and dispersal behaviours of native species. However, these impacts are expected to be localised, temporary and not of a scale that would result in ecologically significant fragmentation or disruption to population processes.

The following potential indirect impacts may be associated with The Project.

Fragmentation

Habitat fragmentation is widely recognised as a driver of biodiversity decline (Fahrig, 2003, Jellinek *et al.* 2004). The size and isolation of a fragment strongly influence ecological processes within each area, particularly population size, community composition, and genetic stability (Jellinek *et al.* 2004). While the Project will involve the removal of native vegetation, the extent and configuration of clearing must be considered in the context of the existing landscape and retained habitat.

The Subject Land is already partially fragmented by a legacy network of vehicle tracks and fence lines, which create residual barriers to the movement and dispersal of larger fauna, such as macropods. The Project has been designed to utilise and upgrade existing disturbance corridors, thereby, minimising the need for new tracks, and limiting any increases in fragmentation. Importantly these existing features have not prevented the persistence in native fauna across the site e.g. birds can fly between patches, and smaller species typically have limited home ranges and can pass through fences.

The forested areas in the north-western section of the PAA, which support the highest biodiversity value, occur on the fringe of a much larger, contiguous tract of forest extending beyond the PAA (Figure 24). For volant species, such as the Corben's Long-eared Bat and Pink Cockatoo, the proposed clearing will not present a barrier to movement, as individuals can readily traverse the landscape and utilise adjacent habitat. For non-volant species, habitat connectivity will be maintained through the retention of contiguous vegetation and the staged nature of clearing, which allows gradual displacement into adjacent suitable habitat. Barriers such as fencing are not expected to significantly impede movement for these species. Although the smaller section on the fringe of the forest will be subject to vegetation removal, the larger, contiguous section will remain undisturbed and functional as a connectivity corridor during and after the clearing and construction phases, helping to minimise the impacts of the loss of the smaller section. Volant species inhabiting the section earmarked for removal can readily relocate into the adjacent forest, while non-volant species will have access to connected habitat, allowing gradual dispersal as clearing progresses.

Across the broader landscape, vegetation communities associated with the PCTs present in the PAA remain extensive and well connected, ensuring that dispersal pathways and ecological processes are maintained (Figure 1), further supporting dispersal opportunities and limiting the impacts of fragmentation. The Project will not result in the isolation of habitat patches or create barriers of a scale that would disrupt gene flow or population viability.

Erosion and Sedimentation

Sedimentation and erosion have the potential to occur during both the construction and operational phases of The Project primarily through disturbance of soils, exposure of soil and the mobilisation of sediments via surface water runoff. If unmanaged, these processes can result in the loss of topsoil, reduced vegetation regeneration capacity, and the transport of sediments into adjacent habitats.

However, these risks will be effectively avoided and managed through design, containment measures, and standard erosion and sediment controls, such that impacts will be localised to the PAA and will not extend to surrounding environments.

Topsoil, which represents the most biologically productive component of the soil profile will be strategically stripped, stock piled and managed for reuse in progressive rehabilitation. This approach will maintain soil viability and support the re-establishment of native vegetation communities following disturbance. Where topsoil remains in situ, appropriate erosion and sediment control measures will be implemented to prevent loss. These mitigation measures are summarised in Table 7 and will be discussed in more detail in the Soil Erosion and Sediment Control Plan.

Sedimentation and erosion associated with dredge mining operations will be fully contained within the dredge ponds, which will not be connected to other waterways. This containment ensures that sediment-laden water is retained on-site and managed internally, preventing off-site transport of sediments. The post-mining rehabilitation period will ensure any areas subjected to erosion and sedimentation throughout the operation of the mine will be rehabilitated to minimise any deleterious impacts to nearby catchments.

A Soil Erosion and Sediment Control Plan (SESCP) will be prepared by a Certified Practitioner in Erosion and Sediment Control (CPESC). This SESCP will incorporate industry best practice measures. These controls will be maintained throughout construction and operation, with progressive rehabilitation undertaken to stabilise disturbed areas as soon as practicable. This will further reduce the duration and extent of exposure to erosion risk. Accordingly, the Project is not expected to adversely affect threatened species habitat, downstream ecosystems, or water quality, and will not result in a significant impact in the context of the EPBC Act.

Injury/Mortality During Clearing

Conflict between site traffic, clearing activities and fauna has potential to result in injury or mortality within the PAA (Linear Corridor and Mine Site). These risks are most relevant to ground-dwelling species, hollow-dependent fauna, and individuals unable to disperse rapidly (e.g. during breeding or torpor periods).

The PAA contains habitat features such as Hollow Bearing Trees (HBTs), fallen timber, and dense vegetation that may support fauna at risk during clearing. Potential impact pathways include vehicle strike, tree felling, entrapment during vegetation removal, and capture within open excavations.

However, these risks will be effectively managed through a suite of standard avoidance and mitigation measures, ensuring that impacts are localised, temporary, and not significant at a population level. Vegetation clearing will be undertaken in a staged and controlled manner and pre-clearing inspections will be undertaken by suitably qualified or experienced person during all clearing activities and will mitigate the risk of injury to fauna. Where practicable, clearing will be scheduled to avoid peak breeding periods, further reducing the risk to dependent young. Further detail of the mitigation measures proposed to reduce injury or mortality during clearing is provided in Table 20.

Vehicle related impacts will be managed through implementation of a Traffic Management Plan which will include speed restrictions, temporary fencing to minimise the risk of fauna injury/mortality due to vehicle strike or entrapment during excavations and designated access routes. The Traffic Management Plan will be implemented during the construction and operation phases of The Project to assist in controlling the risks of species collision.

While some limited fauna mortality cannot be entirely avoided in large-scale developments, the application of these measures will ensure that any losses are minor and do not affect the viability of local populations. For threatened species potentially occurring within the PAA, including the Corben's Long-eared Bat and Southern Whiteface, the risk of mortality is further reduced by their mobility and ability to utilise adjacent habitats. The Project will not result in the loss of all suitable habitat, and individuals will be able to relocate into retained and surrounding vegetation.

Accordingly, although there is a risk of fauna injury or mortality associated with clearing and operational activities, these impacts will be effectively minimised and will not result in a long-term decrease in population size, disruption to breeding, or a significant impact under the EPBC Act.

Edge Effects

Changes to the edges of vegetation communities are known to influence ecological processes, including alteration to microclimate, changes in species abundance and distributions, and changes in species interactions (Murcia 1995). However, the magnitude of edge effects is highly dependent on the contrast between habitat types and the structural characteristics of the landscape. Not all habitats are subjected to the same degree of impact (Kremsater & Bunnell, 1999). For instance, in open arid landscapes, the transition between edge and interior environments is more gradual, leading to less pronounced edge effects compared to densely forested areas.

The Project's will introduce additional habitat edges associated with infrastructure and vegetation clearing. To a lesser extent, the construction of other infrastructure and facilities will create edges adjacent to remnant vegetation patches. Potential edge effects include:

- Increased risk of weed incursion from disturbed areas,
- Increased exposure of fauna to predation due to increased visibility,
- Microclimatic changes associated with increased sunlight, and
- Increased weed proliferation.

Ground dwelling fauna are most at risk from increased predation around the edges of native vegetation (remnant habitat) as fauna are more visible and accessible.

The Subject Land is characterised by a remote arid landscape dominated by open woodland and shrubland, where vegetation structure is sparse and environmental gradients between habitat edges and interiors are relatively subtle. Given these conditions, and the minimisation measures outlined in Section 5.3.1 (Fragmentation), edge effects following the proposed development are not expected to significantly worsen or become pronounced through delineation and disturbance.

Furthermore, much of the vegetation within the PAA has been historically disturbed and long-term grazed. Weeds are already prevalent within the Subject Land and may be spread through disturbance and vehicle movement.

These risks are not expected to heighten significantly during the construction and operational phases of the development. These risks will be managed through standard biosecurity and site management measures including inductions, signage and the provision of onsite waste disposal facilities. See also Table 25 through Table 31. These measures will minimise the likelihood of new weed introductions or significant increases in weed abundance.

The minimisation of additional fragmentation, combined with the use of existing disturbance corridors and the retention of surrounding vegetation, will further limit the extent and influence of newly created edges.

Given the low structural contrast of habitats, the existing level of disturbance, and the implementation of standard management measures, edge effects associated with the Project are expected to be localised and minor and will not result in measurable changes to habitat function, species composition, or the use of the area by native fauna.

Accordingly, edge effects are not expected to adversely affect threatened species or ecological communities and will not result in a significant impact in the context of the EPBC Act.

Weed Invasion

Invasive plant species have the potential to alter ecosystem structure and function by competing with native vegetation for resources such as light, nutrients and space. If unmanaged, this can result in long term changes to habitat quality and availability.

The Subject Land currently supports low to moderate levels of weed infestation. A total of 260 plant species were recorded during fields surveys, of these 49 were exotic (BDAR Rev 6.0 Table 53). Importantly, no species listed under the *Australia Weeds Strategy 2017-2027* or Weeds of National Significance were recorded, indicating that the PAA does not currently support high risk invasive species.

Construction and operational phases of The Project have potential to facilitate the spread of weeds through increased vehicle movement and soil disturbance. However, these risks will be effectively managed through the implementation of standard biosecurity and weed management measures, consistent with regional and state guidelines, including the Western Downs Regional Council Biosecurity Plan and relevant NSW hygiene protocols.

The Western Downs Regional Council Biosecurity Plan defines and outlines strategies, objectives and outcomes necessary for a planned and coordinated approach to weed management across the region. DPE (2020) provides hygiene protocols for weeds and includes keeping vehicles, machinery, and people dry surfaces, and removing all soil, plant material and other debris from clothing, footwear, tools and equipment (DPE 2020). The following standard recommendations will be taken into account during the pre-construction phase of The Project:

- Vehicles and equipment must be adequately cleaned and free of weeds, dirt and other materials that may contain weed seeds before being bought onto the site,
- Weeds must be actively managed during the clearing and construction phase, including those immediately adjacent that may spread into the subject site,
- The site must be routinely inspected for weeds during the construction phase,
- If any weed establishment is detected during inspections, appropriate control measures must be implemented to manage their spread and impact,
- Disturbance of vegetation and soils on the site must be limited to the areas of the proposed work and must not extend into adjacent vegetation,
- All plant used for clearing and construction works is certified as weed-free,
- Appropriate collection and disposal of all weed material removed via clearing,
- Any recent weed invasions within the development area must be removed, and
- Ongoing weed control in the development area.

High risk vectors for weed spread such as roads and washdown bays will be regularly monitored for weed invasion, and control measures implemented where necessary to limit the potential for spread and minimise impacts from weeds. Additional mitigation measures are discussed in Table 7 (Mitigation measure summary). These include the development and implementation of the Biodiversity Management Plan, Construction Environmental Management Plan (CEMP) and associated sub-plans post construction

as the Biosecurity Management Plan. See BDAR Rev 6.0 (Tabel 53) for list of weeds observed during field surveys.

Feral Pest Fauna

The Project has the potential to attract feral fauna. Feral Cats and Red Foxes are already known to occur on the Subject Land and are significant predators of native species (NPWS 2001; Dickman 1996; May and Norton 1996; DCCEEW 2025b). Other feral animals known to occur on the Subject Land include Rabbits and Goats. These species can negatively impact native fauna and flora through the spread of disease, competition for food and shelter, and the destruction of habitat (DCCEEW 2025c). The impacts of feral animals have been listed as key threatening processes under the BC Act 2016. A Biodiversity Management Plan will be implemented during the pre-construction, construction, operation, and rehabilitation phases to assist in the integrated control of these species. This BMP will include lethal control and monitoring measures.

Noise, Vibration and Anthropogenic Disturbances

The clearing and construction phase of The Project is likely to result in increased levels of noise and vibration within and immediately surrounding the PAA. A report from Muller Acoustic Consulting Pty Ltd (MAC, 2025) predicts noise emissions to range from > 60 dB near noise sources (e.g. mining operations, processing plant) to 35 dB up to 1.5 km from sources (Assessment Area). These levels may not be limited to daylight hours as mining, processing and transport operations can occur 24 hours per day. Further, it is expected that noise and vibration levels will remain at a relatively constant level for the life of The Project.

The increase in noise and vibration may impact local fauna, particularly birds, through adverse changes to behaviour, population densities, community structure and breeding success (Barber *et al.* 2009). These responses can result from the frequent disturbance to daily activities by evoking anti-predatory responses and by blocking call signals between individuals (Barber *et al.* 2009).

Impacts on fauna and disturbance from noise during construction and operation will generally cause fauna to move away from noise sources as these may anticipated as a threat. The BMP must include mitigation strategies as part of vegetation clearing protocols, including sequential/stage clearing requirements, to minimise the impact on fauna. Where vibration levels are predicted to outpace the screening criteria, a more detailed assessment of the structure and vibration monitoring must be undertaken to ensure vibration levels remain below standard limits for that structure.

While the exact tolerance thresholds of the various species present on site are unknown, a review of research on the effects of noise on wildlife, reports that adverse responses by birds (e.g. decline in species diversity, call rates and call durations) begin at around 40 dB, while those of mammals (e.g. changes in proportion of time spent feeding), reptiles, and amphibians (e.g. reduction in chorus duration) begin above 60 dB (Shannon *et al.* 2016). Thus, it can be inferred that birds might avoid spending any considerable length of time within the immediate vicinity of noise sources within the PAA and that they will likely be unaffected beyond 1.5 km of noise sources. Mammals, reptiles, and amphibians may only be disturbed near noise sources. Monitoring is recommended throughout the lifespan of The Project to ensure noise levels do not exceed those predicted and that no long-term adverse changes to species diversity and abundance occur, particularly for avifauna. A Biodiversity Management Plan (see Section 5.5.2) will be developed and will commence with flora and fauna monitoring to establish a baseline, which, along with the findings of the BDAR, will be used to monitor the influence of noise and other potential impacts on flora and fauna communities.

Light Spill

The introduction of additional artificial light has the potential to effect fauna within and adjacent to the PAA. Studies have shown both an increase in orientation and disorientation as a result of additional illumination to an area. This can have the potential to alter normal foraging, communication and

reproductive behaviours, as well as competition and predation dynamics within and among species (Longcore and Rich, 2004; Chepesiuk, 2009). For example, some species may experience heightened predation pressure due to the increased hunting success of predators that benefit from illumination, while others may refrain from foraging due to the decreased ability to detect natural light cycle changes (Fardell & Dickman, 2023).

Light spill is expected to occur from the Mine Site infrastructure area, extraction areas, and vehicles. Despite this, the buffer zones surrounding the extraction areas and positioning of the PAA in an area of limited habitat value must ensure that light spill remains largely within the bounds of the PAA and impacts on wildlife species will be minimal. Artificial lighting will be kept to a minimum and strategically placed so as not to disturb fauna in adjacent habitats. Measurements of light disturbance will be ongoing and incorporated into an adaptive environmental monitoring program, whereby intervention will occur if triggers are exceeded.

To ensure anthropogenic impacts are minimised, it is recommended that artificial lighting be kept to a minimum and be of a localised and low luminosity, with light directed to the ground and not onto retained trees/adjacent vegetation. Sufficient artificial lighting will likely be required for security reasons and in the event any evening works are required. Security lighting is preferred to be sensor-based to reduce energy consumption and contribute to Climate Change. The applicant will need to consider the requirements of the Australian Standard 4282:2023 and the National Light Pollution Guidelines for Wildlife. The effects of light spill on wildlife will be monitored through the Biodiversity Management Plan.

Movement Obstruction

Temporary and permanent fences will be installed within the PAA to manage access and ensure operational safety during construction and operation.

Additional fencing may be used to exclude feral animals (e.g. Goats, Sheep) from sensitive areas and in some cases result in injury or mortality through collision or entanglement particularly where barbed wire is used. Kangaroos and Emus were observed colliding with established property boundary fences along the Proposed Linear Corridor, and others were observed deceased after having become stuck, highlighting that such risks are already present within the landscape.

However, the Project will not introduce a substantial new barrier to fauna movement at a landscape scale, as fencing will be largely confined to the mine site and associated infrastructure areas. Importantly fencing associated with the project will be designed and implemented to minimise risks to fauna. Mitigation measures to eliminate this risk are outlined in Section 5.5.5 (Mitigation Measure Summary).

While some residual risk of fauna interaction with fencing cannot be entirely eliminated, the implementation of these design and management measures will ensure that any impacts are minor and do not result in a measurable effect on population viability.

Increased Dust Levels

Dust generated during construction and operation of The Project has the potential to affect adjacent native vegetation. Deposition of airborne dust, sand and soil may have potential impacts on vegetation if excessive levels are sustained over extended periods. When dust settles on plant foliage, it can reduce the amount of light penetration on the leaf surface, block and damage stomata and slow gas exchange and water loss. A diminished ability to photosynthesise may result in reduced growth rates of vegetation, flora vigour, and overall community health (Thompson *et al.* 1984).

Localised dust effects are likely to arise during the following activities:

- Vegetation clearing, earthworks associated with the construction of surface facilities such as the construction villages and access roads and vehicle movements. Dust from these activities will occur over a relatively short duration, typically several months where dust plumes may affect native vegetation adjacent to these areas,

- The access and internal roads proposed for The Project will be unsealed, and there will be an increase in dust during the clearing, construction, and operational phases of The Project. An Air Quality Management Plan will be prepared following approval of the PAA to address impacts associated with increased dust levels, and
- Dust from stockpiles.

The Linear Corridor will provide primary access to the construction site and villages; therefore, adjacent vegetation will suffer from continuous exposure to dust impacts. Some additional localised dust deposition across the PAA – Mine Site may occur immediately adjacent to access roads. Vegetation situated in proximity to construction and operational activities may become coated with dust. However, this will be short term and unlikely to cause any significant damage or permanent impacts.

The potential effects of dust deposition on vegetation are determined by the following factors:

- The characteristics of leaf surfaces, such as roughness, influencing the rate of dust deposition on vegetation,
- Concentration and size of dust particles in the ambient air and its associated deposition rates, and
- Local meteorological conditions and the degree of penetration of dust into vegetation.

Proposed mitigation measures will include using water trucks to wet road surfaces and reduce dust kick-up, as well as developing a monitoring program to track the extent and effects of depositional dust on sensitive plant communities over time, ensuring timely intervention in the event of adverse changes being detected. An Air Quality Management Plan will be developed before construction which will consider potential dust related impacts. These will be detailed in the Biodiversity Management Plan (see BDAR Rev 6.0 Section 5.5.2). These measures will ensure that dust generation is effectively controlled and maintained at levels that do not result in ecological harm.

Therefore, dust related impacts on vegetation are expected to be spatially limited, temporary and reversible. Deposition will primarily occur within close proximity to disturbance sources (generally within tens of metres), and vegetation beyond these areas will not be measurably affected. Where dust deposition does occur, impacts are typically short-term, with vegetation recovering following rainfall or cessation of disturbance.

Increased Risk of Starvation

The vegetation proposed for removal is surrounded by vast areas of intact native vegetation. The areas of intact vegetation that are beyond the PAA will ensure that food resources will not decrease to a level that will pose a risk of starvation to fauna.

Critical Loss of Shade or Shelter

Some tree loss will be required for the development. This is unlikely to lead to a critical loss of shade or shelter due to the vastness of adjoining habitats.

Increased Soil Salinity

An increase in soil salinity can be detrimental to native species with surfaced salts becoming toxic to a large majority of native flora. Increases in soil salinity have been linked to large-scale land clearing and are usually associated with the clearing of vegetation (Australian Bureau of Statistics 2013). The Project requires the removal of 3883.08 ha of vegetation and the construction of dredge ponds, which will be filled with extracted groundwater. The groundwater on the Subject Land has been found to have an extremely high salt concentration (61 g/L or 10,167 mS/m), such that it exceeds the salt tolerance thresholds of all plant communities present on the PAA (Greenloaning Biostudies, 2022; refer to Appendix A-3). Accordingly, it can be concluded that the plant communities are not accessing or utilising water from the groundwater table, and that the removal of vegetation will not cause the groundwater

table to rise and bring salts closer to the surface. However, the establishment of the dredge ponds will likely disperse the hypersaline groundwater over areas beyond those currently subjected to salt deposition through groundwater evaporation, and this may greatly increase soil salinity within affected areas of the PAA.

Rubbish Dumping

The Subject Land is currently subject to minor levels of rubbish dumping, primarily due to the actions of the current landowners. It is possible that the risk of rubbish dumping will heighten due to increased human presence because of the proposed development. However, suitable waste disposal facilities will be provided as part of the development, and waste will be routinely transported off site to waste disposal facilities in nearby townships. It is recommended that rubbish dumping is monitored throughout the lifespan of The Project, and that a Waste Management Plan outlining exactly how waste will be dealt with is developed. These will be outlined in the Biodiversity Management Plan (see BDAR Rev 6.0 Section 5.5.2).

Wood Collection

Woody debris provides habitat for wildlife, substrates for fungal and plant germination and growth, and contributes to soil processes (Smith *et al.* 2012). Its removal can, therefore, have adverse ecological impacts. All materials required for the development will be sourced externally and the Subject Land is far from populated areas and is not considered to attract wood collection. Nevertheless, the establishment of onsite mining camps may create a new avenue for potential wood collection, for activities such as campfires. It is essential that environmental inductions developed for the Proposed Action highlight the importance of leaving woody debris in situ and undisturbed to avoid environmental degradation.

Bush Rock Removal and Disturbance

Bush rocks are essential habitat features for biodiversity as they provide refuge for reptiles (O'Sullivan *et al.* 2024). The removal of bush rock can have serious implications for the persistence of rock-dependent reptile species. The Subject Land is not considered to attract bush rock collection, but the risk of collection may grow with the increased human activity associated with the Proposed Action. Similarly to wood collection, the importance of leaving bush rock undisturbed must be highlighted in pre-work environmental inductions. Additionally, the rehabilitation phase must ensure bush rock is restored on the rehabilitated landscape (to be addressed in the CEMP).

Increased Risk of Fire

The Proposed Action will not increase the risk of fire in the area.

Habitat Connectivity

The Project will result in the removal of 3,883.08 ha from the PAA - Mine Site and 190.16 ha from the PAA - Linear Corridor of native vegetation. This removal of vegetation will impact the connectivity of habitats that facilitate the movements of fauna whose ranges encompass the Subject Land. Further, the PAAs will be surrounded by fencing, potentially disrupting species' behaviour, dispersal abilities, and gene flow (Lindenmayer and Fisher, 2006).

However, these impacts are expected to affect only non-threatened fauna, such as macropods, whose large body sizes and home ranges preclude movement through fenced areas and necessitate uninterrupted access to connected habitat. The macropod species observed on the Subject Land, including the Western Grey Kangaroo, Common Wallaroo, and Red Kangaroo, have wide distributions due to their broad habitat tolerances. This ecological flexibility means these species are not restricted by the connectivity of particular PCTs and can adapt to a variety of vegetation types across the landscape. Consequently, while fencing and vegetation removal may temporarily alter their movement patterns, these macropod species are expected to persist by utilising habitats and resources within the

environment surrounding the PAAs. Therefore, the anticipated impacts on connectivity are unlikely to result in any significant long-term effects on their populations.

Species with potential to occur on the Subject Land that have more specialised habitat requirements, such as the spinifex-obligate Mallee Slender Blue-tongue Lizard, are also expected to experience limited impacts associated with the loss of habitat connectivity and disruption to movement. This is due to two factors:

- As shown in Figure 24, vast areas of intact vegetation beyond the PAA will remain undisturbed, including a large, contiguous forested area to the north-west of the Subject Land. In all cases, the PCTs present within the PAA extend uninterrupted beyond the Project boundary, meaning that displaced species will have ample connected habitat for movement and dispersal outside the affected area, and
- The threatened species with potential to occur within the Subject Land, such as those listed in BDAR Rev 6.0 Table 53 have body sizes or dispersal modes, including the ability to fly, that allow them to bypass barriers (as discussed in BDAR Rev 6.0 Section 5.3.1 Fragmentation).

4.8 Impacts related to specific needs and characteristics

It is concluded that the PAA would harbour lower density populations of those species which have a reliance on fresh ground water sources such as rivers, creeks and dams. The Pink Cockatoo is one such species which is known to frequent fresh groundwater sources and nest within range of those water features in the landscape (DCCEEW 2023). The combination of no fresh groundwater sources, very few suitable nesting trees and no breeding activity observed during breeding season surveys point to a lower impact for the Pink Cockatoo.

4.9 Unknown, Unpredictable or Irreversible Impacts

The landscape within the PAA and in the surrounding area has been the subject of extensive agricultural practices for the past 150 years. Therefore, Impacts from unpredictable or irreversible events is relatively well known. There is confidence that unknown impacts, as yet unexperienced, or those which little is known, are very rare. More is known about unpredictable climatic events - impacts of flooding and too frequent, or infrequent fires. There is also potential for dust impacts if it is not mitigated (water carts etc) - dust can impact stomatal opening resulting in reduced growth, lower quality vegetation for herbivores etc. Dust settling on water ways increasing turbidity, reduced oxygen. Impacts relating to blasting creating vibration, noise.

4.10 Limited Information Available for MNES Entities

Limited availability of relevant information has the potential to influence the conclusions of this assessment. Currently there is no recovery plan required for the Corben's Long-eared Bat and there are no published recovery plans for the Pink Cockatoo, Southern Whiteface, MBC, Corben's Long-eared Bat and Hooded Robin. Although published conservation advice exists for each species assessed, recovery plans would give more of an understanding of the practical measures required to help the Threatened Ecological Community and species increase in numbers.

4.11 Cumulative Impacts

Broader landscape cumulative Impacts are minimal as the PAA is located in an area where the nearest similar development is more than 100 km away to the east. The local cumulative impacts for the PAA will

be mitigated against by monitoring the surrounding areas and implementing Trigger Action Response plans as described in Table 29 through to Table 36.

The Project has progressed through the design phases for the past 7 years with numerous biological, environmental and engineering stakeholders contributing to the final design presented within this BDAR. As demonstrated within the Stage 1 BDAR, the proponent and numerous BAM Accredited Assessors have applied significant effort to fully understand the Biodiversity Values of the Subject Land and Assessment Area through a series of fully compliant BAM 2020 surveys. Where no survey guideline existed for a particular species, advice on survey effort and method were sought from the BCS. Due to the extensive survey effort, the Biodiversity Values of the PAA are very well understood. Additional information about the Project was also obtained by Bio Aus through the review and consultation process. This has included a vast array of documents, reports, and online material, such as the BAM 2020, Copi EIS, geotechnical reports, and via a series of meetings with relevant stakeholders including R.W. Corkery & Co Pty. Ltd., RZ Resources Limited (The Client), and the Department of Climate Change, Energy, the Environment and Water (DCCEEW). The information described above has been utilised to assess the accumulative impacts of the PA.

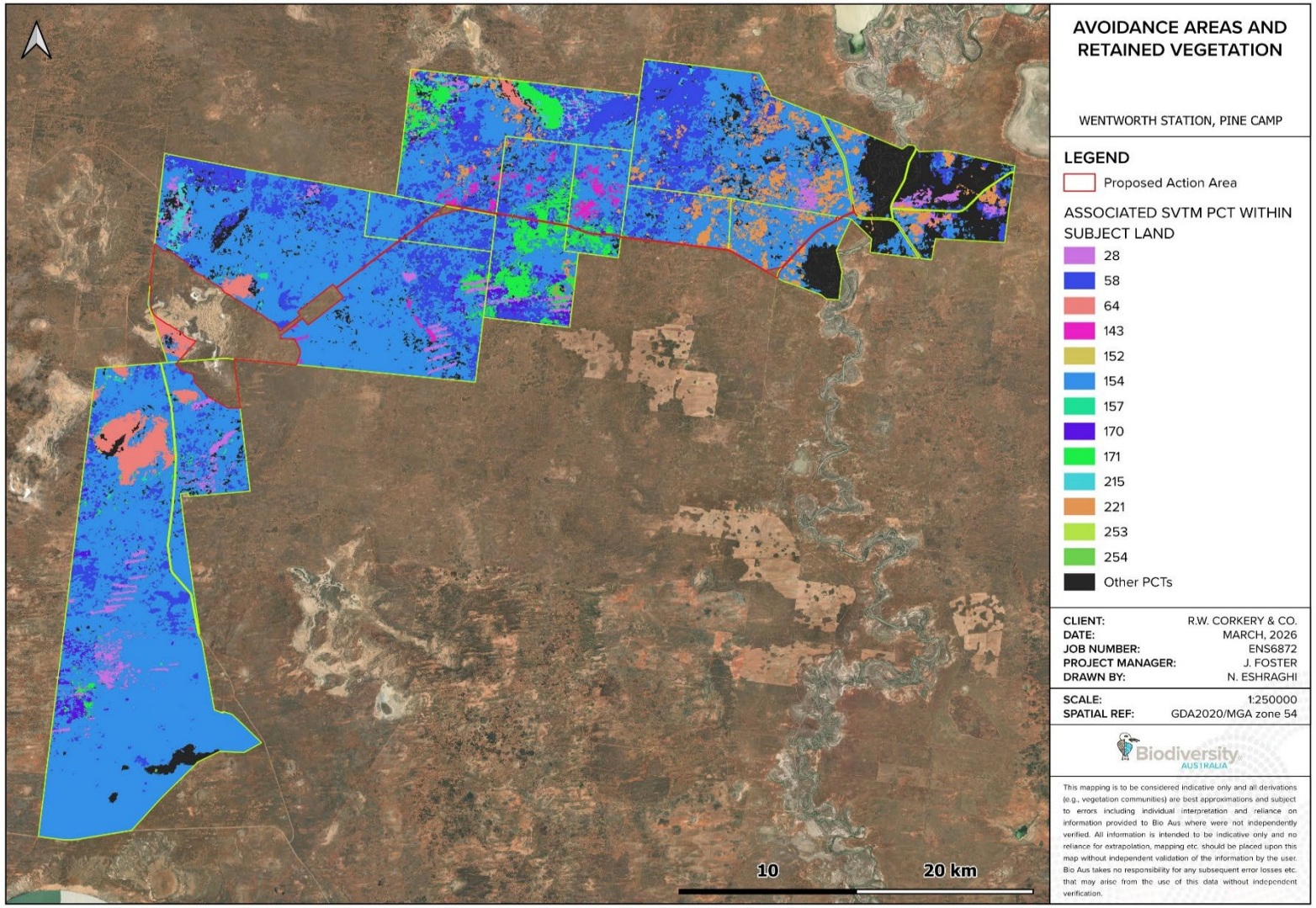

Figure 24: Avoidance areas and retained vegetation

4.12 Ecological Community Integrity Protection Buffer Zones

In addition to the avoided areas of retained vegetation which contain suitable habitat (PCTS associated with the threatened Ecological community and species), a development buffer zone has also been designed and will be applied to the outer limit of the PAA as a protective measure. This protective area will be a 30 m wide buffer zone surrounding the mine site area, and a 10 m wide buffer zone surrounding the Linear Corridor (Figure 25). The 12 PCTS associated with MNES threatened TEC and species make up the buffer zone which covers 395 ha of retained vegetated land (Table 21). The purpose of this buffer zone is to minimise the risk of indirect impacts by physically separating the ecological community from direct impacts and by identifying these elements to land managers. The buffer zone will help protect root zones of edge trees and other components of the neighbouring ecological communities from spray drift (fertiliser, pesticide or herbicide sprayed in adjacent land), weed invasion, polluted water runoff, increased dust, erosion, sedimentation and other damage. This, buffer zone is designed to primarily contain native vegetation which will effectively avoid and protect the retained patch of ecological communities surrounding the PAA. Effective buffer on the edge of patches are typically up to 30 m wide on non-linear development areas and 10m wide on linear development areas (DCCEEW 2025).

Table 21: Development protective Buffer Zone for adjacent retained ecological community

Threatened TEC or Species	Associated PCTs	Area (ha)
MBC	170 & 171	9.83
Pink Cockatoo	28, 58, 143, 152, 154, 170, 171, 221, 215, 253, 254	146.39
Southern Whiteface	28, 58, 143, 152, 154, 157, 170, 171, 215, 253	140.48
Hooded Robin	28, 58, 143, 170, 171, 215, 221, 254	45.67
Corben's Long-eared Bat	28, 58, 170, 171, 221	43.18
	Total	**385.56**

5. Impact Minimisation

The proposal would be subject to a suite of mitigation measures and environmental controls to reduce the overall impact of the development on biodiversity and ensure potential offsite impacts are minimised. Detailed descriptions of the suite of mitigation measures are provided in Biodiversity Australia's Copi Mineral Sands Project BDAR Rev 6.0 (Bio Aus 2026).

The impact Mitigation measures summary for The Project, is provided in Table 24 below.

A summary of the impact mitigation measures employed prior, during and after project actions, including descriptions of the measures, timing and responsibility and associated failure risk weightings featured in the BDAR are listed in Table 15 below. These suite of measures will be implemented during the relevant stages of the Project.

All measures to minimise impacts to the MBC, Pink Cockatoo, Hooded Robin, Corben's Large-eared Bat and Southern Whiteface are detailed in Table 15.

Specific mitigation measures are provided in the form of a Trigger Action Response Plan (TARP). The TARP addresses vegetation clearing, habitat loss and fragmentation, noise, light and vibration, increased dust, erosion and sedimentation, hydrology and environment spills, fauna injury and mortality, introduced weeds, pests, pathogens and anthropogenic impacts, and is designed to minimise the risk of direct and indirect impacts to adjacent vegetation. These TARPS are located in Table 26,

Table 27, Table 28, Table 29, Table 30, Table 31 and Table 32.

Minimisation has also been achieved by the process of numerous development design iterations which have minimised the overall impact of the haul road (within the linear corridor) and the associated impacts to land adjacent to the proposed road.

5.1 Protection and Rehabilitation of Retained Vegetation

The Subject Land contains areas of significant Biodiversity Value, namely the forested areas to the north-west of the PAA. These areas comprise good-moderate quality woodland vegetation and abundant habitat features that will be retained. Whilst the quality of vegetation varies across the Subject Land, the areas to be retained contains the highest quality vegetation and is comprised of communities of mature trees, with minimal weed invasion, established ground layer habitat and an abundance of hollow logs and woody debris (See Table 34). The design of The Project avoids these areas of higher quality vegetation. Areas where vegetation has been cleared will be subject to ecological rehabilitation. The specific requirements including the objectives, areas to be rehabilitated, measurable outcomes, timing and monitoring will be detailed in a Rehabilitation Plan.

The development protective buffer zone (30 m) surrounding the entire site, shown above in Figure 25 adds an extra layer of protection for retained adjacent ecological communities at risk of indirect impacts.

5.2 Biodiversity Management Plan

A Biodiversity Management Plan (BMP) will be developed following approval of the proposed development and Environmental Impact Statement (EIS) outlining the findings of the extensive Environmental Impact Assessment for The Project. The BMP will commence with flora and fauna monitoring to establish a baseline. This baseline, and the findings of this BDAR, will serve as a benchmark for future surveys, enabling comparisons and measurement of potential impacts over time. The

document will then outline an adaptive management plan designed to identify, address, and mitigate adverse ecological impacts associated with the proposed action.

A number of adaptive management plans will be prepared to address specific biodiversity impacts and outline mitigation measures to be implemented during all phases of The Project including:

- Weed and Pest Management Plan (all phases),
- Rehabilitation Plan (construction and operation phases),
- Soil Erosion & Sediment Control Plan (pre-construction and construction phases),
- Air quality Management Plan (construction and operation phases),
- Topsoil Management Plan (construction and operation phases),
- Vegetation Management Plan (all phases),
- Traffic Management Plan, and
- Waste Management Plan.

An overall Construction Environmental Management Plan (CEMP) will also be prepared to mitigate and manage impacts such as noise and light pollution. This plan will describe:

- Risk Assessment,
- Objective,
- Environmental Management Activities and Mitigation Measures, and
- Action and timing.

The monitoring program, may include:

- Roles and responsibilities (clearly stating who is responsible for each activity),
- Performance indicators against achievements and outcomes that are to be measured in an accurate and reliable methodology. (e.g. BAM 2024/2025 baseline survey),
- Monitoring requirements (timing and frequency of monitoring to detect changes in the performance indicators, to determine outcome achievement, and inform adaptive management),
- Trigger values for corrective actions, and
- Auditing and review mechanisms.

Monitoring of retained vegetation areas will be undertaken throughout the life of The Project. Remnant vegetation will be monitored for foliar discolouration, partial, or complete defoliation, increased pathogenic diseases, tree death and dust deposition as indicators of vegetation impacts. In areas where natural regrowth is not sufficient to replace dead trees, replanting will be undertaken.

The BMP will also monitor potential impact sources to ensure they are mitigated or remain within acceptable levels and define trigger points that will determine when and how interventions are required. For example, if depositional dust is found to be impacting plant health along the Linear Corridor, requests may be made to reduce speed limits and increase the frequency of water trucks to dampen the road surface and minimise dust. Potential impact sources that will be monitored include:

- Weed invasion,
- Noise levels,
- Light disturbance,
- Feral animals,
- Dust levels and Sediment Control, and
- Rubbish dumping, wood collection and bush rock removal.

Additionally, the BMP will describe protocols and procedures to minimise injury and mortality to wildlife throughout the proposed development's construction and operational phases, including:

- Environmental inductions,
- Pre-clearing surveys,
- Clearing supervision,

- Hollow Bearing Tree removal protocol, and
- Documenting instances of fauna injury or mortality.

5.3 General Clearing Measures

The following measures are recommended to manage clearing:

- Site induction is to specify that no clearing is to occur beyond the marked area. All vehicles are only to be parked in designated areas,
- Outline vegetation clearing protocols, including sequential/stage clearing requirements,
- Clearing and earthworks are to avoid damage to root zones of retained trees,
- No materials or fill are to be placed under retained trees or within adjacent vegetation, and
- Weeds are not to be mulched with native vegetation and must be taken to a licenced landfill facility.

5.4 Pre-clearing Survey and Clearing Supervision

The clearing extent is to be inspected for fauna by a suitably qualified or experienced person immediately prior to commencement of any vegetation removal involving machinery and/or tree-felling. This is to occur each morning if clearing spans over multiple days/weeks. Pre-clearing checks would include searches of habitat (e.g. lifting and destructive searches of logs) and searches for bird nests. Any detected fauna is to be relocated off-site to nearby suitable areas (preferably within their natural home range) prior to clearing.

During the pre-inspection, any habitat features detected (e.g. hollows, logs, nests) are to be clearly marked with flagging tape to allow easy identification during clearing.

- A suitably qualified or experienced person must be present on site to supervise all clearing works to retrieve any fauna detected during works and undertake appropriate action (e.g. humanely euthanise severely injured animals and/or relocate uninjured animals). The fauna spotter must also be present during de-watering of any temporary water bodies on the site to rescue and relocate any potential stranded aquatic fauna species, and
- A report detailing the results of the clearing monitoring is to be provided to the consent authority within 14 days of works completion.

5.5 Hollow-bearing Tree Removal

Hollow-bearing trees are to be felled in a manner that will minimise the risk of injury/mortality of denning/roosting fauna within the limitation of Work Health and Safety (WHS) Guidelines. This is suggested to be achieved by the following general procedure:

- The hollow-bearing trees are to be gently bumped several times prior to removal to encourage any fauna present to vacate,
- Trees are to be felled in a manner that minimises injury to fauna. This includes gently pushing or ‘soft felling’ with an excavator or gradual cut down by an arborist,
- A suitably qualified or experienced person is to be present during felling and sectioning of the hollow-bearing tree (at the proponent’s cost) in case of animal injury. Hollows are to be inspected for fauna once the tree is deposited. All uninjured animals are to be released in the retained habitat on site, and
- If the hollow is determined to be occupied and fauna do not require assistance (e.g. roosting bats), the entrance is to be blocked, and the log placed in a shaded and protected area on the edge of the site. The obstacle is to be removed just prior to dusk to allow passive escape of the fauna within. The log may then be removed if required.

Upon completion of this exercise, a brief written report (with photos) detailing the above is to be submitted to Council within 14 days of the removal of the hollow-bearing trees.

Table 7 below outlines mitigation measures for the project. Table 8 through Table 14 below, provide examples of adaptive management measures which must be used where applicable throughout each of the management plans.

6. Impact Mitigation

All measures to mitigate impacts to the MBC, Pink Cockatoo, Hooded Robin, Corben's Large-eared Bat and Southern Whiteface are outlined in Table 24 below. Further to this, specific actionable mitigation measures are addressed by the TARPs located in Table 25, Table 26, Table 27, Table 28, Table 29, Table 30 and Table 31. The 'at risk' areas on the edge of patches where PCTs may be indirectly impacted are shown in Table 22. Areas of adjacent vegetation at risk of indirect impacts are shown in Table 23 below. Areas where Indirect Impacts to adjacent retained ecological communities are illustrated in Figure 25.

Table 22: Associated PCTs at risk of indirect impacts adjacent to the PAA

PCT	143	152	154	157	170	171	215	221	253	28	58	64	Total
Area (ha)	2.06	8.89	91.08	7.85	6.26	3.57	0.43	13.75	0.74	0.21	19.38	5.84	182.554

Table 23: Suitable Habitat at risk of indirect impacts adjacent to the PAA

Entity	MBC	Pink Cockatoo	Southern Whiteface	Hooded Robin	Corben's Long-eared Bat	Total
Area (ha)	9.8	146.4	140.5	45.7	43.2	**385.56**

Table 24: Mitigation measures summary for The Project

Impact	Number	Mitigation Measures	Timing	Responsible Party	Risk of Failure
Project Planning	P-1	The preparation and planning of or implementation of the below management plans must be completed prior to construction works commencing. • Operational Environment Management Plan • Construction Environment Management Plan • Biodiversity Management Plan • Vegetation Management Plan • Rehabilitation Management Plan • Research Plan • Rehabilitation Research Plan • Revegetation Research Plan • Translocation Plan • Biosecurity Management Plan • Soil Erosion and Sediment Control Plan • Air Quality Management Plan • Topsoil Management Plan • Stormwater and Runoff Management Plan • Traffic Management Plan • Waste Management Plan The above plans are required to outline the following: • Responsible Parties for each management action • Responsible parties for auditing and compliance • Environmental objectives and outcomes • Spatial mapping • Performance criteria/ milestones • Completion Criteria • Evidence based risk assessment • Monitoring and auditing requirements • Compliance Reporting requirements • Contingency/Adaptive management measures The above plans will be prepared by suitably qualified personnel and reviewed by RW Corkery and RZ Resources Limited prior to implementation.	Pre construction (Plans updated as required)	Construction Manager, Health, Safety and Environment (HSE) Manager	Low
	P-2	The Biodiversity Management Plan must be prepared identifying the Flora and Fauna mitigation measures for each phase of The Project. The BMP will include strategies to limit and reduce potential impacts on vegetation and habitat. Primary objectives of the plan will blueprint:	Pre construction (Plans updated as required)	Construction Manager, Health, Safety and Environment (HSE) Manager	Low

Impact	Number	Mitigation Measures	Timing	Responsible Party	Risk of Failure
		• Roles and responsibilities of personnel and auditing plan. Details of relevant flora and fauna (especially threatened species) to be protected during all phases of The Project, including: • Extent and conditions of the habitats within the PAA. • Species, habitat and breeding places/season. • Protocols to limit fauna injury and mortality, including management risks associated with open excavations, increased traffic and responses and reporting for roadkill and adverse incidents. • Protocols to ensure The Project does not provoke threats to fauna habitat, including exotic species (weeds/pests), road incidents and bushfires. • Display plans of areas to be cleared in stages and areas to be protected, including fauna movement corridors, habitat features, 'no go zones' and rehabilitation areas. • Pre-clearing protocols, including pre-clearing inspections, establishment of exclusion zones and ground identification of specific habitat features to be inspected and possibly retained. • Framework vegetation clearing protocols, including fauna relocation management procedures and any specified seasonal limit on clearing activities. • Display plans of the area to be impacted within the PAA and adjoining areas outlining the location of key constraints including Native Vegetation, flora and fauna habitat, nests and breeding places. • Demands for temporary and permanent fencing to minimise the risk of fauna injury/mortality due to vehicle strike or entrapment during excavations. • Unpredictable threatened species find procedures, including outlining the process of stopping works, engaging a qualified ecologist to confirm the presence, contacting government regulators, securing any approvals required and restarting work. • Revegetation and Rehabilitation requirements for disturbed areas, no longer required for active use or construction, particularly within Native Vegetation, threatened species habitat, watercourses and drainage features. • Inclusion of various related sub plans • Vegetation Management Plan • Rehabilitation Management Plan • Fauna Management Plan • Stormwater and runoff Management Plan • Soil Erosion and Sediment Control Plan • Biosecurity Management Plan • Traffic Management Plan			

Impact	Number	Mitigation Measures	Timing	Responsible Party	Risk of Failure
		• Waste Management Plan • Air Quality Management Plan • Research Plan • Rehabilitation Research Plan • Revegetation Research Plan • Translocation Plan			
	P-3	A Vegetation Management Plan (VMP) is to be prepared, implemented and audited as part of the OEMP, CEMP and BMP. The constitutional objectives of the plan will display: • Roles and responsibilities of personnel implementing and auditing the plan. • Requirements for clearing vegetation around saline plains and drainage features. • Display maps and plans of the areas to be cleared and areas to be protected, 'No go Zones,' and proposed rehabilitation areas. • Outline pre-clearing protocols including establishment of exclusion zones and on-ground inspection of vegetation to be retained. • Outline vegetation clearing protocols, including sequential/stage clearing requirements • Protocols to reclaim and relocate woody debris, tree hollows and boulders/rocks. • Design and construction solutions are to be explored to minimise impacts to vegetation proposed for retention during construction following AS4970-2009 – Protection of trees on development sites and AS43-73-2007- Pruning of amenity trees. • Locate infrastructure and construction amenities and areas (Access, laydown areas, site offices, parking, fencing, stockpiles and storage) within cleared or disturbed areas, outside of the exclusion zones or vegetation to be retained. • Inclusion of various related subplans • Rehabilitation Management Plan • Stormwater and runoff Management Plan • Soil Erosion and Sediment Control Plan • Biosecurity Management Plan • Waste Management Plan • Research Plan • Rehabilitation Research Plan	Pre construction (Plans updated as required)	Construction Manager, Health, Safety and Environment (HSE) Manager	Low

Impact	Number	Mitigation Measures	Timing	Responsible Party	Risk of Failure
		• Revegetation Research Plan			
	P-4	Prepare, implement and audit an Erosion and Sedimentation Control Plan (ESCP) and Stormwater and runoff management plan following the International Erosion Control Association Australasia (IECA). *'Best Practice Erosion and Sediment Control Document'* (IECA, 2008) as part of the CEMP and outlining measures for the prevention of erosion and sedimentation during construction. The ESCP must include: • Suitable measures for erosion prevention including treatment of all bare exposed ground with the adequate crusting agent during extended construction works as soon as practicable upon construction completion. • Planning to minimise risk and manage sedimentation. • Chemical Spill Procedures to manage potential contaminants during construction. Refuelling, chemical storage and maintenance activities are undertaken in designated areas away from environmentally sensitive areas. Containment areas will be designed and managed following relevant regulatory requirements and standards. Include groundwater quality monitoring and management measures.	Pre construction (Plans updated as required)	Construction Manager, Health, Safety and Environment (HSE) Manager	Low
	P-5	Prepare, implement and audit a Traffic Management Plan for the movement of vehicles within the Subject Land. This Plan must identify mitigation measures and adaptive management actions to mitigate the impacts of increased traffic within the Subject Land. Mitigation measures must include but are not limited to: • Speed Restrictions • Fauna movement devices • Fauna awareness signage • Identification of Fauna hotspots • Speed control devices Vehicle movement exclusions/reductions (reduction of vehicle speed and numbers during dusk and dawn)	Pre construction (Plans updated as required)	Construction Manager, Health, Safety and Environment (HSE) Manager	Low
	P-6	Prepare, implement and audit a Biosecurity management plan (BSMP) as part of BMP, OEMP & CEMP The BSMP must identify site specific mitigation measures to reduce the impacts of weeds, pests and pathogens on native vegetation within the Subject Land. Management measures must include but are not limited to: • Preclearance Weed Census	Pre construction (Plans updated as required)	Construction Manager, Health, Safety and Environment (HSE) Manager	Low

Impact	Number	Mitigation Measures	Timing	Responsible Party	Risk of Failure
		• Targeted annual Weed Species Census • Methods for prevention of introduction and/or spread of weeds, pests and pathogens. • Weeds, pests and pathogens monitoring, management measures and control. • Targeted Monthly Weed surveys in high traffic areas, washdown areas, around water sources and pathways, disturbance roadsides, storage and stockpiles. Locations of surveys to be confirmed after an initial sitewide survey which identifies key areas of concern and included these in the BSMP and VMP. • All plant and machinery present on site and entering the site is certified as weed free • All plant, vehicles, equipment, PPE and clothing must be adequately cleaned and free of weeds, dirt and other materials that may contain weed seeds or pathogens prior to entering and exiting the subject Land. • Appropriate collection and disposal of all weed material to a licensed facility • Ongoing weed management throughout all stages of the development including the operational phase and rehabilitation. • New weed invasions are controlled within 2 weeks of identification • Exclusion fencing installed to mitigate the spread of weeds into adjacent retained vegetation • Monthly Monitoring of adjacent vegetation for weed infestations			
	P-7	Prepare, implement and audit a Waste management plan as part of BMP, OEMP & CEMP The WMP must identify site specific mitigation measures to reduce the impacts of waste generated from increased anthropogenic impacts within the region. Mitigation measures must include but are not limited to; • Identification of waste disposal facilities • Monitoring program • Adaptive management measures • Waste management protocols i.e. monthly waste inspection, monthly waste collection etc.	Pre construction (Plans updated as required)	Construction Manager, Health, Safety and Environment (HSE) Manager	Low
General	G-1	All site personnel to attend environmental training as part of the work site induction prior to entering the work site. All personnel will be instructed on their obligations for vegetation clearing protocols, maximum speed limits and biosecurity procedures.	Pre-construction, construction and operation.	Construction Manager, Health, Safety and Environment (HSE) Manager	Low

Impact	Number	Mitigation Measures	Timing	Responsible Party	Risk of Failure
	G-2	Preparation, implementation, review and planning of management and mitigations actions outlined within the plans identified in Section 5.2	Pre-construction, construction and operation.	Construction Manager, Health, Safety and Environment (HSE) Manager	Low
Vegetation Clearing, habitat loss and fragmentation	V-1	Minimise the clearing footprint wherever feasible including avoiding/minimising clearing to mapped and ground-truthed Biodiversity Values, threatened species and communities, saline plains, groundwater, watercourses and drainage features and Native Vegetation.	Pre-construction	Project Design Team, Construction Manager, HSE Manager, Qualified Ecologist	Medium
	V-2	Safeguard vegetation clearing boundaries and 'No go Zones' for areas that may support HBT, threatened species breeding, foraging and shelter habitat, active microhabitat features and within proximity of watercourses and saline plains are established with appropriate signage and visible and physical markings. High visibility tape, barricade webbing or similar must be applied. If fencing or flagging is in poor condition, it must be replaced as practical to reduce the potential of accidental disturbance or clearing.	Pre-construction & Construction		Low
	V-3	Temporary construction areas will be rehabilitated as soon as possible after the completion of construction and operation works to reconnect fragmented habitats. This will be reflected where appropriate in the VMP and RMP.	Construction	HSE Manager	Medium
	V-4	A qualified fauna spotter catcher must be engaged prior and during any vegetation clearing to ensure that legislative obligations related to protect native fauna are met. The responsibilities of the fauna spotter catcher will ensure that: • Hollows to be inspected prior to clearing using inspecting cameras, work platforms, or other suitable methods. • Clearing only occurs once a spotter/catcher gives sign off that vegetation has been inspected and is clear of native fauna present within the area. • Clearing commence within areas with least connectivity and directs fauna towards retained areas, towards Native Vegetation surrounding the PAA. • Clearing in sequence to ensure adequate time for fauna to find refugia towards retained areas.	Pre-construction & Construction	Construction Manager, HSE Manager, Fauna Spotter Catcher	Low
	V-5	During Vegetation Clearing: • Qualified fauna spotter catcher to be present at all times.	Construction		Low

Impact	Number	Mitigation Measures	Timing	Responsible Party	Risk of Failure
		• Undertake stage clearing sequences to minimise the amount of clearing in one time • Stockpile cleared vegetation within clearing limits and retained topsoil and vegetation for on-site rehabilitation. • Hollow Bearing Trees to be slow felled to minimise the chances of fauna injury or death and must be inspected by a qualified fauna spotter catcher to confirm no injured wildlife is present.			
	V-6	If works extend outside of the approved impact area, a record is to be created in the incident management provisions, and an investigation will be undertaken as to why works extend outside the approved area.		Construction Manager, HSE Manager	Medium
	V-7	Exclusion fencing along the Linear Corridor PAA will include installation of one-way fauna movement devices allowing fauna within the PAA to move out of the PAA. These devices will be installed at 1 km intervals on alternating sides of exclusion fencing along the linear corridor PAA.	Pre-construction, Construction	Construction Manager, HSE Manager	Medium
Noise, light and vibration	N-1	The BMP OEMP and CEMP are required to include measures to monitor and mitigate the air quality, noise and vibration risks associated with the proposed activity in accordance with the *Construction Noise and Vibration Strategy* (Transport for NSW, 2019), Construction Noise Guideline (DECC, 2009), especially in areas with proximity of EECs or threatened species habitat. The BMP and CEMP would include a noise and vibration management plan to provide the framework for managing and mitigating potential construction noise and vibration impacts. Specific and active construction noise and vibration impact statements would detail standard and additional mitigation measures to be implemented based on predicted noise levels.	Pre-construction	Construction Manager, HSE Manager	Medium
	N-2	Restrictions of operational and construction work hours to daylight periods. Where night works are required, lights must be directed to minimise light spills into adjacent habitats and to reduce noise and vibration impacts on nocturnal fauna species.	Pre-construction, construction and operation.		
	N-3	Wildlife-friendly lighting must be considered, designed and installed where suitable. For example, light impacts are to be minimised through the use of sensor lighting for low traffic areas and/ or directional lighting for high traffic areas.			
	N-4	Construction vehicles must comply with maintenance schedules and operational restrictions designed to limit noise and light spill impacts during construction and operation phases.			

Impact	Number	Mitigation Measures	Timing	Responsible Party	Risk of Failure
	N-5	Where vibration levels are predicted to outpace the screening criteria, a more detailed assessment of the structure and vibration monitoring must be undertaken to ensure vibration levels remain below appropriate limits for that structure.			
	N-6	Monitoring stations for Noise and vibration are required to be installed within 1.5km of the mine site PAA to monitor impacts on fauna and vegetation.			
	N-7	Important fauna habitat within 1.5km of the mine site PAA will be identified prior to construction works. Monitoring of these locations will be undertaken prior to, and during/following activities that result in and increase in noise and vibration i.e. blasting and vegetation clearing.			
Increased dust	D-1	The BMP, CEMP and OEMP are required to include monitoring of air quality and dust creation. Monitoring must include stationary monitoring devices placed strategically within and outside the PAA to monitor dust levels.	Pre-construction, construction and operation.	Construction Manager, HSE Manager.	High
	D-2	Dust suppression devices must be utilised throughout the PAA. These will include but are not limited to; water carts, impermeable membrane covers and sprinkler systems.			
	D-3	Dust suspension monitoring to be carried out within proximity of EECs, internal unsealed access roads and other disturbed areas. Whenever possible engage watering polymer application to limit generation of dust.			
	D-4	All temporary stockpiles are to be covered, stabilised and/or moistened as required to minimise dust generation.			
	D-5	Dust inspections are to be undertaken daily to ensure construction activities are not generating excessive dust near sensitive receivers specified in the CEMP.			
Erosion and Sedimentation, hydrology and Environmental spills	E-1	All drainage and hydrological features to comply with accepted development requirements for operational work. These standards will be clearly outlined in the CEMP.	Pre-construction, construction.	Construction Manager, HSE Manager.	Low

Impact	Number	Mitigation Measures	Timing	Responsible Party	Risk of Failure
	E-2	Monitoring soil and groundwater salinity. The most salt tolerant species *Tecticornia pergranulata* subsp. *pergranulata*, which is an indicator species for PCT 64, is not likely to be able to utilise groundwater with such extreme salinity levels of 61 g/l (10,167 mS/m). Groundwater within the Assessment Area is likewise too saline to support other, less salinity tolerant plant community types, such as Groundwater Dependent Ecosystems (GDEs).			Low
	E-3	Monitoring of Vegetation Integrity Plots within PCT 154 and PCT 64 outside of the PAA to identify impacts of hydrological changes within the region.	Pre-construction, construction, operation and rehabilitation	Site Environmental officer,	Low
Fauna Injury and Mortality	F-1	Prepare, implement and audit a Traffic Management Plan that outlines the current and expected flow of vehicle (and pedestrian) movements and identifies potential collision points for terrestrial fauna along the PAA – Linear Corridor.	Pre-construction, construction.	Construction Manager.	Low
	F-2	Speed limits on arterial roads and on/off ramps with appropriate signage. It is recommended vehicles maintain a designated speed limit of 80 km/hr or lower along arterial roads and on/off ramps within the Proposed PAA.	Construction and operation.	Construction Manager.	High
	F-3	Vehicle operations to be limited during dawn and dusk periods to avoid fauna collision with nocturnal animals while visibility is impaired. Where operations must be conducted, vehicle speeds are to be reduced by at least 50% to increase response time to potential fauna collisions.			Medium
	F-4	Vehicle access exclusion fencing to be established around cleared areas in locations of known threatened fauna habitat, or activity to prevent wildlife from returning to work areas.			Medium
	F-5	Install fauna awareness signage in locations along access tracks where native fauna are likely to cross.			Low
	F-7	Rehabilitation of temporary construction areas is to be undertaken sequentially and as soon as practicable after clearing. If areas cannot be rehabilitated, temporary fencing is to be erected to avoid fauna injury/mortality.	Pre-construction, Constructions, Operation, Rehabilitation	Construction Manager, HSE Manager.	Medium
	F-8	Install temporary fencing around deep trenches where fauna has the potential to be entrapped.	Pre-construction, construction.	Construction Manager, HSE Manager	Low

Impact	Number	Mitigation Measures	Timing	Responsible Party	Risk of Failure
	F-9	It is recommended that the boundary of the PAA is fenced to exclude fauna from the within PAA. It is also recommended that Fauna exclusion fencing must: • be of a suitable height to exclude all local fauna • be dug into the ground to prevent burrowing fauna from entering the PAA • contain minimal barbed wire • not include 90^{O} corners to reduce injury to fauna • gaps, entry and exit points in exclusion fencing will include "wings" to guide fauna away from the entrance and fauna deterrent sirens to reduce the potential movement of fauna into the PAA • include the installation of one-way fauna movement devices allowing fauna within the linear corridor PAA to move out of the PAA. These devices must be installed on alternating sides at 1 km intervals along exclusion fencing for the linear corridor PAA.	Installation (Pre-construction and Construction) Maintenance and monitoring (Construction, Operation and Rehabilitation)	Construction Manager, HSE Manager, Site Enviro	Low
Introduction and spread of weeds, pests and pathogens	W-1	Prepare implement and audit a Biosecurity Management Plan. All reasonable and practical measures must be considered to minimise the risks and threats associated with weeds, pests and pathogens. Mitigation measures may include but are not limited to: • Designated washdown facilities • Designated Boot scrub stations • Weed and seed certification of machinery, equipment and vehicles entering the Subject Land • All vehicles, machinery and equipment are to be free of all weed seed, debris and soil prior to entering and exiting the Subject Land • Designated parking areas for vehicles and machinery • Installation of cattlegrids to reduce the spread of soil, mud and debris from vehicles entering and exiting the Subject Land • Ongoing Weed and Pest management within the Subject Land and PAA. • Annual weed census monitoring • Monthly weed census monitoring of infested areas, dispersal pathways and disturbed areas. • Installation of exclusion fencing along the boundary of the PAA to prevent works from entering and impacting adjacent retained vegetation.	Pre-construction, construction.	Construction Manager, HSE Manager	Medium

Impact	Number	Mitigation Measures	Timing	Responsible Party	Risk of Failure
		• Treatment of new weed infestations within 2 weeks of identification and prior to seeding • Appropriate collection, storage and disposal of weed materials to a licensed facility.			
	W-2	Commence a pre-clearance weed census and reporting displaying the requirements for treatment and management actions, which are to be implemented and reported in accordance with the OEMP, CEMP, BSMP, BMP and VMP.	Pre-construction, construction.		
	W-3	Install and maintain appropriately designed exclusion fencing around the PAA to prevent access by herbivores (kangaroos, goats, rabbits) and other feral grazers, protecting vegetation from browsing and grazing impacts.	Pre-construction, construction	Construction Manager, HSE Manager	Medium
	W-4	Removal of Goats from the PAA and Subject Land in accordance with the methodologies outlined within the Biosecurity Management Plan (BSMP) (i.e. Trapping and ground shooting).			
Anthropogenic impacts	A-1	Mitigation measures and monitoring rubbish dumping is to be promoted, implemented and audited as part of the Biodiversity Management Plan.	Pre-construction.	Construction Manager, HSE Manager	Low
	A-2	Suitable waste disposal facilities will be provided as part of the development implementation and audit of the Waste Management Plan, associated with CEMP and OEMP where information related to when and how waste must be stored and routinely transported off-site to waste disposal facilities within the LGA.	Pre-construction, construction.		
	A-3	Rocks, fallen timber and logs must remain on site and the wood collection for fire camps must not be permitted.	Construction, operation.	Construction Manager, HSE Manager	Medium

Table 25: Vegetation Clearing, habitat loss and fragmentation

Requirement	Baseline data against which monitoring will occur	Seasonal changes to resources that are relevant to the impacts being monitored	Monitoring methods (Incl. frequency, timing, reporting)	Trigger values for adaptive management actions	Adaptive management proposed to reduce or eliminate impact	Information necessary to measure the impact over time	How results will be applied to ongoing management to reduce extent of impacts
Pre-Clearance, Clearance and habitat loss	Records of potential suitable habitat features such as Hollow Bearing Trees (HBT), stick nests, rocky outcrops, decorticating bark etc. Pre-clearance survey throughout entire Subject Land to identify, record/flag habitat features and identify threatened fauna and flora present. Report containing results of preclearance survey to be prepared and used to guide clearance activities.	Local seasonal and climate, migratory patterns and environmental conditions may influence presence and movement of fauna within the site.	Methodical Inspection & recording of all habitat features prior to clearing is crucial to prevention of habitat loss, fauna injuries and fatalities. Habitat features physically marked with flagging tape, and GPS co-ordinates were noted to record the locations of habitat features.	Identify and record potential suitable habitat and/or instances of fauna presence. Habitat features identified must be recorded, marked and factored into relocation plan.	Preclearance inspection habitat and Fauna records to guide clearance activities. Suitable qualified/experienced professional spotter/catcher present to monitor and manage fauna interactions during the clearing activities. Removal of habitat features and relocation to a designated holding area for later placement into suitable adjacent/nearby bushland or conservation area. Where impact levels have been exceeded initiate investigation. Prepare short report outlining the investigation into the impacts.	Location of potential suitable habitat recorded. New location of relocated potential suitable habitat determined and recorded. Location of mechanically created artificial hollows and nest boxes placed in rehabilitated areas to be recorded and monitored to ensure densities are maintained over time.	All potential suitable habitat identified, recorded and relocated into suitable adjacent/nearby bushland or conservation area. Where installation of mechanically created artificial hollows and nest boxes into rehabilitated areas has occurred, replacements will be provided when densities do not match preclearance numbers.
Fragmentation	Mapped retained remnant native vegetation patches which provide potential suitable habitat.	Local seasonal and climate, migratory patterns and environmental conditions may influence presence and movement of fauna within the site.	Biannually analysis of mapped retained remnant native vegetation patches.	Any reduction in mapped retained remnant native vegetation patch area.	Inclusion of fragmentation avoidance and reduction in VMP. Planned revegetation in areas considered to reduce fragmentation.	Mapping, analysis and on-ground inspections included in annual/biannual monitoring plan.	Success of prior revegetation to guide application of management to areas considered for defragmentation.

Table 26: Noise, light and vibration

Requirement	Baseline data against which monitoring will occur	Seasonal changes to resources that are relevant to the impacts being monitored	Monitoring methods (Incl. frequency, timing, reporting)	Trigger values for adaptive management actions	Adaptive management actions proposed to reduce or eliminate impact	Information necessary to measure the impact over time	How results will be applied to ongoing management to reduce extent of impacts
Noise, Light and Vibration	Noise, light and vibration data has been collected by RZ Resources at multiple monitoring stations located across the Subject Land since July 2024. This data will continue to be built upon.	Seasonal weather patterns will impact each of the metrics recorded and monitored. Wind speed and direction, cloud cover, rainfall intensity and duration.	A data gathering project has been in effect since RZ installed monitoring stations across the Subject Land in July 2024. Daily reports containing hourly values are received.	Trigger values for light spill, vibration and noise will be in line with mine site-specific regulations and industry standards.	Wherever a trigger value has been exceeded for noise, light or vibration, the project manager will initiate investigation/report and management actions outlined in the appropriate adaptive management plan. Actions include review of shift activities roster, inclusion of proposed reductions in site prestart meetings. Prepare a short report outlining the investigation into the changes.	Use of baseline data to compare pre-approval values with post-approval activities and known periods where triggers are reached.	Regular monitoring of noise, light, vibration data to ensure mine activity does not exceed triggers. Consistent notifications where noise, light, vibration trigger events occur, so operators are aware and can modify activities in line with noise, light, vibration regulations.

Table 27: Increased dust

Requirement	Baseline data against which monitoring will occur	Seasonal changes to resources that are relevant to the impacts being monitored	Monitoring methods (Incl. frequency, timing, reporting)	Trigger values for adaptive management actions	Adaptive management actions proposed to reduce or eliminate impact	Information necessary to measure the impact over time	How results will be applied to ongoing management to reduce extent of impacts
Dust pollution	Dust data collected by RZ Resources since July 2024 This data will continue to be built upon.	Seasonal weather patterns will impact the dust metric recorded and monitored. Wind speed and direction, rainfall intensity and duration.	A data gathering project has been in effect since RZ installed monitoring stations across the Subject Land in July 2024. Daily reports containing hourly values are received.	Trigger values for dust generation will be in line with mine site specific regulations and industry standards.	Wherever a trigger value has been exceeded for dust, the project manager will initiate investigation/report and management actions outlined in the appropriate adaptive management plan. Actions include dust suppression tanker watering, review of shift activities roster, inclusion of proposed reductions in site prestart meetings. Prepare a short report outlining the investigation into the changes.	Use of baseline data to compare pre-approval values with post-approval activities and known periods where triggers are reached.	Regular monitoring of dust data to ensure mine activity does not exceed triggers. Consistent notifications where dust value trigger events occur, so operators are aware and can modify activities in line with dust regulations.

Table 28: Erosion and Sedimentation, hydrology and Environmental spills

Requirement	Baseline data against which monitoring will occur	Seasonal changes to resources that are relevant to the impacts being monitored	Monitoring methods (Incl. frequency, timing, reporting)	Trigger values for adaptive management actions	Adaptive management actions proposed to reduce or eliminate impact	Information necessary to measure the impact over time	How results will be applied to ongoing management to reduce extent of impacts
Erosion & Sedimentation	Relevant PCT VI plot assessments undertaken during 'average' and/or 'dry' benchmark conditions for ground cover, leaf litter and exposed/bare earth.	Seasonal rainfall will determine benchmarks against which VI plot scores will be compared. Soil erosion and sedimentation monitoring must be undertaken following high rainfall events.	Annual VI plot monitoring throughout relevant PCTs where risk of erosion is elevated. Erosion control Performance Criteria will be detailed within a Rehabilitation Management Plan. Continued failure to achieve erosion Key Performance Indicators in the same area may require additional alternative control measures detailed within the Adaptive Management Biodiversity Strategy BMP.	If VI plot scores fall below the baseline for 2 consecutive years. Greater than 20% change in sedimentation baseline levels after rainfall. Sheet erosion – Minor: Shallow soil deposits downslope, Moderate: Partial exposure of roots; moderate soil deposits downslope, Severe: Loss of surface horizon; subsoil exposure; root exposure; substantial soil deposits downslope. Rill/Gully Erosion – Minor: <15 Rills and <0.3m deep, Moderate: 15-30 rills and <0.3m deep, Severe: >30 rills and / or any >0.3m deep.	Engage Geologist and hydrologist to investigate remediation actions. Increase monitoring to monthly to determine trends in sedimentation. Application of measures such as sediment fencing, direct seeding, hydro mulching, placing tree logs and brush matting across cleared areas. Erosion infilling is to be undertaken by the placement of gravel and or clean sand via manual application. Prepare a report outlining the investigation into the changes	VI plot ground cover and leaf litter cover score trends. Sedimentation trends	Results of investigations into the causes of relevant VI plot value declines and sedimentation changes will be used to inform ongoing management.
Hydrology and Environmental spills	Establish hydrology baseline through water sampling of Salt Lakes prior to impacts	Effects of seasonal rainfall must be considered.	Monitoring methods are to follow those outlines in the Copi Mineral Sands Project Groundwater Impact	Any hydrological or environmental spill occurring within the Subject Land.	Initiate emergency response including identify source and nature of hazard, PPE and site-wide protection protocols, set up a perimeter, stop/contain spill at source.	Water and soil quality – organic and inorganic compounds, sedimentation etc.	Results of investigations will outline ongoing management actions and determine if further

Requirement	Baseline data against which monitoring will occur	Seasonal changes to resources that are relevant to the impacts being monitored	Monitoring methods (Incl. frequency, timing, reporting)	Trigger values for adaptive management actions	Adaptive management actions proposed to reduce or eliminate impact	Information necessary to measure the impact over time	How results will be applied to ongoing management to reduce extent of impacts
	where achievable. Outlined within the Copi Mineral Sands Project Groundwater Impact Assessment.		Assessment. Monitoring will occur at increased frequency during actions that pose a risk of spills.		Minimise impacts, properly dispose of hazard source and cleanup contaminant – decontaminate. If the situation escalates, external emergency responders may be required and seek medical attention if required. Investigate incidents and increased soil and water monitoring at high risk areas Prepare a report outlining the investigation into the changes	Groundwater quality trends	mitigation measures are required to be implemented.

Table 29: Fauna injury and Mortality

Requirement	Baseline data against which monitoring will occur	Seasonal changes to resources that are relevant to the impacts being monitored	Monitoring methods (Incl. frequency, timing, reporting)	Trigger values for adaptive management actions	Adaptive management actions proposed to reduce or eliminate impact	Information necessary to measure the impact over time	How results will be applied to ongoing management to reduce extent of impacts
Fauna welfare	Data from the fauna management plan outlines the current and expected flow of vehicle (and pedestrian) movements and identifies potential collision points for terrestrial fauna along the PAA – Linear Corridor.	Local seasonal and climate, migratory patterns and environmental conditions may influence presence and movement of fauna within the site.	Remote cameras will record traffic activity levels and reported daily. All stages of the project.	Excessive fauna strikes Excessive disruption of fauna movements.	Reporting occurrences of vehicle strike within Subject Land and investigation of incidents. Reduce traffic movements and speed limits on the PAA – Linear Corridor to 40 km/h during dawn and dusk periods, where animal activity is likely to occur. Speed limits on arterial roads and on/off ramps with appropriate signage. Vehicles must maintain a designated speed limit of 80 km/hr or lower along arterial roads and on/off ramps within the PAA. Vehicle access exclusion fencing to be established around cleared areas in locations of known threatened fauna habitat, or activity to prevent wildlife from returning to work areas. Install fauna awareness signage in locations along access tracks where native fauna is likely to cross. Rehabilitation of temporary construction areas is to be undertaken sequentially and as soon as practicable after clearing. If they cannot be rehabilitation, temporary fencing is to be erected to avoid fauna injury/mortality. Install temporary fencing around deep trenches where fauna has the potential to become trapped.	Records of vehicle strike, roadkill for all fauna, including native and exotic mammals, reptiles, birds, and amphibians.	Results of investigations analysed and applied to traffic management plan.

Table 30: Introduction and spread of weeds, pests and pathogens

Requirement	Baseline data against which monitoring will occur	Seasonal changes to resources that are relevant to the impacts being monitored	Monitoring methods (Incl. frequency, timing, reporting)	Trigger values for adaptive management actions	Adaptive management actions proposed to reduce or eliminate impact	Information necessary to measure the impact over time	How results will be applied to ongoing management to reduce extent of impacts
Weeds, pests and pathogens	Various PCT VI plot assessments undertaken during average and dry benchmark conditions, within appropriate high risk areas. Levels of die-off, dieback, weed infestations, and plant disease/pathogen impacts.	Seasonal rainfall will determine benchmarks against which VI scores will be compared.	Annual VI monitoring throughout PCTs within appropriate high risk areas. Plant disease/pathogen inspection.	If a significant increase (>20%) in weed cover or weed species richness occurs. If VI plot scores fall below the baseline for 2 consecutive years. Instances of plant disease/pathogen impacts.	Preparation of a Weed eradication plan and/or a Weed Management Plan. Vehicle washdown/disinfectant stations at site entry points.	VI score trend report data Plant disease / pathogen, die-off, dieback, impacts report data.	Results of investigations will outline ongoing management actions and determine if further mitigation measures are required to be implemented.

Table 31: Anthropogenic impacts

Requirement	Baseline data against which monitoring will occur	Seasonal changes to resources that are relevant to the impacts being monitored	Monitoring methods (Incl. frequency, timing, reporting)	Trigger values for adaptive management actions	Adaptive management actions proposed to reduce or eliminate impact	Information necessary to measure the impact over time	How results will be applied to ongoing management to reduce extent of impacts
Human caused impacts	Establish a baseline through site condition inspection/assessments undertaken at all relevant areas of the Subject Land prior to commencing development. Data from the site-wide fencing, signage and remote camera condition, function and maintenance report.	Monitoring of the Subject Land identifies greater than 20% change in parameters	Quarterly monitoring and reporting of site condition / rubbish levels, fence and camera function.	Occurrences of rubbish detected Fences, signage and cameras are not functioning	Occurrences of rubbish within and around the Subject Land are detected, monitoring is increased and a report prepared. Rubbish collection and removal implemented. Fences, signage and cameras inspected and repaired where needed.	Data from the Quarterly report assessing fencing, signage and remote camera condition and function	Results of investigations and quarterly report will outline ongoing management actions and determine if further mitigation measures are required to be implemented

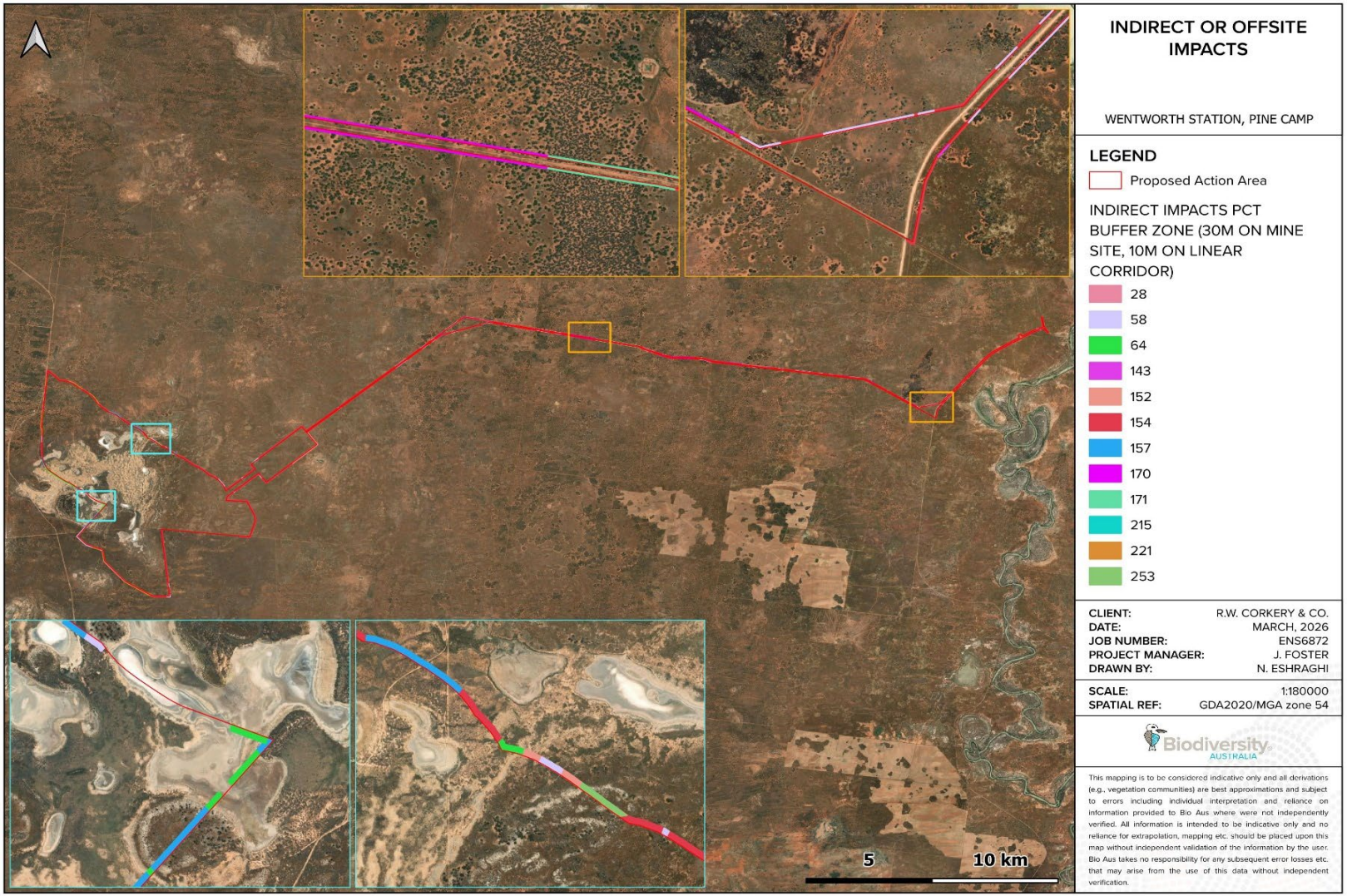

Figure 25: Indirect or Offsite Impacts

7. Proposed Offsets and Compensation Measures

7.1 Summary of Significant Impacts

Offsets are proposed to address impacts to MNES. As the NSW BAM and BOS have been endorsed by the Commonwealth, offsetting outcomes achieved through the BAM may be accepted by the Commonwealth where they are like-for-like with respect to threatened species and ecological communities listed under the EPBC Act.

Table 15 identifies the MNES entities relevant to the Project, the associated PCTs, and the combined area (ha) of PCTs that would be impacted by the Project. Table 15 also presents the PCT areas that are proposed for offset through Ecosystem Credits in the BDAR (Bio Aus 2025a) prepared in accordance with the NSW BAM and BOS.

Of the five listed MNES, four have existing offset credit identified in the BDAR (Bio Aus 2025a), and the Applicant is currently progressing the acquisition and establishment of Biodiversity Stewardship Agreements (BSA) sites to satisfy the offset requirements.

Although the MBC Threatened Ecological Community (TEC) is listed only under the EPBC Act, the Applicant considers that the proposed Ecosystem Credit offsets for PCT 170 and PCT 171 would adequately compensate for the impacts to this TEC. These PCTs are recognised as vegetation types that support the MBC and therefore provide a suitable like-for-like ecological offset. The total proposed Ecosystem Credit offset area for these PCTs (27.7 ha) exceeds the area of impacted vegetation associated with the TEC within the PAA (16.74 ha).

Given that the NSW BAM has been endorsed by the Commonwealth, the use of BAM-derived offsets for these vegetation types is considered consistent with the principles of the EPBC Act Environmental Offsets Policy, including the requirements that offsets be ecologically equivalent, proportionate to the impact, and deliver a conservation gain. Accordingly, the existing Ecosystem Credit offset requirements proposed in the BDAR (Bio Aus 2025a) are considered sufficient to address impacts to the MBC TEC, subject to the establishment and management of Biodiversity Stewardship Agreement sites (BSAs).

The Pink Cockatoo is classified as a dual credit species under the NSW BAM. Impacts to this species can therefore be offset through either species credits or ecosystem credits, depending on the habitat values present within the impact area. Field surveys undertaken for the Project did not identify any breeding habitat, such as suitable hollow-bearing nesting trees, within the PAA. As a result, species credits are not required for this species and impacts will be addressed through the ecosystem credit obligations associated with the impacted PCTs.

The Southern Whiteface, Hooded Robin, and Corben's Long eared Bat are classified as ecosystem credit species under the NSW BAM. Accordingly, impacts to potential habitat for these species are addressed through the like-for-like ecosystem credit offsets associated with the impacted vegetation communities, rather than through the retirement of species-specific credits. The ecosystem credit offsets proposed in the BDAR (Bio Aus 2025a) therefore provide appropriate compensation for impacts to habitat for these species.

7.2 Approach to Offset Package

The Applicant proposes to establish one or more Stewardship Sites within or surrounding the Mine Site to generate the majority of required ecosystem and species credits for the Project (credit requirements can be found in Section 5.7 and 5.8 of Bio Aus, (2025a)). A program to identify suitable locations for Stewardship Sites has commenced, with desktop analysis, supported by limited ground truthing, indicating that sufficient credits within the relevant Offset Trading Groups occur within the areas

assessed. Commercial negotiations with landholders and further desktop and on-ground studies were ongoing at the time of finalisation of this document.

Since submission of the Amendment Report, the Applicant has acquired Huntingfield and Sunshine Stations which are adjacent to the Mine Site. Substantial areas of PCT 171, a PCT associated with MBC TEC, were identified within the Huntingfield and Sunshine Stations during field surveys conducted in 2022 for the EIS (RWC, 2024 - Figure 7.1). While further consideration of the mineral prospectivity of this land is still required so that "sterilisation" of mineralisation areas does not occur, the Applicant intends to utilise areas of the Huntingfield and Sunshine Stations for offset of like for like biodiversity values for the Project.

In light of the above, the Applicant recognises an inherent tension between providing adequate biodiversity offsets for the Project while not sterilising mineral sands resources for future generations. As a result, the Applicant would undertake additional exploration drilling to confirm the presence/absence of mineral sand within potential Stewardship Sites.

7.3 Direct Offset

Table 32: MNES Entities and Associated Impact Areas on the PAA

MNES Entity	EPBC Act Status	Credit Type	PCT Area Associated	Impacted PCT Area (ha)
Pink Cockatoo (eastern) (*Lophochroa leadbeateri leadbeateri*)	E	Ecosystem	28, 58, 143, 152, 154, 170, 171, 215, 221, 253, 254	2,746.57
Hooded Robin (south-eastern) (*Melanodryas cucullata cucullata*)	E	Ecosystem	28, 58, 143, 170, 171, 215, 221, 254	686.62
Corben's Long-eared Bat (*Nyctophilus corbeni*)	V	Ecosystem	28, 58, 170, 171, 221	662.03
Southern Whiteface (*Aphelocephala leucopsis*)	V	Ecosystem	28, 58, 142, 152, 154, 157, 170, 171, 215, 253	2,845.65
Mallee Bird Community of the Murray Darling Depression Bioregion	E	Ecosystem	170, 171	16.72
Source: Bio Aus (2025b) – Modified after Section 8				

Table 33: Proposed Ecosystem Credit Offset PCT Areas

PCT	Proposed Ecosystem Credit Areas (ha)	BAM-C Credits
28	0.77	21
58	238.42	5,620
143	17.52	517
152	250.43	4,666
154	1669.8	21,361
157	495.38	16,702
170	15.59	152
171	12.11	287
215	5.91	48
221	395.13	8,495
253	139.72	2,852
254	1.16	26
Source: Bio Aus (2025a) Section 5.7		

8. Ecologically Sustainable Development

8.1 Economic Outcomes

The Economic Impact Assessment for the Amendment Report was prepared by Synergies (2025) and is presented as Appendix 16 of the amended report (RWC 2025). That assessment determined that the Project would contribute the following economic benefits:

- Up to 480 direct full-time equivalent employment positions during construction and 240 positions during operations,
- A net present value of $723 million over the life of the Project,
- A net benefit to NSW of $214 million, including $160 million in taxes and $126 million in royalties,
- Non-labour expenditure within the Wentworth LGA of $207 million during construction and between $54.5 million and $97.62 million each year during operations,
- Additional output within the Wentworth LGA of up to $1.28 billion during construction and $8.3 billion during operations, and
- Support for 514 full time equivalent (FTE) positions during construction and 580 FTE positions during operations within the Wentworth LGA.

Furthermore, the Applicant has committed to ensuring that the economic benefits of the Project are retained, to the extent practicable, within the Wentworth LGA and surrounding areas. The Project's workforce would preferentially reside locally, and the Applicant would provide preference to local residents in employment and local businesses for the supply of goods and services.

As a result, the Applicant contends that the economic benefits to the local, State and National economies substantially exceed potential costs.

8.2 Environmental Outcomes

The planning process in NSW requires that Applicants adequately consider, assess and value the potential environmental outcomes of development. Through multi-agency input to the assessment requirements, the priorities of all levels of government are considered and included in assessment of the Project. By taking this approach the relevant agency(ies) can determine the value that will be placed on the environmental resources within NSW. The Applicant has addressed the assessment requirements of all government agencies that had input to the assessment requirements for the Project.

The natural environment would be enhanced through the in-perpetuity conservation of land proportionate to the offsetting obligations of the Project.

8.3 Social and Equitable Outcomes

The Project would be consistent with the inter-generational principle as the economic benefits would not only be experienced by individuals directly employed at the Mine Site, but within the local community, including Wentworth LGA and surrounds as well as the State of NSW and throughout Australia. The following aspects of the Project support the inter-generational principle:

- Preferential local employment and procurement that would benefit the Community of Wentworth and surrounding areas,
- Ongoing payment of mining-related rates, royalties and other taxes to maximise the local, State and national distribution of benefits,

- The provision of opportunities for gaining off-farm income and by providing funding for community programs, the Project would continue to encourage a more diverse business base in the Wentworth LGA and the surrounding area that would benefit future generations,
- The Applicant would continue to invest in exploration that may potentially see the benefits of employment and training extending beyond the current generation, and
- The natural environment would be enhanced through the in-perpetuity conservation of land proportionate to the offsetting obligations of the Project.

Furthermore, the Project would increase the on-shore production of critical minerals and thus assist in resolving supply-chain issues for advanced manufacturing and the production of renewable energy technologies that would provide benefits for current and future generations.

Finally, the significant economic benefits to the Wentworth LGA, Far West Region, NSW and nationally through the payment of taxes, royalties and wages would provide funding for the development of local infrastructure that would be a direct benefit to future generations. This is dependent on the funding priorities of government at all levels but may include enhancement of schools, medical facilities and the funding of roads and other infrastructure. The direct economic benefits associated with the Project are from wages paid to resident employees and fees paid to local service and material providers that would substantially enhance the economic and social viability of Wentworth and surrounding areas.

8.4 Environmental Damage and Scientific Uncertainty

The precautionary principle has been applied during all stages of the Project's design and assessment. This approach has involved the following activities that are consistent with a preventative approach to environmental impact:

- A detailed analysis of the risk associated with potential environmental outcomes,
- The risk analysis was used to frame the emphasis placed upon the specialist consultant studies undertaken for the Project, with the most resources focused on those environmental outcomes with the highest perceived risk,
- Collection of comprehensive baseline environmental data,
- This level of baseline data allowed the specialist consultant team to undertake their assessments based on a robust understanding of the environment within and surrounding the Mine Site. In particular, the biodiversity assessment was informed by 10 years of data, and
- Comprehensive consultation with Government agencies, businesses and the surrounding community to gauge local knowledge and to understand concerns.

Robust technical assessment by the specialist consultant team of worst-case scenarios, including maximum disturbance areas, minimum offset distances or maximum intensity of operations, as opposed to less impactful scenarios, so that the following were developed:

- A suite of preventative management and mitigation measures that account for worst-case outcomes during operations, rather than requiring future reactive measures, and
- A suite of robust management and mitigation measures to reduce residual impacts to levels that would either be negligible or less than the relevant criteria or reasonable community expectations.

All recommended management and mitigation measures were accepted by the Applicant. Provision of training and induction for all workforce personnel to ensure that they understand their obligations to prevent or minimise environmental impacts.

Avoidance of long-term adverse impacts on the local environment through the design and rehabilitation of disturbed areas to create a landform and land use that is equivalent or improved to that of the pre-mining environment.

The Applicant has drawn upon the experience of other mining operations in the Far West Region of NSW, as well as other areas in Australia and elsewhere, when designing the final landform and rehabilitation techniques to maximise the potential for successful rehabilitation. These measures include:

- Slopes of less than 1:10 (V:H) and slope lengths of less than 100 m,
- Flat areas that are internally draining and designed to maximise infiltration,
- Developing a robust soil stripping, storage and respreading regime,
- Using seed of local provenance during revegetation. This would ensure that the final landform has the maximum potential for achieving a land capability equivalent or better than that of the pre-mining environment, and
- Avoidance of long-term adverse impacts on the local groundwater environment through the rehabilitation of disturbed areas to create a landform with similar hydrogeological characteristics to the pre-mining setting.

As a result, the assessments of the key environmental aspects determined that:

- There would be no substantial, long-term impact on the groundwater setting that would rapidly recover following mining,
- Biodiversity impacts are well understood, and residual impacts can be accounted for by using offsetting mechanisms,
- The soils from most areas may be stripped and reused, and the final landform could be constructed in a manner that would not adversely impact the long-term land capability of the Mine Site,
- Whilst some items and sites of Aboriginal cultural heritage would require removal, impacts would not be on an unacceptable scale, and
- All other environmental impacts would be temporary and of a scale that would be acceptable.

9. Social and Economic

The Social Impact Assessment (SIA) for the Project was prepared by Element Environmental Pty Ltd (Element, 2024) for the EIS for the Project and is presented as Appendix 14 of EIS (RWC 2024). A comprehensive program of community engagement was undertaken, and a range of feedback has been received. In particular, the community in close proximity to the Mine Site was concerned about the effect on their way of life, road infrastructure, agricultural operations, and potential groundwater-related impacts. By contrast, those living further from the Mine Site were mostly positive about the Project, citing potential employment, economic activity, and diversification of the local economy as likely positive contributions.

9.1 Public Consultation

The Applicants' Community Engagement Strategy was prepared in accordance with the guidelines published by the Department of Planning and Environment and implemented throughout the Project's design and planning phases. Section 5 of EIS (RWC 2024) presents the engagement undertaken between 2018 and prior to the exhibition of the EIS in May and June 2024.

In summary, a variety of formal and informal methods of engagement were employed, including:

- Face-to-face meetings,
- Telephone discussions,
- Direct mail and email,
- Public and community meetings,
- Public displays,
- Hosting an information stall at the Wentworth Show, and
- Presentations to key groups such as business groups and supplier groups.

Key matters of interest raised during landholder and community engagement between 2018 and 2024 prior to the exhibition of the EIS included the following:

- Transportation routes and proposed road and intersection upgrades,
- Potential effects on groundwater, particularly within the Middle and Lower Aquifers,
- Potential effects on neighbouring agricultural operations,
- Location of the Mine Site and site infrastructure,
- Rehabilitation of the Mine Site,
- The Project's ability to improve communication and safety in the local area, and
- Employment and economic opportunities.

9.1.1 Engagement Principles

A range of community engagement and enhancement strategies are proposed to maximise the social benefit of the Project including the following:

- Negotiation of commercial agreements with all directly impacted landholders,
- Negotiation of Good Neighbour Agreements with all fence line neighbours and landholders in vicinity of the Site Access Road, Anabranch Mail Road and Nulla Road,
- Negotiation of Planning Agreements with Wentworth Shire and Broken Hill City Councils, and
- A commitment to train and employ local residents and source goods and services from local businesses.

The SIA concluded that with the exception of those whose land will be directly affected by the Project, social impacts will largely be positive.

9.1.2 Stakeholders

Key stakeholders for the Project include landholders within and adjacent to the PAA, residents and businesses in Wentworth and surrounding areas and road users along the proposed transport route. Broader stakeholders include local Aboriginal communities consulted in accordance with cultural heritage requirements, local councils and State and Commonwealth government agencies. Engagement has occurred throughout exploration and project planning, during preparation and exhibition of environmental impact documentation, and will continue through procurement, construction and operational phases.

9.1.3 Engagement Snapshot

Section 5 of the amended report (RWC 2025) presents the engagement undertaken between exhibition of the EIS in and finalisation of this document in January 2026. In summary, since exhibition of the EIS a range of community engagement activities have been undertaken, including the following:

a) Meetings with individual landholders and others in relation to a range of matters, including the proposed amendments to the Project and environmental and other impacts.

b) A stall at the Wentworth Show, in August 2024.

c) Email and other correspondence with individual landholders, including offers for individual meetings and briefings with the EIS author.

d) A well-attended community drop-in session at the Applicant's office in Wentworth on 28 May 2025.

In addition, the Applicant and its advisors have met with numerous government agencies and non-government bodies, including local clubs, community organisations and representatives of the local Aboriginal community.

The Applicant will continue to encourage two-way communication that is meaningful, relevant, and respectful with community members and stakeholders, offering various formal and informal opportunities for engagement, including the planned opening of a local shopfront.

9.1.4 Key Feedback

An updated SIA for the Project was prepared for the Amendment Report by The Social Aspect Consulting Pty Ltd (Social Aspect, 2025) and is presented as Appendix 15 of the amended report (RWC 2025). That assessment determined that the Project would generally result in reduced social impact when compared with the Project as exhibited. It was noted that trustworthiness of the Applicant was identified as a negative impact on community in the EIS submissions. Commentary on this issue in the EIS submissions was more prominent than in the data analysed for the original SIA. It was identified that these submissions followed a range of problematic interactions between the Applicant and a landholder during exploration activities and the EIS development period. While noting that the PAA would no longer directly impact on that landholder's land, Social Aspect (2025) determined that the Project would create a social impact of medium significance for the landholder.

9.2 Cost and Benefits

The Economic Impact Assessment for the Amendment Report was prepared by Synergies (2025) and is presented as Appendix 16 of the amended report (RWC 2025). That assessment determined that the Project would contribute the following economic benefits stated in Section 9.3.1.

Furthermore, the Applicant has committed to ensuring that the economic benefits of the Project are retained, to the extent practicable, within the Wentworth LGA and surrounding areas. The Project's workforce would preferentially reside locally, and the Applicant would provide preference to local residents in employment and local businesses for the supply of goods and services.

As a result, the Applicant contends that the economic benefits to the local, State and National economies substantially exceed potential costs.

9.2.1 Economic

- Up to 480 direct full-time equivalent employment positions during construction and 240 positions during operations,
- A net present value of $723 million over the life of the Project, and
- A net benefit to NSW of $214 million, including $160 million in taxes and $126 million in royalties.

9.2.2 Social and Environmental

- Non-labour expenditure within the Wentworth LGA of $207 million during construction and between $54.5 million and $97.62 million each year during operations,
- Additional output within the Wentworth LGA of up to $1.28 billion during construction and $8.3 billion during operations, and
- Support for 514 full time equivalent (FTE) positions during construction and 580 FTE positions during operations within the Wentworth LGA.

10. Conclusion

The Proposed Action for the Copi Mineral Sands Project is to construct, operate and rehabilitate a mineral sands mine and associated infrastructure to extract critical minerals 75 km northwest of Wentworth, and to undertake intersection upgrades required for materials transport in Broken Hill, New South Wales.

Biodiversity Australia was requested to prepare a Biodiversity Development Assessment Report (BDAR) for the proposed Copi Mineral Sands Project (The Project) and subsequently to prepare this report in response to further information required for preliminary documentation.

On 4 December 2025, a delegate of the Minister for the Environment and Water decided that the Proposed Action is a controlled action and that it will be assessed by preliminary documentation. Further information was required to assess the relevant impacts of the proposed Action under s95A(2) of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The following items have been requested by the Department of Climate Change, Energy, the Environment and Water to be addressed in this Preliminary Documentation:

- Overview – Information provided in your referral documentation,
- Description of the Proposed Action – Illustrated with maps and figures,
- Description of direct and indirect impacts, proposed avoidance, management and mitigation measures, and proposed compensation (offset) measures for each of these listed threatened species and ecological communities:
    - Mallee Bird Community of the Murray Darling Depression Bioregion – Endangered
    - Pink Cockatoo (eastern) (*Lophochroa leadbeateri leadbeateri*) – Endangered
    - Hooded Robin (south-eastern) (*Melanodryas cucullata cucullata*) – Endangered
    - Corben's Long-eared Bat (*Nyctophilus corbeni*) – Vulnerable
    - Southern Whiteface (*Aphelocephala leucopsis*) – Vulnerable
- Impact Assessments,
- Avoidance, mitigation, and management measures,
- Compensation measures (offsets), and
- Economic and social matters.

The Biodiversity Development Assessment Report prepared for the Project by Biodiversity Australia in December of 2025 (Biodiversity Australia, 2025) and submitted in December 2025, provides details of the Biodiversity Values that occur within the Subject Land. The BDAR describes the efforts made to avoid these Biodiversity Values where possible, the minimisation and mitigation strategies employed to reduce the effects of residual impacts and a qualitative and quantitative description of the Biodiversity Credits that would be required to offset all residual impacts in line with the *Environmental Planning and Assessment Act 1979 and Biodiversity Conservation Act 2016.* It is acknowledged that the Biodiversity Assessment Method 2020 has been established under Section 6.7 of the BC Act and authorised by the NSW Minister for the Environment as an appropriate method to deliver "No Net Loss". Whilst the Biodiversity Assessment Method 2020 and associated Biodiversity Offset Scheme are primarily a function of the New South Wales Government, the method has been formally acknowledged under Bilateral Agreement as an appropriate mechanism to assess impacts on Matters of National

Environmental Significance. Whilst formal triggering of the Bilateral Agreement was not undertaken for this Proposed Action, this Preliminary Documentation seeks to provide information on how the Biodiversity Assessment Method 2020 and Biodiversity Offset Scheme has successfully achieved the objectives of the Environment Protection Biodiversity Conservation Act.

This Preliminary Documentation has been prepared in response to the Commonwealth Department of Climate Change, Energy, the Environment and Water. Request For Information regarding the Copi Mineral Sands Project which has been declared a controlled action under the EPBC Act. The Proposed Action Area is comprised of two assessment areas, a Linear Corridor containing a proposed haul road and the non-linear assessment area containing the PAA. The Proposed Action is located within a broader landscape containing potential habitat for the threatened ecological community and threatened species listed under the EPBC Act. All five entities; the Mallee Bird Community, Pink Cockatoo, Hooded Robin, Corben's Large-eared Bat and Southern Whiteface will be impacted by the Proposed Action in varying degrees. All entities will be impacted directly with the loss of potential suitable habitat:

- Mallee Bird Community –16.72 ha loss of potential breeding and foraging habitat,
- Pink Cockatoo - 2,746.57 ha loss of foraging habitat,
- Hooded Robin - 686.62 ha loss of breeding and foraging habitat,
- Corben's Large-eared Bat - 662.03 ha loss of breeding and foraging habitat, and
- Southern Whiteface - 2,845.65 ha loss of breeding and foraging habitat.

While the loss of potential suitable habitat for each species represents a reduction in the species resources for foraging and breeding, the reduction is not significant in terms of the broader landscape and temporally when considering the long-term plan to revegetate and rehabilitate the Proposed Action Area in a staged manner over more than 26 years of the project.

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Appendices

A-1 EPBC Act Referral

Copi Mineral Sands Project

Application Number: **02515** Commencement Date: **22/07/2024** Status: **Locked**

1. About the project

1.1 Project details

1.1.1 Project title *

Copi Mineral Sands Project

1.1.2 Project industry type *

Mining

1.1.3 Project industry sub-type

Mineral sand mine

1.1.4 Estimated start date *

01/07/2026

1.1.4 Estimated end date *

30/06/2051

1.2 Proposed Action details

1.2.1 Provide an overview of the proposed action, including all proposed activities. *

The Project would generally include the following components (see att 1_Project Description).

- Mining using a combination of traditional dry (excavate, load and haul) and wet (dredging) mining techniques to extract up to approximately 46.8 million tonnes per annum (Mtpa) of overburden, 44.1Mtpa of interburden and 27.1Mtpa of ore.
- On-site processing to produce up to 475,000tpa of mine products.
- The Extraction Area comprises an area approximately 1,983ha
- The Disturbance Area for the Site consists of approximately 3,798ha of Mine Site and 219ha of the Site Access Road and realigned Anabranch Mail Road.
- Transportation of mine products in sealed containers from the Mine Site to the existing Broken Hill Rail Facility.
- Progressive establishment of a final landform with re-established ecosystem function.
- Construction and use of ancillary infrastructure.
- The life of the Project will be 26 years, comprising an initial 3-year construction period, followed by 18 years of mining operations and a further period of 5 years of rehabilitation.

The Project would initially consist of following activities to deliver the proposed action

- Initial vegetation clearing for site establishment and construction
- Infrastructure development

The following activities would then occur progressively along the mine path

- Vegetation clearing for mining
- Soil stripping and management.
- Dry mining (removal of overburden and interburden)
- Dredge Mining (extraction of interburden and ore from within the water table)
- Reject management and placement into Off Path Storage Facility
- Progressive rehabilitation.

During operation, the Project would also include the following activities to deliver the proposed action.

- Transport of material to the Rare Earth Concentrate Plant.
- Transport of mine products to Broken Hill Rail Facility
- Waste and Water Management
- Mine closure and rehabilitation

The proposed activities required to deliver the proposed actions for the Project will result in the following impact.

- Project Area impact area: 19,725ha
- Mine Site Limit of Disturbance area: 3,798ha
- Linear Corridor Disturbance area: 219ha
- Total Limit of Disturbance area: 4,020ha

1.2.2 Is the project action part of a staged development or related to other actions or proposals in the region?

No

1.2.6 What Commonwealth or state legislation, planning frameworks or policy documents are relevant to the proposed action, and how are they relevant? *

The Project requires the following State and Commonwealth legislation considerations.

Development Consent

As a mining mineral mining operation, the Project is classified as “State Significant Development” under Clause 5(1)(a) of Schedule 1 of the NSW State Environmental Planning Policy (SEPP) (Planning Systems) 2021. The Development Application will therefore require assessment under Division 4.7 of Part 4 of the NSW Environmental Planning and Assessment Act 1979 (EP&A Act).

In accordance with Section 4.5(a) of the EP&A Act Environmental Planning and Assessment Act 1979, the consent authority for the Project will be the Independent Planning Commission should one of the following criteria, identified in Section 2.7 of the Planning Systems SEPP, be met.

- Wentworth Shire Council provides a submission objecting to the Project.
- There are more than 50 submissions objecting to the Project.
- The Applicant has made a reportable political donation.

If these thresholds are not met, the determining authority would be the Minister for Planning and Public Spaces. In practice, it is understood that the Minister has delegated their authority to determine such applications to a senior officer of the Department of Planning and Environment.

Mine Site and Site Access Road

The Mine Site is located wholly on land zoned under the Wentworth Local Environmental Plan 2011 (Wentworth LEP) as RU1 – Primary Production. Open Cut mining is permissible with consent in this zone. These objectives of the zone have been considered during the design and planning process of the Project.

See att 12_Land Zoning.jpg

Anabranch Mail Road and Associated Intersections

Anabranch Mail Road is an existing local road that would be realigned and upgraded as a result of the Project (see att_20_Intersection plans). The road between the intersection of the Site Access Road and the Silver City Highway occurs on land zoned as follows.

- RU1 – Primary Production.
- SP2 – Infrastructure

Roads are permitted without consent within Zone RU1 – Primary Production and Zone SP2 - Infrastructure.

Broken Hill Rail Facility

The Rail Facility is located wholly within the Broken Hill Local Government Area (LGA). Under the Broken Hill Local Environmental Plan 2013 (Broken Hill LEP), the land on which the Rail Facility is located is designated as:

- Zone SP2 – Infrastructure (Rail Infrastructure Facility); and
- Zone SP1 – Special Activities (Mining)

Development for the purpose of a Rail Facility is permissible under each of these zones.

The proposed works to be undertaken at the intersections of Patton and Comstock Streets and Comstock and Eyre Streets are on land zoned:

- R1 – General Residential; and
- B4 – Mixed Use.

Roads are permitted without consent in both these zones.

Other Approvals

The following presents the approvals that would otherwise be are required for the Project but and cannot be refused under Section 4.42 of the EP&A Act.

- A Mining Lease under the Mining Act 1992.

RZ Resources would require a new Mining Lease, to permit mining of minerals. Mining Lease Application MLA646 has been submitted to cover the area of proposed mining operations.

- An Environment Protection Licence under Chapter 3 of the Protection of the Environment Operations Act 1997.

The Project would disturb more than 4ha for the purposes of mining of minerals. As a result, the Applicant would apply for an Environmental Protection License (EPL) for Project.

A Permit under Section 138 of the Roads Act 1993. Permits (and an associated Works Authority Deed where relevant) will be required from:

- Transport for NSW for works within the Silver City Highway road reserve;
- Broken Hill City Council for works within the Holten Drive, Eyre Street, Comstock Street and Patton Street road reserves;
- Wentworth Shire Council for works within the Anabranch Mail Road road reserve.

The following presents the approvals would otherwise be required but are not required for the Project under Section 4.41(1) of the EP&A Act.

- A water use approval under section 89, a water management work approval under section 90 or an activity approval (apart from an aquifer interference approval) under section 91 of the *Water Management Act 2000.*
- An Aboriginal Heritage Impact Permit under section 90 of the *National Parks and Wildlife Act 1974.*

The following presents other approvals that are required to carry out the Project that have not been addressed above.

- Environment Protection and Biodiversity Conservation Act 1999
  The Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) details the general obligations regarding the management of biodiversity and conservation under Commonwealth legislation.

Biodiversity assessments indicate that no significant adverse impacts on Matters of National Environmental Significance are considered likely to occur as a result of the Project (see att 3b_Copi MNES_Redacted). However, consultation with Cth DCCEEW indicated it would be best practice to refer the proposed action for further assessment.

Water Management Act 2000

Water Management Act 2000 (WM Act) approvals required for the Project that are not otherwise exempted under Section 4.41 of the EP&A Act, include Water Access Licences (WALs) issued under the Water Sharing Plan for the NSW Murray Darling Basin (MDB) Porous Rock Groundwater Sources Order 2020 to account for groundwater extracted from the production bores and evaporative losses from the dredge pond.

Under the NSW Harvestable Rights Policy, as the Project is located within the Western Division, no WALs are required for harvesting, storage or use of incident rainfall within the Mine Site.

- Protection from Harmful Radiation Act 1990 Licences to store, handle and transport Monazite Product

1. The Monazite Product is expected to be classified as a Class 7 (Radioactive Material) under the Australian Dangerous Goods Code. Up to 7,500tpa of Monazite Product would be produced.
2. A licence under Section 6 of the Protection from Harmful Radiation Act 1990 will be required for the storage of Monazite Product.
3. Licences under Paragraph 59(1)(c) of the Commonwealth Australian Radiation Protection and Nuclear Safety Regulations 2018 will be required for transportation of Monazite Product from the Mine Site. The required approval would be issued by the Australian Radiation Protection and Nuclear Safety Agency.

- Construction Certificates, Occupation Certificates, etc
  All necessary approvals under Division 6.3 of the EP&A Act would be obtained from Wentworth Shire Council for construction, erection and/or placement of buildings, structures and appropriate water treatment systems for the Project.

Section 2 of the Amendment Report for the Project (see att 2_Strategic Context) outlines the legislation, planning frameworks and policy documents are also relevant to the strategic context of the proposed action and how they are relevant.

1.2.7 Describe any public consultation that has been, is being or will be undertaken regarding the project area, including with Indigenous stakeholders. Attach any completed consultation documentations, if relevant. *

RZ Resources is committed to ongoing, open, and transparent communication with all affected stakeholders throughout the Project.

RZ Resources has engaged with landholders, the wider community, the Aboriginal community, and government agencies regarding the Project.

RZ Resources' Community Engagement Strategy was prepared in accordance with the guidelines published by the Department of Planning and Environment and implemented throughout the Project's design and planning phases.

Since 2018, a variety of formal and informal methods of engagement have been employed, including:

- Face-to-face meetings.
- Telephone discussions.
- Direct mail and email.
- Public and community meetings.
- Public displays.
- Hosting an information stall at the Wentworth Show.
- Presentations to key groups such as business groups and supplier groups.

Establishing a local presence has been important to RZ Resources. Since mid-2018, a full-time Exploration Manager has resided within the Wentworth LGA. The exploration team during peak exploration operations expanded to more than 20 people on a full-time equivalent basis. Currently there are 9 local people employed on a full-time basis, however roles are still being developed, and there is a commitment to ensure the majority of RZ Resources personnel will be locally based.

RZ Resources will develop a Cultural Heritage Management Plan in partnership with the Registered Aboriginal Parties.

RZ Resources will continue to encourage two-way communication that is meaningful, relevant, and respectful with community members and stakeholders, offering various formal and informal opportunities for engagement, including the planned opening of a local shopfront.

A detailed consultation log with over 750 individual consultation events has been prepared since January 2018. For privacy reasons this log has not been provided with this application. A copy may be supplied on a confidential basis on request.

Key matters of interest raised during landholder and community engagement included the following.

- Transportation routes and proposed road and intersection upgrades.
- Potential effects on groundwater, particularly within the Middle and Lower Aquifers.
- Potential effects on neighbouring agricultural operations.
- Location of the Mine Site and site infrastructure.
- Rehabilitation of the Mine Site.
- The Project's ability to improve communication and safety in the local area.
- Employment and economic opportunities.

RZ Resources will develop a Cultural Heritage Management Plan in partnership with the Registered Aboriginal Parties.

RZ Resources will continue to encourage two-way communication that is meaningful, relevant, and respectful with community members and stakeholders, offering various formal and informal opportunities for engagement, including the planned opening of a local shopfront.

Section 5 of the EIS (see att 5_EIS Sect 5) presents the extent of public consultant undertaken by the Applicant during preparation of the EIS, and Section 5 of the Amendment Report (see att 6_Amendment Report Sect 5) presents the extent of public consultation undertaken by the Applicant during preparation of the Amendment Report.

1.3.1 Identity: Referring party

Privacy Notice:

Personal information means information or an opinion about an identified individual, or an individual who is reasonably identifiable.

By completing and submitting this form, you consent to the collection of all personal information contained in this form. If you are providing the personal information of other individuals in this form, please ensure you have their consent before doing so.

The Department of Climate Change, Energy, the Environment and Water (the department) collects your personal information (as defined by the Privacy Act 1988) through this platform for the purposes of enabling the department to consider your submission and contact you in relation to your submission. If you fail to provide some or all of the personal information requested on this platform (name and email address), the department will be unable to contact you to seek further information (if required) and subsequently may impact the consideration given to your submission.

Personal information may be disclosed to other Australian government agencies, persons or organisations where necessary for the above purposes, provided the disclosure is consistent with relevant laws, in particular the Privacy Act 1988 (Privacy Act). Your personal information will be used and stored in accordance with the Australian Privacy Principles.

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☑ **Confirm that you have read and understand this Privacy Notice ***

1.3.1.1 Is Referring party an organisation or business? *

Yes

Referring party organisation details

ABN/ACN	31002033712
Organisation name	R.W. Corkery & Co
Organisation address	North Tower, Suite 12.01, 1/5 Railway St, Chatswood NSW 2067

Referring party details

Name	Rebecca Raynal
Job title	Graduate Environmental Consultant
Phone	0429 635 975
Email	rebecca@rwcorkery.com
Address	North Tower, Suite 12.01, 1/5 Railway St, Chatswood NSW 2067

1.3.2 Identity: Person proposing to take the action

1.3.2.1 Are the Person proposing to take the action details the same as the Referring party details? *

No

1.3.2.2 Is Person proposing to take the action an organisation or business? *

Yes

Person proposing to take the action organisation details

ABN/ACN	23160863892
Organisation name	RZ Resources LTD
Organisation address	Level 8/10 Eagle St, Brisbane City QLD 4000

Person proposing to take the action details

Name	Ashley Beechey
Job title	Manager - Environmental and Approvals
Phone	0419 008 736
Email	abeechey@rzresources.com
Address	Level 8/10 Eagle St, Brisbane City QLD 4000

1.3.2.14 Are you proposing the action as part of a Joint Venture? *

No

1.3.2.15 Are you proposing the action as part of a Trust? *

No

1.3.2.17 Describe the Person proposing the action's history of responsible environmental management including details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against the Person proposing to take the action. *

RZ Resources has undertaken mineral exploration within the Mine Site since 2017. During that time extensive mineral exploration programs have been completed without significant environmental incident.

In 2020, the Resources Regulator advised of a compliance audit of RZ Resources exploration activities. As a result of their investigation, the Company was notified of potential contraventions sections of the Mining Act 1992 (Mining Act) and exploration codes of practice. The alleged contraventions related to matters of an administrative and compliance nature. In March 2023 the Resources Regulator and the Applicant agreed to an enforceable undertaking under the Mining Act noting that there were potential issues with past exploration activities and where practices and processes will be improved going forward.

Prior to finalisation of the enforceable undertaking, RZ Resources had already taken an extensive range of actions to improve environmental and consultation practices on all its tenements, including additional workplace training, resources, systems, and software. Additional third-party auditing of the company's rehabilitation activities enabled the company to make improvements to its rehabilitation practices and align with industry best practice.

On 18 April 2023, the Resources Regulator commenced an investigation in relation to 50 alleged non-compliances with Section 378D and 140 of the Mining Act related to rehabilitation of exploration-related disturbance on a neighboring property within the Mine Site. On 24 January 2024, the Applicant was notified by the Resources Regulator that none of the allegations were sustained and no further action was required.

In May 2025, Resource Regulation audited exploration leases EL8312 and EL9496 for the Copi Project (refer att_9_Draft Audit Report). The audit found RZ Resources' exploration operations were well managed, with robust systems in place to identify and manage compliance. Records were properly maintained, and environmental performance had significantly improved since previous inspections. RZ Resources were compliant with license conditions, activity approvals, and relevant codes of practice. No non-compliances were identified.

1.3.2.18 If the person proposing to take the action is a corporation, provide details of the corporation's environmental policy and planning framework

RZ resources is committed to effective environmental management in all areas of the company's business. They are working to achieve best practice in managing the environmental impacts of our exploration, mining and mineral processing operations. This includes:

- Ensuring all employees and contractors are aware of their environmental obligations and accountable for RZ Resources environmental performance,
- Operating with due regard for applicable legislation, regulations, guidelines & standards,
- Designing, developing and operating facilities that aim to reducing the impact of our operations,
- Integrate environmental issues into all aspects of planning and operational processes,
- Establishing and maintaining procedures to minimise environmental disturbance caused by operations,
- Re-establishing disturbed areas as sustainable ecosystems and community assets,
- Evaluating regularly RZ Resources environmental results, objects, targets and risk potential to achieve continuous improvement in their environmental performance,
- Ensure efficient use of all resources and reduce, reuse and recycle our wastes,
- Using resources efficiently, in particular energy, water and land, and;
- Maintain a product stewardship approach towards the use of their products.

The following attachments are examples of RZ Resources Environmental Policy and planning framework:

- RZ Resources Environmental Policy (draft) (see att_7_RZ Environmental Policy Draft).
- RZ Resources Standard Operating Procedure for Exploration Site Rehabilitation 2025 (see att_8_RZ Exploration Rehab SOP).
- RZ Resources Rehabilitation Management Plan: Risk Assessment document (see att_19_RZ Rehab Risk Assessment).

1.3.3 Identity: Proposed designated proponent

1.3.3.1 Are the Proposed designated proponent details the same as the Person proposing to take the action? *

Yes

Proposed designated proponent organisation details

ABN/ACN	23160863892
Organisation name	RZ Resources LTD
Organisation address	Level 8/10 Eagle St, Brisbane City QLD 4000

Proposed designated proponent details

Name	Ashley Beechey
Job title	Manager - Environmental and Approvals
Phone	0419 008 736
Email	abeechey@rzresources.com
Address	Level 8/10 Eagle St, Brisbane City QLD 4000

1.3.4 Identity: Summary of allocation

Confirmed Referring party's identity

The Referring party is the person preparing the information in this referral.

ABN/ACN	31002033712
Organisation name	R.W. Corkery & Co
Organisation address	North Tower, Suite 12.01, 1/5 Railway St, Chatswood NSW 2067
Representative's name	Rebecca Raynal
Representative's job title	Graduate Environmental Consultant
Phone	0429 635 975
Email	rebecca@rwcorkery.com
Address	North Tower, Suite 12.01, 1/5 Railway St, Chatswood NSW 2067

Confirmed Person proposing to take the action's identity

The Person proposing to take the action is the individual, business, government agency or trustee that will be responsible for the proposed action.

ABN/ACN	23160863892
Organisation name	RZ Resources LTD
Organisation address	Level 8/10 Eagle St, Brisbane City QLD 4000
Representative's name	Ashley Beechey
Representative's job title	Manager - Environmental and Approvals
Phone	0419 008 736
Email	abeechey@rzresources.com
Address	Level 8/10 Eagle St, Brisbane City QLD 4000

Confirmed Proposed designated proponent's identity

The Person proposing to take the action is the individual or organisation proposed to be responsible for meeting the requirements of the EPBC Act during the assessment process, if the Minister decides that this project is a controlled action.

Same as Person proposing to take the action information.

1.4 Payment details: Payment exemption and fee waiver

1.4.1 Do you qualify for an exemption from fees under EPBC Regulation 5.23 (1) (a)? *

No

1.4.3 Have you applied for or been granted a waiver for full or partial fees under Regulation 5.21A? *

No

1.4.5 Are you going to apply for a waiver of full or partial fees under EPBC Regulation 5.21A?

No

1.4.7 Has the department issued you with a credit note? *

No

1.4.9 Would you like to add a purchase order number to your invoice? *

No

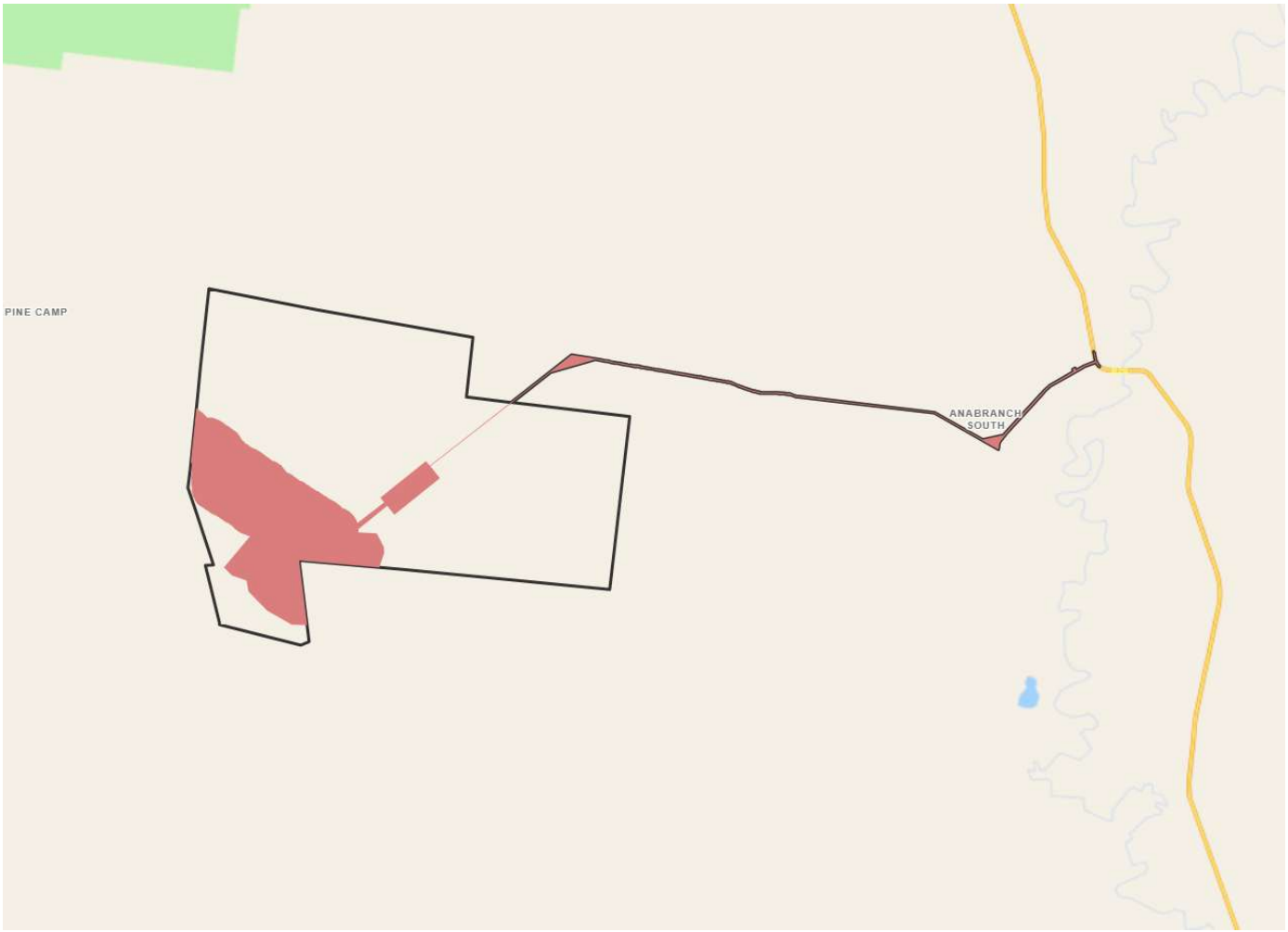
1.4 Payment details: Payment allocation

1.4.11 Who would you like to allocate as the entity responsible for payment? *

Person proposing to take the action

2. Location

2.1 Project footprint



Project Area: 19728.07 Ha **Disturbance Footprint:** 4020.44 Ha

2.2 Footprint details

2.2.1 What is the address of the proposed action? *

Nulla Road, Rufus Wentworth NSW 2648

2.2.2 Where is the primary jurisdiction of the proposed action? *

New South Wales

2.2.3 Is there a secondary jurisdiction for this proposed action? *

No

2.2.5 What is the tenure of the action area relevant to the project area? *

The Project Site tenure consists of leasehold land (Western Lands Lease) and Council Road Reserves (including Nulla, Anabranch Mail). Att_11_Land Holders presents a plan showing the location of the relevant land holdings within and surrounding the Project Site. In summary, the Project Site is the subject of four Western Land Lease landholdings as follows.

- “Warwick” – held by the Wentworth Pastoral Company, an entity associated with the RZ Resources. As a result, the property is Project-related.
- “Nulla” – held by a private individual, however the Applicant has finalised a commercial agreement with the property owner. As a result, the property is Project-related.

3. Existing environment

3.1 Physical description

3.1.1 Describe the current condition of the project area’s environment.

Existing Environment

The Project is located within the Murray Darling Depression Bioregion of western NSW, dominated by a warm to hot, semi-arid climate. The bioregion lies within the Murray basin on Tertiary and Quaternary sediments characterised by dune fields, and plains and calcareous soils (National Parks and Wildlife Service (NSW), 2003).

The Project' Sites catchment encompasses the Lower Murray Darling River system flowing from Menidnee Lakes to it's junction with the Murray River at Wentworth. The topography is characterised by a series of low ridges and drainage depressions, with gentle slopes typically less than 1% or 1:100 (V:H), with localised areas with slopes of approximately 5% or 1:20 (V:H). There are no major watercourses that flow through the Mine site. However, there are a series of salt lakes that are known to be expressions of groundwater. Shallow groundwater within the Project is saline, with an electrical conductivity of ~61,000uS/cm. The Great Darling Anabranch is located approximately 20km east of the Project Site. Lake Victoria is located ~30km south of the Project Site, an integral component of the regulated Murray River system.

Biodiversity and Agriculture

The Project Site is characterised by 3 main landscapes being the Scotia Groundwater Basin, Scotia Linear Dunes and Scotia Sandplains. The landscape is characterised by the Scotia Linear. Five soil types have been identified within the Project Site as follows:

- Dunefields and Sand Plains – primarily occupying areas of higher elevation
- Blanchetown Clay – primarily occupying low lying areas.
- Lunettes – primarily comprising wind-blown material to the east of the Salt Pans.
- Lunettes with Copi – primarily occupying areas near or downwind of the Salt Pans.
- Lake Floor East - primarily occupying the Eastern Salt Pan. The soil is clayey and sufficiently saline to be toxic to plants

Results of the Biodiversity Development Assessment Report (BDAR) identified thirteen Plant Community Types (PCTs) which are present within The Project Site (Mine Site and Linear Corridor) . The land of the Project Site has undergone substantial historical grazing. The region has also been subject to drought conditions sporadically throughout the past 40 years. The majority of native vegetation within the Project Site Footprint is considered to be of very low to low condition.

The BDAR identified a range of fauna on the Project area. Surveys identified 82 bird species 29 reptile species, 17 mammal species and 3 amphibian species.

Location

The Mine Site is located approximately 75km northwest of Wentworth and 180km south-southwest of Broken Hill, within the Wentworth Local Government Area (LGA) of New South Wales.

Land Zoning

The Mine Site is located wholly on and is surrounded by land zoned under the *Wentworth Local Environmental Plan 2011* (Wentworth LEP) as RU1 – Primary Production . Open Cut mining is permissible with consent in this zone.

The Site Access Road and section of Anabranch Mail Road to be upgraded occurs on land zoned as follows.

RU1 – Primary Production.

SP2 – Infrastructure (Silver City Highway)

Roads are permitted without consent within Zone RU1 – Primary Production and Zone SP2 - Infrastructure.

(See attachment att 12_Land Zoning.jpg)

Transportation

The Project Site will be accessed from the Silver City Highway via an upgraded and slightly realigned section of Anabranch Mail Road (approximately 6.1km). The proposed Site Access Road follows an existing access track.

3.1.2 Describe any existing or proposed uses for the project area.

Existing land uses within the Project Site include agriculture, namely low intensity grazing.

Proposed land uses within the Project Site during the life of the Project would include mining, with agriculture and nature conservation within areas not subject to mining operations.

Following the closure and rehabilitation of the Project Site, the land uses would primarily comprise nature conservation, and infrastructure or industrial use subject to further approval (see attachment att 10_Final Landform.jpg).

3.1.3 Describe any outstanding natural features and/or any other important or unique values that applies to the project area.

The Project Site contains significant geological features in the form of gypsum soils associated with lunette rises. These soils and rises are essential habitat for the endangered (BC Act 2016) Nulla Spear Grass (Austrostipa nullanulla), a gypsum obligate species. The Project will require the removal of 3.84ha of land occupied by A. nullanulla and 135.88ha of potential habitat in the form of gypsum soils consistent with PCT 253.

Endeavors will be made to restore the disturbed soils and rises once the soils are processed and works on sectors have ceased. This will take the form of placing gypsum-rich soils on the eastern margins of salt pans, mimicking the current habitat and conditions in areas occupied by A. nullanulla.

There are no Areas of Outstanding Biodiversity Value , or any karst, caves, crevices and cliffs within the Project Site.

3.1.4 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the project area.

The Project Site is situated within a relatively flat area of the central Murray Darling Basin. Regional topography is characterised by sequences of ridges and lunettes that rise to elevations between 50m AHD and 70m AHD. These ridges are interspersed with broad swales and drainage depressions with elevations between 30m AHD and 40m AHD.

The Project Site topography is a small-scale reflection of regional topography and is characterised by swales and drainage depressions. Within the Mine Site there are three depressions, the largest being the centrally situated Eastern Salt Pan with two lesser depressions, the central and eastern depressions. The floor of the Eastern Salt Pan is approximately 25m AHD whilst the floor of the central and eastern depressions are notably higher at between approximately 30m AHD and 40m AHD respectively. The Salt Pans are interpreted to have been formed by deflation, with wind-blown sediments deposited as lunettes on the eastern side of each structure. The Salt Pans are surrounded by gently sloping land that rises to approximately 60m AHD east of the Eastern Salt Pan. At greater distances from the salt pans, the landforms are typically flat to undulating, with rises and swales typically between 40m AHD and 70m AHD respectively. Slopes typically average <1%, with localised areas with slopes around 5% associated with the wind-blown lunettes adjacent to the Eastern Salt Pan.

The Project will not be in a marine area.

3.2 Flora and fauna

3.2.1 Describe the flora and fauna within the affected area and attach any investigations of surveys if applicable.

Flora

Field surveys undertaken as part of the BDAR identified thirteen plant community types within the Project Site as follows.

- PCT 28 - White Cypress Pine open woodland of sand plains, prior streams and dunes mainly of the semi-arid (warm) climate zone
- PCT 58 - Black Oak – Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion
- PCT 64 - Samphire – Water Weed – Sea Heath shrubland saline wetland of depressions of the arid and semi-arid (warm zones)
- PCT 143 - Narrow-leaved Hopbush – Scrub Turpentine – Senna shrubland on semi-arid and arid sandplains and dunes
- PCT 152 - Lunette chenopod shrubland mainly of the Murray Darling Depression Bioregion
- PCT 154 - Pearl Bluebush low open shrubland of the arid and semi-arid plains
- PCT 157 - Bladder Saltbush shrubland on alluvial plains in the semi-arid (warm) zone including Riverina Bioregion
- PCT 170 - Chenopod sandplain mallee woodland/shrubland
- PCT 171 - Spinifex linear dune mallee mainly of the Murray Darling Depression bioregion
- PCT 215 - Woollybutt Grass open grassland on red earths of the inland plains
- PCT 221 - Black Oak – Pearl Bluebush open woodlands of the sandplains of the semi-arid warm and arid climate zones
- PCT 253 - Gypseous shrubland on rises in the semi-arid and arid plains
- PCT 254 - Black Oak - Bladder Saltbush on light clays in the arid zone

One state and nationally endangered species, *Austrostipa nullanulla,* was recorded during targeted surveys across the Mine Site. A total of 3.84ha of scattered A. nullanulla was confirmed within the Mine Site**.**

No PCTs associated with Endangered Ecological Communities (EECs) under the *Biodiversity Conservation Act 2016* were identified as a part of the BDAR analysis (ground truthed data and analysis of the diagnostic keys). Therefore, no EECs were identified to occur within the Project Site (refer att 3b_Copi MNES_Redacted).

The following EPBC Act listed flora species were identified as having the potential to occur within the Project Site based on historical records in the locality and/or PCT associations.

- MacNutt's Wattle (*Acacia macnuttiana*)
- Velvet Wattle (*Acacia pubifolia*)
- Rodd's Star Hair (*Astrotricha roddii*)
- *Callistemon pungens*
- Bluegrass (*Dichanthium setosum*)
- Ovenden's Ironbark (*Eucalyptus caleyi subsp. ovendenii*)
- McKie's Stringybark (*Eucalyptus mckieana*)
- Narrow-leaved Peppermint (*Eucalyptus nicholii*)
- Blackbutt Candlebark (*Eucalyptus rubida subsp. Barbigerorum*)
- Heath Wrinklewort (*Rutidosis heterogama*)
- Austral Toadflax (*Thesium australe*)
- Keith's Zieria (*Zieria ingramii*)

The following EPBC Act listed species were predicted likely to occur based on suitable habitat being present (refer to att 3b_Copi MNES_Redacted, Appendix 2, Table 25).

- A Saltbush (*Atriplex infrequens*)

- Winged Peppercress (*Lepidium monoplocoides*)
- Desert Greenhood (*Pterostylis xerophila*)
- Menindee Nightshade (*Solanum karsense*)
- Slender Darling-pea (*Swainsona murrayana*)
- Yellow Swainson-pea (*Swainsona pyrophila*)

It is noted that none of the above species were found present during extensive flora and fauna surveys across the Project Site.

Fauna

Surveys detected 82 bird species 29 reptile species, 17 mammal species and 3 amphibian species (see att 3b_Copi MNES_Redacted, Appendix 2, Table 25). A summary of targeted survey methods and identified EPBC listed species is detailed below (refer to att 3b_Copi MNES_Redacted, Appendix 2, Table 25):

- **Active herpetological searches –** No threatened species identified
- **Diurnal bird surveys –** Four species identified:
  - *Melanodryas cucullata cucullata* (South-Eastern Hooded Robin) - Endangered
  - *Lophochroa leadbeateri leadbeateri* (Pink Cockatoo) - Endangered
  - *Aphelocphala leucopsis* (Southern Whiteface) – Vulnerable
- **Hollow bearing tree search –** Thirty-nine hollow bearing trees were located with a total of 65 hollow identified. However, only nine were identified within the Mine Site.
- **Nocturnal spotlight surveys –** No threatened species identified.
- **Nocturnal call playback –** No threatened species identified.
- **Elliot trapping and pitfall trapping** - No threatened species identified.
- **Microbat call recording** - No threatened species identified. An unconfirmed call of a Nyctophilus genus identified and was noted to potentially be *Nyctophilus corbeni* (Corbens Long-eared Bat) - Vulnerable. Further surveys would be needed to confirm the species presence.

The following EPBC Act listed fauna species were identified as having the potential to occur within the Project Site based on historical records in the locality and/or PCT associations (refer toatt 3b_Copi MNES_Redacted, Appendix 2, Table 25).

- Murray Mallee Striated Grasswren (*Amytornis striatus howei*)
- Malleefowl (*Leipoa ocellata*)
- Grey Falcon (*Falco hypoleucos*)
- Australian Bittern (*Bitaurus poiciloptilus*)
- Sharp-tailed Sandpiper (*Calidrus acuminata*)
- Curlew Sandpiper (*Calidrus ferruginea*)
- Latham's Snipe (*Gallinago hardwickii*)
- Painted Honeyeater (*Grantiella picta*)
- Black-eared Miner (*Manorina melanotis*)
- Blue-winged Parrot (*Neophema chrysostoma*)
- Red-lored Whistler (*Pachycephala rufogularis*)
- Plains-wanderer (*Pedionomus torquatus*)
- Regent Parrot (*Polytelis anthopeplus monarchoides*)
- Australian Painted Snipe (Rostratula australis)
- Diamond Firetail (*Stagonopleura guttata*)
- Southern Bell Frog (*Litoria raniformis*)
- Grey Snake (*Hemiaspis damelii*)
- Burrowing Bettong (*Bettongia lesseur lesseur*)
- Greater Stick-nest Rat (*Leporillus conditor*)

- Numbat (*Myrmecobius fasciatus*)
- Corben's Long-eared Bat (*Nyctophilus corbeni)*
- Brindled Nail-tail Wallaby *(Onychogalea fraenata)*
- Koala *(Phascolarctos cinereus)*

The following EPBC Act listed species either recorded in the Project Area or were predicted to occur based on suitable habitat being present (see att 3b_Copi MNES_Redacted, Appendix 2, Table 25).

- South-eastern Hooded Robin (*Melanodryas cucullata cucullata*)
- Southern Whiteface (*Aphelocephala leucopsis*)
- Pink Cockatoo (*Lophochroa leadbeateri leadbeateri*)
- Corben's Long-eared Bat (*Nyctophilus corbeni*)

Threatened Ecological Communities
The following EPBC Act listed Threatened Ecological Communities (TEC) were identified as having the potential to occur within the Project Site based on historical records in the locality and/or PCT associations.

- Coolibah-Black Box Woodlands
- Buloke Woodlands
- Mallee Bird Community

Only the Mallee Bird Community was considered likely to occur within the Project Area (att 3b_Copi MNES_Redacted, Appendix 2, Table 25).

3.2.2 Describe the vegetation (including the status of native vegetation and soil) within the project area.

The Project Site (consisting of the Mine Site and Linear Corridor) has undergone substantial historical grazing disturbance over decades from ongoing pastoral activity including sheep and goats. The area had regular drought records over the past 40 years which has likely exacerbated these grazing pressures. The majority of the Project Site consists of Native Vegetation which is broadly in a low to low-moderate condition state across representative PCTs. NSW State Vegetation Type Mapping only partially aligns with ground-truthed PCTs within the Limit of Disturbance. A total of 13 PCTs occur within the Limit of Disturbance including 11 within the Mine Site and six within the Linear Corridor. PCTs 28 and 143 are confined to the Linear Corridor.

- PCT 28 - White Cypress Pine open woodland of sand plains, prior streams and dunes mainly of the semi-arid (warm) climate zone
- PCT 58 - Black Oak – Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion
- PCT 64 - Samphire – Water Weed – Sea Heath shrubland saline wetland of depressions of the arid and semi-arid (warm zones)
- PCT 143 - Narrow-leaved Hopbush – Scrub Turpentine – Senna shrubland on semi-arid and arid sandplains and dunes
- PCT 152 - Lunette chenopod shrubland mainly of the Murray Darling Depression Bioregion
- PCT 154 - Pearl Bluebush low open shrubland of the arid and semi-arid plains
- PCT 157 - Bladder Saltbush shrubland on alluvial plains in the semi-arid (warm) zone including Riverina Bioregion
- PCT 170 - Chenopod sandplain mallee woodland/shrubland
- PCT 171 - Spinifex linear dune mallee mainly of the Murray Darling Depression bioregion
- PCT 215 - Woollybutt Grass open grassland on red earths of the inland plains
- PCT 221 - Black Oak – Pearl Bluebush open woodlands of the sandplains of the semi-arid warm and arid climate zones
- PCT 253 - Gypseous shrubland on rises in the semi-arid and arid plains
- PCT 254 - Black Oak - Bladder Saltbush on light clays in the arid zone

Refer to att 3b_Copi MNES_Redacted Table 5.

The Linear Corridor intersects five PCTs that are potentially associated with an Endangered Ecological Communities (EEC) listed under the BC Act.

- PCT 28 is associated with the EEC - Sandhill Pine Woodland in the Riverina, Murray Darling Depression and NSW South Western Slopes bioregions and Acacia melvillei Shrubland in the Riverina and Murray-Darling Depression bioregions.
- PCT 143 and 154 are associated with Acacia loderi shrublands.
- PCT 58 and 170 are associated with the EEC Acacia loderi shrublands and Acacia melvillei Shrubland in the Riverina and Murray-Darling Depression bioregions.

Five soil associations were identified within the Project Site as follows.

- Dunefields and Sand Plains – primarily occupying areas of higher elevation.
- Blanchetown Clay – primarily occupying low lying areas.
- Lunettes – primarily comprising wind-blown material to the east of the Salt Pans.
- Lunettes with Copi – primarily occupying areas near or downwind of the Salt Pans.
- Lake Floor East - primarily occupying the Eastern Salt Pan. The soil is clayey and sufficiently saline to be toxic to plants.

The Dunefield and Sand Plains Association, covering 31% of the Limit of Disturbance is typical of surrounding land, and was rich in carbonate, alkaline and had low salinity (Table S1). Blanchetown is clayey, with non-saline topsoil over saline subsoil. The Lunettes associations were formed from sediment that has blown out of the relict lakes, The Lunettes with Copi have a high proportion of gypsite or Copi, while the Lunettes Association is sandy soil. Lake Floor East is a closed depression with shallow

groundwater, and the soil is strongly saline.

The land was rated as having low capacity to withstand high impact land use such as cropping. 66% of the Limit of Disturbance was rated as Land and Soil Capability (LSC) class 6, which is suitable for low impact uses such as grazing. The remaining 33% was LSC class 8, indicating that the land has extremely low capacity to withstand disturbance. The capability of the Dunefields and Sand Plains, Blanchetown, and Lunettes Associations was restricted by susceptibility of the sandy topsoil to wind erosion, in which the surface stability was provided predominantly by fragile cryptogram crusts (biological crusts formed by algae). Elevated salinity limited the capability of Lake Floor East Association to LSC 8. This LSC rating means that the current land use of grazing of native grasses and shrubs is consistent with the capacity of the soil to withstand disturbance.

The area with potential to contain acid sulphate soil was very strongly saline, and salinity was judged to be a greater hazard at this site than acid sulphate soil.

3.3 Heritage

3.3.1 Describe any Commonwealth Heritage Places Overseas or other places recognised as having heritage values that apply to the project area.

No Commonwealth heritage places overseas or other places are recognised as having heritage values that apply to the project area.

3.3.2 Describe any Indigenous heritage values that apply to the project area.

An Aboriginal Cultural Heritage Assessment Report was prepared by OzArk Environment and Heritage Pty Ltd that investigates the impacts of the Project on Aboriginal cultural heritage within the Project Site. Refer to att 4_928_Aboriginal Heritage for a summary of that report.

Surveys consisted of 21 days of field survey and 12 days of test pit excavation. Registered Aboriginal Parties participated in all field work. In summary, 143 sites with Aboriginal objects were identified within the Project Area. Of these identified Aboriginal sites, 55 sites would be impacted and 88 sites would be avoided.

The impacted Aboriginal sites within the limit of disturbance consist of:

- 32 isolated finds
- 20 artefact scatters, and
- 3 artefact scatters with harths.

Of the sites in the Project Site, 136 were assessed as having low scientific significance and seven were assessed as having moderate scientific significance. All sites were identified by the Registered Aboriginal Parties as having high social or cultural value.

The local Aboriginal community has been consulted throughout the assessment process and all requests in relation to management of the identified sites have been agreed to.

3.4 Hydrology

3.4.1 Describe the hydrology characteristics that apply to the project area and attach any hydrological investigations or surveys if applicable. *

Surface Water Catchments and Flows

The Project Site is situated within a relatively flat area of the central Murray Darling Basin. The Murray Darling Basin in the vicinity of the Project Site is dominated by the Darling River. This river starts at the confluence of the Barwon and Culgoa Rivers, between Brewarrina and Bourke in northern NSW and flows in a southeasterly direction before merging with the Murray River at Wentworth. The Murray River then flows in a westerly and south-westerly direction before entering the Southern Ocean at Goolwa, in South Australia.

The Great Darling Anabranch, located approximately 20km east of the Project Site, is a relict channel of the Darling River and flows in a generally southerly direction before also merging with the Murray River at Wentworth. The Great Darling Anabranch includes a series of large, shallow, typically dry lakes such as Yelta, Wialia, Pine, Popio and Popiltah Lakes. These lakes, and many smaller drainage depressions, are believed to have been formed by wind transportation of dry exposed sediments in the base of the depression. These sediments commonly form lunettes of wind-blown material on the northeastern and eastern margins of the lakes, a reflection the dominant south-westerly wind patterns. Lake Victoria, located approximately 30km to the south of the Mine Site, forms an integral component of the regulated Murray River system, with water levels controlled by a series of embankments and locks.

There are five surface water catchments either wholly or partly within the Project Site boundary. The local drainage networks of the catchments direct runoff internally, with no catchment outlet or downstream linkages. These internal drainage networks are also indistinct and discontinuous, terminating in dams that were historically constructed to support stock watering. The land surface is also sandy which means that drainage depressions, such as the Eastern Salt Pan, will typically only receive overland flow after substantial rainfall occurs.

A brief overview of all Project Site catchments is as follows.

- Southwestern Catchment – this catchment is partly situated within, and externally drains beyond, the southwestern and western sections of the Project Site. Approximately 83ha of the northeastern section of this catchment would be disturbed by the Project.
- Central Depression Catchment– this catchment is situated in the northwest of the Project Site. Project-related activities would disturb an approximately 345ha in the southern section of this catchment.
- Eastern Salt Pan Catchment – this catchment is situated in the central eastern section of the Project Site. Catchment drainage is towards the Eastern Salt Pan. Approximately 3301ha of this catchment would be disturbed by Project-related activities.
- Eastern Catchment – this catchment is situated in the northeast section of the Project Site. Approximately 69ha of this catchment would be disturbed by Project-related activities

There are no RAMSAR listed wetlands in the vicinity of the Project Site. There are no identified flooding risks within the Project Site.

Groundwater Setting and Flows

The Project Site is located within the Lower Darling Basin with three principal aquifers (Upper, Middle and Lower). From shallowest to deepest, the stratigraphic units which variously comprise these aquifers.

The Upper Aquifer is the principal groundwater system of interest for the Project. The Upper Aquifer is underlain by the Bookpurong Beds and Gera Clay and is hydrologically disconnected from the Middle and Lower Aquifers. The Upper Aquifer is overlain in places by the Blanchetown Clay, resulting in a locally confined groundwater system.

The Upper Aquifer is hosted by unconsolidated sands of the Loxton-Parilla Sands and is characterised by water table with a very shallow gradient towards the southwest. The aquifer is characterised by a very high horizontal hydraulic conductivity (up to 30m/d) and groundwater quality within the aquifer is very poor, with

an electrical conductivity of approximately 61,000uS/cm, almost twice that of sea water (35,000uS/cm).

4. Impacts and mitigation

4.1 Impact details

Potential Matters of National Environmental Significance (MNES) relevant to your proposed action area.

EPBC Act section	Controlling provision	Impacted	Reviewed
S12	World Heritage	No	Yes
S15B	National Heritage	No	Yes
S16	Ramsar Wetland	No	Yes
S18	Threatened Species and Ecological Communities	Yes	Yes
S20	Migratory Species	No	Yes
S21	Nuclear	Yes	Yes
S23	Commonwealth Marine Area	No	Yes
S24B	Great Barrier Reef	No	Yes
S24D	Water resource in relation to large coal mining development or coal seam gas	No	Yes
S26	Commonwealth Land	No	Yes
S27B	Commonwealth Heritage Places Overseas	No	Yes
S28	Commonwealth or Commonwealth Agency	No	Yes

4.1.1 World Heritage

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

—

4.1.1.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.1.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

No World Heritage protected matters are in the vicinity of the Project area and therefore will not be impacted by Project.

4.1.2 National Heritage

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

—

4.1.2.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.2.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

No National Heritage protected matters are in the vicinity of the Project area and therefore will not be impacted by Project.

4.1.3 Ramsar Wetland

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Direct impact	Indirect impact	Ramsar wetland
No	No	Banrock Station Wetland Complex
No	No	Riverland
No	No	The Coorong, and Lakes Alexandrina and Albert Wetland

4.1.3.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.3.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

No RAMSAR Wetland protected matters are in the vicinity of the Project area and therefore will not be impacted by Project.

4.1.4 Threatened Species and Ecological Communities

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Threatened species

Direct impact	Indirect impact	Species	Common name
Yes	Yes	Amytornis striatus howei	Murray Mallee Striated Grasswren, Striated Grasswren (sandplain)
Yes	Yes	Aphelocephala leucopsis	Southern Whiteface
Yes	Yes	Atriplex infrequens	
No	No	Bidyanus bidyanus	Silver Perch, Bidyan
No	No	Botaurus poiciloptilus	Australasian Bittern
No	No	Calidris acuminata	Sharp-tailed Sandpiper
No	No	Calidris ferruginea	Curlew Sandpiper
Yes	Yes	Falco hypoleucos	Grey Falcon
No	No	Galaxias rostratus	Flathead Galaxias, Beaked Minnow, Flat-headed Galaxias, Flat-headed Jollytail, Flat-headed Minnow
No	No	Gallinago hardwickii	Latham's Snipe, Japanese Snipe
No	No	Grantiella picta	Painted Honeyeater
No	No	Hemiaspis damelii	Grey Snake
Yes	Yes	Leipoa ocellata	Malleefowl
Yes	Yes	Lepidium monoplocoides	Winged Pepper-cress
Yes	Yes	Lophochroa leadbeateri leadbeateri	Major Mitchell's Cockatoo (eastern), Eastern Major Mitchell's Cockatoo
No	No	Maccullochella macquariensis	Trout Cod
No	No	Maccullochella peelii	Murray Cod
No	No	Manorina melanotis	Black-eared Miner
Yes	Yes	Melanodryas cucullata cucullata	South-eastern Hooded Robin, Hooded Robin (south-eastern)

Direct impact	Indirect impact	Species	Common name
No	No	Neophema chrysostoma	Blue-winged Parrot
Yes	Yes	Nyctophilus corbeni	Corben's Long-eared Bat, South-eastern Long-eared Bat
No	No	Pedionomus torquatus	Plains-wanderer
No	No	Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)	Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory)
No	No	Polytelis anthopeplus monarchoides	Regent Parrot (eastern)
Yes	Yes	Pterostylis xerophila	Desert Greenhood
No	No	Rostratula australis	Australian Painted Snipe
Yes	Yes	Solanum karsense	Menindee Nightshade
No	No	Stagonopleura guttata	Diamond Firetail
Yes	Yes	Swainsona murrayana	Slender Darling-pea, Slender Swainson, Murray Swainson-pea
Yes	Yes	Swainsona pyrophila	Yellow Swainson-pea

Ecological communities

Direct impact	Indirect impact	Ecological community
No	No	Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions
No	No	Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions
No	No	Mallee Bird Community of the Murray Darling Depression Bioregion

4.1.4.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

Yes

4.1.4.2 Briefly describe why your action has a direct and/or indirect impact on these protected matters. *

Biodiversity Australia prepared the Matters of National Environmental Significance report for the Copi Mineral Sands Project. For those protected matters that were considered to have potential to occur within the Disturbance footprint,or that were recorded within the limit of disturbance, assessments of significance were prepared, in accordance with Matters of National Environmental Significance. Significant Impact Guidelines 1.1 (DoE, 2013), as presented in att 3b_Copi MNES_Redacted, Appendix 2, Table 25.

Four EPBC Act listed threatened fauna were recorded within the Project Site including:

- South-eastern Hooded Robin (Melanodryas cucullata cucullata)
- Southern Whiteface (Aphelocephala leucopsis)
- Pink Cockatoo (Lophochroa leadbeateri leadbeateri)
- Corben's Long-eared Bat (Nyctophilus corbeni)

An additional nine EPBC Act listed threatened fauna that the PMST lists as likely to occur at the Project Site based on suitable habitat, but were not recorded within the Project Site include:

- A Saltbush (Atriplex infrequens)
- Winged Peppercress (Lepidium monoplocoides)
- Desert Greenhood (Pterostylis xerophila)
- Menindee Nightshade (Solanum karsense)
- Slender Darling-pea (Swainsona murrayana)
- Yellow Swainson-pea (Swainsona pyrophila)
- Murray Mallee Striated Grasswren (Amytornis striatus howei)
- Malleefowl (Leipoa ocellata)
- Grey Falcon (Falco hypoleucos)

Direct impacts to these species through the disturbance of approximately 3,883.08 ha (Mine Site 3,692.92 ha and Linear Corridor 190.16 ha) of known or suitable habitat are predicted as a result of the Proposed Action. The Proposed Action may also result in indirect impacts to the above threatened fauna species from construction and operation activities, including noise, dust, light and vibration.

Mallee Bird Community TEC

Although the Project Site contains two Mallee communities providing potential habitat for the Mallee Bird Community, (DAWE 2021) states the TEC is only present when at least three (3) terrestrial bird species from the list of MBC diagnostic birds are present. However, extensive bird surveys conducted in these areas recorded only two diagnostic species. Therefore the action within the impact site does not directly impact the TEC (see att 3b_Copi MNES_Redacted, Section 8.1).

South-eastern Hooded Robin (Melanodryas cucullata cucullata)

South-eastern Hooded Robin was recorded in the Project Site on multiple occasions between 2018 and 2025. Plant Community Types associated with the species and present within the Project Site include PCTs 58, 170, 171, 254 and 221. The total area proposed to be cleared that could be occupied by these species is approximately 662 ha. Refer to att 3b_Copi MNES_Redacted, Section 8.2.

Southern Whiteface (Aphelocephala leucopsis)

The Southern Whiteface was recorded in the Project Site on multiple occasions between 2018 and 2025. PCT that associated with the species are present within the disturbance footprint and include PCT 28, 58, 143, 152, 154, 157, 170, 171, 215 and 253. The total area proposed to be cleared that could be occupied by these species is approximately 2846ha. Refer to att 3b_Copi MNES_Redacted, Section 8.3.

Pink Cockatoo (Lophochroa leadbeateri leadbeateri)

The Project Site is within the known distribution of the Pink Cockatoo and the species has been recorded within the limit of disturbance on multiple occasions. Habitat critical to the survival of the species is present on the site in terms of vegetation types associated with the species and 34 trees bearing hollows greater than 10 cm in diameter; however, the lack of fresh water is likely to limit reliance in the limit of disturbance for nesting. The Action would remove approximately 802ha of potential habitat from a locality where forage habitat is not scarce and the habitat on site is heavily impacted by goats. The Action would remove nine Hollow Bearing Trees suitable for Pink Cockatoo breeding: five from the Project Site (where Hollow Bearing Trees are scarce) and four from the Linear Corridor (where 23 were recorded). The Linear Corridor would also introduce a threat from traffic strike. Refer to att 3b_Copi MNES_Redacted, Section 8.4.

Corben's Long-eared Bat (Nyctophilus corbeni)

The Project Site is within the known distribution of the Corben's Long-eared Bat. The species has not been definitively recorded within the limit of disturbance but it is assumed present in the absence of a broader detailed survey, since Anabat survey recorded a Nyctophilus species at the Site. Nyctophilus species cannot be reliably differentiated using call characteristics, so detected calls could belong to either or both of N. geoffroyi (Lesser Long-eared Bat, not listed as a threated species) or the target species N.corbeni (Corben's Long-eared Bat). No BioNet or ALA records for the species occur within 50 km of the Project Site; however suitable habitat occurs within the Project Site. Habitat critical to the survival of the species has not been defined, however the species is known from four PCT which are present in the limit of disturbance along with Hollow Bearing Trees (considered essential breeding habitat), with some or both proposed for progressive removal. Refer to att 3b_Copi MNES_Redacted, Section 8.5.

4.1.4.4 Do you consider this likely direct and/or indirect impact to be a Significant Impact? *

No

4.1.4.6 Describe why you do not consider this to be a Significant Impact. *

Biodiversity Australia prepared the Matters of National Environmental Significance report for the Copi Mineral Sands Project (refer to att 3b_Copi MNES_Redacted).

Mallee Bird Community TEC

Suitable habitat for the Mallee Bird Community is defined according to the EPBC Conservation Advice (2021) as follows:

- Vegetation community consistent with Mallee PCTs 170 and 171;
- Native vegetation (50% or more native crown cover and 50% or more native perennial cover less than 2 m) patch is at least 10 ha with at least 5 ha of mallee;
- Tree canopy crown cover is between 5% and 70%;
- Mallee eucalypt trees are the dominant tree canopy type present; and
- At least three specialist or dependent bird species recorded from survey

The Project Site contains two Mallee PCT;s providing potential habitat for the Mallee Bird Community:
• PCT 170 Chenopod sandplain mallee woodland/shrubland.
• PCT 171 Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion.

Applying the patch size criteria, only vegetation patches along the Linear Corridor area met the criteria, with 10.17ha of PCT 170 and 6.56 ha of PCT 171. Loss of this mallee vegetation will occur from the Linear Corridor construction, though this represents less than 0.21% of mallee within a 20 km radius of the Project Site. Further, the Mallee community within much of the disturbance footprint has been heavily degraded as a result of historic and ongoing grazing and damage arising from feral goats and sheep, as well as the absence of fire activity. Extensive bird surveys conducted in these areas recorded only two diagnostic species. Based on the information above, the Mallee Bird Community of the Murray Darling Depression bioregion TEC is not considered to be present within the limit of disturbance. Therefore, The Action will have less than a remote chance of causing a significant impact on the TEC (att 3b_Copi MNES_Redacted, Section 8.1).

South-eastern Hooded Robin (Melanodryas cucullata cucullata)
Habitat critical to the survival of the species as listed in the species Conservation Advice (DCCEEW 2023) includes areas of:
• Dry eucalypt and acacia woodlands and shrublands remnants with an open understorey, some grassy areas and a complex ground layer, often in or near clearings or open areas.
• Structurally diverse habitats featuring mature eucalypts, saplings, some small shrubs and a ground layer of moderately tall native grasses.
• Standing dead or live trees and tree stumps are also essential for nesting, roosting and foraging.
• Moderately deep to deep soils, rocks and fallen timber which provides essential foraging habitat.
None of the habitat on site meets all of the above criteria, primarily due to the loss of native grasses and ground layer complexity due to impacts arising from agriculture, feral goats and sheep. The land surrounding the disturbance footprint contains large swathes of PCTs 58, 170, 171, 254 and 221, which are in the same condition or similar to that proposed for removal. The removal of 662 ha of vegetation constitutes 0.92% of the overall Project Area. Therefore, the vegetation to be removed within the disturbance footprint is a relatively minor proportion and not considered habitat critical to the survival of the South-eastern Hooded Robin. Based on the information above, the impacts of The Action on South-eastern Hooded Robin habitat are not considered to be significant under the EPBC guidelines (att 3b_Copi MNES_Redacted, Section 8.2).

Southern Whiteface (Aphelocephala leucopsis)

The Project Area is not at or near the limit of the species range, the region is not identified as a key source population, and the population is not considered to be severely fragmented, genetically distinct or have limitations to dispersal, therefore the population in the disturbance footprint is not considered to represent an important population.

Habitat critical to the survival of the species as listed in the species Conservation advice (DCCEEW 2023) includes areas of:
• Relatively undisturbed open woodlands and shrublands with an understorey of grasses or shrubs, or both.
• Habitat with low tree densities and an herbaceous understory litter cover which provides essential foraging habitat.
• Living and dead trees with hollows and crevices which are essential for roosting and nesting.

None of the habitat in the disturbance footprint meets all the above criteria; primarily due to habitat degradation leading to the loss of trees, shrubs or native grasses and herbaceous ground litter, arising from impacts of agriculture and feral goats. The land surrounding Mine Site and along the Linear Corridor contains large swathes of PCTs 28. 58, 143, 152, 154, 157, 170, 171, 215 and 253, which are in the same condition or similar to that proposed for removal. The removal of the 2846 ha of vegetation constitutes 3.93% of the overall Project Area. Therefore, the vegetation to be removed within the disturbance footprint is a relatively minor proportion and not considered to be habitat critical to the survival of the Southern Whiteface. Based on the above, the Impact on the Southern Whiteface by The Action is not considered significant under the EPBC guidelines (att 3b_Copi MNES_Redacted, Section 8.3).

Pink Cockatoo (Lophochroa leadbeateri leadbeateri)

Land surrounding the Project Area contains large swathes of native vegetation, which is in the same condition or similar, and contains habitat (such as Hollow Bearing Tree density) of equal or higher value to that proposed for removal. The removal of 802 ha of potential habitat constitutes 1.1% of the overall Subject Land, in which 68,330 ha will be retained. Therefore, the vegetation to be removed within the Impact Site is a relatively minor proportion and not considered to be habitat critical to the survival of the Pink Cockatoo. Additionally, the lack of fresh water is likely to limit reliance on the disturbance footprint for nesting (att 3b_Copi MNES_Redacted, Section 8.4).

Corben's Long-eared Bat (Nyctophilus corbeni)

The species is considered to have large home ranges, and most roost sites are used for a single day only. Large distances are travelled at night, with consecutive roost sites generally within 4 km (TSSC 2015). This appears to indicate lesser reliance on any one habitat area in a mosaic of large tracts of native vegetation, as occurs in the region. The Proposed Action is considered of moderate severity based on the impact of vegetation clearing as a single event in any one area and a medium-long term (26 years) time frame. However, these impacts are considered reversible with progressive habitat rehabilitation following cessation of mining. Based on the above, the Impact caused by The Action to the Corben's Long-eared Bat and its habitat is not considered a significant impact under the EPBC guidelines (att 3b_Copi MNES_Redacted, Section 8.5 and Appendix 2, Table 25).

Significance assessments of the following species that were not recorded on site resulted in 'no significant impact' under all the relevant criteria, indicating a low risk of a real chance of significant impact (Refer to att 3b_Copi MNES_Redacted, Tables 16-24).

- A Saltbush (*Atriplex infrequens*)
- Winged Peppercress (*Lepidium monoplocoides*)
- Desert Greenhood (*Pterostylis xerophila*)
- Menindee Nightshade (*Solanum karsense*)

- Slender Darling-pea (*Swainsona murrayana*)
- Yellow Swainson-pea (*Swainsona pyrophila*)
- Murray Mallee Striated Grasswren (*Amytornis striatus howei*)
- Malleefowl (*Leipoa ocellata*)
- Grey Falcon (*Falco hypoleucos*)

4.1.4.7 Do you think your proposed action is a controlled action? *

No

4.1.4.9 Please elaborate why you do not think your proposed action is a controlled action. *

An assessment of The Action, utilising the matrix developed from the Significant Impact Guidelines 1.2, Is presented in att 3_928 Copi MNES report, Table 4. Considering the intensity, duration, scale and timing of the proposed Actions, the Actions align most closely with the 'Moderate Severity' category across all four key factors. The proposed Actions are characterised by their moderate-high intensity, medium-large scale and medium-long term, but reversible nature through rehabilitation.

All MNES entities recorded in the limit of disturbance, and those with suitable habitat and considered likely to occur in the limit of disturbance were subject to detailed assessment to determine the significance, or otherwise, of the impact/s. These entities, which have more than remote chance of being at risk of sustaining a significant impact, have been the subject of a detailed impact assessment in line with the MNES Significant impact guidelines 1.1.

1. **Mallee Bird Community TEC** (att 3_928 Copi MNES report, Section 8.1).

Applying the patch size criteria, only vegetation patches along the Linear Corridor area met the criteria, with 10.17 ha of PCT 170 and 6.56 ha of PCT 171. Loss of this mallee vegetation will occur from the Linear Corridor construction, though this represents less than 0.21% of mallee within a 20 km radius of the Project Site. Further, the Mallee community vegetation within much of the limit of disturbance has been heavily degraded as a result of historic and ongoing grazing and damage arising from feral goats and sheep, as well as the absence of fire activity.

2. **South-eastern Hooded Robin (Melanodryas cucullata cucullata)** (att 3_928 Copi MNES report, Section 8.1).

The land surrounding the limit of disturbance at the Mine Site and along the Linear Corridor contains large swathes of PCTs 58, 170, 171, 254 and 221, which are in the same condition or similar to that proposed for removal. The removal of 662 ha of vegetation constitutes 0.92% of the overall land assessed for the Project**.** Therefore, the vegetation to be removed within the Impact Site is a relatively minor proportion and not considered habitat critical to the survival of the South-eastern Hooded Robin.

3. **Southern Whiteface (Aphelocephala leucopsis)** (att 3_928 Copi MNES report, Section 8.1).
The land surrounding the disturbance footprint at the Mine Site and along the Linear Corridor contains large swathes of PCTs 28. 58, 143, 152, 154, 157, 170, 171, 215 and 253, which are in the same condition or similar to that proposed for removal. Therefore, the vegetation to be removed within the limit of disturbance is a relatively minor proportion and not considered to be habitat critical to the survival of the Southern Whiteface.

4. **Pink Cockatoo (Lophochroa leadbeateri leadbeateri)** (att 3_928 Copi MNES report, Section 8.1).
The land surrounding the disturbance footprint at the Mine Site and along the Linear Corridor contains large swathes of native vegetation, which is in the same condition or similar, and contains habitat (such as Hollow Bearing Tree density) of equal or higher value to that proposed for removal. Therefore, the vegetation to be removed within the limit of disturbance is a relatively minor proportion and not considered to be habitat critical to the survival of the Pink Cockatoo.

5. **Corben's Long-eared Bat (Nyctophilus corbeni)** (att 3_928 Copi MNES report, Section 8.1).

Habitat critical to the survival of the species has not been defined, however the species is known from four PCTs which are present in the limit of disturbance along with Hollow Bearing Trees (considered essential breeding habitat), with some or both proposed for progressive removal. No BioNet or ALA records for the species occur within 50 km of the Project Site; however suitable habitat occurs within the disturbance footprint.

All of the aforementioned species were assessed for the likelihood that the Action would have a nonremote chance of a significant impact via the Severity Assessment Matrix framework included within the Department of Sustainability, Environment, Water, Population and Communities (DSEWPC) – 2013 Significant Impact Guideline 1.2. The Severity Assessment Matrix was used in conjunction with considerations of each species biology, distribution and sensitivity to the potential impacts of the Action, in the application of the Significant Impact Guidelines 1.1 (DEWHA 2013). From this assessment it has been confidently determined that no Matter of National Environmental Significance has more than a remote chance of incurring a Significant Impact.

4.1.4.10 Please describe any avoidance or mitigation measures proposed for this action and attach any supporting documentation for these avoidance and mitigation measures. *

Since the exhibition of the EIS, the limit of disturbance has been reduced from 5974ha to 4017ha through the removal of Huntingfield, Sunshine and Belmore Stations (Refer to att 11_Land Holders.jpg, west of the Project Area). The Linear Corridor width has been reduced (from an initial 120m to 42m) to maximise the retention of areas of intact habitat and lessen the extent of disturbance to vegetation and habitat connectivity. These amendments ensure large areas of high-quality vegetation to the north-west of the disturbance footprint will be undisturbed by the Project. Additionally, the Project has successfully avoided impacts on any BC Act listed EECs and will have no impact on any important areas from the Important Habitat Map.

RZ Resources would implement the following management and mitigation measures to minimise those residual impacts on biodiversity values which cannot be avoided.

Pre-Clearing Surveys

The clearing extent is to be inspected for fauna by a suitably qualified or experienced person immediately prior to commencement of any vegetation removal involving machinery and/or tree-felling. This is to occur each morning if clearing spans over multiple days/weeks. Pre-clearing checks would include searches of habitat and searches for bird nests. If possible, any detected fauna is to be relocated off-site to nearby suitable areas (preferably within their natural home range) prior to clearing. During the pre-inspection, any habitat features detected (e.g. hollows, logs, nests) are to be clearly marked with flagging tape to allow easy identification during clearing. A suitably qualified or experienced person is to be present on site to supervise all clearing works to retrieve any fauna detected during works and undertake appropriate action.

Hollow Bearing Tree Protocol

Hollow Bearing Trees are to be felled in a manner that will minimise the risk of injury/mortality of denning/roosting fauna within the limitation of Work Health and Safety (WHS) Guidelines. This is suggested to be achieved by the following general procedure: The Hollow Bearing Trees are to be gently bumped several times prior to removal to encourage any fauna present to vacate. Trees are to be felled in a manner that minimises injury to fauna. This includes gently pushing or ‘soft felling’ with an excavator or gradual cut down by an arborist. A suitably qualified or experienced person is to be present during felling and sectioning of the hollow bearing tree (at the proponent’s cost) in case of animal injury. Hollows are to be inspected for fauna once the tree is deposited. All uninjured animals are to be released in the retained habitat on site. If the hollow is determined to be occupied and fauna do not require assistance (e.g. roosting bats), the entrance is to be blocked, and the log placed in a shaded and protected area on the edge of the site. The obstacle is to be removed just prior to dusk to allow passive escape of the fauna within the log may then be removed if required.

Staged Vegetation Clearing and Rehabilitation

Clearing of the vegetation within the limit of disturbance will be progressively staged and rehabilitated as extraction progresses to minimise the impact to biodiversity.

As part of a Biodiversity Management Plan, the following mitigation and management measures would also be implemented.

- Ensure that soil and seed material is not transferred into the Project Site to prevent weed invasion.
- Ensure that any weed infestations within the Project Site are identified and mapped and appropriate weed management is implemented as outlined in the *Biodiversity Management Plan.*

- Implement a feral animal management program, and outline this program in the *Biodiversity Management Plan,* to reduce and/or manage populations of feral animals at the Project Site including goats, rabbits, pigs, foxes and cats.
- Ensure that site-specific management plans consider measures to mitigate impacts to biodiversity values associated with noise, vibration, waste, lighting, and air pollution.

4.1.4.11 Please describe any proposed offsets and attach any supporting documentation relevant to these measures. *

Residual unavoidable impacts of the Proposed action will be calculated in accordance with the NSW BC Act and the Biodiversity Assessment Method (BAM) (2020). Offsets will be in accordance with the NSW Biodiversity Offset Scheme (BOS). Offsetting obligations will be delivered in accordance with the BOS, with a preference of establishing several Biodiversity Stewardship Agreements (BSA). RZ Resources is currently progressing the establishment of a BSA by engaging with surrounding landholders whose properties have been identified through desktop reviews and fieldwork as containing the required offset trade groups. RZR's priority is to secure offsets through property purchase where possible, followed by sponsored BSAs, with fund contributions considered as a last resort. Any remaining credits would be offset through purchase and retirement of existing biodiversity credits on the market or direct payment to the Biodiversity Conservation Fund (BCF). Please see att 14_Biodiversity Offset Strategic Plan, which demonstrates RZ Resources priorities for Biodiversity Offsetting on the Project Site.

4.1.5 Migratory Species

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Direct impact	Indirect impact	Species	Common name
No	No	Actitis hypoleucos	Common Sandpiper
No	No	Apus pacificus	Fork-tailed Swift
No	No	Calidris acuminata	Sharp-tailed Sandpiper
No	No	Calidris ferruginea	Curlew Sandpiper
No	No	Calidris melanotos	Pectoral Sandpiper
No	No	Gallinago hardwickii	Latham's Snipe, Japanese Snipe
No	No	Hydroprogne caspia	Caspian Tern
No	No	Motacilla cinerea	Grey Wagtail
No	No	Motacilla flava	Yellow Wagtail
No	No	Pandion haliaetus	Osprey

4.1.5.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.5.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

While migratory species of bird may potentially use the Project Site, the Project Site would not be classed as 'important habitat' as defined by the '*Significant Impact Guidelines 1.1 – Matters of National Environmental Significance*' (Department of the Environment 2013), 'important habitat' is defined as:

- Habitat utilised by a migratory species occasionally or periodically within a region that supports an ecological significant proportion of the population of the species, and/or
- Habitat that is of critical importance to the species at particular life-cycle stages, and/or
- Habitat utilised by a migratory species which is at the limit of the species range; and/or
- Habitat within an area where the species is declining.

While some migratory species of bird are likely to use the Project Site and locality, it would not be classed as an 'important habitat' for the following reasons:

- No nationally or internationally important habitats for migratory wetlands species are present in the study area according to the definition provided in the EPBC Act Policy Statement 3.21—Industry guidelines for avoiding, assessing and mitigating impacts on EPBC Act listed migratory shorebird species (Commonwealth of Australia 2017).
- There are no important habitats in the Project Site for the 10 birds listed as migratory species under the EPBC Act (Commonwealth of Australia 2017), as outlined in the Draft Referral guideline.
- A nationally significant proportion of a listed Migratory bird population would not be supported by the habitats in the Project Site.
- The Project Site does not contain any known important foraging grounds for listed migratory species and the Project would not impact on any significant foraging habitats.
- The Project Site does not contain any known important staging grounds for migration.
- The Project Site does not contain habitat that is at the limit of a listed Migratory species' range.
- The Project Site is not located within an area where a listed Migratory species is known to be declining.

Likelihood of occurrence assessments completed by Biodiversity Australia (refer Att_15_MNES_Table 25) found no migratory species were expected to have more than a low-moderate likelihood of occurrence within the Project Site.

Common Sandpiper (Actitis hypoleucos) - Likelihood of occurrence: Low (refer Att_15_MNES_Table 25)

Uses riparian habitats and wetland edges. Ephemeral waterbodies may form within the Project Site in wet years, but the saline lakes are unsuitable. This species may occur opportunistically; but no critical habitat or important population supported at the Project Site.

Pectoral Sandpiper (Calidris melanotos) - Likelihood of occurrence: Low (refer Att_15_MNES_Table 25)

This species is a rare migrant and requires freshwater wetlands or marshes. The saline site lakes within the Project Site are unsuitable. This species may occur opportunistically at the adjacent farm dams.

Sharp-tailed Sandpiper (Calidris acuminata) - Likelihood of occurrence: Moderate, Opportunistic. (refer Att_15_MNES_Table 25)

This species prefers shallow freshwater wetlands. The saline lakes within the Project Site are unsuitable. This species may occur opportunistically at farm dams within 10km of the Project Site. No critical habitat or important population occurs in the Project site.

Grey Wagtail (Motacilla cinerea) - Likelihood of occurrence: Low (refer Att_15_MNES_Table 25)

This species occurs along rivers and freshwater wetlands. The saline lakes within the Project Site are unsuitable. This species may occur opportunistically at adjacent farm dams. No important population or habitat critical to survival occurs within the site.

Yellow Wagtail (Motacilla flava) - Likelihood of occurrence: Low (refer Att_15_MNES_Table 25)

This species habitat requirements are grasslands, wetlands, open areas near freshwater. Freshwater sources within the Project Site are largely absent, the nearest non-saline waterbodies are farm dams outside the Project Site. The Project Site does not provide critical habitat or support an important population.

Latham's Snipe, Japanese Snipe (Gallinago hardwickii) - Likelihood of occurrence: Low (refer Att_15_MNES_Table 25)

This species habitat in Australia includes permanent and ephemeral wetlands. Ephemeral wetlands within the Project Site are available only occasionally after significant rainfall.

Fork-tailed Swift (Apus pacificus) - Likelihood of occurrence: Low (refer Att_15_MNES_Table 25)

This is a highly aerial species that may pass over the Project Site opportunistically. There is no breeding habitat present and the Project Site does not provide habitat critical to survival. No important population is supported on the Project Site.

Curlew Sandpiper (Calidris ferruginea) - Likelihood of occurrence: Low (refer Att_15_MNES_Table 25)

This species requires large freshwater or estuarine wetlands. The saline lakes within the Project Site are unsuitable. The Project Site does not support critical habitat or an important population.

Caspian Tern (Hydroprogne caspia) - Likelihood of occurrence: Low (refer Att_15_MNES_Table 25)

This species habitat requirements include sheltered coastal embayments, estuaries and sandy or muddy shorelines. This species roosts on sandbars, exposed sand or shell spits, and beaches. They may use Inland wetlands or in large lakes (including ephemeral lakes), waterholes, reservoirs, rivers, and creeks are utilized. This species was not found in 5,500 threatened flora surveys undertaken across a 100m grid over the entire Project Site. There is no suitable habitat for this species on the Project Site.

Osprey (Pandion haliaetus) - Likelihood of occurrence: Low (refer Att_15_MNES_Table 25)

This Fish-eating raptor requires permanent waterbodies. There are no suitable lakes/rivers within the Project Site and the saline lakes are unsuitable. This species may occur regionally, but the Project Site does not provide critical habitat or support important populations.

4.1.6 Nuclear

4.1.6.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

Yes

4.1.6.2 Briefly describe why your action has a direct and/or indirect impact on this protected matter. *

The Project would have an impact on “any other action prescribed by the regulations” under Section 21(g) of the EPBC Act. Reg 2.02 of the EPBC Regs states that “a mixture is excessive if … the unsealed source activity value is greater than 106, and the unsealed source activity concentration value is greater than 1” with respect to the values outlined in the Australian Radiation Protection and Nuclear Safety Regulations 2018. Thus, the threshold is 1 Bq/g AND 1000 MBq.

Table 1 (att 18_Nuclear Table 1) shows the Total Bq/g and the MBq/day expected to be produced for each product. The HMC and non-magnetic concentrate would exceed these thresholds based on both the activity concentrations, and the tonnage likely to be present on site after one day of production. HMC would exceed the tonnage after 1 week of production.

The ore, other products, and tailings generated and returned to the mining void would never exceed this threshold based on the lower activity concentrations.

4.1.6.4 Do you consider this likely direct and/or indirect impact to be a Significant Impact? *

No

4.1.6.6 Describe why you do not consider this to be a Significant Impact. *

Two radiological impacts assessments were undertaken namely the:

- Public Radiation Risk Assessment, Copi Project, June 2025; and
- Environmental Radiation Impact Assessment, Copi Project, June 2025.

Public Radiation Risk Assessment (Refer to att 16_Public Radiation Impact Assessment)

This report assesses specifically the radiological risk to members of the public as a result of the Proposed Action. Potential doses from exposure pathways were calculated using internationally and nationally recognised radiation protection documentation and methodologies.

The exposure pathways considered include:

- Inhalation of airborne dust arising from operations;
- Exposure to radon gas from operations;
- Consumption of crops and vegetables grown in impacted soils;
- Consumption of contaminated soils;
- Consumption of personal tank rainwater;
- Consumption of locally grown livestock; and
- Exposure resulting from transport of products on roadways and by rail.
- Exposure from rehabilitated landforms and groundwater seepage.

Air quality data from the Air Quality Report (prepared by Northstar in 2025 for the Copi Mineral Sands Amendment Report (2025)) assumed conservative estimates for dust resuspension and occupancy factors in order to produce a conservative exposure scenario. Under this scenario, the maximum dose estimated, under 'worst-case' environmental conditions is 9.3 µSv – equating to 1% of the upper regulatory limit of 1000 µSv. No mitigations were considered in the calculated doses. When implemented, these are certain to reduce the doses further.

Based on the calculated doses, it was determined that the radiological risk to members of the public was considered negligible as a result of the Proposed Action.

Environmental Radiation Impact Assessment (non-human biota) (Refer to att_17_Environmental Radiation Impact Assessment)

An impact assessment was undertaken to demonstrate that non-human species living in natural habitats are protected against ionising radiation risks from radionuclides released to the environment by the Proposed Action (ARPANSA 2015*).

A Tier 2 assessment was undertaken to identify if an Environmental Reference Level (ERL) was exceeded. Using the ERICA software tool, a site scenario was considered. Namely exposure to biota, in a terrestrial ecosystem within the Project area following 17 years of dust deposition arising from operations. Species of flora and fauna native to the area, and/or referenced in the Biodiversity Development Assessment Report for the Project were considered.

The results of the modelling have identified that dose rate values are at least two orders of magnitude less than the 10 µGy/h screening value applicable to Tier 1 assessments. For completeness a Tier 2 assessment was conducted to allow assessment of Project specific species potentially at risk. Estimated dose rates are less than the respective Tier 2 Environmental Reference Level (40 µGy/h or 400 µGy/h) by several orders of magnitude.

It was concluded that even using extremely conservative criteria, the radiological risk on any non-human biota impacted by the Proposed Action would be negligible.

4.1.6.7 Do you think your proposed action is a controlled action? *

No

4.1.6.9 Please elaborate why you do not think your proposed action is a controlled action. *

In summary,

- Radiation impact assessment of the proposed Action on the members of the public and the environment were identified as negligible; and
- Mitigations and controls will be implemented to minimise these impacts further (discussed in Section 4.1.6.10)

4.1.6.10 Please describe any avoidance or mitigation measures proposed for this action and attach any supporting documentation for these avoidance and mitigation measures. *

Mitigation and controls

The primary means of environmental contamination is the resuspension of radioactive material from the Proposed Action and deposition in the environment. The following controls will be implemented:

- The relevant products (heavy mineral concentrate, non-magnetic concentrate and monazite) product would be produced within an access-controlled environment within a sealed building at the Rare Earth Concentrate Plant.
- Heavy mineral concentrate would be dewatered on a concentrate dewatering pad adjacent to the Extraction Area and placed into three sided bins prior to loading into covered trucks for transportation to the Rare Earth Concentrate Plant.
- The non-magnetic concentrate would be loaded into shipping containers within a sealed building at the Rare Earth Concentrate Plant, before the sealed containers are transferred to the Rail Facility.
- The monazite product would be placed into sealed bulka bags or 205L drums which would in turn be placed into shipping containers within a sealed building at the Rare Earth Concentrate Plant, before the sealed containers are transferred direct to port in South Australia.
- The shipping containers for all products would remain sealed until reaching the destination port.

Additional mitigations in place to applicable to materials not exceeding the Nuclear Action thresholds includes:

- Limiting of on-site vehicle speeds to less than or equal to 50 km/hr;
- Ore extraction, dredge mining, wet concentrator plant are all wet processes; and
- Retention of particulate matter in sub-ground-level areas (pit retention).

The Proposed Action including the production, management and transportation of product would be governed by the approved Radiation Management Plan prepared in accordance with Radiation Guideline 2 – Preparation of Radiation Management Plans (NSW EPA, 2018). A draft of that plan has been prepared and would be progressively updated during the detailed design phase of the Project and throughout the life of the Project.

4.1.6.11 Please describe any proposed offsets and attach any supporting documentation relevant to these measures. *

No offsets are required for the Nuclear impacts of this Project.

4.1.7 Commonwealth Marine Area

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

—

4.1.7.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.7.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

No Commonwealth Marine Area protected matters are in the vicinity of the Project area and therefore will not be impacted by Project.

4.1.8 Great Barrier Reef

4.1.8.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.8.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

No Great Barrier Reef protected matters are in the vicinity of the Project area and therefore will not be impacted by Project.

4.1.9 Water resource in relation to large coal mining development or coal seam gas

4.1.9.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.9.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

No Water resource in relation to large coal mining development or coal seam gas protected matters are in the vicinity of the Project area and therefore will not be impacted by Project.

4.1.10 Commonwealth Land

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

—

4.1.10.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.10.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

No Commonwealth Land protected matters are in the vicinity of the Project area and therefore will not be impacted by Project.

4.1.11 Commonwealth Heritage Places Overseas

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

—

4.1.11.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.11.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

No Commonwealth Heritage Places Overseas protected matters are in the vicinity of the Project area and therefore will not be impacted by Project.

4.1.12 Commonwealth or Commonwealth Agency

4.1.12.1 Is the proposed action to be taken by the Commonwealth or a Commonwealth Agency? *

No

4.2 Impact summary

Conclusion on the likelihood of significant impacts

You have indicated that the proposed action will likely have a significant impact on the following Matters of National Environmental Significance:

None

Conclusion on the likelihood of unlikely significant impacts

You have indicated that the proposed action will unlikely have a significant impact on the following Matters of National Environmental Significance:

- World Heritage (S12)
- National Heritage (S15B)
- Ramsar Wetland (S16)
- Threatened Species and Ecological Communities (S18)
- Migratory Species (S20)
- Nuclear (S21)
- Commonwealth Marine Area (S23)
- Great Barrier Reef (S24B)
- Water resource in relation to large coal mining development or coal seam gas (S24D)
- Commonwealth Land (S26)
- Commonwealth Heritage Places Overseas (S27B)
- Commonwealth or Commonwealth Agency (S28)

4.3 Alternatives

4.3.1 Do you have any possible alternatives for your proposed action to be considered as part of your referral? *

No

4.3.8 Describe why alternatives for your proposed action were not possible. *

Section 2.5 of the EIS (att 13_EIS Sect 2_Strategic Justification, Section 2.5) outlines the feasible alternatives that have been considered during the design and planning phase of the Project. These are summarised as follows.

Alternate Mining Methods

The alternative of extracting the identified resources using conventional dry open cut mining operations was considered.

Conventional dry open cut mining operations would have the advantage of the following:

- More selective mining of ore that would have resulted in a higher head grade for the extracted ore as a result of minimised intermingling with overburden.
- Minimised additional capital costs early in the life of the Project.

Notwithstanding these benefits, this alternative would have resulted in the following less favourable outcomes.

- Advanced dewatering would be required, resulting in substantially more water being required to be withdrawn from the Upper Aquifer, and re-injection of excess water back into the aquifer. For comparison, early estimates for advanced dewatering for a substantially shallower mining operation indicated that between 7.5GLpa and 32.2GLpa of water would be required to be withdrawn from the aquifer. By contrast, the Project as proposed has a peak extraction rate of approximately 4.8GLpa in Year 1 of mining operations, reducing to between 2,817MLpa and 1,278MLpa in Years 2 to 15.
- Significant water management and processing facilities would be required, causing substantial increases in the additional capital costs required.
- Substantially more mobile plant would be required, with associated additional noise, dust and greenhouse gas emissions.

Alternate Site Access Options

RZ Resources proposes to access the Mine Site from the east via the Silver City Highway, Anabranch Mail Road and a proposed Site Access Road.

An alternate option was to access the Mine Site from the west via Springwood Road. This option would have the following advantages.

- A shorter transportation distance for mine products to be transported to the Rail Facility.
- The upgraded Springwood Road would provide greater community benefits.
- Site access would be primarily via the public road network, thereby minimising the requirement for easements across private land.

However, access via Springwood Road would result in the following less favourable outcomes.

- Greater distance of road upgrades required (approximately 57km of Springwood Road to be upgraded compared with approximately 27km of Site Access Road to be constructed and 6.1km of Anabranch Mail Road to be upgraded).
- The tenure of the Springwood Road reserve where it passed through the Tarawi Nature Reserve is uncertain.
- A greater travel distance for those accessing the Mine Site from the south.

As a result, the Applicant elected to access the Mine Site from the east via Anabranch Mail Road.

Not Taking the Action

The consequences of not proceeding with the Project relate principally to the lost opportunity to mine the identified mineral sands resources and any further resources that may be identified throughout the life of the Project. RZ Resources is confident that it has presented a Project that not only seeks the efficient development of the known deposits but has taken into consideration the likely impact of the Project on the local community and the predicted short-, medium- and long-term environmental outcomes. It is concluded that the Project, as presented, provides an acceptable balance of environmental and social outcomes in achieving the economic benefits arising from a substantial mining operation in an area with few other industries.

5. Lodgement

5.1 Attachments

1.2.1 Overview of the proposed action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	att 1_Project Description.pdf The Project Description for the Copi Mineral Sands Project (Amendment Report)	19/08/2025	No	High

1.2.6 Commonwealth or state legislation, planning frameworks or policy documents that are relevant to the proposed action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	att 12_Land Zoning.jpg A figure showing the Land Zoning in and around the Copi Project Site	07/05/2025	No	High
#2.	Document	att 2_Strategic Context.pdf Copi Mineral Sands Strategic Context - Amendment Report	22/07/2025	No	High
#3.	Document	att 3a_Copi MNES.pdf Matters of National Environmental Importance Report for Copi Mineral Sands - this version contains sensitive species information	29/07/2025	Yes	High
#4.	Document	att 3b_Copi MNES_Redacted.pdf Matters of National Environmental Importance Report for Copi Mineral Sands - Redacted sensitive species information	29/07/2025	No	High
#5.	Document	att_20_Intersection plans.pdf Intersection upgrade plans for Anabranch Mail Road and the Silver City Highway	08/10/2025	No	High

1.2.7 Public consultation regarding the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	att 5_EIS Sect 5.pdf Section 5 of the 2024 EIS for Copi Mineral Sands Project	01/05/2024	No	High
#2.	Document	att 6_Amendment Report Sect 5.pdf Section 5 of the Amendment Report for the Copi Mineral Sands Project	18/08/2025	No	High

1.3.2.17 (Person proposing to take the action) Proposer's history of responsible environmental management

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	att 9_Draft Audit Report.pdf The draft audit report of EL8312 and	30/05/2025	No	High

EL9496 Copi Exploration Project

1.3.2.18 (Person proposing to take the action) If the person proposing to take the action is a corporation, provide details of the corporation's environmental policy and planning framework

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	att_19_RZ Rehab Risk Assessment.pdf RZ Resources Rehabilitation Risk Assessment for Exploration	30/10/2025	No	High
#2.	Document	att_7_RZ Environmental Policy Draft.pdf RZ Resources draft Environmental Policy	01/08/2024	No	High
#3.	Document	att_8_RZ Exploration Rehab SOP.pdf RZ Resources Standard Operating Procedure for Exploration Site Rehabilitation	12/05/2025	No	High

2.2.5 Tenure of the action area relevant to the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	att 11_Land Holders.jpg A figure from the Copi Amendment Report showing landholders surrounding the Project Site.	11/07/2025	No	High

3.1.1 Current condition of the project area's environment

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	att 12_Land Zoning.jpg A figure showing the Land Zoning in and around the Copi Project Site	08/05/2025	No	High

3.1.2 Existing or proposed uses for the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	att 10_Final Landform.jpg A figure showing the proposed final landform for the Copi Project	13/06/2025	No	High

3.2.1 Flora and fauna within the affected area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	att 3a_Copi MNES.pdf Matters of National Environmental Importance Report for Copi Mineral	28/07/2025	Yes	High

		Sands - this version contains sensitive species information			
#2.	Document	att 3b_Copi MNES_Redacted.pdf Matters of National Environmental Importance Report for Copi Mineral Sands - Redacted sensitive species information	28/07/2025	No	High

3.2.2 Vegetation within the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	att 3a_Copi MNES.pdf Matters of National Environmental Importance Report for Copi Mineral Sands - this version contains sensitive species information	28/07/2025	Yes	High
#2.	Document	att 3b_Copi MNES_Redacted.pdf Matters of National Environmental Importance Report for Copi Mineral Sands - Redacted sensitive species information	28/07/2025	No	High

3.3.2 Indigenous heritage values that apply to the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	att 4_928_Aboriginal Heritage.pdf The Amendment Report summary of the ACHAR prepared for the Copi Mineral Sands Project	18/08/2025	No	High

4.1.4.2 (Threatened Species and Ecological Communities) Why your action has a direct and/or indirect impact on the identified protected matters

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	att 3a_Copi MNES.pdf Matters of National Environmental Importance Report for Copi Mineral Sands - this version contains sensitive species information	28/07/2025	Yes	High
#2.	Document	att 3b_Copi MNES_Redacted.pdf Matters of National Environmental Importance Report for Copi Mineral Sands - Redacted sensitive species information	28/07/2025	No	High

4.1.4.6 (Threatened Species and Ecological Communities) Why you do not consider the direct and/or indirect impact to be a Significant Impact

Type	Name	Date	Sensitivity	Confidence
#1. Document	att 3a_Copi MNES.pdf Matters of National Environmental Importance Report for Copi Mineral Sands - this version contains sensitive species information	28/07/2025	Yes	High
#2. Document	att 3b_Copi MNES_Redacted.pdf Matters of National Environmental Importance Report for Copi Mineral Sands - Redacted sensitive species information	28/07/2025	No	High

4.1.4.9 (Threatened Species and Ecological Communities) Why you do not think your proposed action is a controlled action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	att 3a_Copi MNES.pdf Matters of National Environmental Importance Report for Copi Mineral Sands - this version contains sensitive species information	28/07/2025	Yes	High
#2.	Document	att 3b_Copi MNES_Redacted.pdf Matters of National Environmental Importance Report for Copi Mineral Sands - Redacted sensitive species information	28/07/2025	No	High

4.1.4.10 (Threatened Species and Ecological Communities) Avoidance or mitigation measures proposed for this action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	att 11_Land Holders.jpg A figure from the Copi Amendment Report showing landholders surrounding the Project Site.	10/07/2025	No	High

4.1.4.11 (Threatened Species and Ecological Communities) Proposed offsets relevant to avoidance or mitigation measures

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	att 14_Biodiversity Offset Strategic Plan.pdf RZ Resources Biodiversity Offset Strategic Plan for the Copi Mineral Sands Project.	13/10/2025	No	High

4.1.5.3 (Migratory Species) Why your action is unlikely to have a direct and/or indirect impact

	Type	Name	Date	Sensitivity	Confidence
#1.	Document				

		att_15_MNES_Table 25.pdf Table 25 from the MNES report which includes occurrence information on migratory species	07/10/2025	No	High

4.1.6.2 (Nuclear) Why your action has a direct and/or indirect impact

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	att 18_Nuclear Table 1.pdf A table showing the Total Bq/g and the MBq/day expected to be produced for each product	20/10/2025	No	High

4.1.6.6 (Nuclear) Why you do not consider the direct and/or indirect impact to be a Significant Impact

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	att 16_Public Radiation Impact Assessment.pdf The Public Radiation Impact Assessment prepared for the Copi Mineral Sands Amendment Report	10/07/2025	No	High
#2.	Document	att_17_Environmental Radiation Impact Assessment.pdf The Environmental Radiation Impact Assessment prepared for the Copi Mineral Sands Amendment Report	16/06/2025	No	High

4.3.8 Why alternatives for your proposed action were not possible

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	att 13_EIS Sect 2_Strategic Context.pdf Section 2 of the 2024 EIS for the Copi Mineral Sands Project, as exhibited.	24/04/2024	No	High

5.2 Declarations

Completed Referring party's declaration

The Referring party is the person preparing the information in this referral.

ABN/ACN	31002033712
Organisation name	R.W. Corkery & Co
Organisation address	North Tower, Suite 12.01, 1/5 Railway St, Chatswood NSW 2067
Representative's name	Rebecca Raynal
Representative's job title	Graduate Environmental Consultant
Phone	0429 635 975
Email	rebecca@rwcorkery.com
Address	North Tower, Suite 12.01, 1/5 Railway St, Chatswood NSW 2067

☑ Check this box to indicate you have read the referral form. *

☑ Check this box to confirm these are the correct identification details. *

☑ By checking this box, I, **Rebecca Raynal of R.W. Corkery & Co**, declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. *

You may receive automated notifications that aim to assist you in tracking the progress of your project. You can opt out of these notifications by updating your communication preferences on your profile.

Completed Person proposing to take the action's declaration

The Person proposing to take the action is the individual, business, government agency or trustee that will be responsible for the proposed action.

ABN/ACN	23160863892
Organisation name	RZ Resources LTD
Organisation address	Level 8/10 Eagle St, Brisbane City QLD 4000
Representative's name	Ashley Beechey

Representative's job title	Manager - Environmental and Approvals
Phone	0419 008 736
Email	abeechey@rzresources.com
Address	Level 8/10 Eagle St, Brisbane City QLD 4000

☑ Check this box to indicate you have read the referral form. *

☑ Check this box to confirm these are the correct identification details. *

☑ I, **Ashley Beechey of RZ Resources LTD**, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf or for the benefit of any other person or entity. *

You may receive automated notifications that aim to assist you in tracking the progress of your project. You can opt out of these notifications by updating your communication preferences on your profile.

✔ Completed Proposed designated proponent's declaration

The Proposed designated proponent is the individual or organisation proposed to be responsible for meeting the requirements of the EPBC Act during the assessment process, if the Minister decides that this project is a controlled action.

Same as Person proposing to take the action information.

☑ Check this box to indicate you have read the referral form. *

☑ Check this box to confirm these are the correct identification details. *

☑ I, **Ashley Beechey of RZ Resources LTD**, the Proposed designated proponent, consent to the designation of myself as the Proposed designated proponent for the purposes of the action described in this EPBC Act Referral. *

You may receive automated notifications that aim to assist you in tracking the progress of your project. You can opt out of these notifications by updating your communication preferences on your profile.

A-2 Surface Water Modelling and Assessment

Appendix 10

Updated Surface Water Assessment

prepared by

R.W. Corkery & Co. Pty Limited

(Total No. of pages including blank pages = 45)

RZ Resources Limited
ABN: 23 160 863 892

Updated Surface Water Assessment

for the

Copi Mineral Sands Project

Prepared by:

RWCorkery&co

July 2025

ACKNOWLEDGEMENT

R.W. Corkery & Co. acknowledge and pay our respects to the Traditional Custodians of the lands in NSW and Australia on which our projects are located. We value the knowledge, advice and involvement of the Elders and extended Aboriginal community that contribute to our Projects and extend our respect to all Aboriginal and Torres Strait Islander peoples.

RZ Resources Limited
ABN: 23 160 863 892

Updated Surface Water Assessment

for the

Copi Mineral Sands Project

Prepared for:

RZ Resources Limited
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Ref No. 928/15 July 2025

RWCorkery&co

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Acronyms

AEP	Annual Exceedance Probability
ANZG	Australian and New Zealand Guidelines for Fresh and Marine Water Quality
BCD	Biodiversity and Conservation Division
BoM	Bureau of Meteorology
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DECCW	Department of Environment and Climate Change and Water
DES	Department of Environment and Science
DPHI	Department of Planning, Housing and Infrastructure
DPE-Water	Department of Planning and Environment - Water
EA	Environmental Assessment
EC	Electrical Conductivity
EIS	Environmental Impact Statement
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPA	Environment Protection Authority
EPL	Environment Protection Licence
LEP	Local Environmental Plan
LGA	Local Government Area
Mtpa	Million tonnes per annum
NRAR	Natural Resources Access Regulator
NWQMS	National Water Quality Management Strategy
OEH	Office of Environment and Heritage
POEO Act	*Protection of the Environment Operations Act 1997*
RWC	R.W. Corkery & Co. Pty. Limited
SES	State Emergency Service
SEARs	Secretary's Environmental Assessment Requirements
SILO	Scientific Information for Landowners
SSD	State Significant Development
SSM	Sustainable Soils Management Pty Ltd
SWA	Surface Water Assessment
WAL	Water access license
WM Act	*Water Management Act 2000*
WSP	Water Sharing Plans

Executive Summary

RZ Resources Limited (the Applicant) is proposing to develop and operate the Copi Mineral Sands Project for the extraction and processing of heavy mineral ore to produce a heavy mineral concentrate. The proposed mine and its associated infrastructure would be located approximately 75km northwest of Wentworth, NSW, within the Wentworth Local Government Area (LGA) of New South Wales.

The EIS for the Project was originally exhibited in May and June 2024. Following the exhibition period, the Applicant determined to amend the Project to limit mining operations to the Warrick and Nulla Stations. This Updated Surface Water Assessment has been prepared to assess the potential impacts to local and regional surface water resources and users within and surrounding the Amended Mine Site and identify appropriate management measures to mitigate any identified impacts.

Mining operations would be undertaken using conventional dredge mining methods, with overburden extracted using conventional free dig, load and haul mining methods. Extracted ore would then be transferred to the floating Wet Concentration Plant. Heavy mineral concentrate would then be transferred to a land-based Rare Earth Concentrate Plant for further processing . The Amended Project would extract up to 27.1 million tonnes of ore per annum for on-site processing to produce up to 475,000 tonnes per annum of mine products. Following an approximately three year construction period, extraction operations would commence and are expected to continue for a period of up to 18 years that would be followed by a 5 year post-mining rehabilitation period. However, progressive rehabilitation would be undertaken throughout the life of mine, to take advantage of seasonal conditions as the mine progresses.

The surface water resources of the Amended Mine Site are managed under the *Water Management Act 2000* (WM Act) under the rules of the water sharing plan for the *Lower Murray-Darling Unregulated River Water Source 2011*. The WM Act also contains provisions for basic landholder (harvestable) rights which entitle the owner or occupier of a landholding to take water without the need for a water access licence or approval. As the Amended Mine Site is located within the Western Division harvestable rights order area, the Amended Project is entitled to utilise all collected runoff for use in operations.

Within the Amended Mine Site, there are three catchments that would be intersected by Project-related disturbance. Existing catchment drainage is topographically controlled and directed to internally draining depressions that provide no linkage or outlet to adjacent catchments. Where watercourses do occur, they comprise indistinct, discontinuous, ephemeral, drainage features which terminate in historically constructed farm dams. Some of the central depressions contain areas identified in the *Wentworth Shire Council Local Environmental Plan 2011* (Wentworth LEP) as wetland features. However, much of these areas are also identified on 1:100,000 topographic maps as “Lakes-mainly dry”.

The Amended Mine Site is not situated on land identified as a Flood Planning Area in the Wentworth LEP.

During operations, the proposed water management strategy for the Amended Project would ensure that clean runoff is prevented from entering disturbance areas by the construction of bunds across the low lying areas of the Eastern Salt Pan. These bunds are considered “excluded works” under the *Water Management (General) Regulation 2018* and therefore permissible under the

WM Act. Water ponded against these bunds would be allowed to infiltrate or evaporate, which is consistent with the current hydrologic regime. Sediment-laden runoff within disturbance areas would be prevented from exiting the disturbance area and entering the surrounding environment by bunding or roads with internally directed cross-fall that would be situated along the boundary of the disturbance footprint.

In summary, whilst the Amended Project would result in a reduction to areas of mapped wetlands, flow accumulation in undisturbed sub-catchments, that represent the majority of existing catchments, would be unimpacted. Any sediment-laden runoff from disturbed sub-catchments would be retained to prevent impacts to the receiving surface water environment.

1. Introduction

1.1 Scope

This Surface Water Assessment (SWA) has been prepared by R.W. Corkery & Co. Pty. Limited (RWC) for the proposed construction and operation of the Copi Mineral Sands Project (the Project) located approximately 75km northwest of Wentworth, NSW, within the Wentworth Local Government Area (LGA) (**Figure 1**).

The EIS for the Project was originally exhibited in May and June 2024. Following the exhibition period, the Applicant determined to amend the Project to limit mining operations to the Warrick and Nulla Stations. This *Updated Surface Water Assessment* has been prepared to assess the potential impacts to local and regional surface water resources and users within and surrounding the Amended Mine Site and identify appropriate management measures to mitigate any identified impacts.

The Rail Facility, located in Broken Hill, is currently disturbed and surface water runoff would continue to be managed through appropriate sediment and erosion controls. As a result, the Rail Facility is not considered further in this assessment,

1.2 Project Summary

1.2.1 Overview

The Amended Project would comprise the following (**Figure 2**).

- Construction and use of a range of ancillary infrastructure within an Infrastructure Area that would be comprised of the following components.
  - Rare Earth Concentrate Plant.
  - Offices, Administration, Workshop, Stores and Laydown Area.
  - A Mine Camp area, including accommodation for up to 220 persons, amenities, car parking and related infrastructure.
  - Internal roads.
- A 27 kilometre (km) Site Access Road linking the Infrastructure Area to the Anabranch Mail Road.
- A 66 kilovolt (kV) powerline, adjacent to the Site Access Road to connect the Amended Mine Site with the 220kV Buronga to Broken Hill transmission line.
- Open cut mining using a combination of traditional dry (excavate, load and haul) and wet (dredging) mining techniques to extract up to approximately 46.8 million tonnes per annum (Mtpa) of overburden, 44.1Mtpa of interburden and 27.1Mtpa of ore.

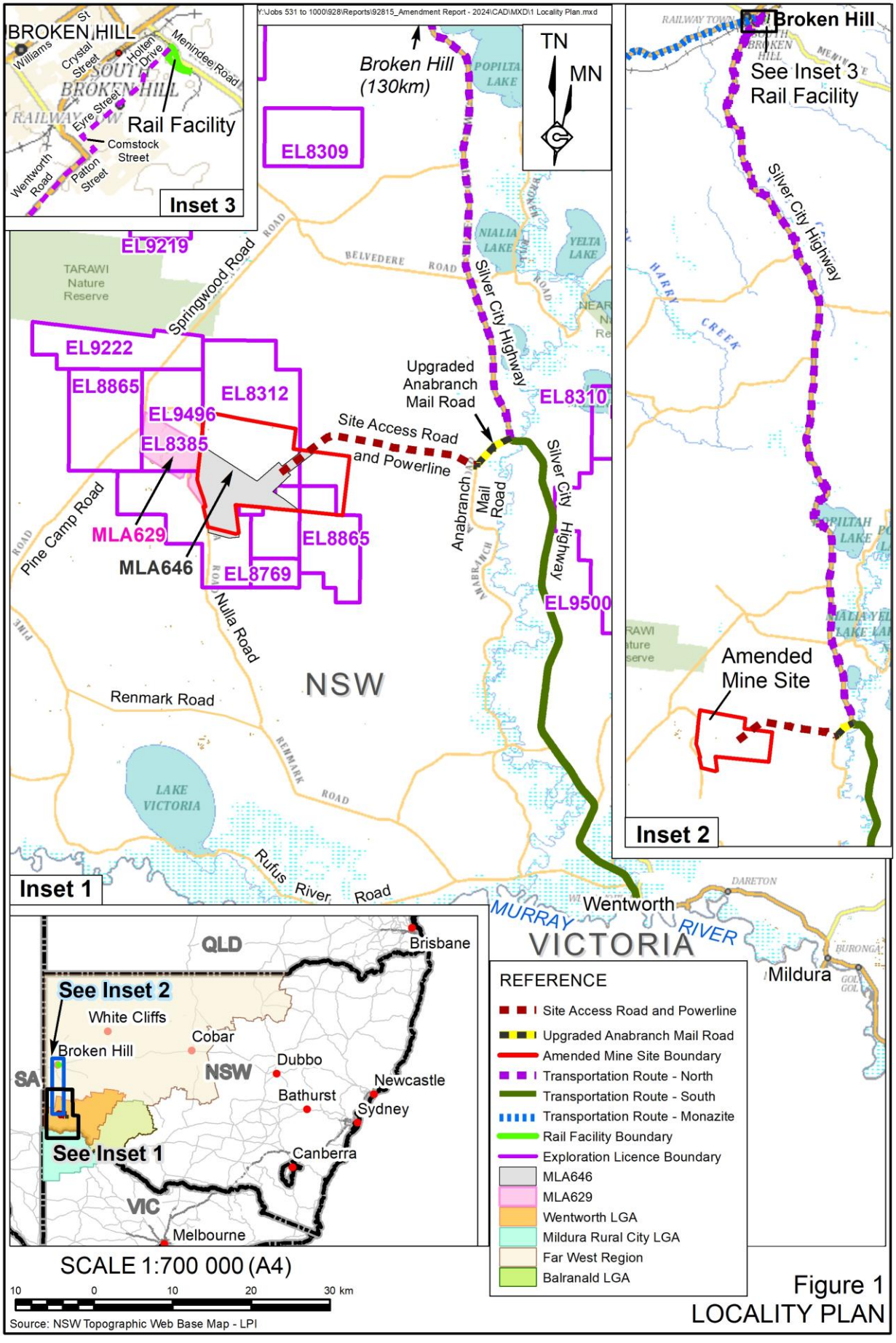


Figure 1
LOCALITY PLAN

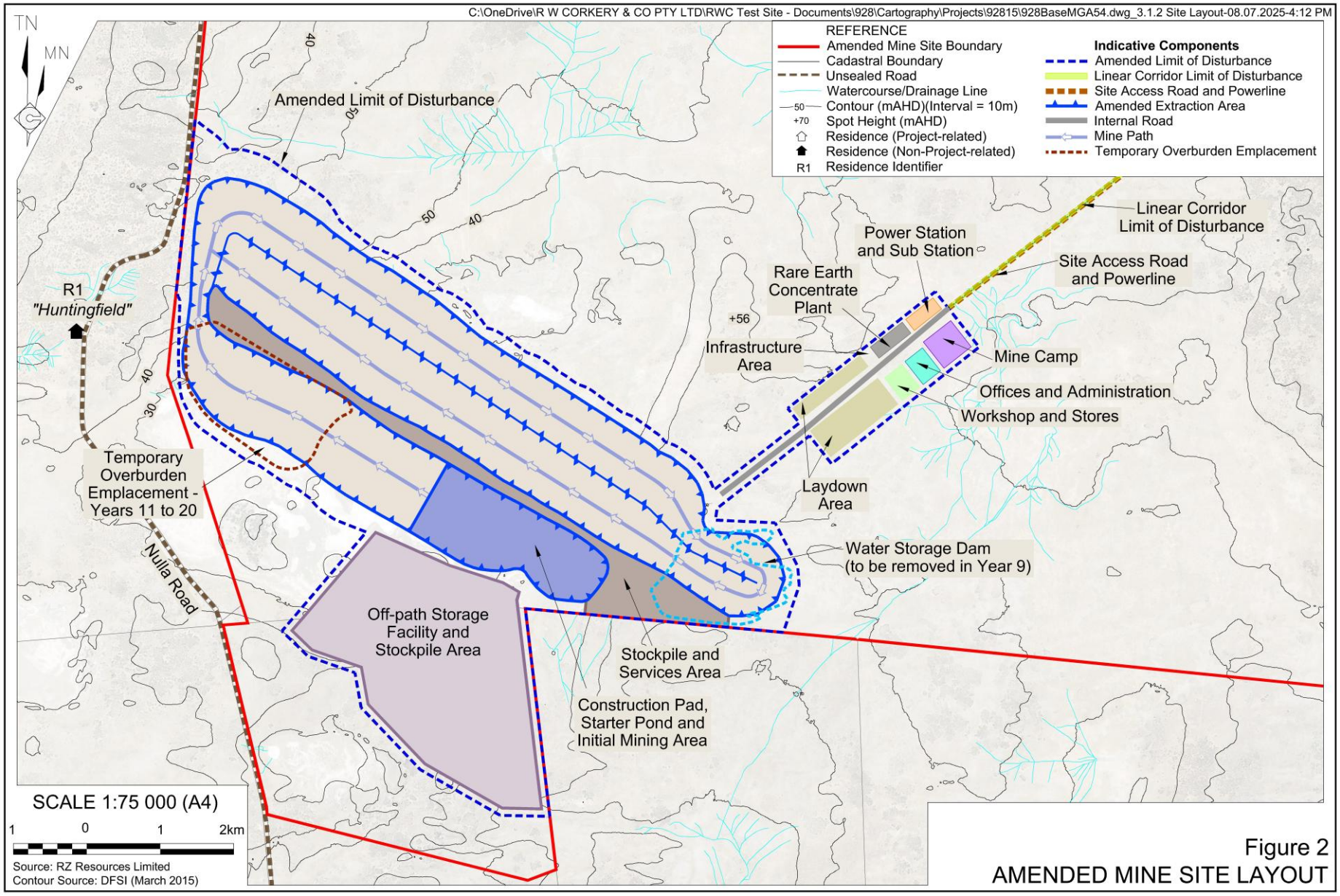


Figure 2
AMENDED MINE SITE LAYOUT

- On-site processing of extracted ore using a floating Wet Concentrator Plant and land-based Rare Earth Concentrate Plant to produce up to approximately 475,000 tonnes per annum (tpa) of heavy mineral concentrate.
- Transportation of heavy mineral concentrate in sealed containers from the Amended Mine Site to the Rail Facility via the Site Access Road, an upgraded section of the Anabranch Mail Road and the Silver City Highway to Broken Hill.
- Loading of mine products containers onto trains or direct onward transportation by road to port.
- Initial placement of overburden, interburden and tailings within an Off Path Storage Facility until sufficient area within the dredge pond has been established. Following this, interburden and tailings would be placed within completed sections of the dredge pond, with overburden used to cap the placed material and for construction of the final landform.
- A Water Storage Dam for the management of water levels within the construction/starter ponds during the assembly of the dredges and Wet Concentration Plant.
- Progressive rehabilitation of completed sections of the Amended Mine Site, including re-establishment of a final landform that would largely mimic the existing landform and revegetation with native species to re-establish ecosystem function within the Amended Mine Site.
- The life of the Amended Project would be approximately 26 years, comprising an initial 3 year construction period, followed by up to 18 years of mining operations and a further period of 5 years of rehabilitation.

1.2.2 Site Establishment and Construction Stage

The general preparatory activities to be undertaken during the site establishment and construction stage would include the following (**Figure 2**).

- The survey and marking out of all component areas to be disturbed during the site establishment and construction stage.
- Installation of fencing, gates, cameras and communications systems/infrastructure.
- Installation of erosion and sediment controls and associated drainage infrastructure to ensure exclusion of all surface water flows from areas outside the disturbance areas and containment of all incident rainfall within those areas.
- Development of a track along the alignment of the Site Access Road to permit access for construction-related equipment.
- Vegetation clearing.
- Soil stripping and stockpiling.
- Construction of internal roads.

- Installation of areas and facilities to support construction, including:
  - A Construction, Offices, Administration and associated infrastructure;
  - a Laydown Area, Workshop and Stores;
  - a Power Station (diesel);
  - an Off Path Storage Facility; and
  - the Water Storage Dam.

During this stage of the Amended Project, water necessary for dust suppression and other construction activities would be sourced from groundwater via existing production bores within the Amended Mine Site.

1.2.3 Operational Stage

Prior to the commencement of mining operations, the Applicant would establish a construction pad and starter pond. The construction pad would be used to individually assemble three dredges and the Wet Concentration Plant. During this period, a small temporary dredge would also be used to expand the starter pond and provide sufficient area to float all assembled equipment. Whilst the construction pond is in use, water levels would be managed via pumping to the Water Storage Dam. Once a dredge (or the Wet Concentration Plant) has been assembled, it would be floated into the starter pond. This process would be repeated until all plant has been assembled and dredge mining operations would commence.

The establishment of the construction pad and starter pond and subsequent mining operations would involve the removal of vegetation and soil from the dredge pond footprint. This material would initially be placed in stockpiles within the approved limit of disturbance until required for rehabilitation. Following vegetation clearing and soil stripping, overburden, or non-mineralised material located above the water table would be extracted using conventional free dig, load and haul open cut mining methods. The thickness of overburden removed using this method would vary depending on the depth to the water table. Extracted overburden would initially be used to construct and rehabilitate the Off Path Storage Facility and other infrastructure then subsequently used to cover the backfilled sections of the dredge pond.

The extraction of material below the water table, namely interburden and ore, would then be undertaken using three dredges. Typically, two dredges would extract interburden whilst the remaining dredge would extract the ore.

Extracted material from each dredge would be pumped to the Wet Concentration Plant, with material from the interburden dredges passing directly to the reject circuit. Initially, reject and interburden would be pumped to the Off Path Storage Facility. However, once the dredge pond is fully established and progressively moving along the mine path, the trailing edge of the dredge pond would be backfilled with reject and interburden using floating stackers. As this material would be primarily comprised of coarse to fine sand, it would settle relatively quickly and naturally consolidate to form a beach with a slope towards the dredge pond. Any water released during this consolidation would then return to the dredge pond. Once sufficiently consolidated and stabilised, overburden would be placed over the placed reject and interburden to promote further consolidation and compaction prior to shaping the final landform and rehabilitation.

1.2.4 Mining Schedule

Figure 3 presents the anticipated mine schedule which may be summarised as follows. It is noted that circumstances during the Project-life may alter the mining schedule and the following description is indicative only.

- The starter pond would be located at the southeastern limit of the Extraction Area.
- Once the starter pit has been established, mining during Years 1 to 5 would progress to the northwest.
- In Year 5, the mine path would be reorientated to the north.
- Following completion of Year 5, mining operations would proceed in a southeasterly direction path until approximately Year 10.
- During Years 10 and 11, the mine path would undergo a 180° rotation to proceed in a north westerly direction, parallel and adjacent to the Years 6 to 10 mine path, until Year 18 when mining would cease.

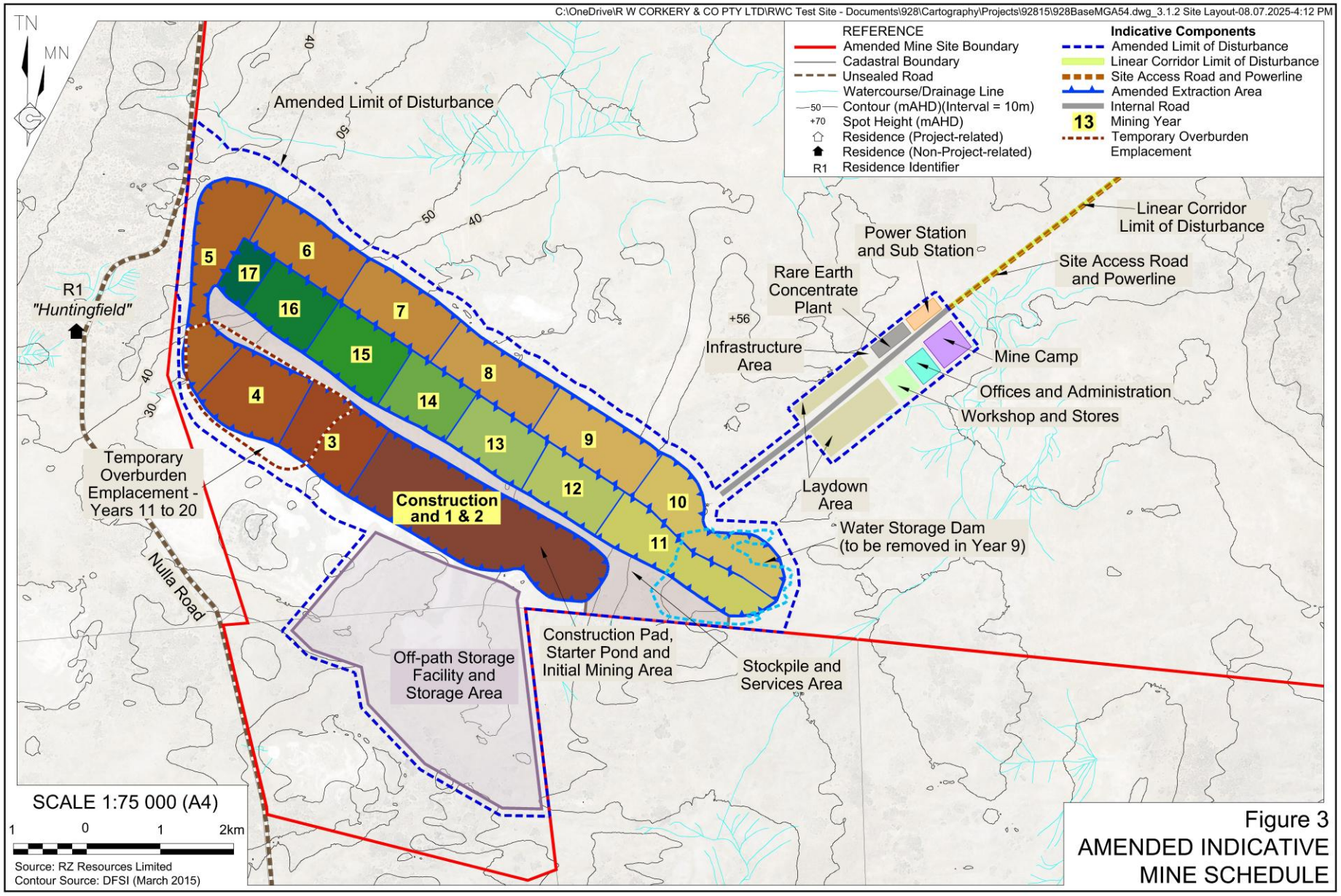


Figure 3
AMENDED INDICATIVE MINE SCHEDULE

2. Regulatory framework

2.1 Assessment Requirements

Table 1 presents the requirements of the Secretary's Environmental Assessment Requirements (SEARs) as they relate surface water, with the relevant section(s) of this document in which they have been addressed.

Table 1
Coverage of SEARs – Surface Water

Agency / Organisation	Requirement	Relevant Section(s)
Department of Planning & Environment 19/05/22	a water management strategy;	4
	a description of all works/activities that may intercept, extract, use, divert or receive surface water and/or groundwater;	1.2 and 4
	details of all water take for the life of the development and the relevant water source where water entitlements are required to account for the water take. If the water is to be taken from an alternative source, confirmation should be provided by the supplier that the appropriate volumes can be obtained;	Not applicable
	details of Water Access Licences (WALs) held to account for any take of water where required, or demonstration that WALs can be obtained prior to take of water occurring. This should include an assessment of the current market depth where water entitlement is required to be purchased and details of any exemptions or exclusions to requiring approvals or licenses under the *Water Management Act 2000*;	Not applicable
	an assessment of impacts on surface and groundwater sources (both quality and quantity), related infrastructure, adjacent licensed water users, basic landholder rights, watercourses, riparian land;	5
	a detailed and consolidated site water balance, including a description of site water demands, water disposal methods (inclusive of volume and frequency of any water discharges), water supply and transfer infrastructure and water storage structures, and measures to minimise water use;	EIS Section 3.8.4
	a description of the measures proposed, including monitoring activities and methodologies, to ensure the development can operate in accordance with the requirements of any relevant WSP or water source embargo;	4, 5
	a detailed description of the proposed water management system (including sewage), water monitoring program and other measures to mitigate surface and groundwater impacts;	4, 5
	a description of construction erosion and sediment controls, how the impacts of the development on areas of erosion, salinity or acid-sulphate risk or erodible soils types would be managed and any contingency requirements to address residual impacts;	4.3 and EIS Section 6.4
	identification and impact assessment of all works located on waterfront land including consideration of the *Guidelines for Controlled Activity Approvals*; and	Not applicable
	an assessment of any likely flooding impacts of the development including consideration of the hydrology of the site in the site design and the placement of infrastructure to minimise flood risks.	5.5

In the preparation of the SEARs, relevant government agencies have been consulted, with responses received from the following.

- Department of Planning and Environment – Water (DPE – Water) - 21 April 2022
- Environment Protection Authority (EPA) - 4 May 2022
- Biodiversity and Conservation Division (BCD) - 4 May 2022

Each of these agencies provided a detailed (generic) list of requirements to be addressed in the preparation of the SWA. The relevant requirements are listed in **Table 2** together with the section of this report where each requirement is addressed.

No specific assessment requirements have been provided by the Wentworth Shire Council for the SWA.

Table 2
NSW Government Agency Requirements– Surface Water

Agency	Requirement	Addressed
DPE – Water 21/04/2022	The identification of an adequate and secure water supply for the life of the project. Confirmation that water can be sourced from an appropriately authorised and reliable supply. This is to include an assessment of the current market depth where water entitlement is required to be purchased.	Addressed in Groundwater Assessment
	A detailed and consolidated site water balance	Refer EIS Section 3.8.4
	Assessment of impacts on surface water sources (both quality and quantity), related infrastructure, adjacent licensed water users, basic landholder rights, watercourses and riparian land, and measures proposed to reduce and mitigate these impacts.	5
	Proposed surface water monitoring activities and methodologies.	4.4.3
	Consideration of relevant legislation, policies and guidelines, including the *Guidelines for Controlled Activities on Waterfront Land (NRAR 2018)* and the relevant Water Sharing Plans.	2.1
NSW Environment Protection Authority 04/05/2022	The following potential environmental impacts of the project need to be assessed, quantified and reported on. (c) Water; The Environmental Assessment (EA) should address how the required environmental goals outlined below will be met for each potential impact.	This report
	The EA should describe mitigation and management options that will be used to prevent, control, abate or mitigate identified potential environmental impacts associated with the project and to reduce risks to human health and prevent the degradation of the environment.	4
	Potential impacts on water quantity and quality	5
	Details of the site drainage and any natural or artificial waters within or adjacent to the development must be identified and where applicable measures proposed to mitigate potential impacts of the development on these waters. The EA should provide details of the proposed design and construction of water management systems for the site to ensure surface and ground waters are protected from contaminants.	4
DPE – Biodiversity & Conservation Division 04/05/2022	The EIS should fully describe the proposal, the existing environment, including threatened species habitat not associated with vegetation communities such as paddock trees, and impacts of the development including the location and extent of all proposed works that may impact on flooding.	4, 5.5
	The EIS should specifically address the attached requirements for flooding and conduct suitable flood modelling for the purposes of appropriately locating infrastructure and for assessing impacts, including on waterway crossings for site access.	5.5
	The EIS must map the following features relevant to flooding as described in the Floodplain Development Manual 2005 (NSW Government 2005) including: a. Flood prone land. b. Flood planning area, the area below the flood planning level. c. Hydraulic categorisation (floodways and flood storage areas). d. Flood hazard.	Not applicable

Table 2 (Cont'd)
NSW Government Agency Requirements for SSD 41294067 – Surface Water

Issue	Requirement	Addressed
DPE – Biodiversity & Conservation Division 04/05/2022 (Cont'd)	The EIS must describe flood assessment and modelling undertaken in determining the design flood levels for events, including a minimum of the 5% Annual Exceedance Probability (AEP), 1% AEP flood levels and the probable maximum flood, or an equivalent extreme event.	Not applicable
	The EIS must model the effect of the proposed development (including fill) on the flood behaviour under the following scenarios: a. Current flood behaviour for a range of design events as identified in 7 above. This includes the 0.5% and 0.2% AEP year flood events as proxies for assessing sensitivity to an increase in rainfall intensity of flood producing rainfall events due to climate change.	Not applicable
	Modelling in the EIS must consider and document: a. Existing council flood studies in the area and examine consistency to the flood behaviour documented in these studies.	3.3
	b. The impact on existing flood behaviour for a full range of flood events including up to the probable maximum flood.	Not applicable
	c. Impacts of the development on flood behaviour resulting in detrimental changes in potential flood affection of other developments or land. This may include redirection of flow, flow velocities, flood levels, hazards and hydraulic categories.	Not applicable
	d. Relevant provisions of the NSW Floodplain Development Manual 2005.	Not applicable
	The EIS must assess the impacts on the proposed development on flood behaviour, including: a. Whether there will be detrimental increases in the potential flood affectation of other properties, assets and infrastructure.	Not applicable
	b. Consistency with Council Floodplain Risk Management Plans.	Not applicable
	c. Consistency with any Rural Floodplain Management Plans.	Not applicable
	d. Compatibility with the flood hazard of the land.	Not applicable
	e. Compatibility with the hydraulic functions of flow conveyance in floodways and storage in flood storage areas of the land.	5.3
	f. Whether there will be adverse effect to beneficial inundation of the floodplain environment, on, adjacent to or downstream of the site.	5.3
	g. Whether there will be direct or indirect increase in erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses.	5.3
	h. Any impacts the development may have upon existing community emergency management arrangements for flooding. These matters are to be discussed with the SES and Council.	Not applicable
	i. Whether the proposal incorporates specific measures to manage risk to life from flood. These matters are to be discussed with the SES and Council.	Not applicable
	j. Emergency management, evacuation and access, and contingency measures for the development considering the full range or flood risk (based upon the probable maximum flood or an equivalent extreme flood event). These matters are to be discussed with and have the support of Council and the SES.	Not applicable
	k. Any impacts the development may have on the social and economic costs to the community as consequence of flooding.	Not applicable

2.2 Agency Submissions on EIS

A summary of requirements submitted by Government Agencies after the exhibition of the EIS is presented in **Table 3**.

Table 3
Agency Submissions on the EIS

Agency	Requirement	Addressed
BCS	Complete detailed flood modelling in the detailed design stage to appropriately locate and size infrastructure and to inform emergency management plans.	Not required. Mine Site is not subject to flooding
	Engage with the local council and the NSW State Emergency Service (SES) to discuss and agree emergency management matters, and to inform a site-specific flood emergency response plan	Post approval
EPA	The EPA recommends that the Applicant prepare and implement Surface Water and Groundwater Management Plans for the development to the satisfaction of the Secretary, and prior to any construction works.	Post approval

2.3 Applicable Legislation, Policies, Plans and Guidelines

2.3.1 Water Management Act

The *Water Management Act 2000* (WM Act) was developed in recognition of the need for NSW water resources to be managed in a sustainable and integrated manner for the benefit of both present and future generations. The WM Act is administered by the NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW), WaterNSW and the Natural Resources Access Regulator (NRAR) to provide clear arrangements relating to the allocation of, and regulating access to, NSW's water resources. The WM Act also contains provisions for controlling land-based activities that may affect the quality and quantity of the State's water resources via the granting of certain approvals.

Table 4 below presents the surface water licensing and approval requirements of the WM Act and how they apply to the Amended Project.

Table 4
WM Act Approvals and Application to Project

Page 1 of 2

WM Act Section	Name and purpose	Applicability for Project
53	Harvestable rights that entitle the owner or occupier of a landholding to construct works for the capture, storage and use of water without the need for a WAL or water management work approval.	The Amended Mine Site is situated within the Western Division of the harvestable rights area, the owner or occupier of the land is entitled to capture all rainfall and runoff and use it for any purpose.
56	Water access license (WAL) that entitles the holder to take and use water up to a specified share (share component) within a specified water management area or specified water source.	Not applicable as no licensed entitlement to surface water resources would be sought or are required.

Table 4 (Cont'd)
WM Act Approvals and Application to Project

WM Act Section	Name and purpose	Applicability for Project
89	Water use approval authorising the use of water for a specific purpose and at a specific location	Not applicable. The Amended Project is exempt from this requirement under Section 4.41 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and Section 53 (harvestable rights) of the WM Act.
90	Water management work approval authorising the construction of a water supply work, drainage work or flood work at a specified location.	Not applicable. The Amended Project is exempt from this requirement under Section 4.41 of the EP&A Act. In addition, water management works in certain areas of the Amended Mine Site are considered "excluded works" under Section 39 of the WM (General) Regulation 2018.
91	Approval authorising a controlled activity on waterfront land.	Not applicable. The Amended Project is exempt from the requirement for a controlled activity approval under Section 4.41 of the EP&A Act.

2.3.2 Protection of the Environment Operations Act

The *Protection of the Environment Operations Act 1997* (POEO Act) provides the framework for regulation and reduction of pollution and waste in NSW. The POEO Act is regulated by the Environment Protection Authority (EPA), which issues environment protection licences (EPLs) for certain activities including water discharge. As the Amended Project would exceed the 4ha disturbance threshold under Clause 29(2) of Schedule 1 of the POEO Act and EPL would be required.

The POEO Act also requires immediate reporting of pollution incidents which cause or threaten to cause material harm to the environment. All holders of EPLs are required to prepare, implement and regularly test *Pollution Incident Response Management Plans*.

2.3.3 Water Sharing Plan

The principles of the WM Act require that operational water sharing plans (WSP) for the respective river or aquifer system be established to protect the water resource, dependent ecosystems and surface water users by identifying and establishing the resource allocations available for distribution (e.g. WALs) and share components) and the objectives for the relevant system.

Surface water resources of the area in which the Amended Mine Site is situated are managed under the terms of the *Water Sharing Plan for the Lower Murray-Darling Unregulated River Water Source 2011*. However, as identified in **Table 4**, no WALs entitling access to surface water resources are required or would be sought by the Applicant. This notwithstanding, the Applicant would endeavour to ensure the Project meets the environmental objectives of the WSP.

2.3.4 Wentworth Local Environmental Plan

The Amended Mine Site is situated within the Wentworth Local Government Area (LGA) and as such is subject to the planning provisions contained in the Wentworth Local Environmental Plan (LEP) 2011. Regarding the management of surface water, the provisions of the LEP require the consent authority to consider whether the Amended Project:

- is compatible with the land's flood function;
- avoids adverse or cumulative impacts on flood behaviour;
- does not disrupt or have a detrimental effect on existing drainage patterns and soil stability;
- would have adverse impacts on any waterway, drinking water catchment or environmentally sensitive area;
- would protect the ecological processes necessary for the continued existence of native flora and fauna; and
- has the potential for adverse impacts to the surface water characteristics, quality and flows to wetlands, watercourses and riparian areas.

The Amended Mine Site is not identified as being within an LEP flood planning area. However, mining-related disturbance would occur in areas mapped as wetlands under the LEP (**Figure 4**). These LEP mapped wetlands align with mapped watercourse areas of the WM (General) Regulations 2018 hydrolines spatial dataset. However, comparison with **Figure 7** shows that the mapped LEP wetlands also correspond with areas identified as "Lakes – Mainly Dry" on the NSW 1: 100,000 topographic map series.

2.3.5 Erosion and Sediment Control Guidelines

Whilst there are a number of documents available for the management of stormwater runoff with respect to the prevention of water quality impacts as a result of increased erosion and potentially sediment-laden runoff, the following guidelines are typically referenced in NSW and with regard to similar developments as the Amended Project.

- *Managing Urban Stormwater: Soils and Construction, Volume 1 (Landcom, 2004).* This document is commonly referred to as the "Blue Book".
- *Managing Urban Stormwater: Soils and Construction, Volume 2E – Mines and Quarries (DECC, 2008).*

In particular, the guidelines referenced above contain details relating to the methodologies employed in the design calculations of sedimentation basins necessary for the capture, storage and treatment of stormwater prior to release.

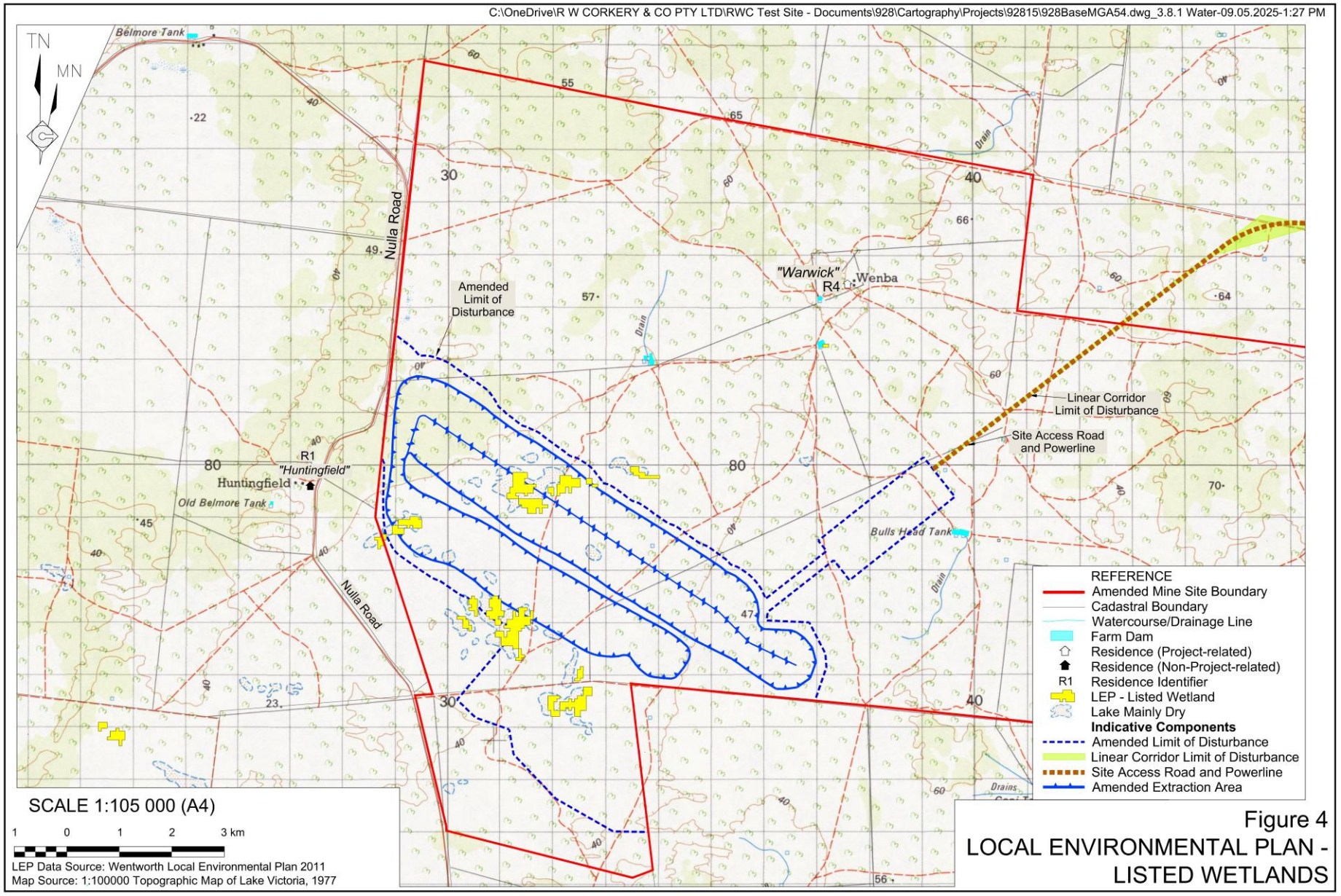


Figure 4
LOCAL ENVIRONMENTAL PLAN - LISTED WETLANDS

2.3.6 Water Quality Guidelines

The principal guideline for water quality in Australia is the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZG, 2019). This guideline was established under the National Water Quality Management Strategy (NWQMS). The ANZG 2019 Guideline sets quantitative and qualitative values for a range of water quality parameters for the protection of water quality objectives.

There are a range of water quality objectives reflecting the ecological, social and economic attributes and ecosystem function of the regional catchment. The identification of these water quality objectives helps to identify the water quality trigger values for the Amended Project. A summary of the surface water quality objectives and their aims for the uncontrolled streams of the Barwon – Darling and Far Western Catchments (DECCW, 2006) that constitute the receiving environment are as follows.

- Aquatic ecosystems – that aim to maintain or improve the ecological condition of waterbodies and their riparian zones.
- Visual amenity – that aim to protect the aesthetic quality of waters.
- Secondary contact recreation – that aims to maintain water quality for activities where there is a low probability of water being swallowed.
- Primary contact recreation – that aims to maintain water quality for activities where there is a high probability of water being swallowed.
- Livestock water supply – that aims to protect water quality to maximise production of healthy livestock.
- Homestead water supply - that aims to protect water quality for domestic use including drinking, cooking and bathing.
- Aquatic foods – that aims to protect water quality for the production of aquatic foods for human consumption.

Another key document for managing water quality in the Murray Darling Basin is the Commonwealth *Water Act 2007*. However, this document does not identify any targets for the Murray Lower Darling water resource planning area. In 2020, the (then) Department of Planning, Industry and Environment published a document titled "*The Basin Plan: Water quality technical report for the Murray Lower Darling surface water resource plan area (SW8)"* (DPIE, 2020). This document identified a range of targets to protect the Murray Lower Darling water resource planning area from identified threats such as harmful algal blooms and salinity.

Whilst technically the water quality objectives and various quality targets are applicable to the Amended Project, the existing hydrologic regime in the vicinity of the Amended Mine Site is highly ephemeral, with no permanent natural water features present. Therefore, the water quality guidance identified above is provided as a guide only. This notwithstanding, the Applicant would endeavour to ensure the Amended Project meets these water quality objectives or any others mandated by regulatory agencies.

3. Existing Environment

3.1 Climate

3.1.1 Introduction and Data Sources

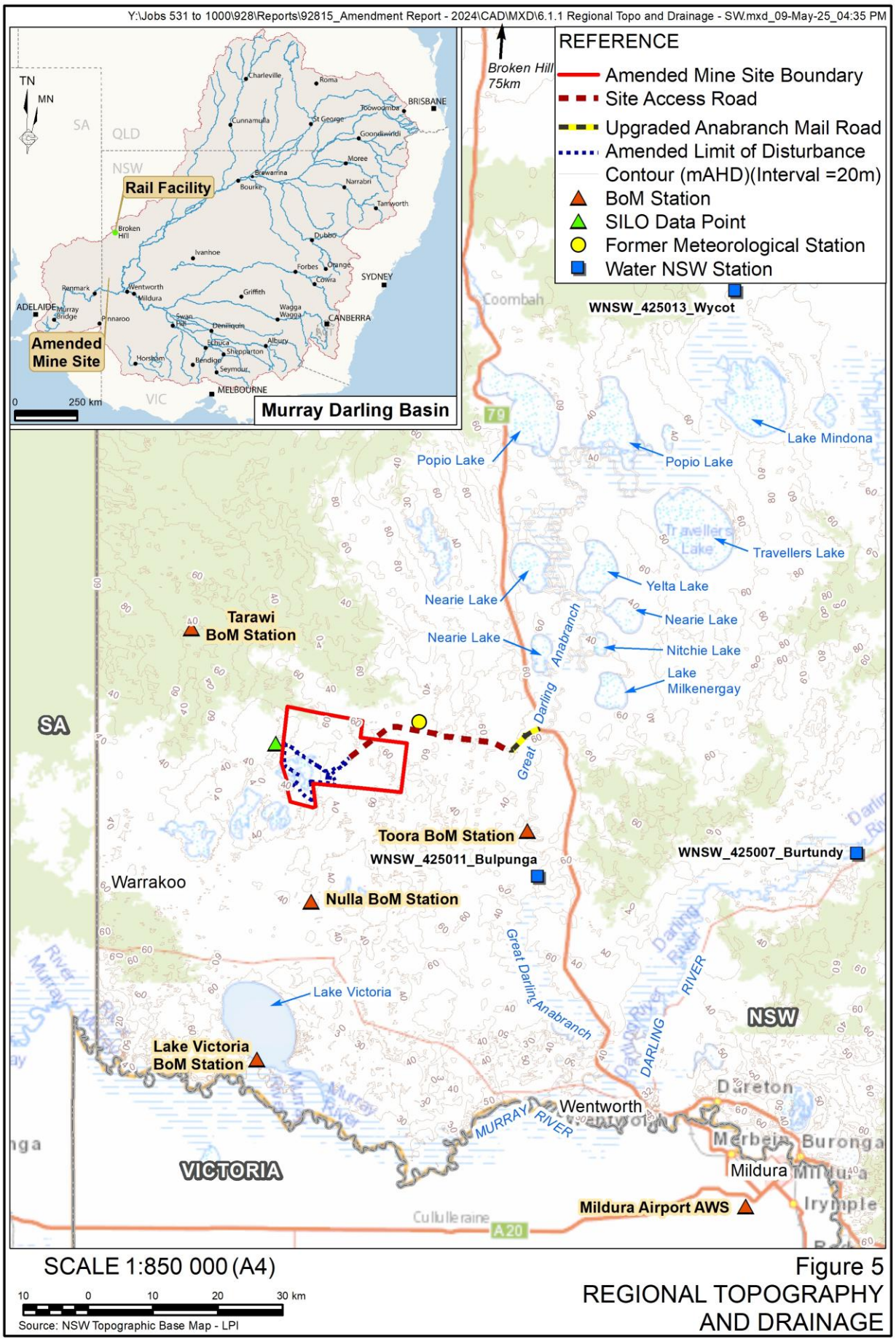
This subsection provides a brief overview of the meteorological conditions surrounding the Amended Mine Site focusing particularly on those aspects of the climate that are likely to influence the potential Amended Project-related surface water impacts.

There are four Bureau of Meteorology (BoM) weather stations within 50km of the Amended Mine Site (**Figure 5**) with either current or historic records, namely:

- Wentworth (Tarawi) – 22km from the Amended Mine Site with rainfall records from 1 January 1966 until 15 February 2016;
- Wentworth (Nulla) – 25km from the Amended Mine Site with rainfall records commencing 1 January 2017 until the present day;
- Wentworth (Toora) – 41km from the Amended Mine Site with rainfall records from 1 January 1972 until 31 July 2016; and
- Lake Victoria – 49km from the Amended Mine Site with rainfall records commencing 1 January 1922 until the present day and evaporation data from 1965 onwards.

The Applicant installed a meteorological station within the Amended Mine Site in 2017. However, this station malfunctioned in December 2019 and was deemed inoperable with limited reliable data available after that date. Therefore, climate data for the SWA has been sourced from the Scientific Information for Landowners (SILO) database, managed by the Queensland Department of Environment and Science (DES). The program uses historic Bureau of Meteorology datasets and interpolation techniques to generate continuous daily time step synthetic climate data for any given location in Australia. The SILO dataset for the period 1 January 1889 to 31 December 2024 was generated for the Amended Mine Site (Latitude -33.60, Longitude 141.30) on 29 April 2025. Climate data sourced from SILO is presented in **Table 5** whilst **Figure 6** provides a comparison of the SILO data with those of the BoM stations identified above.

Review of **Figure 6** identifies the mean monthly rainfall derived from the SILO rainfall data is generally consistent with that of Lake Victoria albeit with some minor variation. This is likely due to the longer-term (100-years) record for Lake Victoria capturing a greater temporal range of observation. This is highlighted by the variation observed from the 48-year record collected at Wentworth (Tarawi). The close relationship between the SILO and Lake Victoria Pan A evaporation data is attributed to the interpolation techniques employed by the SILO and the absence of other BoM stations collecting this data.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REFERENCE
Amended Mine Site Boundary
Site Access Road
Upgraded Anabranch Mail Road
Amended Limit of Disturbance
Contour (mAHD)(Interval =20m)
BoM Station
SILO Data Point
Former Meteorological Station
Water NSW Station
Broken Hill 75km
WNSW_425013_Wycot
Rail Facility
Amended Mine Site
Murray Darling Basin
Lake Mindona
Popio Lake
Travellers Lake
Yelta Lake
Nearie Lake
Nitchie Lake
Lake Milkenergay
Anabranch
Darling
Great
Tarawi BoM Station
SA
Toora BoM Station
WNSW_425011_Bulpunga
WNSW_425007_Burtundy
Warrakoo
Nulla BoM Station
Great Darling Anabranch
DARLING RIVER
Lake Victoria
Lake Victoria BoM Station
NSW
VICTORIA
Wentworth
MURRAY RIVER
Mildura
Buronga
Mildura Airport AWS
Irymple
Cullulleraine
A20
SCALE 1:850 000 (A4)
10 0 10 20 30 km
Source: NSW Topographic Base Map - LPI
Figure 5
REGIONAL TOPOGRAPHY AND DRAINAGE

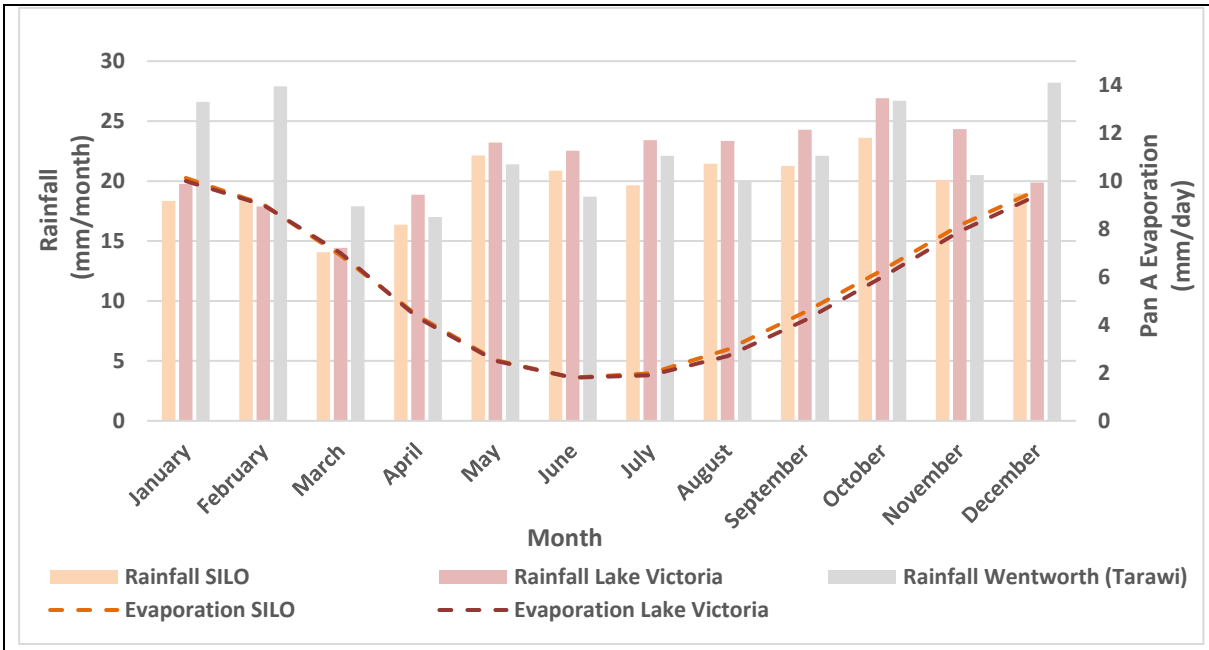

Figure 6
MEAN MONTHLY RAINFALL AND MEAN DAILY EVAPORATION
Derived from SILO and BoM Station Data

Table 5
Climate Data

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
Temperature (C°) – SILO (1889 to 31 December 2024)													
Mean maximum temperature	33.2	32.5	29.2	24.3	19.8	16.5	16.1	18.1	21.5	25.1	28.7	31.4	24.7
Mean minimum temperature	17.3	17.0	14.4	10.7	7.9	5.7	5.0	5.9	8.2	10.8	13.7	15.8	11.0
Rainfall (mm) – SILO (1889 to 31 December 2024)													
Mean rainfall	18.3	18.6	14.1	16.4	22.1	20.9	19.7	21.4	21.3	23.6	20.1	19.0	235.4
Highest rainfall	119.1	214.1	110.5	118.1	103.2	89.5	62.2	84.3	101.0	122.0	82.6	188.7	592.6
Lowest rainfall	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.4	0.0	0.0	0.0	53.1
Highest daily rainfall	53.4	93.8	53.7	32.8	35.6	37.3	27.0	31.7	37.1	48.1	49.4	111.7	111.7
Mean Monthly Evaporation (mm) – SILO (1889 to 31 December 2024)													
Class A Pan	314.0	255.1	214.0	131.1	78.7	54.1	61.4	92.2	136.1	194.8	244.7	298.0	2074.0
Source: Queensland Department of Environment and Science													

3.1.2 Temperature

The SILO data identifies that January is typically the hottest month, with an average maximum temperature of 33.2ºC. July is the coldest month with a mean maximum temperature of 16.1°C and a mean minimum temperature of 5.0°C.

3.1.3 Rainfall

Review of **Table 5** identifies that mean annual rainfall at the Amended Mine Site is 235.4mm. Rainfall distribution is relatively even throughout the year, although the autumn months collectively contribute the lowest amount to total annual rainfall with approximately 22% of the total average annual rainfall. On average, the driest month is March with 14.1mm of rainfall whilst the wettest month on average is October with 22.6mm (**Table 5**).

The driest year of the SILO record is 2019 with 53.1mm of rainfall. This accords with Lake Victoria's 2019 total of 66.4mm and the 47.2mm recorded at Wentworth (Nulla) for the same year. By contrast, the wettest year on the SILO record was 1973 with 592.6mm which corresponds with the 603.6mm recorded at Lake Victoria for that year.

The SILO data contains a maximum daily rainfall of 111.7mm on 13 December 1975. Maximum daily rainfall exceeds monthly average rainfall for all months, indicating that high intensity storms over a relatively short duration may occur, particularly in the summer months of December and February.

3.1.4 Evaporation

The mean Class A Pan evaporation data presented in **Table 5** has been derived from SILO data. Mean evaporation at the Amended Mine Site is subsequently anticipated to be approximately 5.7mm per day throughout the year or 2 079mm per year. This is slightly higher than the annual evaporation recorded at Lake Victoria. Mean daily evaporation varies between approximately 1.8mm per day (54.1mm/month) in June and 10.1mm per day (314.3mm/month) in January.

3.2 Topography

3.2.1 Regional Topography

The Amended Mine Site is situated within a relatively flat area of the central Murray Darling Basin (**Figure 5**). Regional topography is characterised by sequences of ridges and lunettes that rise to elevations between 50m above the Australian Height Datum (AHD) and 70m AHD. These ridges are interspersed with broad swales and drainage depressions with elevations between 30m AHD and 40m AHD.

3.2.2 Local Topography

The Amended Mine Site topography is a small-scale reflection of regional topography and is characterised by swales and drainage depressions. Within the Amended Mine Site there are four depressions, the most significant two being the Eastern and Western Salt Pans with two lesser depressions, namely the central and eastern depression (**Figure 7**). The floors of the two salt pans are approximately 25m AHD whilst the floors of the central and eastern depressions are at an elevation of approximately 30m AHD. The salt pans and depressions are interpreted to have been formed by deflation, with wind-blown sediments deposited as lunettes on the eastern side of each structure. The salt pans and depressions are surrounded by gently sloping land that rises to approximately 58m AHD east of the Eastern Salt Pan and approximately 53m AHD east of the Western Salt Pan.

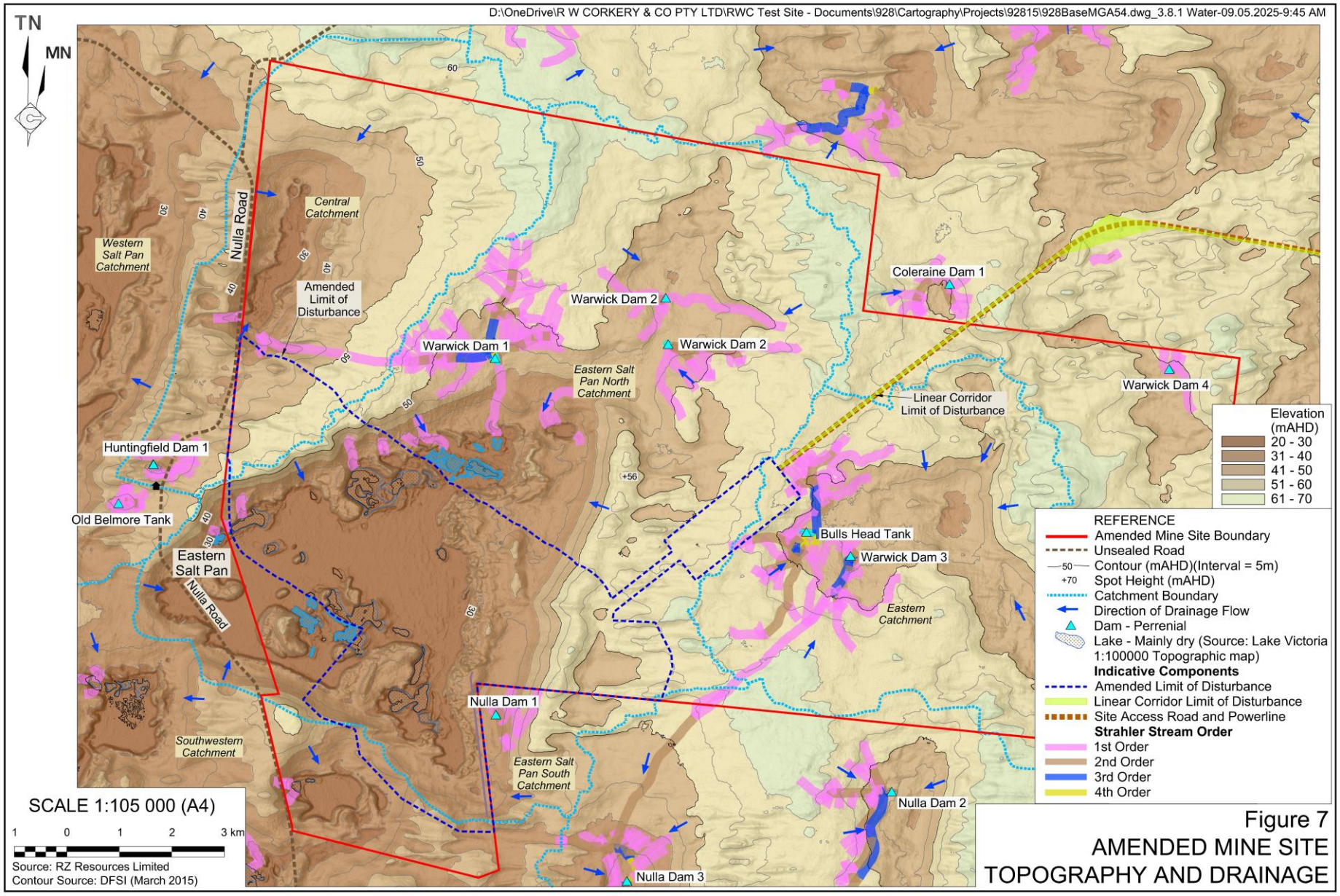

Figure 7
AMENDED MINE SITE
TOPOGRAPHY AND DRAINAGE

At greater distances from the salt pans, the landforms are typically flat to undulating, with rises and swales typically between 70m AHD and 40m AHD respectively. Slopes typically average <1%, with localised areas of 5% slopes associated with the wind-blown lunettes adjacent to the Eastern and Western Salt Pans.

3.3 Regional and Amended Mine Site Catchments

3.3.1 Regional Drainage

3.3.1.1 Rivers and Lakes

As previously noted, the Amended Mine Site is located within the Lower Darling River sub-basin of the broader Murray Darling Basin, which has an area of approximately one million square kilometres. This basin is drained by Australia's three longest rivers, the Murray, Darling and Murrumbidgee Rivers.

The Murray Darling Basin in the vicinity of the Amended Mine Site is dominated by the Darling River. This river starts at the confluence of the Barwon and Culgoa Rivers, between Brewarrina and Bourke in northern NSW and flows in a southeasterly direction before merging with the Murray River at Wentworth. The Murray River then flows in a westerly and south-westerly direction before entering the Southern Ocean at Goolwa, in South Australia.

The Great Darling Anabranch, located approximately 20km east of the Amended Mine Site, is a relict channel of the Darling River and flows in a generally southerly direction before also merging with the Murray River at Wentworth. The Great Darling Anabranch includes series of large shallow lakes such as Yelta, Wialia, Pine, Popio and Popiltah Lakes (**Figure 5**). These lakes, and many smaller drainage depressions, are believed to have been formed by wind transportation of dry exposed sediments in the base of the depression. These sediments commonly form lunettes of wind-blown material on the northeastern and eastern margins of the lakes, a reflection the dominant south-westerly wind patterns.

Lake Victoria located approximately 30km to the south of the Amended Mine Site, forms an integral component of the regulated Murray River system, with water levels controlled by a series of embankments and locks.

3.3.1.2 Regional Flooding

The *Wentworth Shire Local Flood Plan* (SES, 2023) notes that the occurrence of flooding in the Darling River is usually either the result of summer rainfall in southern Queensland or winter rainfall in northern NSW. The Great Darling Anabranch may periodically act as a flood channel when the Darling River is in flood. During such periods, the series of large lakes identified in Section 3.3.1.1 would also fill, acting as floodplain storages. SES (2023) identifies specific flood risk areas in and around population centres such as Wentworth, which is situated at the junction of the Murray and Darling Rivers, and those of Gol Gol, Dareton and Buronga, all of which are located on the Murray River. SES (2023) identifies that Pooncarie, a minor population centre on the Darling River has been isolated but never inundated by floodwaters.

3.3.1.3 Regional Land-use

Due to the low rainfall of the region, land-use is principally low intensity grazing. However, areas closer to more permanent water sources, such as the Darling River at Menindee, Lake Tandou on the Great Darling Anabranch and along the Murray River between Buronga and Wentworth are able to sustain more intensive agricultural activities such as irrigated cropping. Some areas are also set aside for conservation, such as the Tarawi Nature Reserve and the Nearie Lake Nature Reserve that are north and northeast of the Amended Mine Site respectively (refer **Figure 5**).

3.3.1.4 Regional Water Quality

In 2020, land-use changes and flow regulation were identified as major issues and causes of water quality degradation in the Murray and Lower Darling water resource planning area by the (then) Department of Planning, Industry and Environment (DPIE, 2020). Harmful algal blooms are also considered a key threat to the Darling River and its tributaries downstream of Menindee Lakes. Such blooms occur as the result of low flow conditions, elevated water temperatures and nutrient loads (e.g. phosphorous and nitrogen).

Water quality datasets collected at monitoring stations operated by WaterNSW are available for the Darling River and Great Darling Anabranch at the locations shown on **Figure 5**, namely:

- Station 425007 (Burtundy) on the Darling River approximately 90km southeast of the Amended Mine Site.
- Station 425013 (Wycot) on the Great Darling Anabranch approximately 95km northeast of the Amended Mine Site; and
- Station 425011 (Bulpunga) on the Great Darling Anabranch approximately 45km southeast of the Amended Mine Site.

However, the data is limited to electrical conductivity (EC) and temperature, with dissolved oxygen also measured at Station 425007 (Burtundy). **Table 6** presents a statistical summary of collected EC and dissolved oxygen data.

Table 6
WaterNSW Monitoring Data Summary

Parameter	Statistic	Station[1]		
		425007	425013	425011
EC (µS/cm)	Minimum	251.1	211.6	276.7
	Median	588.1	523.8	571.3
	95th Percentile	1259.0	1679.3	1361.8
	Maximum	1,693.4	2,289.7	2,757.2
Dissolved Oxygen (% saturation)	Median (2023/2024)	84.4 / 97.0	Not available	Not available
Note 1: see **Figure 5**				
Source: https://realtimedata.waternsw.com.au/water.stm				

Review of **Table 6** identifies that EC values in both the Darling River and the Great Darling Anabranch are variable and with similar minimum and median values. However, the maximum recorded EC values in the Great Darling Anabranch are somewhat higher than that recorded for the Darling River and possibly reflect the disrupted flow regime in this watercourse.

As noted in Section 2.2.6, the Commonwealth *Water Act, 2007* does not identify water quality targets for the Murray Lower Darling water resource planning area. Therefore, DPIE (2020) nominated 830µS/cm as the 95th percentile target value for the Darling River at Station 425007 (Burtundy) for the purposes of long-term planning. DPIE (2020) also identifies that, for the protection of water dependent ecosystems, annual median dissolved oxygen (% saturation) be between 85 – 110%. **Table 6** identifies the 95th percentile EC target is exceeded at all monitoring stations whilst in 2022, annual median dissolved oxygen was below the target range.

3.3.2 Amended Mine Site Drainage

3.3.2.1 Amended Mine Site Catchments

Due to the Amended Mine Site being reduced in area, the following catchments would no longer by disturbed by the Amended Project and have not been considered further in this assessment (**Figure 7**)

- Northwestern Catchment.
- Western Salt Pan Catchment.

There are four surface water catchments either wholly or partly within the Amended Mine Site boundary (**Figure 7**). The local drainage network of these catchments directs runoff internally, with no catchment outlet or downstream linkages. These internal drainage networks are also indistinct and discontinuous, terminating in dams that were historically constructed to support stock watering (**Figure 7**).

Project-related disturbance would be confined to four catchments, a brief description those is as follows.

- Southwestern Catchment – this catchment is partly situated within, and externally drains beyond, the southwestern and western sections of the Amended Mine Site. Approximately 0.5km^2 of the northeastern section of this catchment would be disturbed by the Amended Project.
- Central Catchment– this catchment is approximately 36km^2 in area and is situated largely within the Amended Mine Site. Project-related activities would disturb an approximately 3.5km^2 area in the southern section of this catchment.
- Eastern Salt Pan Catchment – this catchment is approximately 105km^2 in area and is situated in the central eastern section of the Amended Mine Site. Catchment drainage is towards the Eastern Salt Pan. Approximately 33km^2 of this catchment would be disturbed by Project-related activities.
- Eastern Catchment – this catchment is approximately 42km^2 in area and is almost entirely within the easternmost section of the Amended Mine Site with an approximately 0.6km^2 area within the proposed limit of disturbance.

3.3.2.2 Amended Mine Site Catchment Yield

Annual yields for those catchments draining within the Amended Mine Site across a range of annual exceedance probabilities (AEP) are presented in **Table 7**. These yields have been estimated using SILO data and a 0.05 runoff coefficient which matches that of the Lake Victoria region baseline presented in the document *Climate Change Impacts on Surface Runoff and Recharge to Groundwater* (OEH, 2015).

Table 7
Estimated 72-hour Rainfall Catchment Yields – Undisturbed

Catchment	Area (km^2)	Annual Yield (ML)				
		99% AEP	50% AEP	20% AEP	10% AEP	1% AEP
Eastern Salt Pan	105.5	381	1,183	1,630	1,893	2,584
Central	36.0	130	404	557	647	883
Eastern	41.9	151	470	647	752	1,026

Whilst the relatively low estimated annual catchment yields presented in **Table 7** reflect the permeable nature of the surficial sediments; they are likely to overstate the actual volumes collected at a single geographical point in the catchment. This is due to the nature of the topography which generally collects runoff in multiple minor depressions between sand dunes and lunettes from where it seeps into the ground or is evaporated, thus preventing the cumulative concentration of overland flow at a single location.

3.3.2.3 Amended Mine Site Flooding

The Amended Mine Site is not situated on land identified in the Wentworth LEP as being a "Flood Planning Area" (refer Section 3.3.1). Furthermore, as noted in Section 3.3.2.1, the Amended Mine Site catchments are internally draining and lack connections or outlets with adjacent catchments. Therefore, when rainfall events of sufficient magnitude to generate runoff occur, the discharge is directed by topography to the base of a localised depression where it ponds until the collected water evaporates. In the flatter central areas of the larger topographic depressions within the Amended Mine Site, this results in ponding of larger volumes of water which results in evaporative features like the Western and Eastern Salt Pans. Peak catchment discharge for those catchments where Project-related activities would disturb more than $1km^2$ are presented in **Table 8**[1]. The values presented in **Table 8** have been calculated for a range of annual exceedance probability (AEP) rainfall events using the Bureau of Meteorology (BoM) Intensity Frequency and Duration data and the flood estimation methodology presented in *Zaman et al* (2012).

[1] Whilst Project-related activities would create disturbance sub-catchments at the peripheries of the existing Eastern and Southwestern catchments, the small sub-catchment areas (<6ha), undulating topography and low runoff coefficient means that peak discharge from these sub-catchments is minor.

Table 8
Estimated Peak Catchment Discharge

Catchment	Sub-catchment (see Figure 8)	Area (km^2)	Peak Flow Estimate (m^3/sec)			
			10% AEP	5% AEP	2% AEP	1% AEP
Eastern Salt Pan	North	51.4	6.7	9.5	15.2	21.5
	East	2.5	1.9	2.7	4.3	6.1
	Southeast	7.2	2.9	4.2	6.7	9.4
	Southwest	10.9	3.5	5.0	7.9	11.2
	Disturbed	33.4	5.6	7.9	12.7	18.0
Central	North	32.5	5.5	7.8	12.5	17.7
	Disturbed	3.5	2.2	3.1	4.9	7.0

3.3.2.4 Amended Mine Site Land-use

The prevailing land use within and surrounding the Amended Mine Site is associated with low intensity grazing.

3.3.2.5 Amended Mine Site Water Quality

Due to the highly ephemeral nature of the watercourses and relatively short flow paths and duration and impassability of roads following rainfall events, ambient water quality data is not available for the Amended Mine Site. Standing water, collected in topographic depressions or farm dams is anticipated to have a chemical composition that reflects its rainfall source. However, once subjected to evaporative concentration over time, this standing water is expected to undergo an increase in dissolved ions that would be reflected in EC. Therefore, it is anticipated that surface water quality within the Amended Mine Site would generally be similar to that monitored by WaterNSW in the Great Darling Anabranch and presented in **Table 6**.

4. Management and Mitigation Measures

4.1 Introduction

The proposed site water management system for the Amended Project has been developed to ensure that:

- clean water from areas undisturbed by Project-related activities is prevented from entering disturbed areas; and
- uncontrolled discharge from areas disturbed by Project-related activities to receiving surface water environments is prevented.

The following sub-sections describe the range of measures and infrastructure for the proposed site water management system. These measures would be implemented to optimise the diversion of clean water and ensure that sediment-laden runoff or saline mine water from catchments disturbed by mining activities is appropriately managed. Accumulated sediment-laden water would either be directed to the dredge pond, used for mining-related purposes or permitted to infiltrate the surface or evaporate. In addition, water pumped from the construction pond to the Water Storage Dam would be returned to the dredge pond, as would decant from the Off Path Storage Facility.

4.2 Amended Mine Site Water Classification

During operations there would be three classes of water that would be managed on the Site as follows.

- "Clean water" refers to runoff from those catchments unaffected by Project-related activities (regardless of water quality). This water would be prevented from entering disturbed areas of the Amended Mine Site and mixing with other classes of water and discharged to the downstream environment.
- "Sediment-laden water" refers to runoff from disturbed or active sections of the Amended Mine Site with the potential to contain suspended sediment but not elevated concentrations of salt. This runoff would be captured and managed on site.
- "Mine Water" refers to the saline water of the dredge pond that results from groundwater inflows to the Extraction Area or other water with elevated salt concentrations such as brine from the reverse osmosis plants.

4.3 Acid Generation Potential

With regards to acid sulphate soils risk, Sustainable Soils Management Pty Ltd (SSM) prepared the Land and Soil Capability Assessment for the Amended Project (SSM, 2025). This assessment determined that that there is a low risk of acid sulphate soils within the Amended Mine Site. Therefore, no specific measures are required to manage runoff from areas of acid sulphate soils.

In addition, RGS Environmental Consultants Pty Ltd (RGS, 2023) undertook an assessment of the acid generating potential of overburden, interburden and ore within the Mine Site (see Section 3.4.2.1 of RGS (2023)). That assessment determined that interburden from immediately above the ore zone may be classified potentially acid forming – low capacity, meaning that while this material had the potential to form an acidic leachate if exposed to oxygen, the amount of acid that would be formed would be limited.

In light of the above, the following measures would be implemented to minimise the risk of generation of an acidic leachate.

- Preferentially place interburden from immediately above the ore zone below the water level along the trailing edge of the dredge pond. Where this is not practicable, place such material into the Off Path Storage Facility.
- Line and cap the Off Path Storage Facility with clay from the Blanchetown Clay to prevent oxygen ingress into the facility.

4.4 Amended Mine Site Catchments

As noted in Section 3.3.2.1, surface water drainage within and adjacent to the Amended Mine Site is divided into four catchments by topography (see **Figures 7 and 8**). **Table 9** presents the catchments introduced in Section 3.3.2.1 and describes the implications of the Amended Project for each, including the creation of sub-catchments in each of the catchments disturbed by mining. **Table 9** also identifies the class of water (runoff) generated within each catchment or sub-catchment, the method of managing runoff (either flow bund / containment bund to prevent inflow or captured by containment bund to prevent discharge).

Table 9
Amended Mine Site Catchments

Catchment	Sub-catchment	Class	Area (km^2)	Management
Central	Undisturbed	Clean	31.0	None required
	Disturbed	Sediment-laden / Mine	3.5	Containment bund, drainage directed to dredge pond
Eastern Salt Pan	North	Clean	51.4	Flow bund to prevent clean water entering disturbed sub-catchment
	East	Clean	2.5	Containment bund, drainage retained for infiltration
	Southeast	Clean	7.2	Containment bund, drainage retained for infiltration
	Southwest	Clean	10.9	Flow bund to prevent clean water entering disturbed sub-catchment
	Disturbed	Sediment-laden / Mine	33.4	Containment bund, drainage directed to dredge pond or Off Path Storage Facility.
Eastern	Undisturbed	Clean	41.9	None required
	Disturbed	Sediment-laden / Mine	0.6	Containment bund, drainage retained for infiltration
Note: [1] catchment extends beyond Amended Mine Site.				

4.4.1 Site Water Management Infrastructure

4.4.1.1 Clean Runoff Management

The topography of the Eastern Salt Pan generally directs runoff to the central section of the catchment, whilst runoff in the Central catchment is collected in the central depression. Each of these Amended Mine Site catchments would be intersected by Project-related disturbance. Clean runoff from Eastern Salt Pan would be prevented from entering these disturbed sub-catchments via the construction of four flow bunds that would be located across sections of the basal area of the pan's depression at the boundaries of the disturbance area. **Table 10** presents the impoundment volumes and water levels for the 1% Annual Exceedance Probability (AEP) 72-hour design rainfall event of each flow bund.

Table 10
Clean Water Sub-catchment Flow Bunds: Nominal Design Water Levels, Depths and Impoundment Volumes

Sub-catchment	Area (km^2)	Water Level (mAHD)	Maximum Water Depth (m)	Impoundment Volume (ML)
Eastern Salt Pan North	51.4	27.1	0.05	372
Eastern Salt Pan Southwest	10.9	25.3	1.0	79

These flow bunds would be constructed in the locations shown on **Figure 8** using compacted overburden, including clay sourced from the Blanchetown Clay, to meet the following nominal design criteria.

- Design rainfall event: ..... 1% AEP 72-hour (144mm)
- Maximum side slopes: ..... 7:1 (H:V)
- Minimum crest width: 1m
- Minimum crest elevation: ..... 1% AEP 72-hour water level plus 1m freeboard.

Due to the limited disturbance in the Central, Eastern and Eastern Salt Pan - Southwestern sub-catchments, only minor containment (exclusion bunds) with a. 0.5m height would be required. These would be located at the limit of disturbance to prevent clean runoff entering and sediment-laden runoff leaving, disturbed sub-catchments.

4.4.1.2 Sediment-laden Runoff Management

As noted in Section 3.3.2.1 and shown on **Figure 7**, watercourses within the Amended Mine Site are discontinuous and indistinct. As surface runoff within the disturbance footprint would not collect in a drainage feature, it would be allowed to pond and infiltrate, evaporate or enter the dredge pond. To prevent sediment-laden runoff entering the receiving environment, containment bunds, flow bunds and/or roads would be progressively constructed at the perimeter of the disturbance area. Where installed, these containment bunds would be a minimum 0.5m high whilst roads would be constructed with a cross-fall towards the disturbance area. These roads would also be constructed with safety berms that would also act as bunds to prevent sediment-laden runoff from entering the receiving surface water environment.

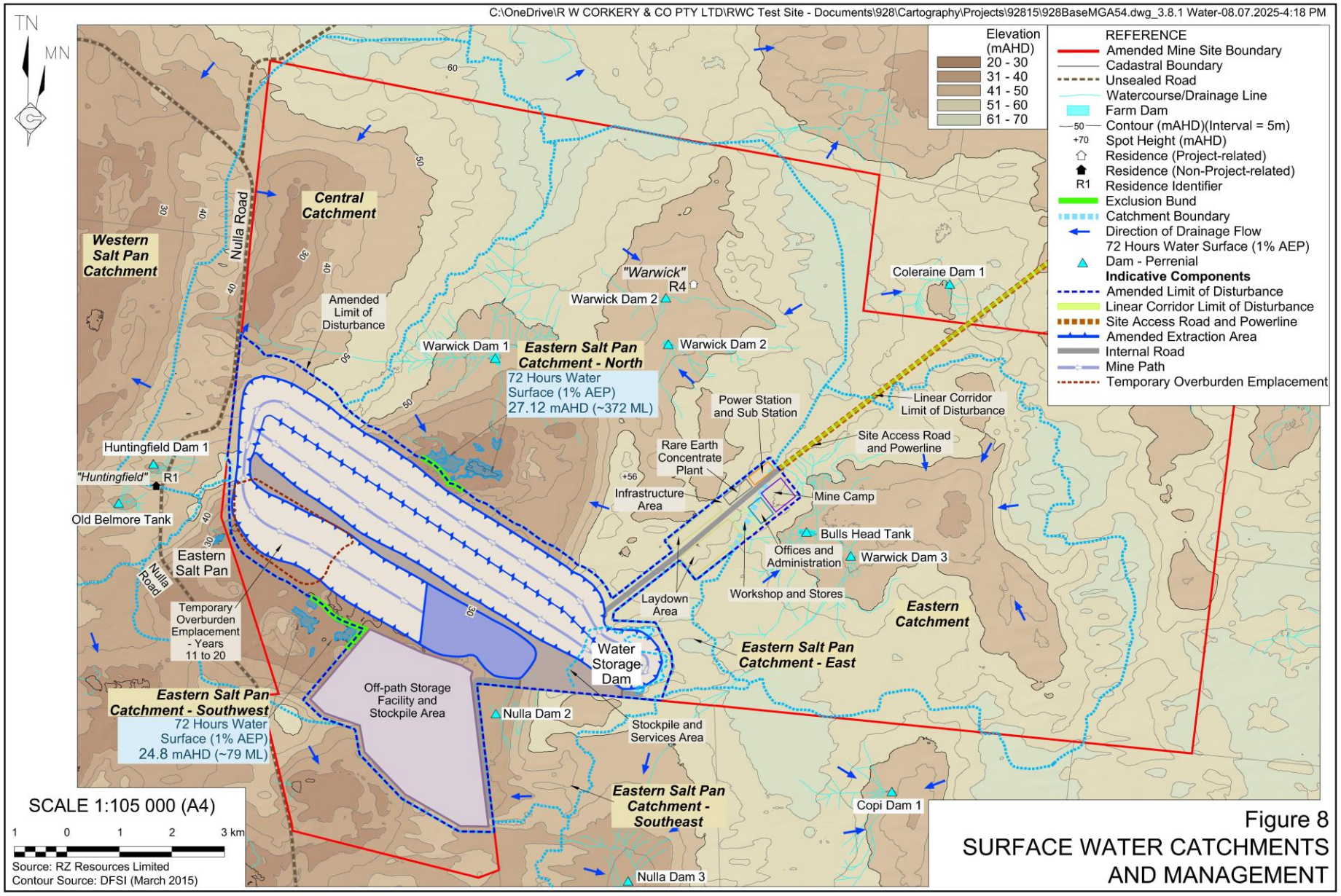

Figure 8
SURFACE WATER CATCHMENTS AND MANAGEMENT

RWCorkery&co

As these measures would result in a closed water management system with the dredge pond receiving runoff from the disturbance area, no measures for the treatment and discharge of sediment-laden runoff are proposed.

4.4.1.3 Mine Water Management

The dredge pond would be progressively developed with a geometry that would create an internally draining void. Dredge pond development would also occur in conjunction with the development of raised, level perimeter roads for overburden haulage and access. Water levels within the dredge pond would largely reflect that of the local groundwater setting (24.6mAHD, GEO-ENG, 2025) and thus below natural ground level. Dredge pond geometry, coupled with perimeter roads would ensure saline groundwater inflows remain within the dredge pond with no discharge of mine water to the receiving surface water environment.

In addition to the above, the following management measures would also be implemented to ensure that saline water, primarily groundwater with elevated concentrations of salt, and mine water, namely saline water that has been used for mining-related purposes, would be managed in a way that would ensure that it would not be discharged to land or natural drainage.

- Pumps and pipes would be fitted with leak detection equipment to ensure that should a leak or pipe failure occur, pumps would automatically cease to pump, thereby limiting the volume of potentially saline water that would be discharges.
- Water used for dust suppression purposes would be the minimum volume required to achieve the required level of dust suppression. To minimise the use of mine water for dust suppression, binding agents and low silt sheeting material would be utilised.

4.4.2 Sewage and Effluent Disposal

Sewage and effluent disposal would be managed on location through an approved water treatment system that would be situated within the Mine Camp and Workshop and Stores area. Treated wastewater would either be discharged to the sub-surface or to land.

4.4.3 Monitoring

4.4.3.1 Surface Water Monitoring

As no discharge is proposed from the disturbance areas nor are permanent watercourses a feature of the existing environment, no regular water quality or flow monitoring is proposed for the Amended Project. Rather, where practicable water quality samples would be collected from the dredge pond and ponded areas upstream of clean water bunds following a >25mm rainfall event over a 24-hour period. Samples would be submitted to a NATA accredited laboratory for analysis of physico-chemical parameters and major ions and the results compared to assess any interaction.

4.4.3.2 Water Management Infrastructure Monitoring

Regular inspections would be undertaken of all water management infrastructure on the Amended Mine Site. Inspections would be undertaken on a monthly basis and following a rainfall event of >25mm/24hr.

The inspections of water management infrastructure will record the following details.

- Ponded areas in bunded sub-catchments.
- Evidence of inflow and condition of clean water management bunds.
- Condition of sediment-laden bunds and road surfaces at boundary of the disturbance area.
- Presence of any oily film in the ponded water within the disturbance area.
- The general condition of the soil surface in the disturbed sub-catchments. This would include recording of any areas of active erosion and the level of any sedimentation.

In any areas where active erosion of water management mitigation measures are observed, repairs shall be scheduled to re-instate full function and consideration given to installation of additional erosion mitigation as required.

5. Impact Assessment

5.1 Introduction

Based on the implementation of the proposed water management measures for the Amended Project as well as the monitoring of the proposed water management infrastructure, the potential surface water impacts of the Amended Project would be as follows.

5.2 Water Availability

During the Project-life, all collected surface water runoff, including that required for construction of the Amended Project or that which is re-used and recycled to meet the operational water demand of the Amended Project, would occur under harvestable rights, as conferred under Section 53 of the WM Act. As the Amended Mine Site is situated in the Western Division harvestable rights order area, all runoff may be captured and used for any purpose. Where Project-related disturbance does disrupt the prevailing hydrological regime of an existing catchment, it does not reduce flow to a downstream catchment with external water users, as all Amended Mine Site catchments are internally draining.

Figures 7 and **8** present the location of farm dams within and surrounding the Amended Mine Site. The Amended Project would not impact on the dams or their catchments.

Therefore, the Applicant does not anticipate the loss of water availability to downstream users and the collection and use of runoff within the disturbance areas is permissible under the WM Act.

5.3 Flow and Watercourse Function

The Amended Project would disturb sections of the existing Central, Eastern Salt Pan, Eastern and Southwestern catchments. This disturbance represents the following proportions of each of the existing catchments.

- 32% of the Eastern Salt Pan Catchment.
- 9.6% of the Central Catchment,
- 1% of the Eastern Catchment.
- <1% of the Southwestern Catchment.

In the case of the Central catchment, whilst there are a number of 1st order watercourses within the disturbance area, there are no areas of mapped wetland. Apart from the disturbance area, flow and watercourse function would be thus maintained in the undisturbed sub-catchment of the Central catchment.

There are however 105ha of mapped wetland in the Eastern Salt Pan catchment that would be disturbed (**Figure 7**). NSW 1:100,000 topographic mapping identifies much of the mapped wetland areas as "Lake – mainly dry" (**Figure 4**). This means that the bunds in these areas can be considered "excluded works" under Clause 8, Schedule 1 of the *WM (General) Regulation 2018* as these areas are identified on topographic maps applying at 1 January 1999.

All disturbance areas would be reinstated during the rehabilitation and closure stage of the Amended Project which would include the removal of all bunds.

Therefore, the impacts of the Amended Project on watercourse flow and function would be relatively minor and confined to areas of disturbance. Impacts would be reduced by the proposed bunds that would continue to permit accumulation of clean runoff within undisturbed sub-catchments that would in turn sustain any areas of mapped wetland.

5.4 Water Quality

As the proposed water management strategy for the Amended Project includes the use of treated water for dust suppression and the capture, storage and re-use of sediment-laden runoff, the likelihood of sediment-laden discharge from the Amended Mine Site is considered to be low.

5.5 Flooding

As noted in Section 3.3.2.2, the Amended Mine Site is not situated within a flood planning area or a zone where inundation from floodwater could be expected to occur. Subsequently, neither the development itself nor neighbouring properties would be adversely impacted by floodwater.

6. Conclusion

Whilst the Amended Project would reduce areas of mapped wetlands, flow accumulation in undisturbed sub-catchments, that represent the majority of existing catchments, would be unimpacted. The prevention of sediment-laden runoff and mine water from those catchments disturbed by Project-related activities would be retained to prevent impacts to the receiving surface water environment. Furthermore, the capture and use of runoff in disturbance areas is permissible under the WM Act, as is the construction of bunds in areas mapped as wetlands as these would be considered "excluded works" under the WM (General) Regulations.

This strategy to exclude inflow from undisturbed catchments, the capture, re-use and recycling of sediment-laden water, provides for the efficient use of water resources whilst simultaneously maintaining to the greatest extent practicable, the existing surface water environment.

7. References

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As previously noted, the Amended Mine Site is located within the Lower Darling River sub-basin of the broader Murray Darling Basin, which has an area of approximately one million square kilometres (BoM, 2013).

A-3 Preliminary Observations of Groundwater Dependent Ecosystems – Greenloaning Biostudies

Preliminary Observations of Groundwater Dependent Ecosystems – Greenloaning Biostudies

1. Introduction

1.1 Groundwater Dependent Ecosystem Mapping

Greenloaning Biostudies has performed some preliminary desktop interrogation of Groundwater Dependent Ecosystem (GDE) mapping for the Huntingfield, Sunshine and Warwick properties, in far South-Western New South Wales. This mapping was sourced from data provided by:

- NSW Department of Planning and Environment (DPE, 2022a), and
- Plant Community Type (PCT) mapping undertaken by EnviroKey in 2018 and 2020.

As far as GIS mapping is concerned, this work should be considered preliminary in nature, and is only intended as a comparison of the two data inputs to be used to inform future, more detailed work on potential GDE mapping.

This work concentrated on the Pitshell Boundary where it occurs on the subject properties plus a 50 metre buffer (Disturbance Area).

More detailed ground-truthing of PCTs was undertaken during mid-September, 2022. Greenloaning Biostudies (accompanied and greatly assisted by Phil Grant – RZ Resources), conducted field inspections at sixteen (16) points within the southern Disturbance Area on Warwick Station (see maps that accompany this document – Map 5).

1.2 Groundwater Levels and Salinity

Groundwater quality, especially salt concentrations, and the impact that it has on groundwater use by vegetation was not considered by DPE when 'probable' GDE PCTs were developed for the area (2016).

The preliminary work undertaken by Greenloaning will provide some analysis and discussion of the potential impacts of groundwater levels and salinity concentrations in conjunction with the likelihood of GDEs being present at the places mapped by DPE and by EnviroKey.

2. GDE Mapping Methods DPE

2.1 DPE- Determining Probable GDEs

The DPE (2016) use a complex model with numerous variants to determine which PCTs are most likely to be GDEs. Some of these variants include how well a PCT survives drought periods.

Given the preliminary nature of this analysis, in this section, we have only examined some of the 'coarser', more accessible inputs to the model.

2.1.1 Determining Probability of Occurrence - DPE

The NSW Department of Primary Industries – Water (DPI-Water, 2016) uses vegetation and PCT occurrence as an indicator of probable DGEs. The probability is categorised into 'Very High – High - Moderate and Low'.

DPE? mapping for the Disturbance Area rates the probability of GDEs occurring into two categories, viz: 1) High probability of GDE, and 2) Low Probability of GDE.

Some of the rules (relevant to the Disturbance Area) used by the DPI-Water (2016) model to determine High Probability GDEs, are as follows:

- groundwater is present at a depth of less than 12 metres (woody vegetation), or less than 0.8 metres (non-woody vegetation),
- topography is low lying, characterised by such features as depressions where groundwater is likely to be close to the surface,
- species with a documented association with groundwater are present,
- species that are considered to be deep rooted are present, and
- there are well drained geological substrates, for example gravels and sandy soils.

Note: There are other considerations that do not apply to the Disturbance Area eg. riverbanks, coastal sands, etc.

Some of the rules (relevant to the Disturbance Area) used by the DPI-Water (2016) model to determine Low Probability GDEs, are as follows:

- depth to groundwater greater than 16 metres,
- steep, or hilltops, ridges and rocky hills,
- shallow rooted (eg. chenopods, grasslands) species, and
- clay soils, skeletal or shallow soils.

2.1.2 Determining value of GDEs – DPE

The NSW Government has adopted the guidelines developed by Dabovic *et al* (2019) for identifying High Ecological Value Aquatic Ecosystems. This approach is applied to PCTs that have a high probability of being GDEs. The variants used to determine ecological value are:

- Naturalness,
- Diversity,
- Distinctiveness, and
- Vital Habitat.

These High Value GDEs are a priority for New South Wales Water Sharing Plans. Data on High Value GDEs was sourced from DPE (2022b).

3. Greenloaning Biostudies Field Observation Methods

Greenloaning conducted field inspections at sixteen (16) points within the southern Disturbance Area on Warwick Station (see maps that accompany this document – Map 5).

These observation points included floristics data collection at two vegetation plots, in accordance with the requirements of the Biodiversity Assessment Method (BAM plots) (DPE, 2020). The aim of these field inspections was to estimate whether probable GDE mapping sourced from the DPE (2022a), aligned with PCT mapping undertaken by EnviroKey in 2018 and 2020.

4. Depth to Groundwater and Groundwater Salinity Concentrations

RZ Resources has undertaken an extensive drilling program within the Disturbance area, which has provided data on depth to groundwater and average salinity concentrations. Preliminary data

supplied to Greenloaning (M. Robertson *pers comm* 07/10/2022) indicates that groundwater levels are fairly constant at 24.7m with average total dissolved solids of 61 grams per litre.

5. Results of GDE Mapping Comparison

5.1 Results of DPI and EnviroKey Mapping of GDEs

The following maps have been attached to the email accompanying this document (maps have been produced as A3 Georeferenced PDF format):

- **Map 1** - High Probability (High Value) GDE mapping undertaken by DPE (2022a);
- **Map 2** - High Probability (High Value) PCT mapping by EnviroKey (2018 & 2020 work);
- **Map 3** – Low Probability GDE mapping undertaken by DPE (2022a);
- **Map 4** - Low Probability PCT mapping by EnviroKey (2018 & 2020 work).

The following tables provide the results of High Probability/High Value GDEs mapped by DPE (2022a) and as mapped by EnviroKey (2018 & 2020 mapping). The **PCTs mapped by both DPE and EnviroKey are distinguished in Tables 1-4 by * and blue shading (Note: For these PCTs, the mapped extent of each [ha] vary between the two data sources).**

Please note that there are discrepancies between the PCTs mapped by DPE (2022a) and those mapped by EnviroKey.

Table 1. High Probability Groundwater Dependent Ecosystems Mapped by DPE (2022a).

PCT_Name	Area (ha)
15 - Black Box open woodland wetland with chenopod understorey mainly on the outer floodplains in south-western NSW (mainly Riverina Bioregion and Murray Darling Depression Bioregion)	165.76
24 - Canegrass swamp tall grassland wetland of drainage depressions, lakes and pans of the inland plains	7.99
* 64 - Samphire - Water Weed - Sea-Heath shrubland saline wetland of depressions of the arid and semi-arid (warm) zones	577.98
65 - Halosarcia lylei low, open shrubland saline wetland of arid and semi-arid regions	0.93
153 - Black Bluebush low open shrubland of the alluvial plains and sandplains of the arid and semi-arid zones	2.64
* 157 - Bladder Saltbush shrubland on alluvial plains in the semi-arid (warm) zone including Riverina Bioregion	156.87
191 - Snap and Rattle Mallee - Moonah open mallee shrubland in the Murray Darling Depression Bioregion	17.13
* 221 - Black Oak - Pearl Bluebush open woodland of the sandplains of the semi-arid warm and arid climate zones	2.35
* 253 - Gypseous shrubland on rises in the semi-arid and arid plains	20.28

Table 2. High Probability Groundwater Dependent Ecosystems Mapped by EnviroKey.

PCT_Name	CONDITION	Area (ha)
64 - Samphire - Water Weed - Sea-Heath shrubland saline wetland of depressions	Mod-good	135.97
157 - Bladder Saltbush shrubland on alluvial plains in the semi-arid (warm) zone including Riverina Bioregion	Low	306.64
157 - Bladder Saltbush shrubland on alluvial plains in the semi-arid (warm) zone including Riverina Bioregion	Mod-good	251.57
221 - Black Oak - Pearl Bluebush open woodland of the sandplains	Mod-good	343.49
253 - Gypseous shrubland on rises in the semi-arid and arid plains	Low	217.88

*s missing?

Table 3. Low Probability Groundwater Dependent Ecosystems Mapped by DPE (2022a).

PCT_Name	Area (ha)
* 28 - White Cypress Pine open woodland of sand plains, prior streams and dunes mainly of the semi-arid (warm) climate zone	199.96
* 58 - Black Oak - Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion	452.44
61 - Mitchell Grass - saltbush grassland/shrubland of the gibber downs of the arid climate zone	315.75
139 - Prickly Wattle tall open shrubland of dunes and sandplains of semi-arid and arid regions	118.08
143 - Narrow-leaved Hopbush - Scrub Turpentine - Senna shrubland on semi-arid and arid sandplains and dunes.	2.5
150 - Bottlewasher - Copperburr grassland of the arid zone	451.79
152 - Lunette chenopod shrubland mainly of the Murray Darling Depression Bioregion	1.29
* 154 - Pearl Bluebush low open shrubland of the arid and semi-arid plains	821.8
165 - Derived corkscrew grass grassland/forbland on sandplains and plains in the semi-arid (warm) climate zone	1.07
170 - Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones	0.89
* 171 - Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion	25.98
215 - Woollybutt Grass open grassland on red earths of the inland plains	621.76
* 252 - Sugarwood open woodland of the inland plains mainly Murray Darling Depression Bioregion	2.1
254 - Black Oak - Bladder Saltbush on light clays in the arid zone	4.42

Table 4. Low Probability Groundwater Dependent Ecosystems Mapped by EnviroKey.

PCT_Name	CONDITION	Area
28 - White Cypress Pine open woodland of sand plains, prior streams and dunes mainly of the semi-arid (warm) climate zone	Very Low	4.3
58 - Black Oak - Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion	Low	13.46
58 - Black Oak - Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion	Mod-good	357.52
154 - Pearl Bluebush low open shrubland of the arid and semi-arid plains	Very Low	1048.48
154 - Pearl Bluebush low open shrubland of the arid and semi-arid plains	Low	0.56
154 - Pearl Bluebush low open shrubland of the arid and semi-arid plains	Mod-good	738
171 - Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion	Mod-good	520.6
252- Sugarwood open woodland of the inland plains	Low	2.51

*s missing???

6. Greenloaning Observations - Southern Disturbance Area Only

Map 5 depicts the results of Greenloaning Biostudies field observations, compared with:

- High Probability (High Value) GDE mapping undertaken by DPE (2022a).
- High Probability (High Value) PCTs as mapped by EnviroKey (2018 & 2020 work).

6.1 Key Results of Field Observations

Map 5 contains detailed notes that describe identified on-ground discrepancies with both DPE and EnviroKey mapping of GDEs in the detailed study area of the southern Disturbance Area.

Generally, vegetation mapping will most likely need to be at a finer scale to satisfy the current Biodiversity Assessment Method requirements. There are large areas of vegetation forming a mosaic of PCTs that will require more detailed survey work to determine more precise boundaries of vegetation communities.

The following key observations are made regarding the mapping of High Probability/High Value/High Priority GDEs by DPE (2022a & 2022b, EnviroKey):

- Looking west from CM 11, CM 15 and CM 16 (**Map 5**) Greenloaning observations do not clearly indicate the dominance of PCT 64 (DPE) or PCT 154 (EnviroKey) in this area. Observations suggest a mosaic of communities that includes PCT 157 (Bladder Saltbush present);
- Where aquatic areas have receded, the bottom and edges of these 'lakes' show no evidence of plant growth, most likely due to hypersaline conditions;

- In most areas, the EnviroKey Mapping is generally more accurate in mapping the PCT 64 'fringes' around aquatic areas than the DPE (2022a) mapping which tends to map the whole area as PCT 64 with no allowance for areas of semi-permanent water (**Map 5**);
- Observations from point CM 9, near the 'Pink Lake' (**Map 5**) showed that the DPE (2022a) mapping was more accurate in this area, especially in relation to mapping the 'fringes' of PCT 64 around waterbodies;
- The EnviroKey mapping has not mapped some areas of PCT 64 that were evident during the September 2022 field observations. An example of this is areas of PCT 64 adjacent to PCT 157 and PCT 253, in proximity to Greenloaning observation point CM 8, as shown on **Map 5**;
- An area near CM 3 was mapped as 'Aquatic' by EnviroKey but was found to be dry and covered in a herbfield/grassland. Greenloaning conducted a floristic plot survey within this area to assist with determining the most relevant PCT; and
- DPE (2022a) mapping had identified areas of PCT 24 at CMGBAM3 (**Map 5**) but this Canegrass dominated PCT was not evident during the 2022 field inspections. A floristics plot was established at this location to assist with determining the PCT (most likely PCT 253).

6. Depth to Groundwater and Salinity Levels

RZ data from the drilling program indicate average potential salinity levels of 61 grams per litre (g/l). This is considered to be a hypersaline environment that is almost twice the salinity levels of seawater. In some parts of the Disturbance Area, the topography drops down to about the level of groundwater at 24.7m.

It is important to understand the ability of plants to utilise hypersaline groundwater when considering whether a PCT has the ability to be groundwater dependent. Below are the results of Greenloaning's preliminary investigations into the salt tolerance of plants that are indicative of the PCTs that have been mapped as groundwater dependent, noting the following:

- For the purpose of understanding whether indicative plants could survive when utilising hypersaline groundwater, millisiemens per meter (mS/m) have been used as the unit of measurement (as most information is only available in this unit).
- For comparison purposes, the average total dissolved solids figure of 61 g/l for Disturbance Area groundwater has been converted to 10,167 mS/m.

The guide to salinity tolerance levels of plants have been sourced from the Department of Primary Industries and Regional Development (DPI&RD WA), (2022), and are as follows:

- Extremely saline sites = >1,600 mS/m
- Very saline sites = 800-1,600 mS/m
- Moderately saline sites = 400-800 mS/m

Table 5. The salt tolerance of indicative species for High Probability GDEs within the Disturbance Area

PCT No.	PCT Name	Indicative species	Salt Tolerance (mS/m)	Reference
15	15 - Black Box open woodland wetland with chenopod understorey mainly on the outer floodplains in south-western NSW (mainly Riverina Bioregion and Murray Darling Depression Bioregion)	*Eucalyptus largiflorens* (Black Box)	Very tolerant 800-1,600	Agriculture Victoria (2022)
24	24 - Canegrass swamp tall grassland wetland of drainage depressions, lakes and pans of the inland plains	*Eragrostis australasica* (Canegrass)	No information	N/A
64	64 - Samphire - Water Weed - Sea-Heath shrubland saline wetland of depressions	*Halosarcia pergranulata* subsp. *pergranulata*	Extremely tolerant 2,700-6,500 mS/m Extremely tolerant 7,000-10,000 mS/m	Ismail, S, Malcolm, C.V & Ahmad, R (1990) DPI&RD WA (2021)
65	65 - Halosarcia lylei low, open shrubland saline wetland of arid and semi-arid regions	*Halosarcia pergranulata* subsp. *pergranulata*	Extremely tolerant 2,700-6,500 mS/m	Ismail, S, Malcolm, C.V & Ahmad, R (1990)
153	153 - Black Bluebush low open shrubland of the alluvial plains and sandplains of the arid and semi-arid zones	*Maireana* spp.	Very Tolerant 600-1,100 mS/m	Barrett-Lennard, E.G, Bennett, S. J & Altman, M (2013)
157	157 - Bladder Saltbush shrubland on alluvial plains in the semi-arid (warm) zone including Riverina Bioregion	*Atriplex vesicaria* (Bladder Saltbush)	Extremely Tolerant Up to 5,000 mS/m Very Tolerant 800-1,600 mS/m	Mahmood, K. & Malik, K. A (1987) Agriculture Victoria (2022)
191	191 - Snap and Rattle Mallee - Moonah open mallee shrubland in the Murray Darling Depression Bioregion	*Melaleuca lanceolata* subsp. *lanceolata*	Very tolerant 800-1,600 mS/m	Agriculture Victoria (2022)
221	221 - Black Oak - Pearl Bluebush open woodland of the sandplains	*Casuarina pauper* (Black Oak)	Very tolerant 800-1,600 mS/m	Agriculture Victoria (2022)
253	253 - Gypseous shrubland on rises in the semi-arid and arid plains	*Maireana* spp.	Very Tolerant 600-1,100 mS/m	Barrett-Lennard, E.G, Bennett, S. J & Altman, M (2013)

7. Discussion

7.1 Vegetation Mapping

A general comment on vegetation mapping is that it will most likely need to be at a finer scale to satisfy the current BAM (DPE, 2020) requirements. There are large areas of vegetation forming a mosaic of PCTs. More detailed survey work would be required to determine limits of PCTs/GDEs.

The above situation is most evident where DPE (2022a) have mapped large areas of PCT 64 and EnviroKey have mapped large areas of PCT 157. Both of these PCTs are mapped as High Probability GDEs (**Map 5**).

7.2 Salinity Tolerance and Groundwater Levels

It is likely that there are two main factors in determining High Value/High Probability GDE occurrence, in the study area, as follows:

1. Depth to groundwater,
2. Topography, and
3. Groundwater salinity levels and the ability of identified PCTs to utilise hypersaline water.

Information supplied from the drilling program (M. Robertson *pers comm* 7/10/2022) indicates that the groundwater present under the Disturbance Area is almost double the average salinity of seawater (33-38 g/l or 5,500-6,300 mS/m for seawater cf. 61 g/l or 10,167 mS/m for groundwater within the Disturbance Area).

The majority of the areas mapped as High Probability of GDE by DPE are located within the Digital Elevation Model (DEM) (ICSM, 2022) range of around 24m - 34m. Data collected from the RZ drilling program estimates a consistent groundwater level, across the Disturbance Area of approximately 25m.

Depth to groundwater becomes almost redundant as a means of determining whether a PCT is groundwater dependent, when the salinity levels of the groundwater are much too high to support the plants of that PCT.

Table 5 demonstrates that even the most salt tolerant species (Samphires - 2,700-6,500 mS/m) would be at the limit of their ability to survive if forced to access hypersaline groundwater with an average electrical conductivity of 10,167 mS/m. DPI&RD WA (2021) reports that an uncited study in Western Australia demonstrated salinity tolerance for *Halosarcia pergranulata* subsp. *pergranulata* of 7,000-10,000 mS/m but that would be at the extreme limit of their ability to survive hypersaline groundwater.

7.3 Likely Overall Impacts on GDEs

The groundwater below the Disturbance Area has an average electrical conductivity of 10,167 mS/m. It is very unlikely, that most of the indicative plants listed in **Table 5** could tolerate such groundwater.

The PCT with the greatest likelihood of being able to utilise hypersaline groundwater is:

- PCT 64 - Samphire - Water Weed - Sea-Heath shrubland saline wetland of depressions (using *Halosarcia pergranulata* subsp. *pergranulata* as an indicator species – extreme tolerance 2,700-6,500 mS/m).

Photograph 1. Facing South from CM 9 with PCT 64 fringing the playa and on elevated areas.

Photograph 2. Facing North from CM 9 with PCT 64 fringing the playa and on elevated areas.

Samphire is present in the area, particularly around the margins of saline lakes and on the elevated areas (**Photograph 1 & 2**)

Ferguson *et al* (1997) states that in the Nulla Groundwater Discharge Complex, saline lakes similar to those that occur in the Disturbance Area, contain salts mainly from the evaporation of groundwater discharge. Ferguson *et al* (1997) comment that most drainage into the lakes, is from subsurface discharge (groundwater) and that local precipitation causes some minor contribution through runoff and seepage from adjacent aeolian dunes.

Photograph 2 clearly shows the extent of the salina (salt lake) with the shallow water level approximating the lowest point on the DEM, at around 24m. The groundwater level is estimated to be approximately 1m above the base of the lake, indicating a correlation with groundwater discharge. The elevation at Greenloaning Biostudies observation point CM 9 was recorded as approximately 30m.

The whiter areas of the playa (dried area of the salina) are clear in **Photograph 2** and most likely represent the 'ephemeral crust' of halite (salts), with a further, unvegetated, fringe of gypsite and other minerals as described by Ferguson *et al* (1997). The halite area and the unvegetated fringe occur within approximately 24-26m elevation.

It is estimated that the majority of the Samphire vegetation is present at elevations above 26m. That is, between 26m and 30m at this point (CM 9). There is, essentially, no vegetation at less than 26m elevation, or within 1m of the groundwater table.

Barret-Lennard *et al* (2013) found that depth to the saline watertable for good growth and survival was 0.7–1 m and salinity of 2,700–6,500 mS/m. The difference between the vegetated areas and groundwater levels is approximately 1m, which correlates with the maximum rooting depth for survival of Samphire.

Botanica Consulting (2018) observed that some *Halosarcia* sp. roots growing in extreme salinity conditions were restricted to the upper sandy loam soil layer. At about 20 centimetres into the soil, vertical root penetration was retarded and lateral roots started to spread.

The exclusion of PCT 64 from low-lying areas below 26m indicates that this community cannot utilise groundwater with salinity levels such as those present in the Disturbance Area.

It is therefore, even more unlikely that the other high probability GDEs identified by DPE would survive if forced to access groundwater with such extreme salinity levels.

8. Conclusions and Recommendations

The following conclusions and recommendations have been reached through preliminary investigations by Greenloaning Biostudies:

- Vegetation mapping will need to be at a finer scale to satisfy the current BAM (DPE, 2020) requirements. There are large areas of vegetation forming a mosaic of PCTs. More detailed survey work would be required to determine the presence of any GDEs.
- The most salt tolerant species *Halosarcia pergranulata* subsp*. pergranulata,* which is an indicator species for PCT 64, is not likely to be able to utilise groundwater with such extreme salinity levels of 61 g/l (10,167 mS/m).
- Groundwater within the Disturbance Area is likely to be too saline to support other, less salinity tolerant plant community types as GDEs.

- The model for High Probability GDEs, as mapped by DPE, does not consider the salt tolerance of plants, within PCTs.
- This preliminary work establishes that the High Probability GDE mapping by DPE, is inadequate as a basis for determining the definite existence of GDEs in the Disturbance Area.
- Further field-based research, to establish such factors as soil profile salinity, rooting depth, location of extremely salt tolerant plants, elevation and depth to groundwater would be required to confirm that PCTs within the Disturbance Area, are groundwater dependent.

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A-4 Preliminary Documentation - Request for information

Australian Government
Department of Climate Change, Energy, the Environment and Water

EPBC Ref: 2024/09955

Ashley Beechey
Manager - Environmental & Approvals
RZ Resources LTD
Level 8/10 Eagle St
BRISBANE CITY QLD 4000

Dear Mr Beechey,

Further information required for preliminary documentation – Copi Mineral Sands Project

I am writing to you in relation to your proposal to construct, operate and rehabilitate a mineral sands mine and associated infrastructure to extract critical minerals approximately 75 km northwest of Wentworth, NSW, and to undertake intersection upgrades required for materials transport in Broken Hill, NSW.

On 4 December 2025, a delegate of the Minister for the Environment and Water decided that the proposed action is a controlled action and that it will be assessed by preliminary documentation. Further information was required to assess the relevant impacts of the proposed decision.

I now request, under s95A(2) of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), further information which is outlined in Attachment A.

Details on the assessment process for the project and the responsibilities of the proponent are set out in the EPBC Act — Environment Assessment process fact sheet. Further information on the referral and assessment process can be found on the department's website.

If you have any questions about the referral process or this decision, please contact the project manager, [redacted], by email to [redacted] and quote the EPBC reference number shown at the beginning of this letter. The department will contact you in early January to set up a time to discuss the further information request and assessment process.

Yours sincerely,

Elvira Lanham
Acting Director, Southern NSW Assessments
Environment Assessments (NSW, ACT)

18 December 2025

Preliminary documentation additional information request

Copi Mineral Sands Project – (EPBC 2024/09955)

On 4 December 2025, the proposed action, to construct, operate and rehabilitate a mineral sands mine and associated infrastructure to extract critical minerals, was determined to be a controlled action under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), due to likely significant impacts to listed threatened species and communities (s18 & s18A).
It has been determined that your proposed action will be assessed by preliminary documentation. This document specifies the information required by the Minister under section 95A of the EPBC Act to adequately assess the impacts of your proposed action (the 'preliminary documentation').

It is important that you read this document carefully and make sure that you understand the requirements. If you have not followed the guidance in this document, your draft preliminary documentation will be rejected. Please contact the project manager, [redacted], at [redacted] as early as possible if you have any questions or concerns.

Overview, formatting, and project description

1 Overview

Your preliminary documentation must include all the information provided in your referral documentation (updated or corrected as necessary), as well as the additional information requested in this document. It may be useful to include the original referral itself as an appendix to the main document.

Your preliminary documentation should enable the Minister (or delegate) and any other interested stakeholders to understand the impacts of the proposed action on relevant protected matters. The preliminary documentation must be able to be read as a stand-alone document.

Any assumptions made in the assessment must be clearly explained and justified. The extent to which the limitations, if any, of available information may influence the conclusions of the environmental assessment should be clearly stated.

Names, roles, and qualifications (where relevant) of all persons involved in preparing the preliminary documentation must be provided.

If it is necessary to rely on any confidential material, you should consult the department on the handling of that material before submitting your preliminary documentation for publication.

1.1 Relevant policies

The preliminary documentation must refer to all relevant standards, policies and other guidance material published by the department. Any instances where published guidance is not followed must

be justified. Where no Commonwealth standards exist, state government and/or industry standards may be useful.

EPBC Act policy statements are located at Referrals and environmental assessments under the EPBC Act - DCCEEW.

Other EPBC Act publications and resources that may be relevant to your assessment are located at EPBC Act publications and resources - DCCEEW.

All relevant guidance documents for determining, avoiding, mitigating and managing likely impacts on listed threatened species and ecological communities.

The *Matters of National Environmental Significance Significant impact guidelines 1.1*[1] (SIG 1.1) contain details on the significant impact criteria for each controlling provision discussed in this document. It is recommended to refer to these criteria when assessing the impacts of the proposed action on the controlling provision.

More specific guidance documents are referenced within the relevant sections of this document.

2 Format and style

The preliminary documentation must be published by the proponent and made available for comment. It is therefore important to the integrity of the assessment process that your preliminary documentation is presented in a way that is intelligible to the general public, who may not be familiar with the history of your proposed action or with the technical aspects of its assessment. **Table 1** provides a checklist for appropriate formatting and style.

Table 1 Formatting and style checklist

Present in a **standard format** – the document(s) will be published in hardcopy (e.g., A4 / A3 hardcopies) and electronic formats (e.g., PDF or MS Word files)	☐
Include all key claims, findings, proposals, and undertakings in the **main document**	☐
Include key supporting documents (e.g., referral, survey data, technical reports) as **appendices**	☐
Explain (or avoid) **technical jargon** and acronyms	☐
Use **maps and/or diagrams** where appropriate to support textual information	☐

[1] Department of the Environment (2013) *Significant Impact Guidelines 1.1 - Matters of National Environmental Significance.* Commonwealth of Australia, Canberra. Matters of National Environmental Significance: Significant Impact Guidelines 1.1 (dcceew.gov.au)

Present all maps and diagrams at an **appropriate size and scale**	☐
Reference all supporting documentation (including websites) clearly and consistently	☐
Ensure that other **supporting documents** (e.g., academic studies, regulatory standards) **are publicly accessible**[2], with electronic links provided where possible.	☐

3 Description of the proposed action

3.1 General

The preliminary documentation must provide a detailed description of the proposed action, including the location and nature of all activities associated with the proposed action. As part of the preliminary documentation, the department requests the **total disturbance area** (ha) of the proposed action.

3.2 Maps and diagrams

If necessary, the preliminary documentation can include maps, plans, and/or diagrams of the proposed action. **Table 2** provides a checklist for the maps or diagrams to be provided. The Department also recommends the *Guide to providing maps and boundary data for EPBC Act projects*[3] is reviewed in the preparation of the preliminary documentation maps.

Table 2 Proposed action maps, plans, and/or diagrams checklist

Clearly show the proposed action location within the **wider area.**	☐
Clearly delineate the **construction/clearing footprint boundary**, and any wider boundaries (e.g., study area) where relevant.	☐
Clearly show the **precise layout of all works to be undertaken**, including building structures or other infrastructure, number and location of lot subdivisions where relevant, proposed land use, or other elements of the action that may have relevant impacts.	☐
Clearly identify any **open spaces** and **buffer zones** (see Appendix D), where relevant.	☐

[2] Supporting documents should be publicly available to allow the Minister, or delegate, assessment officer and the general public have access to all information used to inform your assessment. If any information is not publicly available, it should be attached to the preliminary documentation.

[3] Department of Agriculture, Water and the Environment (2021). *Guide to providing maps and boundary data for EPBC Act projects.* Commonwealth of Australia, Canberra. Maps and boundary data for EPBC Act projects (dcceew.gov.au)

Clearly identify any **avoidance areas, retained vegetation** (in particular, for matters of national environmental significance (MNES)), and **conservation areas**, where relevant.	☐
Clearly identify any areas adjoining the construction footprint which may be affected by **indirect or offsite impacts** as a result of the proposed action, where relevant.	☐

Controlling provisions

4 Listed threatened species and ecological communities (s18 & s18A)

Under this controlling provision, **any** listed threatened species or community is potentially relevant to this assessment. However, based on the information provided in your referral, the department requires additional information in relation to the listed threatened species and ecological communities detailed in section 4.1 and **Error! Reference source not found.** below.

Relevant guidance material (e.g. survey guidelines, conservation advices, recovery plans, threat abatement plans and policy statements) is available through the department's Species Profile and Threats (SPRAT) Database. It is the responsibility of the proponent to ensure that all relevant documents have been identified and considered in the assessment of the proposed action. If species are not included in the assessment, an evidence-based justification for excluding them needs to be included.

4.1 Listed threatened species and ecological communities likely to be significantly impacted

Based on the information provided in the referral documentation, the department considers the following listed threatened species and ecological communities are likely to be significantly impacted by the proposed action:

- Mallee Bird Community of the Murray Darling Depression Bioregion – Endangered
- Pink Cockatoo (eastern) (*Lophochroa leadbeateri leadbeateri*) – Endangered
- Hooded Robin (south-eastern) (*Melanodryas cucullata cucullata*) – Endangered
- Corben's Long-eared Bat (*Nyctophilus corbeni*) – Vulnerable
- Southern Whiteface (*Aphelocephala leucopsis*) – Vulnerable

As specified in this document, further information is required on the **relevant impacts (quantified and divided into direct and indirect), proposed avoidance, management** and **mitigation measures,** and **proposed compensation (offset) measures** for **each of these listed threatened species** and **ecological community** (see below).

Mallee Bird Community of the Murray Darling Depression Bioregion – Endangered

The Approved Conservation Advice for the Mallee Bird Community of the Murray Darling Depression Bioregion[4] (MBC Conservation Advice) outlines the MBC threatened ecological community (TEC) comprises an assemblage of 20 bird species associated with specific mallee vegetation found in the Murray Darling Depression Bioregion.

The following MBC mallee species were recorded within a 20km radius of the proposed mine site and linear corridor site:

- Chestnut Quail-thrush (*Cinclosoma castanotum*) – mallee specialist
- Crested Bellbird (*Oreoica gutturalis*) – mallee dependent
- Grey-fronted Honeyeater (*Ptilotula plumula*) – mallee dependent
- Jacky Winter (*Microeca fascinans*) – mallee dependent
- Splendid Fairy-wren (*Malurus splendens*) – mallee dependent
- Yellow-plumed Honeyeater (*Ptilotula ornata*) – mallee dependent

The referral identified that 16.72 ha of mallee-dominated Plant Community Type (PCT) 170 and 171 that met the patch size criteria was identified along the linear corridor site.

The department has applied the key diagnostics from the MBC Conservation Advice to the survey results in the referral and considers there are at least three species of any mix of MBC TEC specialists or dependents observed within 20 km of the site within the last 10 years. As such, the department has determined that suitable habitat for the MBC TEC is present within the proposed Action area as Category A, which indicates the proposed Action area is good bird habitat for the MBC at this time and/or has the best potential to support even more of the MBC birds in the future if managed and/or restored appropriately.

RZ Resources is upgrading the existing access track to the linear corridor site, which will create a permanent gap of 42 m. The department has reviewed the recommendations in the MBC Conservation Advice, scientific descriptions for PCTs 170 and 171 as per the BioNet Vegetation Classification, and the referral information, and considers the 16.72 ha of MBC habitat proposed to be cleared along the linear corridor site likely form part of an established larger, extensive contiguous MBC habitat. The larger areas of native vegetation are likely to provide greater biodiversity value.

[4] Department of Climate Change, Energy, the Environment and Water (2023). Conservation Advice for Lophochroa leadbeateri leadbeateri (eastern Major Mitchell's cockatoo). Canberra: Department of Climate Change, Energy, the Environment and Water. Available from: http://www.environment.gov.au/biodiversity/threatened/species/pubs/82926-conservation-advice-31032023.pdf. In effect under the EPBC Act from 31-Mar-2023.

The department considers the proposed action will clear up to 16.72 ha of MBC **foraging, breeding, roosting** and **dispersal habitat**. The department has determined the **proposed action** is **likely** to have a **significant impact on the MBC**.

Pink Cockatoo (eastern) (*Lophochroa leadbeateri leadbeateri*) – Endangered

The proposed mine site is within the known distribution of the Pink Cockatoo. Targeted surveys identified the individuals and pairs of the species within the proposed action area occurred on multiple occasions. Additionally, a flock of about 40 Pink Cockatoos were observed feeding to the south of the linear corridor within associated habitat for the species (PCT 58).

The proposed mine site contains suitable breeding habitat for the species. Targeted surveys undertaken in February 2025 identified 39 hollow bearing trees, with 34 hollows greater than 10 cm in diameter which have the potential to provide suitable nesting habitat.

The referral states that the proposed action area could support upwards of two pairs of Pink Cockatoos at a density of one pair per 3,000 ha. No breeding was observed during hollow bearing tree surveys, however the department notes that the surveys were conducted outside the optimum nesting period (August to November), per the *Conservation Advice for Lophochroa leadbeateri leadbeateri* (Eastern Major Mitchell's cockatoo)[5]. Breeding was observed nearby, to the north of the proposed action area in January 2024, when a pair of Pink Cockatoos and their single begging young was recorded north of the proposed action area.

The department concluded that **habitat critical** to the survival of the species is **present** within the mining action area in the form of **suitable foraging** and **breeding habitat** including the presence of 34 suitable nesting hollows.

The department considers the proposed action will clear up to 802.15 ha of Pink Cockatoo suitable foraging and breeding habitat. The department has determined the **proposed action** is **likely** to have a **significant impact on the Pink Cockatoo**.

Hooded Robin (south-eastern) (*Melanodryas cucullata cucullata*) – Endangered

The species was recorded during the mining action area on multiple occasions during field surveys undertaken between 2018 and 2025. The MNES Impact Assessment states that the vegetation proposed to be cleared provides forage, refuge habitat, suitable roosting and nesting habitat for the

[5] Department of Climate Change, Energy, the Environment and Water (2023). Conservation Advice for Lophochroa leadbeateri leadbeateri (eastern Major Mitchell's cockatoo). Canberra: Department of Climate Change, Energy, the Environment and Water. Available from: http://www.environment.gov.au/biodiversity/threatened/species/pubs/82926-conservation-advice-31032023.pdf. In effect under the EPBC Act from 31-Mar-2023.

Hooded Robin (south-eastern), in the form of scattered logs, dead and alive hollow bearing trees, grassy ground cover, fallen timber and moderate prey abundance.

The referral states that none of the habitat within the mining action area meets the criteria for habitat critical. The department disagrees, as the species has been observed multiple times, and as it is generally sedentary, must therefore be utilising the habitat within the site for survival. Further, the *Conservation Advice for* Melanodryas cucullata cucullata *(hooded robin (south-eastern))*[6] states that any known or likely habitat should be considered as habitat critical to the survival of the subspecies.

The department considers the proposed action will clear up to 662.43 ha of Hooded Robin (south-eastern) **suitable foraging** and **breeding habitat**. The department has determined the **proposed action** is **likely** to have a **significant impact on the Hooded Robin (south-eastern)**.

Corben's Long-eared Bat (*Nyctophilus corbeni*) – Vulnerable

RZ Resources Ltd has assumed presence of the species based on the presence of suitable PCTs, hollow bearing trees, and Anabat survey results.

Anabat surveys undertaken in January and February 2025 recorded 28,687 acoustic sequence files, with 92 calls attributable to *Nyctophilus* species. The referral states that *Nyctophilus* species cannot be reliably differentiated using call characteristics, therefore detected calls could belong to Corben's Long-eared Bat, Lesser Long-eared Bat (*N. geoffroyi*), or both species.

The Conservation Advice *Nyctophilus corbeni* south-eastern long-eared bat[7], does not define habitat critical to the survival of the species or important populations of the species.

RZ Resources have precautionarily concluded, and the department agrees, that based on the SIG 1.1, any population within the mining action area could be regarded as an important population.

The department considers the proposed action will clear up to 661.27 ha of Corben's Long-eared Bat **suitable breeding, roosting and foraging habitat**. The department has determined the **proposed action** is **likely** to have a **significant impact on Corben's Long-eared Bat**.

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[6] Department of Climate Change, Energy, the Environment and Water (2023*). Conservation Advice for* Melanodryas cucullata cucullata *(hooded robin (south-eastern))*. Canberra: Department of Climate Change, Energy, the Environment and Water. Available from: http://www.environment.gov.au/biodiversity/threatened/species/pubs/67093-conservation-advice-31032023.pdf. In effect under the EPBC Act from 31-Mar-2023.

[7] Threatened Species Scientific Committee (2015). *Conservation Advice* Nyctophilus corbeni *south-eastern long-eared bat*. Canberra: Department of the Environment. Available from: http://www.environment.gov.au/biodiversity/threatened/species/pubs/83395-conservation_advice-01102015.pdf. In effect under the EPBC Act from 01-Oct-2015.

Southern Whiteface (*Aphelocephala leucopsis*) – Vulnerable

The Southern Whiteface is known to occur in the locality and was recorded on multiple occasions within the proposed action area. Habitat critical to the survival of the species is identified in the *Conservation Advice for* Aphelocephala leucopsis *(Southern Whiteface)*[8]. The referral states that there are open woodlands and shrublands with grassy or shrubby understorey or herbaceous understory litter cover (in the form of PCTs 28, 58, 143, 152, 154, 157, 170, 171, 215 and 253) and hollow bearing trees. The department considers that there is habitat critical suitable for the suitable foraging, roosting, breeding and dispersal habitat for the Southern Whiteface.

The department considers the proposed action will clear up to 2,845.55 ha of Southern Whiteface **suitable foraging, roosting, breeding** and **dispersal habitat**. The department has determined the **proposed action** is **likely** to have a **significant impact on the Southern Whiteface**.

4.2 Information required

4.2.1 Impact assessment

The preliminary documentation must include an assessment of all potential impacts (including direct, indirect, facilitated, and cumulative impacts) that may occur as a result of all project phases and elements of the proposed action on each threatened species and ecological community listed in section 4.1 above. You must also consider the potential of the proposed action to impact on adjacent areas likely to contain threatened species and ecological communities (see **Table 3** checklist).

Table 3 Impact assessment checklist

Identify the **nature and extent** of the likely short-term and long-term impacts from the activities, elements, or stages of the proposed action. When identifying impacts, refer to the **significant impact criteria** for threatened species and ecological communities in the *Matters of National Environmental Significance Significant impact guidelines 1.1*, noting that the impact criteria differ among threatened ecological communities and threatened species with different listing statuses.	☐
Quantify the area of direct and indirect impacts for each species and community including the total area of impact in hectares, and the **number of individuals impacted**, if known (most likely to be relevant for threatened plants identified during survey)	☐

[8] Department of Climate Change, Energy, the Environment and Water (2023). *Conservation Advice for* Aphelocephala leucopsis *(southern whiteface)*. Canberra: Department of Climate Change, Energy, the Environment and Water. Available from: http://www.environment.gov.au/biodiversity/threatened/species/pubs/529-conservation-advice-31032023.pdf. In effect under the EPBC Act from 31-Mar-2023.

Provide an analysis of the **likely impacts** and the **long-term viability** of the species/community if the proposed action was to proceed, at a:	☐
• **Local** (site level) **scale** – discuss impacts to connectivity	☐
• **Regional scale** – discuss impacts to connectivity, potential cumulative impacts within the broader region	☐
Provide details on whether any impacts are likely to **be unknown, unpredictable or irreversible** and what confidence is placed on the predictions or relevant impacts.	☐
Provide **justification for any conclusions** regarding potential impacts in relation to specific needs and characteristics of each species and/or community, including references to conservation advices, listing advices, recovery plans, and any other technical data or information. If these are not applicable, a brief statement to this effect must be included.	☐

The department has identified the **following impacts as being particularly relevant** to your proposed action, which should be considered when preparing the preliminary documentation:

- Vegetation clearing
- Habitat fragmentation
- Reduced habitat connectivity via reduction of habitat corridors
- Reduction of nest availability
- Heavy machinery, vehicles and related equipment used as part of the proposed action may collide with listed threatened species in the area causing injury or death
- Mining operations impacts which may include dust, noise and light pollution that could alter habitat and ecological structure at a local scale.

4.2.2 Avoidance, mitigation, and management measures

In addition to the measures described within the referral documentation, and any additional avoidance measures proposed in response to the information requested in section 4.1 to 4.2, the preliminary documentation must provide information on specific measures proposed to **avoid, mitigate and manage each identified impact** from the proposed action on the **relevant threatened species or community**. The measures must address all project phases (pre-construction, construction and operation) of the proposed action (see **Table 4** checklist).

If it is necessary to rely on any confidential material, you should consult the department on the handling of that material before submitting your preliminary documentation for publication.

For this project specifically, the **department notes that some avoidance and measures for the proposed project have been outlined** in the referral documentation:

- Avoidance:

- Reduced the proposed action disturbance area from 5,974 ha to 4,020 ha by reducing the proposed mine site and linear corridor sites.
- Reduced the proposed linear corridor site width from 120 m to 42 m to maximise retention of intact habitat and maintain connectivity. To avoid and mitigate the impacts of clearing, fragmentation and edge effects on impacted species, RZ Resources proposes to maximise the use of existing tracks, roads and utility corridors and place infrastructure (where possible), in cleared or low condition areas of native vegetation.

- Mitigation:
  - Pre-clearing surveys, including inspecting the clearing extent for fauna immediately prior to vegetation removal involving machinery and/or tree felling, searching habitat features (e.g., hollows, logs, nests) during pre-clearing surveys, relocating any detected fauna off-site to nearby suitable areas and clearly marking habitat features with flagging tape prior to clearing.
  - Hollow bearing tree protocol, including gently bumping hollow bearing trees several times prior to removal to encourage fauna to vacate, felling trees using methods that minimise injury to fauna (e.g., soft felling with excavator or gradual cutting).
  - Staged vegetation clearing, including progressive stage clearing and rehabilitation within disturbance areas as extraction of minerals progresses to minimise biodiversity impacts.
- Management:
  - Ensure a suitably qualified or experienced person conducts pre-clearing surveys and supervises all clearing works. This person will be present during felling and sectioning of hollow bearing trees.
  - Implement a Biodiversity Management Plan that includes weed, feral animal, noise, vibration, waste, lighting, and air pollution management practices.

Table 4 Avoidance, mitigation, and management checklist

Provide a **consolidated list of all avoidance/mitigation measures** proposed to be undertaken to prevent, minimise or compensate for the relevant impacts of the action.	☐
For each of the mitigation measures proposed:	
• Discuss the likely **cost effectiveness** of proposed measures	☐
• Provide an assessment of the **predictive effectiveness** for each protected matter	☐
• Discuss any **statutory or policy basis** for the measures	☐

• Discuss the relationship, if any, with measures identified in the department's **conservation advices**, **recovery plans** and **threat abatement plans**	☐
• Discuss the relationship, if any, with **measures proposed by state and/or local governments** relevant to minimising the impacts of the action on protected matters	☐
• Identify the **roles and responsibilities** associated with implementation	☐
Provide conclusions about the **likely residual significant impacts** to each threatened species and/or community after proposed avoidance and/or mitigation measures are considered	☐
Provide proposed **environmental management plans** if available. If not available, at minimum set out the framework for ongoing management, mitigation, and monitoring programs for the relevant impacts of the action.	☐
Clearly state and discuss and **variables or assumptions** made in the assessment.	☐
Discuss the extent to which **limited availability of relevant information** has the potential to influence the conclusions of the assessment.	☐

4.2.3 Compensation measures (offsets)

Significant residual impacts are impacts to a threatened species or community that remain after any avoidance and mitigation measures have been considered. Significant residual impacts must be offset in accordance with the department's *EPBC Act Environmental Offsets Policy 2012*[9] and Offsets assessment guide[10], or other endorsed offset framework (for example, the NSW Biodiversity Offset Scheme).

The preliminary documentation must describe the proposed offset strategy, outlining how the offsets will be achieved for each protected matter, demonstrating that the offset liability can be satisfied by the mechanisms, and specifying the expected timeframe for legal security of the offsets. Offsets will need to be underway prior to commencement of the proposed action.

[9] Department of Sustainability, Environment, Water, Population and Communities (2012). Environment Protection and Biodiversity Conservation Act 1999 *Environmental Offsets Policy.* Commonwealth of Australia, Canberra. Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy (dcceew.gov.au).

[10] The Offsets assessment guide is a tool developed for users in the department to assess the suitability of offset proposals, but is also available to proponents to assist with planning and estimating future offset requirements. Offsets assessment guide - DCCEEW.

While offsets do not need to be secured before the decision on whether to approve the proposed action, should the proposed action be approved, conditions of an approval are likely to require that offsets are secured, and management measures are in place, before commencement of the proposed action.

EPBC Act Environmental Offsets

If offsets are to be secured in accordance with the EPBC Act Environmental Offsets Policy, the preliminary documentation must demonstrate that the proposed Offset Strategy meets the criteria outlined in **Table 5** below.

The department considers that there is likely to be a significant impact to MBC, such that it is likely offsets will need to be secured in accordance with the EPBC Act Environmental Offsets Policy for the TEC and a proposed Offset Strategy will need to address MBC.

Table 5 EPBC Act Environmental Offsets checklist

The offset strategy must:	
• Meet the principles specified in the EPBC Act Environmental Offsets Policy;	☐
• Directly contribute to the ongoing viability of the relevant protected matters to deliver an overall conservation outcome that improves or maintains the viability of the protected matter in the region, as compared to what is likely to have occurred under the status quo, i.e., if neither the action nor the offset had taken place; and	☐
• Compensate for the impacts over the entire duration of the proposed action (should impacts be in perpetuity, the offsets must also be delivered in perpetuity).	☐
The preliminary documentation must also provide and clearly justify the scores entered into the Offset assessment guide.	☐

Other endorsed offset frameworks

If using an endorsed framework, the report detailing the outcomes (including credit report) prepared in accordance with the state requirements must be submitted with the preliminary documentation. For more information see Appendix B: Endorsed offsetting frameworks.

The BAM and BOS have been endorsed by the Commonwealth. This means that offsetting outcomes achieved through the BAM will be accepted for the purposes of the EPBC Act, provided that they are 'like-for-like' in relation to listed threatened species and communities as defined for the purposes of the EPBC Act. Payment into the Biodiversity Conservation Fund is also considered acceptable. If you are proposing offsets developed using the BAM, you should append all relevant BAM documentation to your preliminary documentation; this would generally include a BDAR prepared by a BAM accredited assessor.

Other considerations

5 Economic and social matters

The preliminary documentation must provide information about the expected long- and short-term economic and social impacts of the proposed action, both positive and negative. This must include, but not necessarily be limited to, the points outlined in **Table 6**.

Table 6 Economic and social matters checklist

Consideration of **negative impacts** (e.g., disruption to existing community infrastructure, environmental features, and/or cultural and traditional activities)	☐
Consideration of **positive impacts** (e.g., increased housing, employment, or social amenity)	☐
Consideration of different **scales of impact** (e.g., local, regional, and national)	☐
Estimated **capital value and ongoing economic value**, using specific dollar or other numerical values where relevant	☐
Discussion of relevant **public consultation** undertaken, including any issues raised in objection or support of the proposed action	☐
Discussion of any **contributions** (for example, government funding, or 'gifting' of land to the NSW Government under a voluntary planning agreement, as discussed in the referral information)	☐

6 Conclusion

The preliminary documentation must summarise the key impacts on protected matters, proposed avoidance and mitigation measures, and offsets proposed for any unavoidable impacts. Provide an overall conclusion on the environmental acceptability of the proposed action, and whether proposed avoidance, mitigation and offset measures are sufficient to manage the additional impacts to the environment arising from the proposed action.

Include a discussion on the consistency of the proposal with principles of ecologically sustainable development of the EPBC Act (see Appendix A).

Appendix A. *Environment Protection and Biodiversity Conservation Act 1999* Principles of ecologically sustainable development

Section 3A Principles of Ecologically Sustainable Development

The following principles are ***principles of ecologically sustainable development***:

a) decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations;

b) if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation;

c) the principle of inter-generational equity – that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations;

d) the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making;

e) improved valuation, pricing and incentive mechanisms should be promoted.

Appendix B. Endorsed offsetting frameworks

In the interests of streamlining regulatory requirements for proponents, the Commonwealth has endorsed some state government policies, as reflected in the department's EPBC Act Condition-setting Policy 2020 at EPBC Act Condition-setting Policy - DCCEEW.

The Department of Climate Change, Energy, the Environment and Water has endorsed the NSW Biodiversity Offsets Scheme (BOS), which includes the Biodiversity Assessment Method (BAM), the biodiversity credit system, and the offset rules set out in the Biodiversity Conservation Regulation.

Where a project demonstrates compliance with an endorsed state or territory policy, the proponent will not be required to simultaneously comply with the corresponding Australian Government policy. This means, if you are using the BOS you will not be required to use the EPBC Act offset assessment guide.

If you are proposing offsets developed and delivered using the BOS, you must append all relevant BAM documentation to your preliminary documentation – this would generally include a BDAR.

Appendix C. Assessing patches of an ecological community

A patch is a discrete and mostly continuous area of an ecological community (or species habitat). It can include small-scale variations, gaps and disturbances, such as tracks, paths or breaks (including exposed soil, leaf litter, cryptogams and watercourses/ drainage lines), or localised changes in vegetation that do not significantly alter the overall functionality of the ecological community. Permanent man-made structures, such as roads and buildings, are typically excluded from a patch.

The Key Diagnostic Characteristics for each community are the primary definition of what the ecological community is (how to identify it). National listing focuses legal protection on the remaining patches of an ecological community that are most functional, relatively natural and in relatively good condition. Patches/occurrences that do not meet minimum condition thresholds (for example, very degraded or modified) can be excluded from national protection.

For example, the *Approved Conservation Advice for the Mallee Bird Community of the Murray Darling Depression Bioregion* outlines Key Diagnostic Characteristics and minimum condition thresholds for the listed TEC.

A condition class describes a range of conditions that are thought to be of similar ecological value; i.e. a range of conditions that meet or exceed a particular condition threshold. A condition class may also contain different condition categories and thresholds, where different variables are used to indicate the same condition class. Patches that do not meet minimum condition thresholds may still be considered critical, as a buffer, to protect patches that do meet minimum condition thresholds. The importance of such patches requires assessment on a case-by-case basis.

Appendix D. Buffer zone

A buffer zone is an area adjacent to an area of ecological community that is important for protecting the integrity of the ecological community. The purpose of a buffer zone is to minimise the risk of indirect impacts by physically separating the ecological community from direct impacts and by identifying it to land managers. For instance, a buffer zone will help protect the root zone of edge trees and other components of the ecological community from spray drift (fertiliser, pesticide or herbicide sprayed in adjacent land), weed invasion, polluted water runoff and other damage. Typically, the most effective buffer zones are comprised of native vegetation.

The department may not consider that a retained patch of an ecological community has been effectively avoided if the design of a development does not include a buffer zone. In these cases, the department will generally consider the outer edge of the patch (typically up to 30 m) to have been impacted or partially impacted, requiring an appropriate offset. Buffer zones can be similarly applied to species habitat.

Glossary and abbreviations

Term	Definition
BAM	Biodiversity Assessment Method
BDAR	Biodiversity Development Assessment Report
BOS	Biodiversity Offset Scheme (NSW)
Construction	The erection of a building or structure that is, or is to be, fixed to the ground and wholly or partially fabricated on-site; the alteration, maintenance, repair or demolition of any building or structure; any work which involves breaking of the ground (including pile driving) or bulk earthworks; the laying of pipes and other prefabricated materials in the ground, and any associated excavation work; but excluding the installation of temporary fences and signage.
Department	The Australian Government agency responsible for administering the EPBC Act
EPBC Act Environmental Offsets Policy	The *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy* (October 2012), including the Offsets Assessment Guide, or any subsequent official version.
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPBC Regulations	*Environment Protection and Biodiversity Conservation Regulations 2000*
ha	hectares
MBC	Mallee Bird Community of the Murray Darling Depression Bioregion
Minister	The Australian Government Minister administering the EPBC Act, including any delegate thereof
MNES	Matters of National Environmental Significance
PCT	Plant Community Type
Protected matter	a matter protected under a controlling provision in Part 3 of the EPBC Act for which this approval has effect
SIG	Matters of National Environmental Significance Significant impact guidelines 1.1
TEC	Threatened Ecological Community

Acknowledgement of Country

We acknowledge the Traditional Custodians of Australia and their continuing connection to land and sea, waters, environment and community. We pay our respects to the Traditional Custodians of the lands we live and work on, their culture, and their Elders past and present.

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A-5 Biodiversity Development Assessment Report (Biodiversity Australia)

Biodiversity AUSTRALIA

SUSTAINABLE PARTNERSHIPS
DEDICATED TO ACHIEVING
ECOLOGICAL AND ECONOMICAL BALANCE

LEADING THE WAY
IN ENVIRONMENTAL
MANAGEMENT

BIODIVERSITY DEVELOPMENT ASSESSMENT REPORT

COPI MINERAL SANDS

FEBRUARY 2026

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Document Control Page

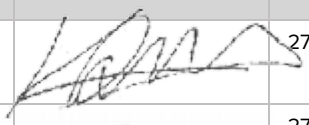
Version Control

Version	Purpose	Author	Reviewed / approved by	Date
Rev 0.1	Draft Report	John Foster, Nathan Eshraghi, Dusty McLean, Samir Khader, Courtney Smith	Nigel Cotsell	03/03/2025
Rev 0.2	Draft Report	Nigel Cotsell, John Foster, Nathan Eshraghi, Andrew Bates, Dusty McLean, Samir Khader, Courtney Smith	Karl Robertson	12/03/2025
Rev 0.3	Draft Report	Nigel Cotsell, John Foster, Nathan Eshraghi, Dusty McLean, Samir Khader, Courtney Smith	Karl Robertson	03/04/2025
Rev 1.0	1st Draft to Client	John Foster	Karl Robertson	04/04/2025
Rev 1.1	Draft Report	John Foster	Nigel Cotsell	29/04/2025
Rev 2.0	Final (2nd)	John Foster	Nigel Cotsell	22/05/2025
Rev 3.0	Final (3rd)	John Foster, Kody Kemp	Karl Robertson	21/07/2025
Rev 4.0	Final (4th)	Kody Kemp, John Foster, Nigel Cotsell	Karl Robertson	20/08/2025
Rev 5.0	Final (5th)	John Foster, Kody Kemp, Nigel Cotsell	Karl Robertson	10/12/2025
Rev 6.0	Final (6th)	John Foster, Kody Kemp, Courtney Smith, Dr Cheryl O'Dwyer	Karl Robertson	27/02/2026

Distribution Control

Copy	Purpose	Method	Issued to:	Name	Date
1	File Copy	Electronic/Email	Biodiversity Australia	Chantal Sargeant	27/02/2026
1	File Copy	Electronic/Email	RW Corkery & CO	Mitchell Bland	27/02/2026

Accredited Person Authorisation

Assessor Name	Accreditation number	Roles	Signature	Date
Karl Robertson	BAAS21022	Project Director and Final Report Review		27/02/2026
Nigel Cotsell	BAAS18026	Field Survey, report Author Review		27/02/2026
John Foster	BAAS25008	Field Surveys, Report Author		27/02/2026

Project Number: ENS6872

ENS6872-RPT-RWCorkery_CopiMineralSands_BDAR-rev6.0.docx

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Executive Summary

Biodiversity Australia (Bio Aus) was requested to prepare a Biodiversity Development Assessment Report (BDAR) for the proposed Copi Mineral Sands Project (The Project). This is for an open-cut mineral sands mine for the extraction and processing of heavy mineral ore to produce a heavy mineral concentrate for R.W Corkery & Co Pty. Ltd (RWC) on behalf of RZ Resources Limited (the "Applicant"). The proposed mine and its associated infrastructure would be located within an area referred to as the "Mine Site," located about 75 kilometres northwest of Wentworth, New South Wales.

The Project is classified as a State Significant Development (SSD) under Clause 5(1)(a) of Schedule 1 of the State Environmental Planning Policy (Planning Systems) 2021 because The Project is for the purpose of 'mineral sands mining'. The Development Application will therefore require assessment under Division 4.7 of Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). In accordance with Section 4.5(a), the consent authority for The Project will be the Minister for Planning or their delegate.

This BDAR was prepared as a requirement of the Planning Secretary's Environmental Assessment Requirements (SEARs) (SSD-41294067). The Project also triggered the Biodiversity Offset Scheme (BOS) Entry Threshold as it would exceed the area clearing threshold and impact on areas mapped as sensitive on the Biodiversity Values Mapping issued by the NSW State Government.

An Environmental Impact Statement (EIS) accompanied by a BDAR undertaken by EnviroKey Pty Ltd, was submitted to the then Department of Climate Change, Energy, the Environment and Water (DCCEEW) in May 2024. Since the public exhibition of this BDAR, the applicant has amended The Project to reduce the Development Footprint. Additionally, in response to feedback received from the Biodiversity, Conservation and Science Division (BCS), the Applicant engaged Bio Aus to undertake a revised BDAR for The Project. As a result, this report presents an updated assessment inclusive of The Project amendments, and matters raised by the BCS.

In accordance with the Biodiversity Assessment Method 2020 (BAM 2020), a parent case (00052608) was established in the New South Wales Biodiversity Offsets and Agreement Management System (BOAMS). The parent case was then split into two related child cases in the Biodiversity Assessment Methodology Credit Calculator (BAM-C). The Development Footprint – Mine Site and associated infrastructure areas were assigned to a Site-based development (related case 00052609) and the Development Footprint – Linear Corridor and access road were assigned to a Linear development (related case 00055120).

A separate Commonwealth EPBC Act referral has been undertaken and is currently under review. The proponent has not sought assessment under the bilateral agreement.

This BDAR was twice previously submitted and has undergone two rounds of requests for further information (RFI-96105708). Initially 13 issues were raised by the Conservation Programs, Heritage and Regulation Group. All issues raised by CPHR were addressed and the responses incorporated into the revised BDAR Rev 5.0. Subsequently, after resubmission, five issues were raised by Conservation Planning and Assessment (CPA). Biodiversity Australia's responses to the five issues raised by CPA have now been addressed within this BDAR and can also be found in the CPA RFI response letter located in Appendix A-1.

Field surveys within the Assessment Area have been ongoing since December 2014. To ensure data remains within the 5-year lifespan required by the BAM 2020, only field survey data, including Vegetation Integrity Plots, from June 2020 onwards, were used for the BDAR.

Thirteen Plant Community Types (PCTs) are present within the Development Footprint/s in which all project-related disturbance within the Mine Site and Linear Corridor would occur. These include:

- PCT 28: White Cypress Pine open woodland of sand plains, prior streams and dunes mainly of the semi-arid (warm) climate zone,
- PCT 58: Black Oak – Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion,
- PCT 64: Samphire – Water Weed – Sea Heath shrubland saline wetland of depressions of the arid and semi-arid (warm zones),
- PCT 143: Narrow-leafed Hopbush – Scrub Turpentine – Senna shrubland on semi-arid and arid sandplains and dunes,
- PCT 152: Lunette chenopod shrubland mainly of the Murray Darling Depression Bioregion,
- PCT 154: Pearl Bluebush low open shrubland of the arid and semi-arid plains,
- PCT 157: Bladder Saltbush shrubland on alluvial plains in the semi-arid (warm) zone including Riverina Bioregion,
- PCT 170: Chenopod sandplain mallee woodland/shrubland,
- PCT 171: Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion,
- PCT 215: Woollybutt Grass open grassland on red earths of the inland plains,
- PCT 221: Black Oak – Pearl Bluebush open woodland of the sandplains of the semi-arid warm and arid climate zones,
- PCT 253: Gypseous shrubland on rises in the semi-arid and arid plains, &
- PCT 254: Black Oak - Bladder Saltbush on light clays in the arid zone.

Field surveys conducted by EnviroKey since June 2020 and by Bio Aus since November 2024 have identified the following ecosystem credit species within the Development Footprint/s:

- Southern Whiteface (*Aphelocephala leucopsis*),
- Dusky Woodswallow (*Artamus cyanopterus*),
- Pied Honeyeater (*Certhionyx variegatus*),
- Little Pied Bat (*Chalinolobus picatus*),
- Chestnut Quail-thrush (*Cinclosoma castanotum*),
- Varied Sittella (*Daphoenositta chrysoptera*),
- Marble-faced Delma (*Delma australis*),
- White-fronted Chat (*Epthianura albifrons*),
- Little Eagle (*Hieraaetus morphnoides*) (foraging only),
- Pink Cockatoo* (*Lophochroa leadbeateri*) (foraging only),
- South-Eastern-Hooded Robin (*Melanodryas cucullata*),
- Bolam's Mouse (*Pseudomys bolami*),
- Ringed Brown Snake (*Pseudonaja modesta*),
- Redthroat (*Pyrrholaemus brunneus*),
- Jewelled Gecko (*Strophurus elderi*), &

- Inland Forest Bat *(Vespadelus baverstocki*).

The following Species Credit Species were confirmed as occurring within the Development Footprint/s:

- Nulla Nulla Grass (*Austrostipa nullanulla*) (Mine Site area only). This species is also a Serious and Irreversible Impact (SAII) entity.

Targeted surveys were conducted in accordance with BAM 2020 during the appropriate survey period, using approved survey methods for each of the candidate species. No evidence was found to confirm the presence of these candidate species. The species include:

Flora

- Harrow Wattle (*Acacia acanthoclada*)
- Purple-wood Wattle (*Acacia carneorum*),
- Atriplex infrequens,
- Austrostipa metatoris,
- Mossgiel Daisy (*Brachyscome papillosa*),
- Burr-daisy (*Calotis moorei*),
- Bladder Senna **(***Colutea arborescens*),
- Bluebush Daisy (*Cratystylis conocephala*),
- Desert Hopbush (*Dodonaea stenozyga*),
- Fleshy Minuria (*Kippistia suaedifolia*),
- Pink Velvet Bush (*Lasiopetalum behrii*),
- Winged Peppercress (*Lepidium monoplocoides*),
- Button Immortelle (*Leptorhynchos waitzia*),
- Thyme Rice Flower (*Pimelea serpyllifolia subsp. serpyllifolia*),
- Cobar Greenhood Orchid (*Pterostylis cobarensis*),
- Bitter Quandong (*Santalum murrayanum*),
- Silky Swainson-pea (*Swainsona sericea*), &
- Yellow Swainson-pea (*Swainsona pyrophila*).

Fauna

- Bush Stone-curlew (*Burhinus grallarius*),
- Crowned Gecko (*Lucasium stenodactylum*),
- Desert Mouse (*Pseudomys desertor*),
- Southern Myotis (*Myotis macropus*),
- Pink Cockatoo* (*Lophochroa leadbeateri*),
- Red-lored Whistler (*Pachycephala rufogularis*),
- Striated Grass Wren (Murray Mallee) (*Amytornis striatus howei*),

- Southern Hairy-nosed Wombat (*Lasiorhinus latifrons*),
- Square-tailed Kite (*Lophoictinia isura*),
- Australian Bustard (*Ardeotis australis*),
- White-bellied Sea-Eagle (*Haliaeetus leucogaster*),
- Black-eared Miner (*Manorina melanotis*),
- Black-breasted Buzzard (*Hamirostra melanosternon*),
- Little Eagle (*Hieraaetus morphnoides)**,*
- Masked Owl (*Tyto novaehollandiae*), &
- Painted Burrowing Frog (*Neobatrachus Pictus*)***.

*The Pink Cockatoo is a dual credit species; ecosystem credits for foraging habitat, and species credit species for breeding habitat. Targeted surveys were undertaken in accordance with the survey guidelines during the breeding season targeting suitable hollow bearing trees. It was recorded in and around the Development Footprint - Mine Site and Development Footprint - Linear Corridor during targeted and opportunistic surveys within the breeding season August to December. However, no evidence of breeding (activity or active breeding habitat) was observed or recorded in either area.

** The Little Eagle is also a dual credit species; ecosystem credits for foraging habitat, and species credit species for breeding habitat. The species was recorded outside of the Development Footprint – Mine Site and Development Footprint Linear Corridor, however no individuals were observed or recorded within either area. A BAM compliant survey consisting of 20 minute raptor survey points along transects through suitable elevated wooded habitat and at Large Raptor nests were conducted on two consecutive days during the species survey window in August 2025, however no evidence of breeding was found.

*** The Painted Burrowing Frog is a species credit species. It has been recorded within the region of the Development Footprint – Mine Sites and Development Footprint – Linear Corridor. Very limited suitable breeding habitat occurs within the Development Footprints. Habitat surveys were undertaken in May 2025, to assess the quality and extent of the potential aquatic habitat. Surveys for the Painted Burrowing Frog require a minimum of 50 millimetres of rain within a 24 hr period, no such event has occurred during the assessment period. In accordance with Box 3 of the BAM (DPIE 2020), an expert report was provided. The expert report concluded that there is a low likelihood of occurrence for the frog due to factors including widespread saline wetlands which are unsuitable for *N. pictus,* making the Copi Mineral Sands site highly unlikely to be of significance for *N. pictus* (Ecological Horizons, 2025).

Painted Burrowing Frogs are primarily threatened by habitat loss and fragmentation caused by over-grazing and the decline of suitable wetland habitats, key threats which are present within the Development Footprint (DCCEEW, 2024).

Key threatening processes to the species such as fragmentation by land clearing, loss of habitat through over-grazing by sheep and goats, and the loss of suitable wetland habitats (DCCEEW, 2024).are found within the Development Footprint Mine site and therefore it is unlikely that N. pictus is present. This is supported by the conclusions from the GHD literature (GHD 2025), data review and site report.

The Painted Burrowing Frog was determined to be unlikely to occur within the Development Footprints due to the scarcity of nearby records, presence of extensive tracts of unsuitable habitat and presence of predatory animals. As such the Painted Burrowing Frog has been excluded as a species credit species from the assessment.

Targeted surveys for the Desert mouse were conducted in accordance with BAM 2020 and the species survey guidelines. However, due to this species being difficult to detect, an expert report was acquired, in addition to the field survey effort, to ensure a comprehensive assessment of presence. As such, based on the expert report, the Desert mouse has been excluded as a species credit species from the assessment.

Five Plant Community Types had potential links with three Endangered Ecological Communities (EEC) located within the Development Footprint/s. These included:

- Vegetation identified as PCT 28, which is consistent with the EEC *Sandhill Pine Woodland in the Riverina, Murray-Darling Depression and NSW South Western slopes bioregions* that is listed as Endangered under the *Biodiversity Conservation Act 2016* (BC Act),
- Vegetation identified as PCT 58, 143, 154, 170 were potentially linked with the EEC - *Acacia loderi shrublands* which is listed as Endangered under the BC Act, and
- Vegetation identified as PCT 28, 58, 170 was potentially linked with the EEC *Acacia melvillei Shrubland in the Riverina and Murray-Darling Depression bioregions* is listed as Endangered under the BC Act.

Following a review of the Final Determinations for each of the three relevant EECs, it was determined that only one community, PCT 28 White Cypress Pine open woodland of sand plains, prior streams and dunes mainly of the semi-arid (warm) climate zone, met the relevant criteria to be considered EEC (*Sandhill Pine Woodland in the Riverina, Murray-Darling Depression and NSW South Western slopes bioregions*) as defined by the New South Wales Scientific Committee – Final Determinations.

The Development Footprint – Mine Site would result in direct impacts to 3,692.92 hectares (ha), which comprises Native Vegetation that is consistent with all identified PCTs. The Development Footprint – Linear Corridor, would result in direct impacts to 190.16 ha of Native Vegetation.

The design of The Project has evolved in an iterative manner over a six-year period from 2018 to 2025. This has involved consideration of the findings of the technical and environmental studies undertaken, feedback from the local and wider community, and responses from the BCS and other New South Wales agencies. Strategies used to avoid and minimise impacts to biodiversity include the redesign of the Mine Site and a reduction in the Linear Corridor width from an initial 120 metres to 90 metres to 60 meters, and more recently 42 metres.

An area (Huntingfield/Sunshine) adjacent to the northwest boundary of the current Development Footprint – Mine Site (which was included in the original Mine Site design) was removed from the current mine layout, however it is not an avoidance measure (RZ Resources may apply to mine this land in the future). The area was excluded due to the inability to accessing the property, which meant biodiversity impacts could not be fully determined. The current design avoids uncertain impacts.

Some infrastructure components will be located within the Development Footprint, but outside of the mine path for the life of The Project. However, the mine path will be progressively backfilled with tailings and overburden. Additionally, the Temporary Tailings Storage Facility (TTSF) will be used to backfill the mine path void following the cessation of mining operations.

This BDAR includes a range of measures designed to mitigate and manage impacts on Biodiversity Values commensurate to the level of impact proposed by The Project. These include staging of vegetation clearing, avoidance of retained areas of vegetation, pre-clearing surveys of Spinifex Grass and Hollow Bearing Trees, Nest Trees and specific requirements around *Austrostipa nullanulla.*

Based on the BOAMS, and a related case in the BAM-C, Section 1. Tables E1 (Table 69) and E2 (Table 70) identify the Ecosystem Credits related to the impacts of The Project. Table E3 (Table 71) identifies the Species Credits, no species credits are required for the Linear Corridor.

Table E1: Impacts that require an offset – Ecosystem Credits – Development Footprint – Mine Site

Zone	Vegetation zone name	TEC name	Current VI score	Change in VI	Area (ha)	Sensitivity to loss (Justification)	Species sensitivity to gain class	Biodiversity risk weighting	Ecosystem credits
58 Black Oak - Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion									
#1	58_Mod	Not a TEC	53.8	53.8	190	PCT Cleared - 50%	High	1.725	4,470
								Subtotal	**4,470**
64 Samphire - Water Weed - Sea-Heath shrubland saline wetland of depressions of the arid and semi-arid (warm) zones									
#2	64_Mod	Not a TEC	49.9	49.9	641.4	PCT Cleared - 0%	High	1.50	12,011
								Subtotal	**12,011**
152 Lunette chenopod shrubland mainly of the Murray Darling Depression Bioregion									
#3	152_Mod	Not a TEC	49.8	49.8	249.8	PCT Cleared - 27%	Moderate	1.50	4,666
								Subtotal	**4,666**
154 Pearl Bluebush low open shrubland of the arid and semi-arid plains									
#4	154_Mod	Not a TEC	34.2	34.2	1,564.7	PCT Cleared - 43%	Moderate	1.50	20,053
								Subtotal	**20,053**
157 Bladder Saltbush shrubland on alluvial plains in the semi-arid (warm) zone including Riverina Bioregion									
#5	157_Mod	Not a TEC	77.1	77.1	492	PCT Cleared - 60%	High	1.75	16,592
#6	157_High	Not a TEC	70	70	3.6	PCT Cleared - 60%	High	1.75	110
								Subtotal	**16,702**
170 Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones									
#7	170_Mod	Not a TEC	26.1	26.1	2.0	PCT Cleared - 41%	High	1.50	19
								Subtotal	**19**
171 Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion									
#8	171_LowMod	Not a TEC	63	63	5.6	PCT Cleared - 19%	High	1.50	132
								Subtotal	**132**

Zone	Vegetation zone name	TEC name	Current VI score	Change in VI	Area (ha)	Sensitivity to loss (Justification)	Species sensitivity to gain class	Biodiversity risk weighting	Ecosystem credits
215 Woollybutt Grass open grassland on red earths of the inland plains									
#9	215_Mod	Not a TEC	20.1	20.1	5.1	PCT Cleared - 20%	High	1.50	38
#10	215_High	Not a TEC	31.6	31.6	0.82	PCT Cleared - 20%	high	1.50	10
								Subtotal	**48**
221 Black Oak - Pearl Bluebush open woodland of the sandplains of the semi-arid warm and arid climate zones									
#11	221_Mod	Not a TEC	57.3	57.3	391.9	PCT Cleared - 30%	High	1.50	8,423
#12	221_High	Not a TEC	62	62	3.1	PCT Cleared - 30%	High	1.50	72
								Subtotal	**8,495**
253 Gypseous shrubland on rises in the semi-arid and arid plains									
#13	253_Mod	Not a TEC	54.3	54.3	140.1	PCT Cleared - 30%	High	1.50	2,852
								Subtotal	**2,852**
254 Black Oak - Bladder Saltbush on light clays in the arid zone									
#14	254_Low	Not a TEC	60.5	60.5	1.2	PCT Cleared - 10%	High	1.50	26
								Subtotal	**26**
								Total	**69,474**

Table E2: Impacts that require an offset – Ecosystem Credits – Development Footprint – Linear Corridor

Zone	Vegetation zone name	TEC name	Current VI score	Change in VI	Area (ha)	Sensitivity to loss (Justification)	Species sensitivity to gain class	Biodiversity risk weighting	Ecosystem credits
28 White Cypress Pine open woodland of sand plains, prior streams and dunes mainly of the semi-arid (warm) climate zone									
EEC Sandhill Pine Woodland in the Riverina, Murray–Darling Depression and NSW South Western Slopes Bioregions - ENDANGERED									
#1	28_Mod	TEC	54.6	54.6	0.77	BC Act Listing Status	High	2.00	21
								Subtotal	**21**
58 Black Oak - Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion									
#2	58_Mod	Not a TEC	53.8	53.8	48.8	PCT Cleared - 50%	High	1.75	1,150
								Subtotal	**1,150**
143 Narrow-leaved Hopbush - Scrub Turpentine - Senna shrubland on semi-arid and arid sandplains and dunes.									
#3	143_Mod	Not a TEC	80.2	80.2	17.2	PCT Cleared - 30%	High	1.50	517
								Subtotal	**517**
154 Pearl Bluebush low open shrubland of the arid and semi-arid plains									
#4	154_Mod	Not a TEC	34.2	34.2	102.1	PCT Cleared - 43%	High	1.50	1,308
								Subtotal	**1,308**
170 Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones									
#5	170_Mod	Not a TEC	26.1	26.1	13.6	PCT Cleared - 41%	High	1.50	133

Zone	Vegetation zone name	TEC name	Current VI score	Change in VI	Area (ha)	Sensitivity to loss (Justification)	Species sensitivity to gain class	Biodiversity risk weighting	Ecosystem credits
								Subtotal	**133**
171 Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion									
#6	171_Low	Not a TEC	63	63	6.6	PCT Cleared - 19%	High	1.50	155
								Subtotal	**155**
								Total	**3,284**

Table E3: Impacts that require an offset – Species Credits - Development Footprint - Mine Site

Vegetation zone name	Habitat condition (VI)	Change in habitat condition	Area (ha)	Sensitivity to loss (Justification)	Sensitivity to gain (Justification)	BC Act Listing status	EPBC Act listing status	Potential SAII	Species credits
Austrostipa nullanulla / A spear-grass (Flora)									
58_Mod	53.8	53.8	3.3	Geographic Distribution	Ability to colonise improved habitat	Endangered	Not Listed	True	133
64_Mod	49.9	49.9	0.95	Geographic Distribution	Ability to colonise improved habitat	Endangered	Not Listed	True	36
152_Mod	49.8	49.8	2.8	Geographic Distribution	Ability to colonise improved habitat	Endangered	Not Listed	True	104
154_Mod	34.2	34.2	6.9	Geographic Distribution	Ability to colonise improved habitat	Endangered	Not Listed	True	177
157_Mod	77.1	77.1	14	Geographic Distribution	Ability to colonise improved habitat	Endangered	Not Listed	True	810
253_Low	54.3	54.3	30.8	Geographic Distribution	Ability to colonise improved habitat	Endangered	Not Listed	True	1,255
254_Mod	60.5	60.5	0.83	Geographic Distribution	Ability to colonise improved habitat	Endangered	Not Listed	True	38
								Subtotal	**2,553**

Abbreviations

Table 1: List of abbreviations within report

AOBV	Area of Outstanding Biodiversity Value
Mine Site Assessment Area	Area of land within a 1500 m buffer around the outer boundary of the Development Footprint – Mine Site.
Linear Corridor Assessment Area	Area of land within a 500 m buffer around the outer boundary of the Development Footprint – Linear Corridor.
BAM	Biodiversity Assessment Method
BAMC	Biodiversity Assessment Method Calculator
BC Act	*Biodiversity Conservation Act 2016*
BC Regulation	*NSW Biodiversity Conservation Regulation 2017*
BDAR	Biodiversity Development Assessment Report
Bio Aus	Biodiversity Australia
BOAMS	Biodiversity Offsets and Agreement Management System
BOS	Biodiversity Offset Scheme
DA	Development Application
DAWE	Commonwealth Department of Agriculture, Water and the Environment
DCCEEW	The NSW Department of Climate Change, Energy, the Environment and Water
DCP	Development Control Plan
DEC	Department of Environment and Conservation
DPE	Department of Planning and Environment
DPIE	Department of Planning, Industry and Environment
DPI & RD	Department of Planning, Industry and regional Development
EEC	Endangered Ecological Community
EP&A Act	*NSW Environmental Planning and Assessment Act 1979*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
GDEs	Groundwater Dependent Ecosystems
GIS	Geographic Information System
GPS	Global Positioning System
ha	Hectares
HBT	Hollow-bearing Tree
IBRA	Interim Biogeographic Regionalisation for Australia
LEP	Local Environmental Plans
LGA	Local Government Area
MNES	Matter of National Environmental Significance
NSW	New South Wales
PCT	Plant Community Type
PIR	Passive Infrared Camera
SAII	Serious and Irreversible Impacts
SEAR	Secretary's Environmental Assessment Requirements
SEPP	*State Environmental Protection Policy*
SMP	Strategic Management Plan

SSD	State Significant Development
TBDC	Threatened Biodiversity Data Collection
TEC	Threatened Ecological Community
VMP	Vegetation Management Plan
VI	Vegetation Index
VZ	Vegetation Zone

Abbreviations adopted within this report are compliant with the BAM 2020 Glossary of terms.

Certification under Section 6.15 Biodiversity Conservation Act 2016

I, Karl Robertson (BAAS21022) certify that this Biodiversity Development Assessment Report and the accompanying finalised credit reports have been prepared based on the requirements of, and information provided under the Biodiversity Assessment Method 2020 and clause 6.15 of the *Biodiversity* Conservation *Act 2016*.

I declare that all EPBC listed species and communities that have the potential to occur within the Subject Land have been identified in this BDAR including those that are ecosystem credit species.

Date: 27 February 2026

Signature:

BAM Assessor Accreditation no: BAAS21022

CONFLICT OF INTEREST

I declare that I have considered the circumstances and there is no actual, perceived or potential conflict of interest. This declaration has been made in the interests of full disclosure to the decision-maker. Full disclosure has also been provided to the client.

Date: 27 February 2026

Signature:

BAM Assessor Accreditation no: BAAS21022

Details and Experience of Authors and Contributors are located in Appendix A-12

STAGE 1 - BIODIVERSITY ASSESSMENT

1. Introduction

Biodiversity Australia (Bio Aus) was requested to undertake a Biodiversity Development Assessment Report (BDAR) for the proposed open-cut mineral sands mine Copi Mineral Sands Project (The Project), on behalf of R.W Corkery & Co Pty. Ltd (RWC) and RZ Resources Limited (The Client). The proposed activity and its associated infrastructure would be located within an area of 75 kilometres (km) northwest of Wentworth, New South Wales (NSW), in the Wentworth Local Government Area (LGA) (Figure 1, Figure 2 and Figure 3). Relevant property identifiers are Lot 1907//DP763791, 1//DP1255308, 1940//DP763792 and 4068//DP766543 within Development Footprint – Mine Site and 4068//DP766543, 4117//DP766622, 3421//DP765710, 3422//DP765711, 3423//DP765712, 1908//DP763764, 1910//DP763766 and 3248//DP765453 within the Development Footprint - Linear Corridor (Figure 4 and

Figure 5).

The Development Footprint - Mine Site and associated infrastructure areas were assigned to a site-based development (related case 00052609), and the Development Footprint – Linear Corridor was assigned to a Linear Development (related case 00055120) in the Biodiversity Assessment Method Calculator (BAM-C). This BDAR considers the Assessment Area, comprising the Development Footprint (both Development Footprint – Mine Site and Development Footprint – Linear Corridor) as identified in Figure 6**.** The transportation route or the rail facility at Broken Hill may occur in future assessments and is not included in this BDAR.

1.1 Requirement for the BDAR

Dredge mining from an Extraction area 9.5 kilometres (km) long and up to 1,000 m wide is proposed within the Subject Land. The mining would be using conventional free dig, load and haul mining techniques. Extracted overburden, namely material located above the water table with no heavy mineral, would be used to construct infrastructure within the Mine Site or stockpiled for later use during rehabilitation operations. The placed reject and interburden would be covered by overburden and soil before being rehabilitated.

For the purpose of this BDAR, the area of maximum construction and operational disturbance is hereafter referred to as the Development Footprint, encompassing a total of 4019.6 hectares (ha) (Figure 6, Figure 7, and Figure 8).

The Assessment Area includes the area of land within the 1500 m buffer zone surrounding the Development Footprint – Mine Site and 500 m surrounding the Development Footprint – Linear Corridor that is determined as per Subsection 3.1.2. of the BAM 2020.

The Development Footprint total is 4,019.6 ha with an Assessment Area of 13,693.4 ha. The Development Footprint – Linear Corridor total is 218.4 ha with an Assessment Area (500 m buffer) 3,619 ha. The Development Footprint – Mine Site total is 3801.2 ha with an Assessment Area (1500 m buffer) 10,271.7 ha.

Table 2: Areas of The Project

Areas	Mine Site (ha)	Linear Corridor (ha)	Combined (ha)
Non-vegetated land - Including salt lakes	108.3	28.1	136.4
Assessment Area - Development Footprint + Buffer	10271.74	3619.00	13693.40
Development Footprint	3801.20	218.43	4019.62

Subject Land	39879.70	32469.56	72349.25

These are identified in Figure 9: Development Footprint – Mine Site and Assessment Area and Figure 10: Development Footprint– Linear Corridor and Assessment Area.

The extent of clearing required for the proposed Development Footprint will exceed the clearing threshold prescribed under the BAM 2020. The majority of the Subject Land is zoned RU1 Primary Production under the Wentworth Local Environmental Plan 2011 (The LEP). Areas of Biodiversity Values are mapped within the Subject Land including saline plains (Figure 18 & Figure 19).

The Project is classified as State Significant Development (SSD) under Clause 5(1)(a) of Schedule 1 of the State Environmental Planning Policy (SEPP) (Planning Systems) 2021 'mineral sands mining'. Therefore, the Development Application (DA) will require assessment under Division 4.7 of Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). Under Section 4.5(a) of the EP&A Act, the consent authority for The Project will be the Minister for Planning or their delegate.

Section 7.14(2) of the *Biodiversity Conservation Act 2016* (BC Act) states *'that the Minister for Planning, when determining in accordance with the EP&A Act any such application, is to take into consideration under that Act the likely impact of the proposed development on biodiversity values as assessed in the biodiversity development assessment report. The Minister for Planning may (but is not required to) further consider under that Act the likely impact of the proposed development on biodiversity values.*

1.2 Definitions Used in the Report

This report uses the following key definitions as per BAM:

- **Study Area:** A 10 km area where desktop assessment was conducted for threatened species under BC Act and EPBC Act.
- **Subject Land:** Land comprised of Lot 1907//DP763791, 1//DP1255308, 1940//DP763792 and 4068//DP766543 within Development Footprint – Mine Site and 4068//DP766543, 4117//DP766622, 3421//DP765710, 3422//DP765711, 3423//DP765712, 1908//DP763764, 1910//DP763766 and 3248//DP765453 within the Development Footprint – Linear Corridor which is an area of 72,349.52 ha.
- **Assessment Area:** Includes the Subject Land and the area of land within the 1500 m buffer zone surrounding the Subject Land (or 500 m buffer zone for linear proposals) that is determined as per Subsection 3.1.2 (Figure 9 and Figure 10).
- **Development Footprint:** The area of land that is directly impacted by a proposed development, including access roads and areas used to store construction materials. The term *Development Footprint* is also taken to include clearing footprint, except where the reference is to a small area development or a major project development. The includes both the Development Footprint – Mine Site and Development Footprint – Linear Corridor collectively (Figure 6).
- **Development Footprint – Mine Site:** Refers to the area that will be directly impacted by the proposed action including any infrastructure within the Subject Land which covers 3,801.2 ha (Figure 7).
- **Development Footprint - Linear Corridor:** The access haul route, including the road and electricity easement stretching 33 km long and 42 metres (m) wide to the northeast, connecting with the B79 Motorway, covering an area of 218.4 ha (Figure 8).

These definitions are in line with the BAM, which provides further explanation of definitions and legal terms that may be used in this report. Refer to Table 1 for a list of abbreviations and explanations.

1.3 Structure of the Report

This report has been structured using guidance provided in Appendix K of the BAM. It is structured as follows:

- Section 1 – Introduction: Provides background information for the assessment,
- Section 2 – Landscape Context: Describes the landscape features of the Subject Land and Assessment Area,
- Section 3 - Native Vegetation: Describes the Native Vegetation features of the Subject Land,
- Section 4 – Threatened Species: Describes the threatened species and habitat features associated with the Subject Land,
- Section 5 – Avoid and Minimise Impacts: Details avoidance and minimisation measures for the proposal, &
- Section 6 – Impact Summary and Biodiversity Credit Report: Provides an impact summary and the number and type of credits required to offset impacts.

1.4 Description of the Subject Land

The Subject Land comprises 72,344.52 ha. The properties are located 75 km northwest of Wentworth, New South Wales, within the Wentworth LGA (Figure 3). The entire area is zoned RU1 Primary Production under the Wentworth Local Environmental Plan 2011 (The LEP). The list of the Subject Land Lot Plans where the Development Footprint – Mine Site and Development Footprint – Linear Corridor intersect is provided in Table 3 below.

Table 3: List of the lot / plans within the Subject Land

Development Footprint – Mine Site	Development Footprint – Linear Corridor
1907//DP763791	4068//DP766543
1//DP1255308	4117//DP766622
1940//DP763792	3421//DP765710
4068//DP766543	3422//DP765711
	3423//DP765712
	1908//DP763764
	1910//DP763766
	3248//DP765453

The Subject Land is within the Murray Darling Depression Interim Biogeographic Regionalisation for Australia (IBRA) Region and South Olary Plain IBRA Subregion. The Development Footprints are compounded by Scotia Linear Dunes, Scotia Groundwater Basins and Scotia Sandplains Mitchell Landscapes (Figure 11 and Figure 12).

The Subject Land has undergone substantial historical grazing disturbance over decades from ongoing pastoral activity including sheep and goats. The area had regular drought records over the past 40 years

which has likely exacerbated these grazing pressures. However, Native Vegetation still dominates the ground and shrub layer where 13 Plant Community Types (PCTs) have been confirmed.

There is no Category 1 – exempt land mapped within the Development Footprint based on the Transitional Native Vegetation Regulatory Map.

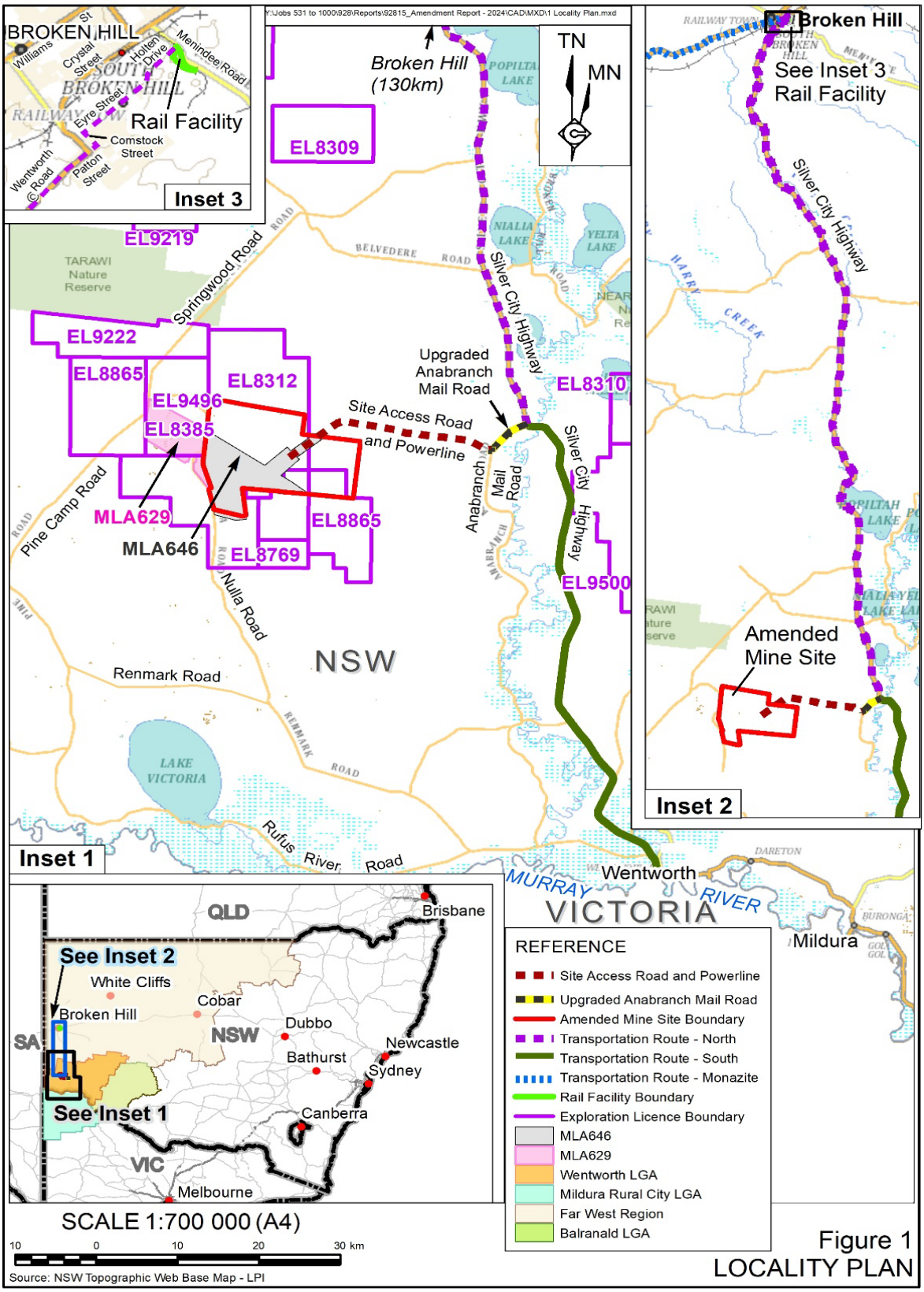
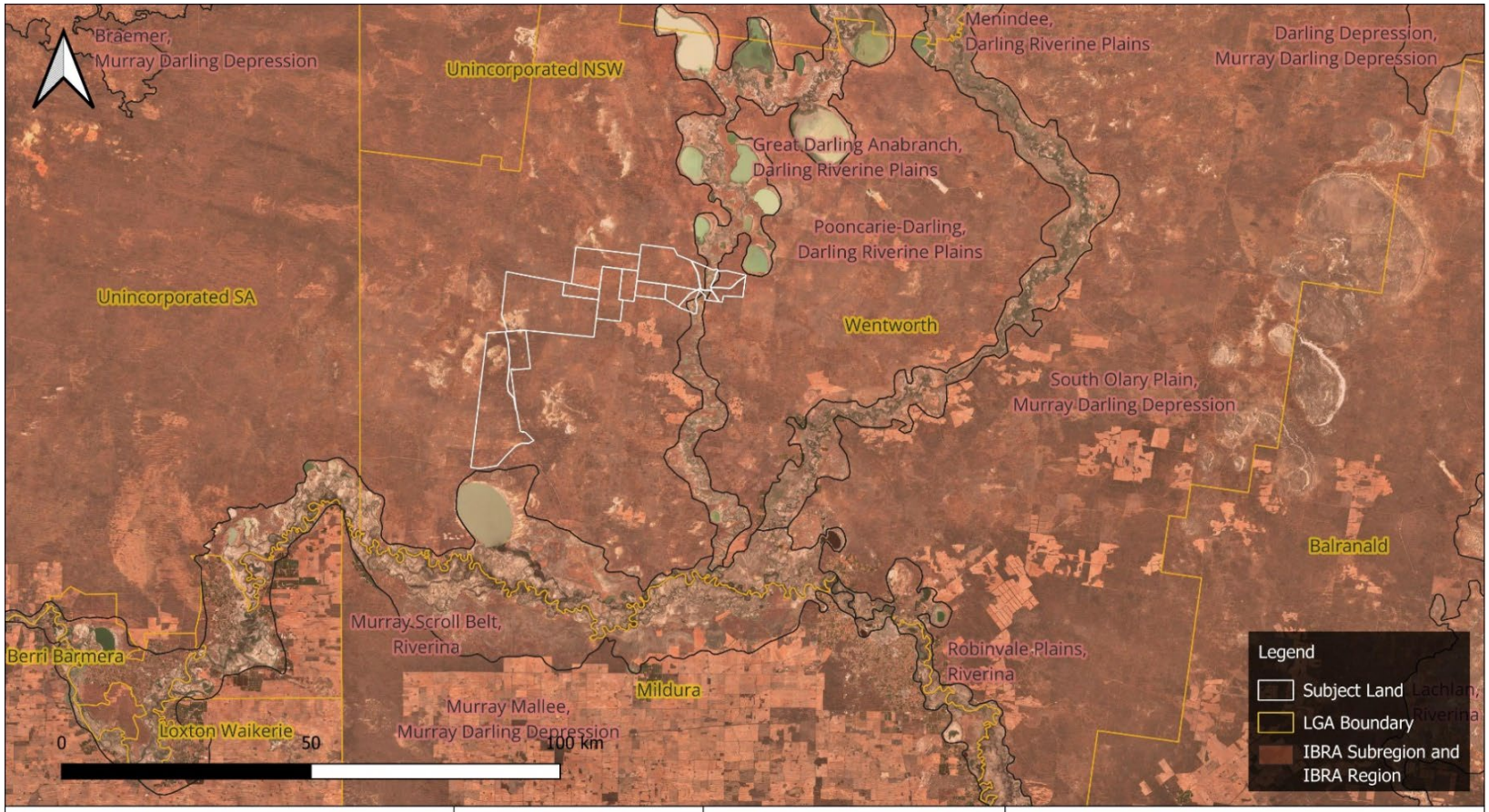


Figure 1: Locality plan

This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Location of Subject Land	Biodiversity AUSTRALIA	
	Drawn by: NE	Location: Warwick Station		
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54 Scale: 1:1000000

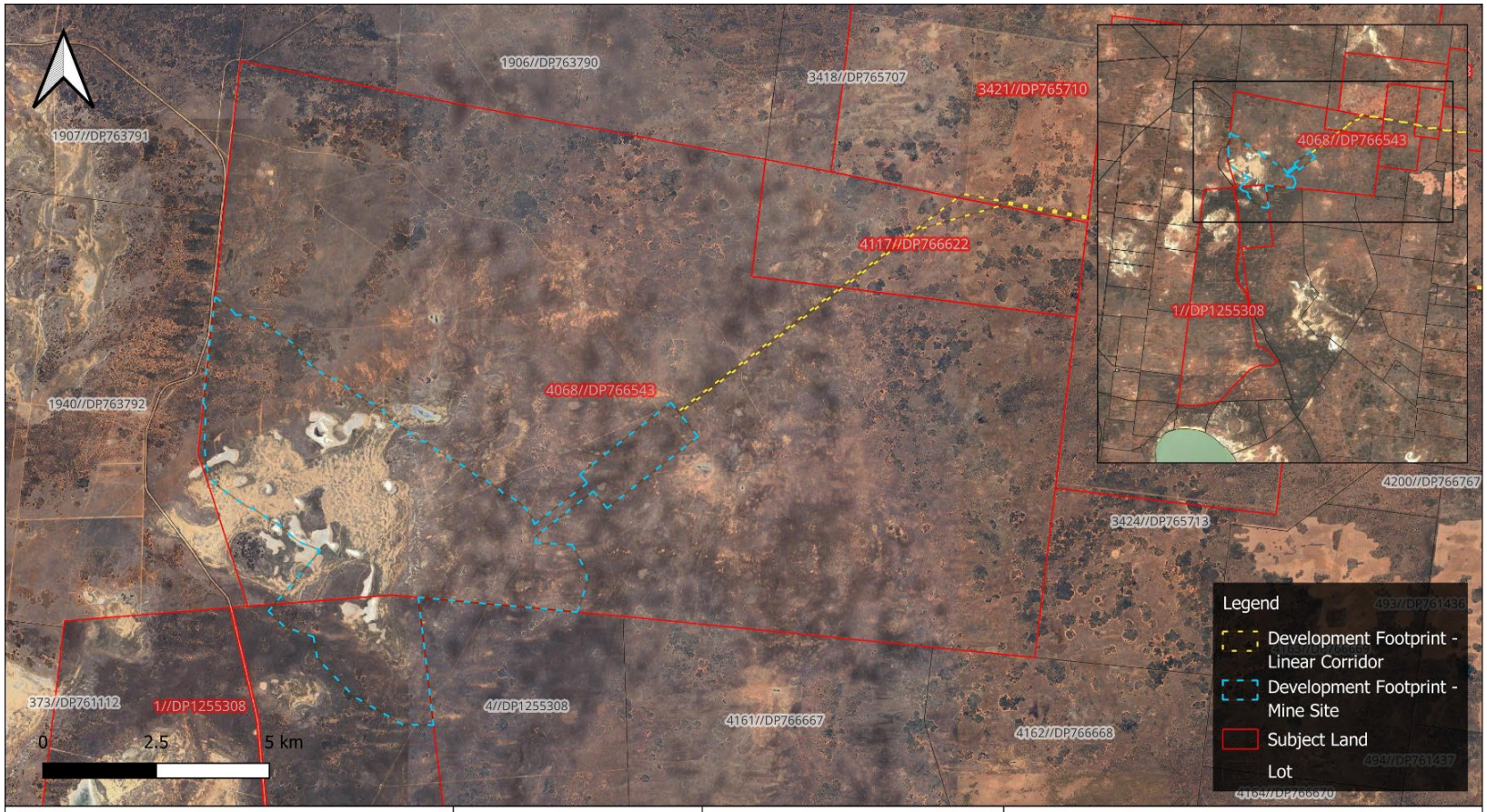
Figure 2: Location of the Subject Land



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.

Project Manager: NC	Figure Name: LGAs, IBRA Regions and Subregion Boundaries	Biodiversity AUSTRALIA	
Drawn by: NE	Location: Warwick Station		
Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:1000000

Figure 3: LGAs, IBRA Regions and subregion boundaries



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.

Project Manager: NC	Figure Name: Cadastre – Development Footprint - Mine Site	Biodiversity AUSTRALIA	
Drawn by: NE	Location: Warwick Station		
Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:110000

Figure 4: Cadastre – Development Footprint - Mine Site

This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Cadastre – Development Footprint - Linear Corridor	Biodiversity AUSTRALIA	
	Drawn by: NE	Location: Warwick Station		
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54 Scale: 1:180000

Figure 5: Cadastre - Development Footprint – Linear Corridor

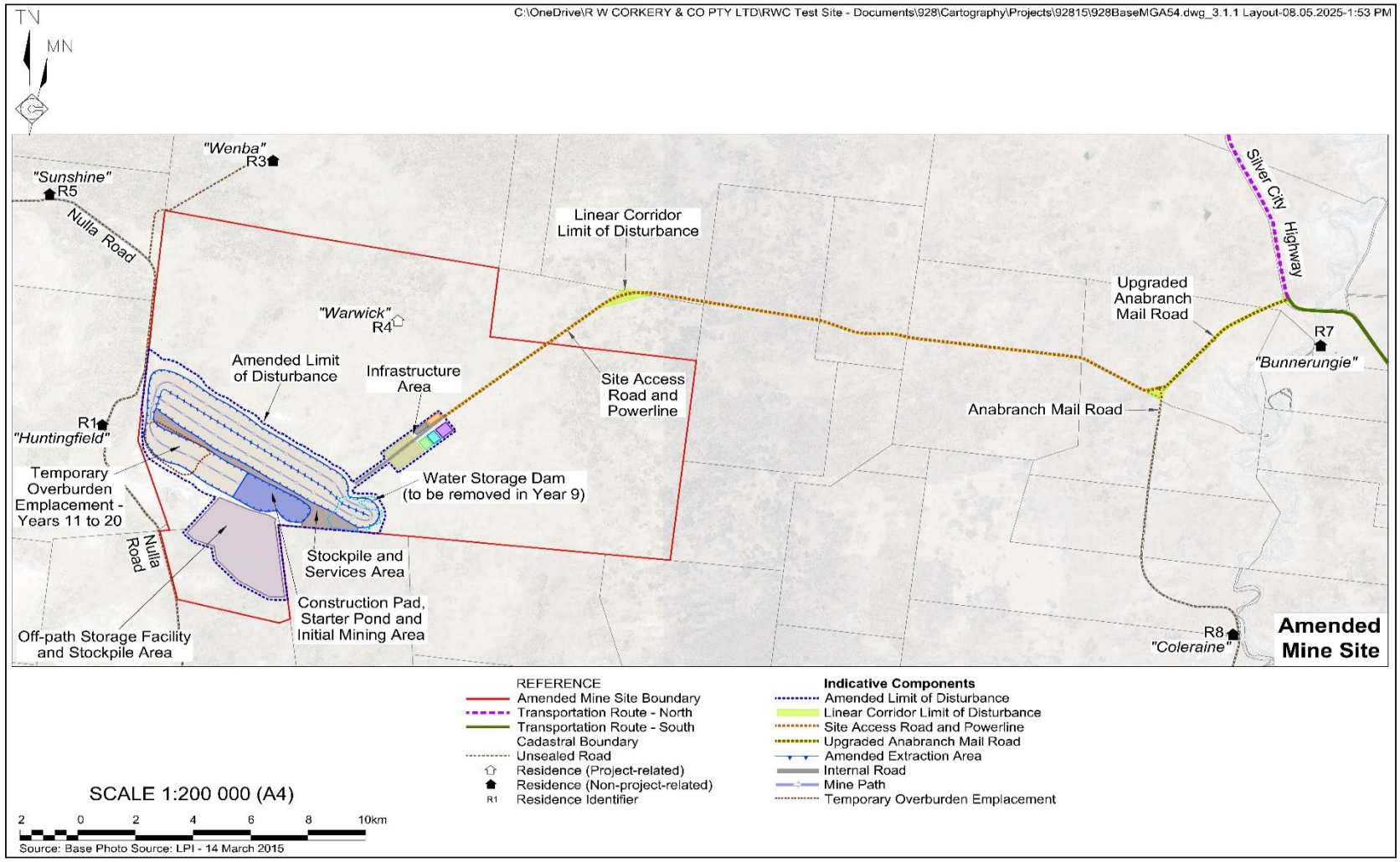


Figure 6: Development Footprint/s

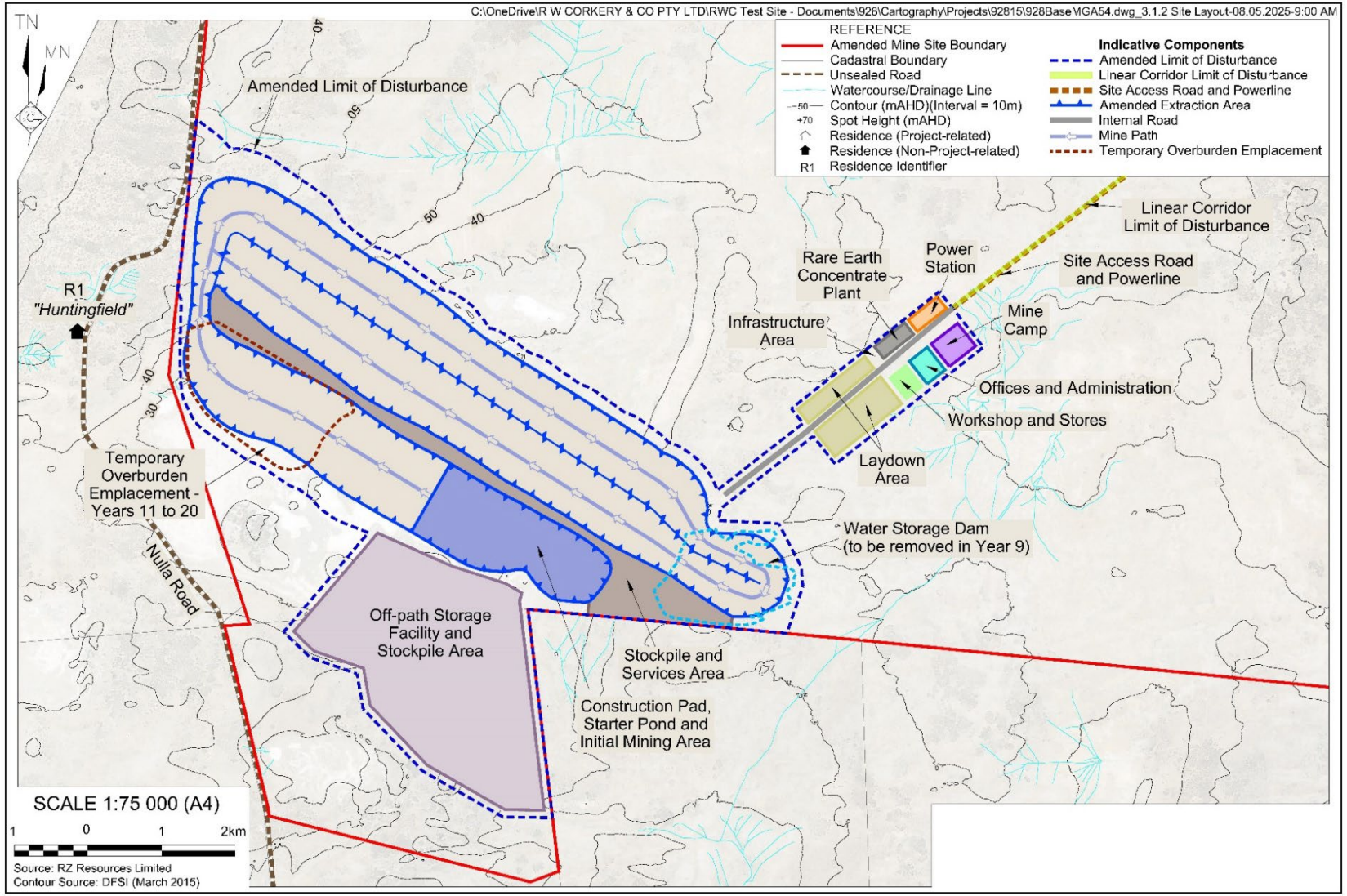


Figure 7: Development Footprint – Mine Site

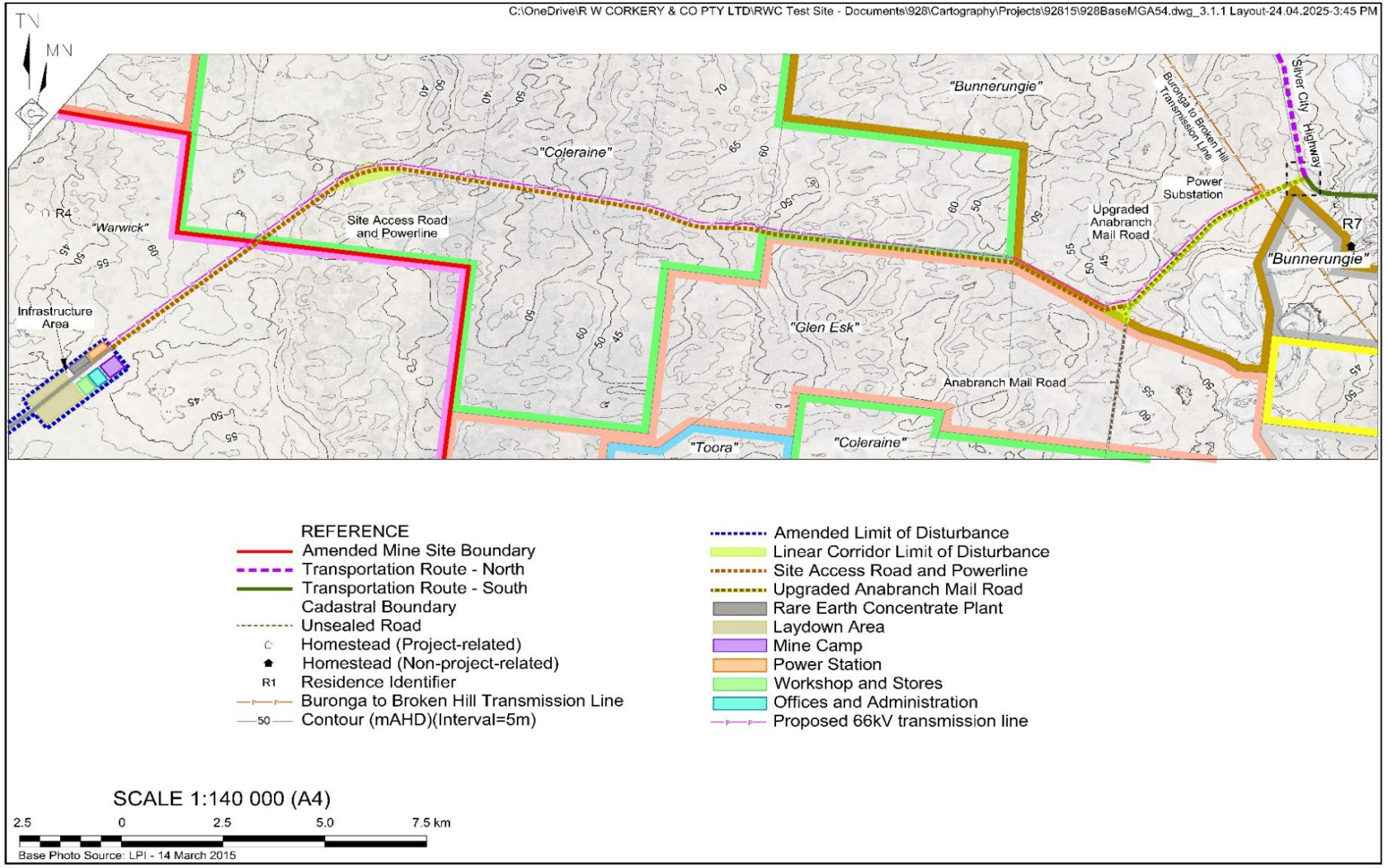
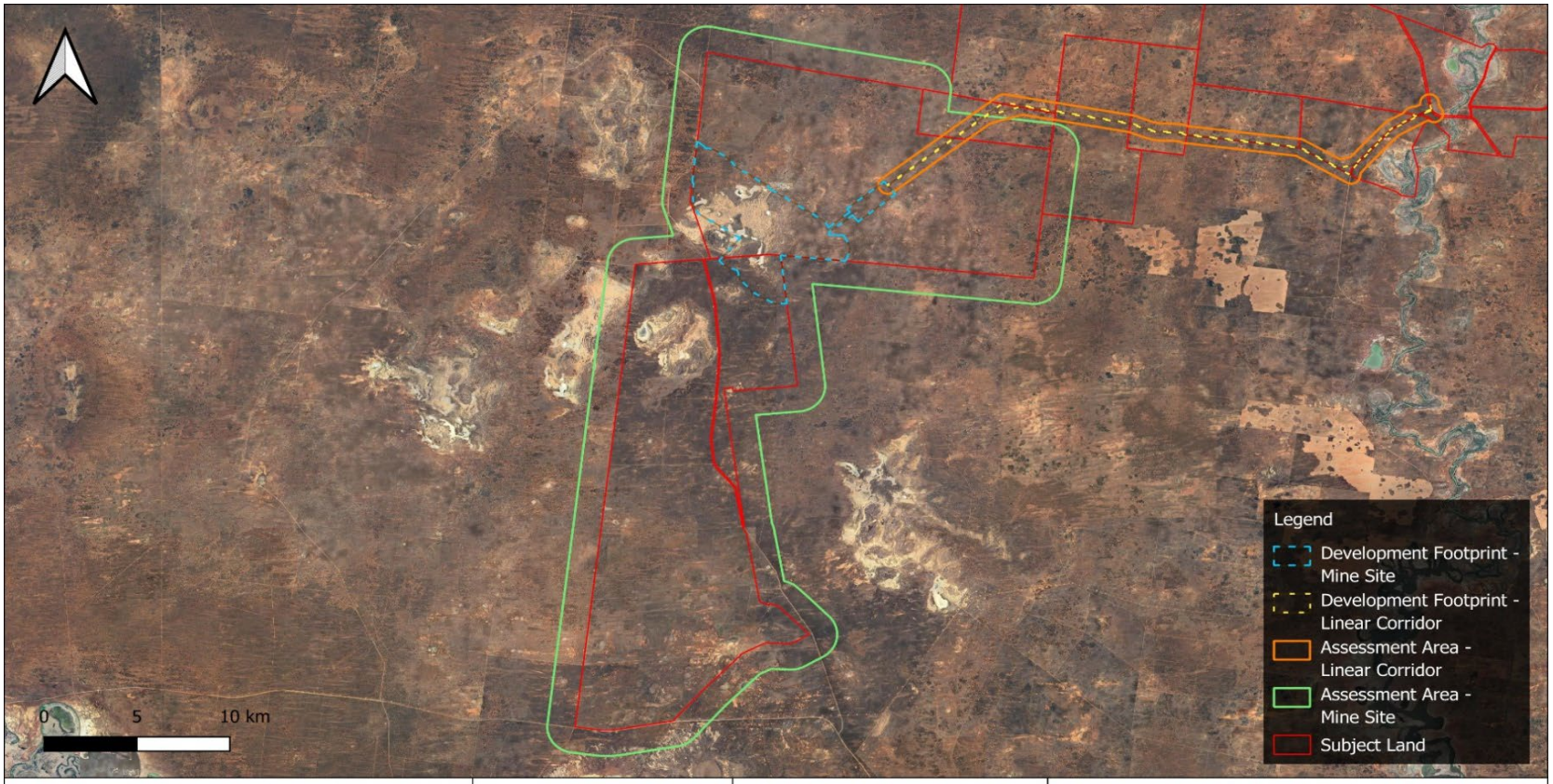


Figure 8: Development Footprint - Linear Corridor



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: BDAR Footprint and Assessment Area - Development Footprint - Mine Site	Biodiversity AUSTRALIA	
	Drawn by: NE	Location: Warwick Station		
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54 Scale: 1:280000

Figure 9: Development Footprint – Mine Site and Assessment Area

This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: BDAR Footprint and Assessment Area - Development Footprint - Linear Corridor	Biodiversity AUSTRALIA	
	Drawn by: NE	Location: Warwick Station		
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:110000

Figure 10: Development Footprint– Linear Corridor and Assessment Area.

1.5 Desktop Assessment

The following databases and Geographic Information System (GIS) layers were searched/obtained:

- Department of Climate Change, Energy, the Environment and Water Protected Matters Search Tool (DCCEEW 2025a).
- Department of Climate Change, Energy, the Environment and Water MNES SPRAT Profiles (DCCEEW 2025b).
- Department of Climate Change, Energy, the Environment and Water - Interim Biogeographic Regionalisation for Australia (IBRA).
- NSW Department of Climate Change, Energy, the Environment and Water Threatened Biodiversity Data Collection (NSW DCCEEW 2025c).
- NSW Department of Climate Change, Energy, the Environment and Water - BioNet/Atlas of Wildlife (NSW DCCEEW 2025d).
- NSW Department of Climate Change, Energy, the Environment and Water - Regional Corridors and Key Habitat Mapping (NSW DCCEEW 2053e).
- NSW Department of Climate Change, Energy, the Environment and Water - Biodiversity Values Map and Threshold Tool and digital data layer (NSW DCCEEW 2025f).
- NSW Department of Climate Change, Energy, the Environment and Water – NSW State Vegetation Type Map (NSW DCCEEW, 2025g).
- NSW Department of Customer Service - NSW Water Theme - Hydro Line.
- NSW Government - Six maps - Clip and Ship, Mapped areas of Water - Department of Customer Services - Spatial Services Waterbody areas - Hydro Area/Hydro lines.

2. Site Context

2.1.1 IBRA Bioregions and Subregions

The Project is within the Murray Darling Depression IBRA Region and South Olary Plain IBRA Subregion (Figure 3).

2.1.2 Mitchell Landscapes

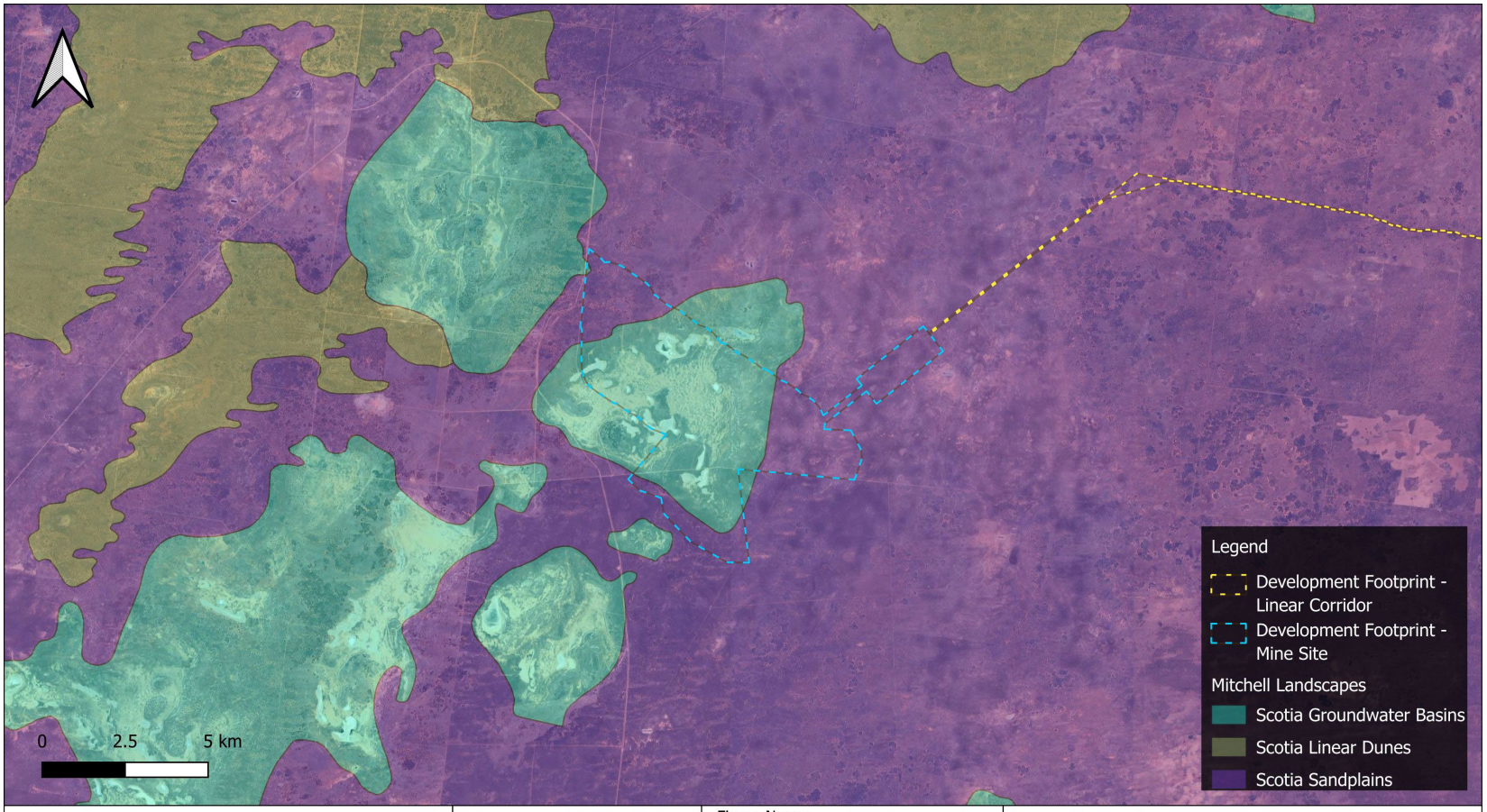
The Assessment Area is compounded by Scotia Linear Dunes, Scotia Groundwater Basins and Scotia Sandplains Mitchell Landscapes (Figure 11 and Figure 12). The Assessment Area within the Development Footprint – Mine Site was assigned to the Scotia Groundwater Basins Mitchell Landscape. The Assessment Area within the Development Footprint - Linear Corridor only intersects the Scotia Sandplains.

2.1.3 Native Vegetation Extent in 1500 m Buffer

The Assessment Area is depicted within Figure 9 and Figure 10. GIS analysis has determined that there is 99.7 % Native Vegetation cover within the Assessment Area (Figure 13) for both assessment areas.

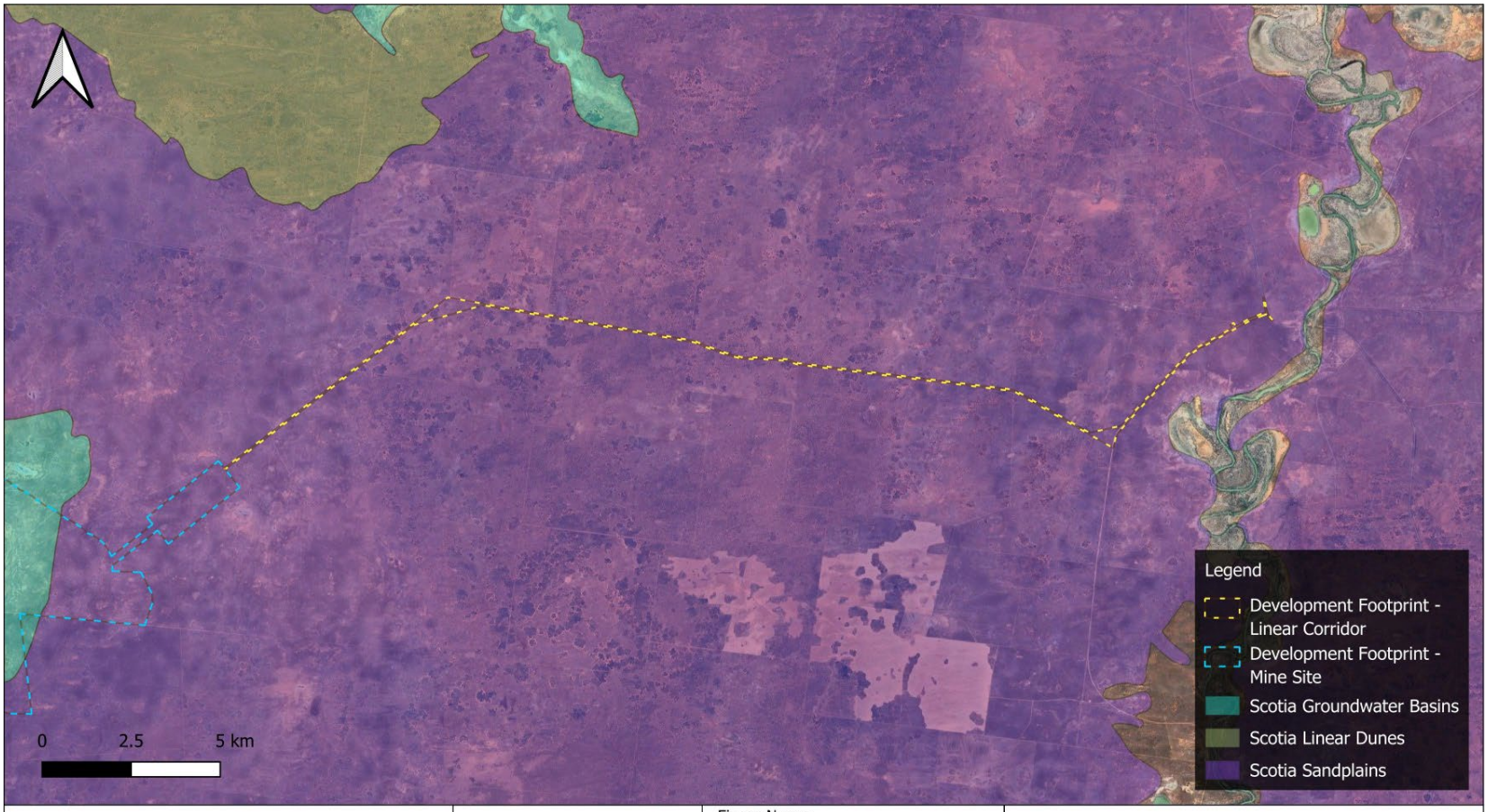
2.1.4 Cleared and Highly Disturbed Areas

Cleared or highly disturbed land occurs throughout the Assessment Area in the form of a network of vehicle tracks, concentrated areas of livestock traffic such as surrounding dams, troughs, fence lines, existing infrastructure such as homesteads, yards, and shearers quarters. Cleared land including vehicle roads and tracks cover approximately 30 ha of the Development Footprint - Mine Site and 28 ha of the Development Footprint - Linear Corridor.



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Location of Development Footprint - Mine Site and surrounding Mitchell Landscapes	Biodiversity AUSTRALIA	
	Drawn by: NE	Location: Warwick Station		
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:150000

Figure 11: Mitchell Landscapes - Development Footprint - Mine Site



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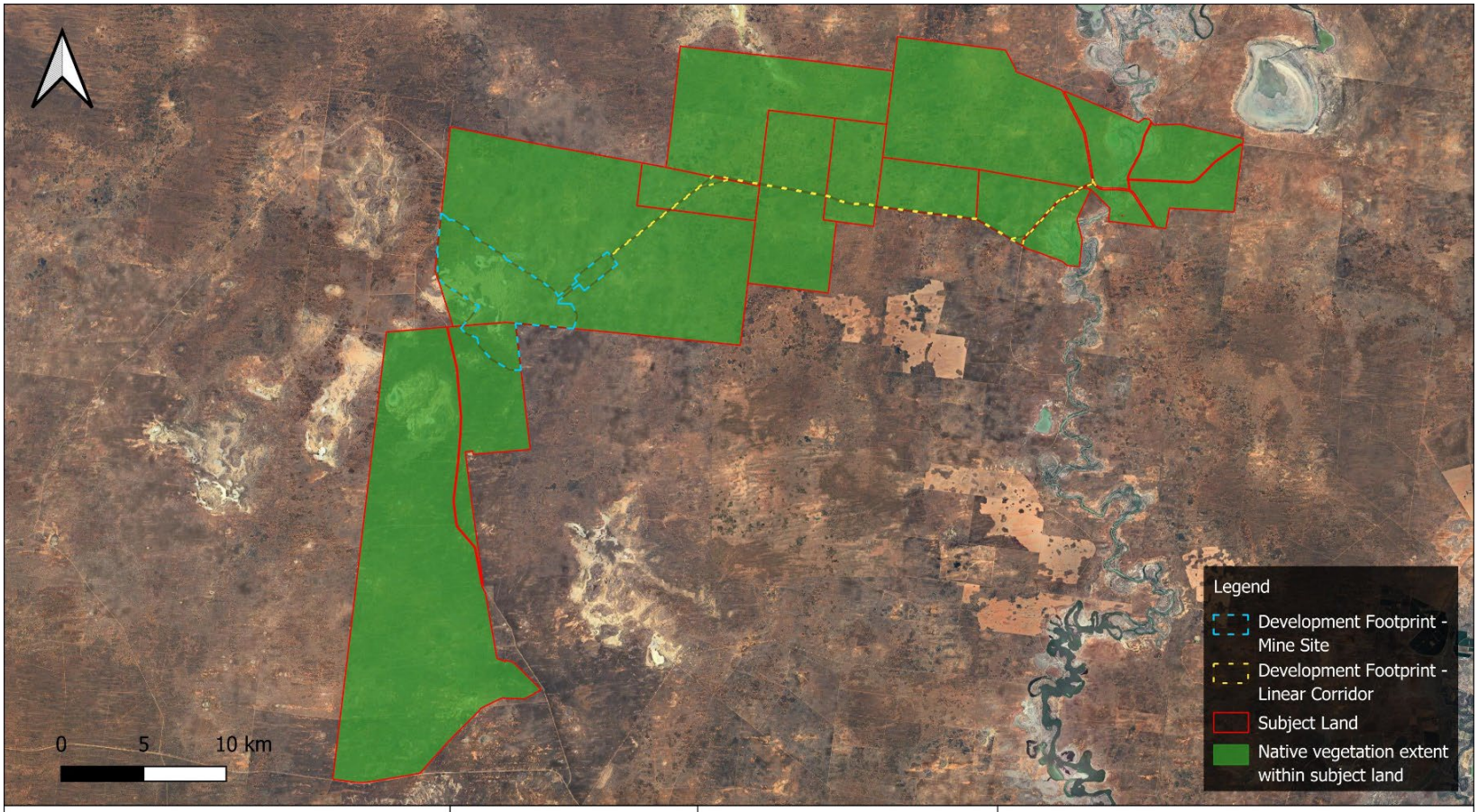
	Drawn by: NE	Location: Warwick Station		
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:140000

Figure 12: Mitchell Landscapes - Development Footprint - Linear Corridor



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	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:300000

Figure 13: Native Vegetation extent within the Subject Land

2.1.5 Landscape Features

The catchment boundaries encompass the Lower Murray-Darling. The Lower Darling River flows from the Menindee Lakes to its junction with the River Murray at Wentworth. The river travels as a deep channel in the flat, dry floodplains of western NSW. Below the Menindee Lakes, the river has two large and distinct channels – its main channel, the lower Darling River, and its ancestral channel, the Great Darling Anabranch. A list of landscape features present is shown in Table 4.

The Great Darling Anabranch has a number of overflow lakes that can hold water for prolonged periods following a flood. It branches from the main channel of the river about 55 km south of Menindee and joins the River Murray downstream of Wentworth. Flows can also reach the Great Darling Anabranch from the lakes system through Tandou Creek and several other minor creeks.

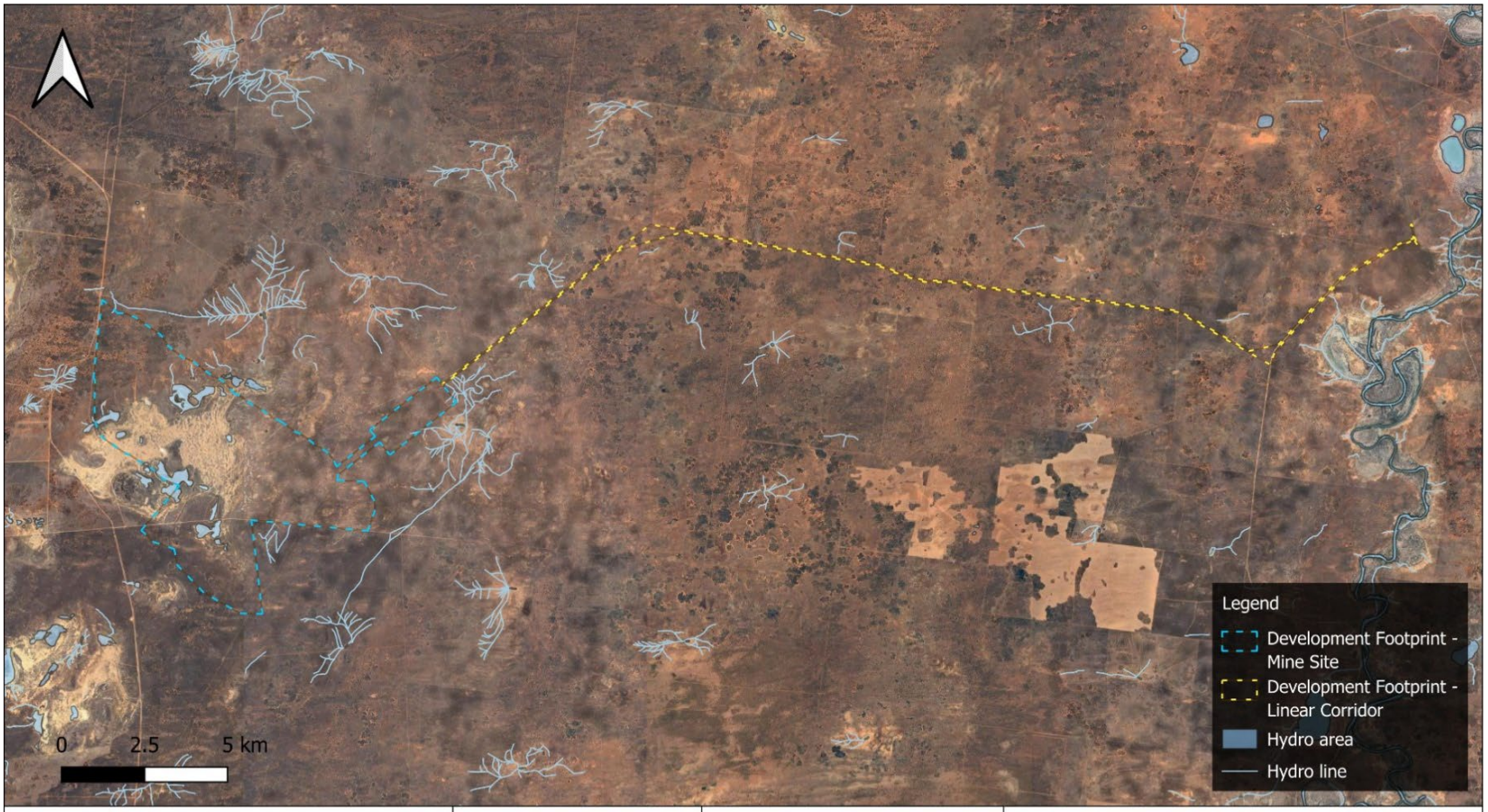
Within the Development Footprint – Mine Site, four salt pans (lakes) are present. These are mapped as 'wetlands' under the NSW Wetlands Layer. The salt pans are expressions of the groundwater and collect surface water runoff from time to time and given the extent of salt when dry, would be highly saline when containing water (Figure 14).

A report titled Preliminary Observation of Groundwater Dependent Ecosystems (GDE) conducted by Greenloaning Biostudies in October 2022, concluded the most salt tolerant species *Tecticornia* (formerly) (*Halosarcia) pergranulata* subsp. *pergranulata*, which is an indicator species for PCT 64, is not likely to be able to utilise groundwater with such extreme salinity levels of 61 g/l (10,167 mS/m) (DPI&RD WA 2022). In addition, groundwater within the Assessment Area is likewise too saline to support other, less salinity tolerant plant community types, such as GDEs. See Appendix A-10**.** for the detailed results of this study.

Table 4: Landscape features present

Feature	Present on site?	Present on adjoining land?	Description
Rivers and Streams	No	No	Murray River flows east to west and is 19 km South of the Subject Land. The Great Darling Anabranch flows north to south and is 26 km east of the Assessment Area (Development Footprint – Mine Site) and 45 m east of the Development Footprint – Linear Corridor.
Important Local Wetlands	No	No	Four salt pans (lakes) are present within the Subject Land mapped as 'wetlands' under the NSW Wetlands Layer. The salt pans are expressions of the ground water and collect surface water runoff from time to time and given the extent of salt when dry, would be highly saline when containing water. Lake Victoria is also a key water storage facility in the River Murray System managed by the Murray-Darling Basin Authority (MDBA) on behalf of the Commonwealth Government and the Governments of South Australia (SA), New South Wales (NSW) and Victoria (VIC) in accordance with the Murray-Darling Basin Agreement 2008 (Schedule 1 of the *Water Act 2007*). Lake Victoria plays a critical role in the conservation and management of water resources in the Murray-Darling Basin and provides significant socio-economic benefits to communities throughout the Murray Valley.
Connectivity Features	No	No	Tarawi Nature Reserve is 8 km north of the Subject Land.
Areas of Geological Significance (e.g.	Yes	Yes	One area of geological significance relating to biodiversity are the gypsum soils associated with lunette rises that are observed within the Development Footprint – Mine Site. These soils are preferentially

Feature	Present on site?	Present on adjoining land?	Description
karst, caves, crevices, cliffs)			favoured by gypsum obligate species such as *Austrostipa nullanulla* (Endangered). These gypsum soils correspond with PCT 253.
Soil Hazard Features	No	No	No specific soil hazards have been identified within the assessment area.



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	Drawn by: NE	Location: Warwick Station		
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:150000

Figure 14: Rivers and Wetlands within the Development Footprint - Mine Site and Linear Corridor

2.1.6 Soil Landscape

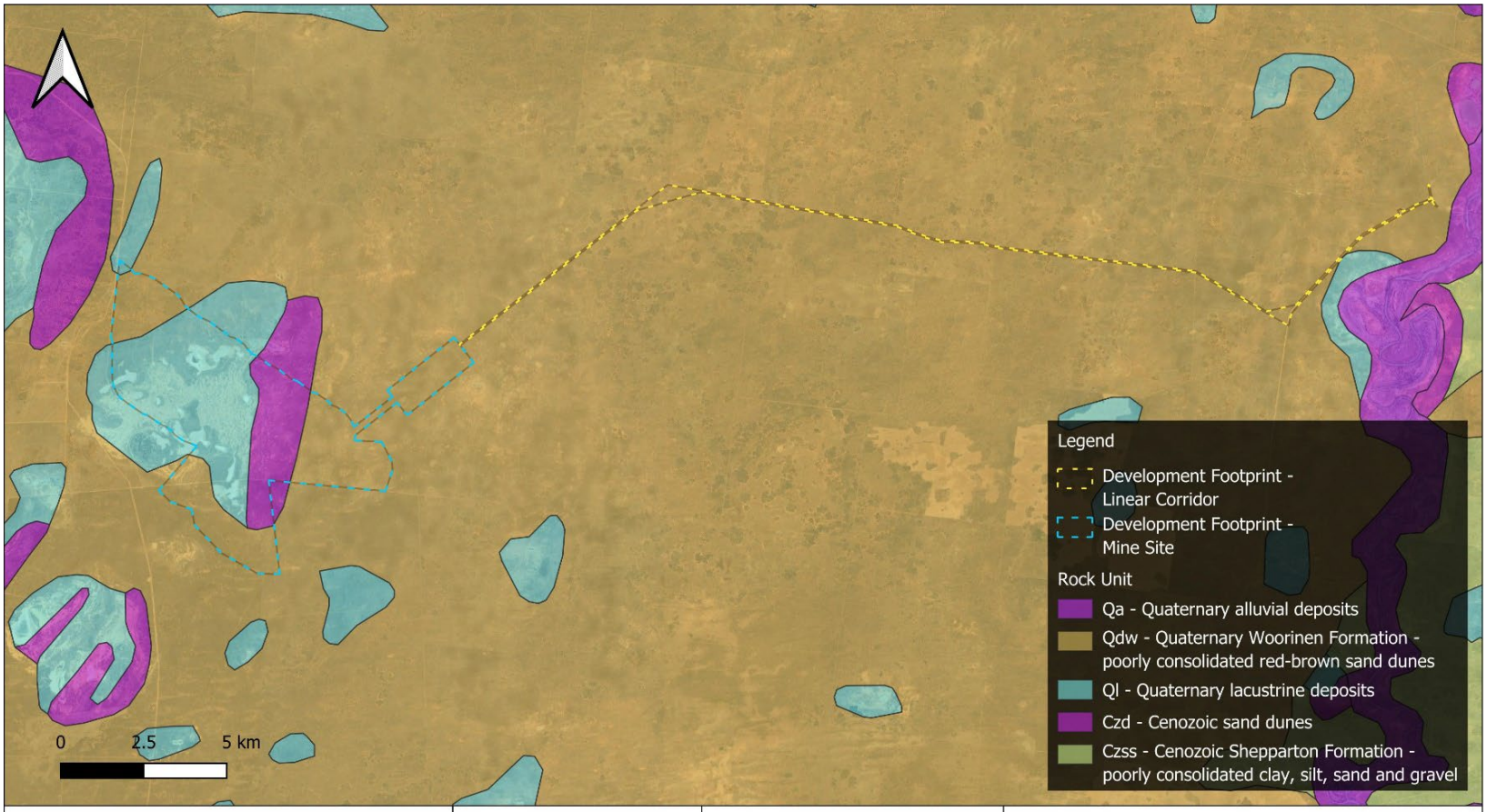
The soil composition within the Subject Land encompasses a mosaic of sand dunes and undulating sand plains of southwestern NSW (Mitchell, 2002). Sandy rises and interdune swales composed of calcareous earth (pH >7) of red to red-brown loam and contrast soils to grey clay soils often crusted with salt on the bed and fringes of salt lakes or salt clay pans in the arid and semi-arid (warm) and arid zones of far south-western NSW.

Some communities have lime-rich red-brown loam or duplex sand/clay soils sometimes derived from limestone on rises on the plains often containing different vegetation such as Belah or Box Woodlands where other areas have been heavily grazed and subject to high levels of erosion.

No specific soil hazards have been identified within the assessment area. However, some areas within the Development Footprint/s and surrounds are considered highly erodible (Figure 15, Figure 16 and Figure 17).

Soil landscapes mapped on the Subject Land include:

- Czd - Cenozoic sand dunes,
- Ql - Quaternary lacustrine deposits, &
- Qdw - Quaternary Woorinen Formation - poorly consolidated red-brown sand dunes.



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Project Manager: NC	Figure Name: Geology - Assessment Area - Development Footprint	Biodiversity AUSTRALIA	
Drawn by: NE	Location: Warwick Station		
Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:150000

Figure 15: Geology within the Development Footprint - Mine Site and Linear Corridor

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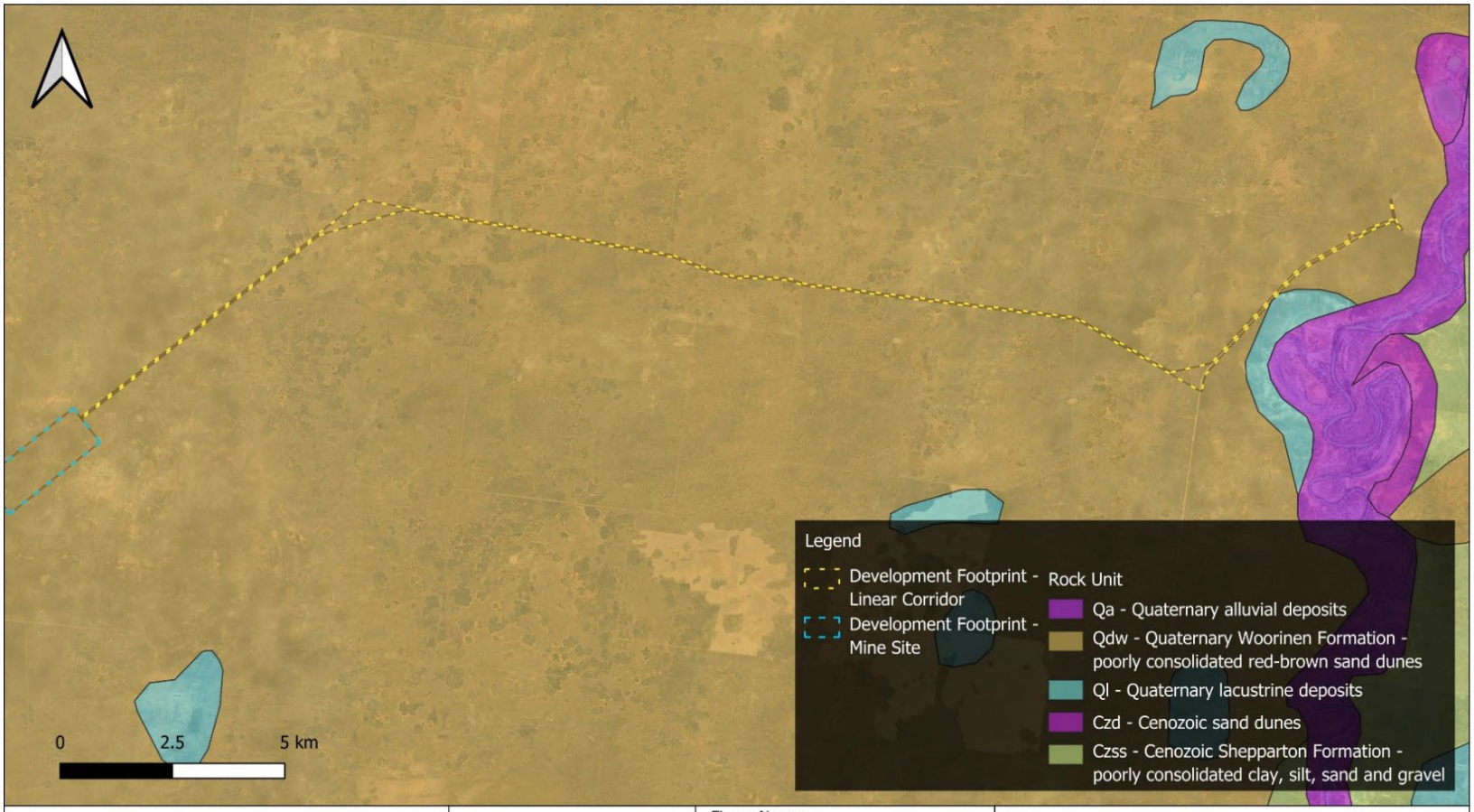
	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:70000

Figure 16: Geology within the Development Footprint - Mine Site Area



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	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872 / Spatial Reference: GDA2020 / MGA zone 54 / Scale: 1:110000

Figure 17: Geology within the Development Footprint - - Linear Corridor

2.1.7 Areas of Outstanding Biodiversity Value (AOBV)

Clause 3.1(1)(b) of the BC Act identifies the four possible pathways by which an area must make a significant contribution to persistence of biodiversity in NSW to be eligible as an AOBV. These four pathways (and the section dealing with each) are:

(i) Multiple species or at least one threatened species or ecological community,

(ii) Irreplaceable biological distinctiveness,

(iii) Ecological processes or ecological integrity, and

(iv) Outstanding ecological value for education or scientific research.

Biodiversity Values within the Subject Land do not meet the eligibility criteria for Areas of Outstanding Biodiversity Value (AOBV) as identified in the BC Act.

2.1.8 Biodiversity Values Map

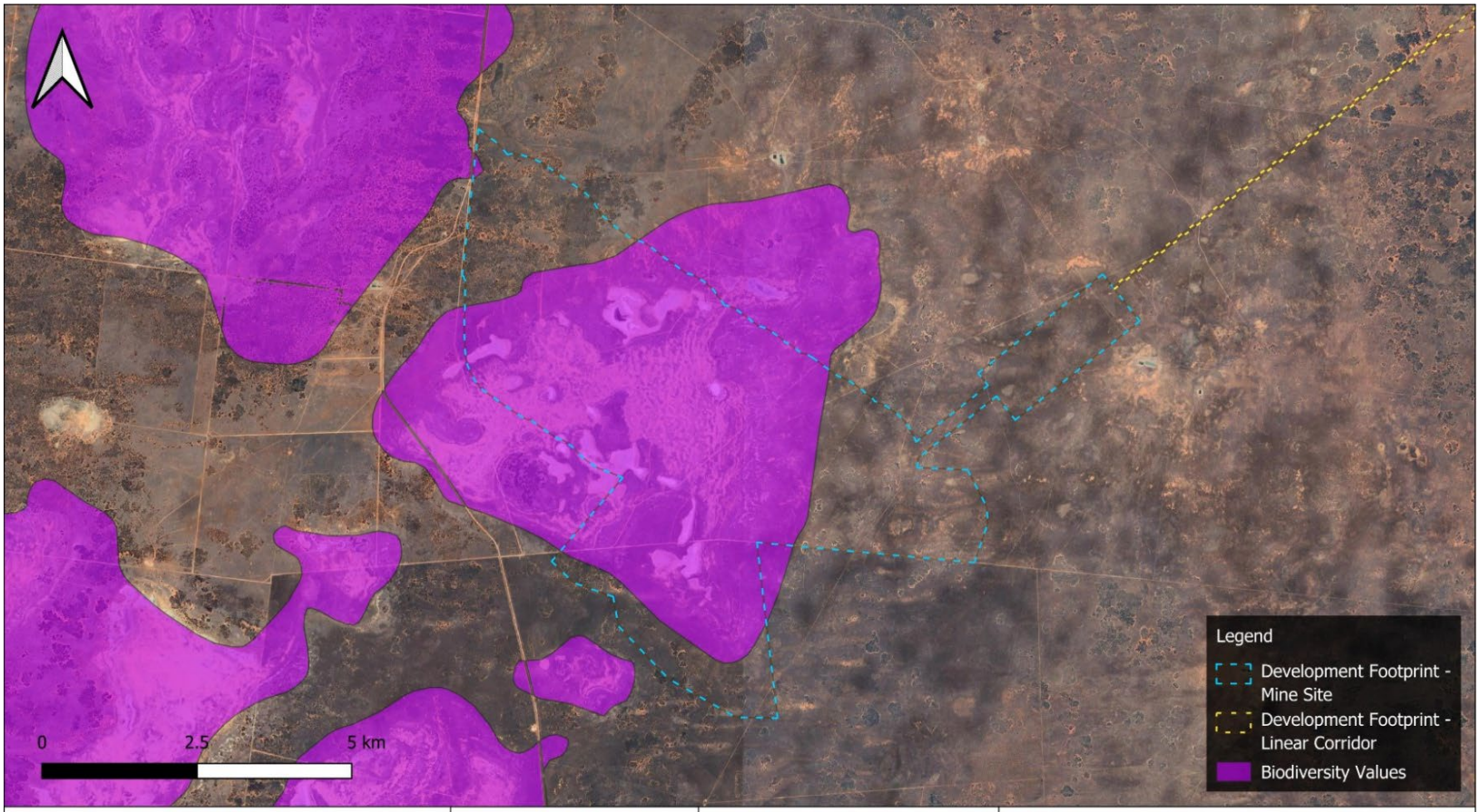
Areas of Biodiversity Values are mapped within the Subject Land. These areas correspond to areas mapped as wetlands within the Subject Land (Figure 18 and Figure 19).

2.1.9 Important Habitat Map

The Important Habitat Map was viewed to determine if areas of Important habitat for threatened species were present within the Assessment Area. This tool indicated no areas of important habitat are mapped within the Subject Land (Figure 20).

2.1.10 Groundwater Dependent Ecosystems

Varying levels of potential for Groundwater Dependent Ecosystems (GDE) occur within the Development Footprint and Assessment Area as portrayed in the Spatial Layer of Probable Vegetation GDEs in NSW dataset provided in SEED by (water.dpie.nsw.gov.au.). Figure 21 through Figure 26 show areas of high, moderate and low potential for occurrences of GDEs within the Development Footprint. GDEs are discussed further in Sections 5.3.13, 5.4.4 and Appendix A-10.



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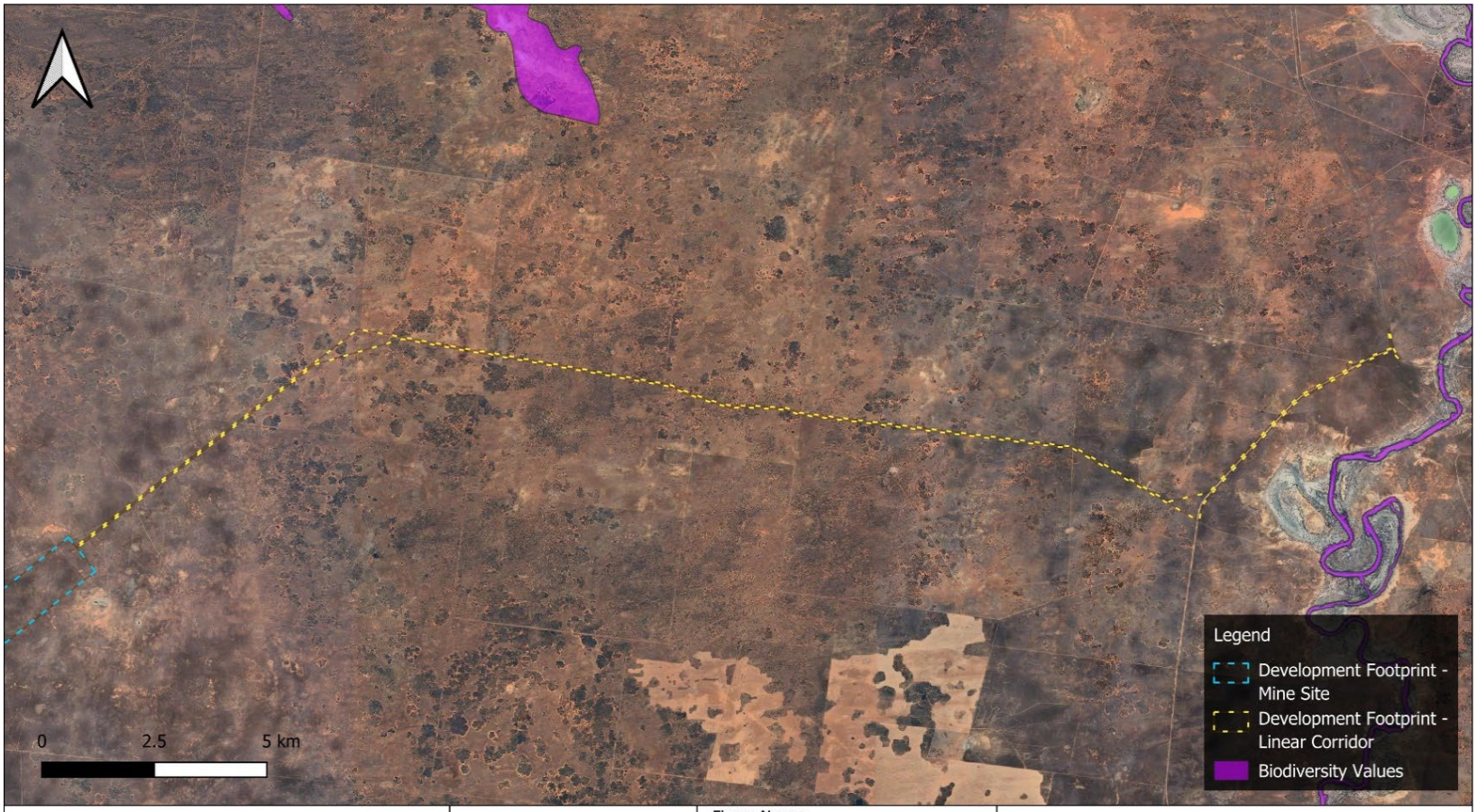
	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:80000

Figure 18: Biodiversity Values map of Development Footprint – Mine Site



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	Drawn by: NE	Location: Warwick Station		
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:110000

Figure 19: Biodiversity Values map – Development Footprint – Linear Corridor

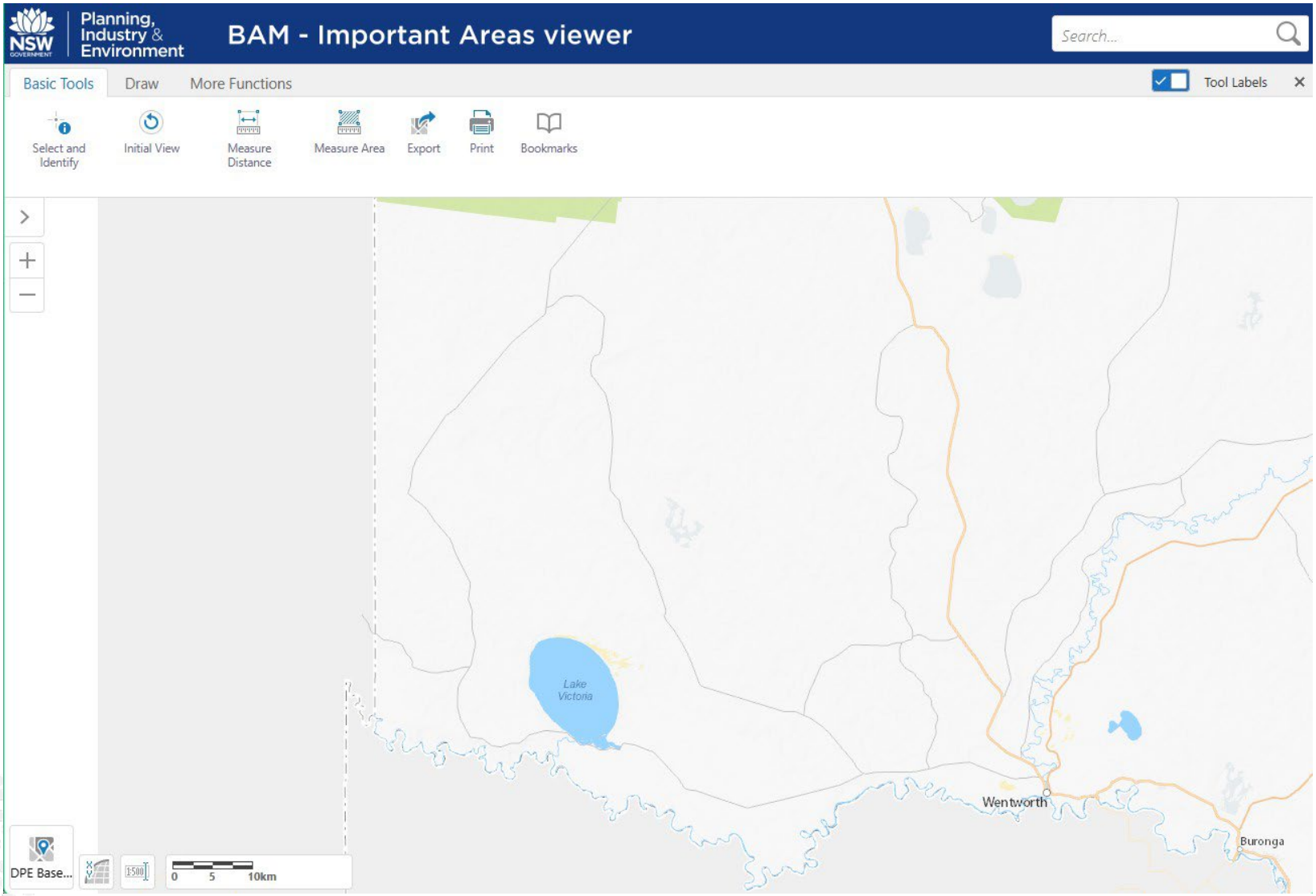
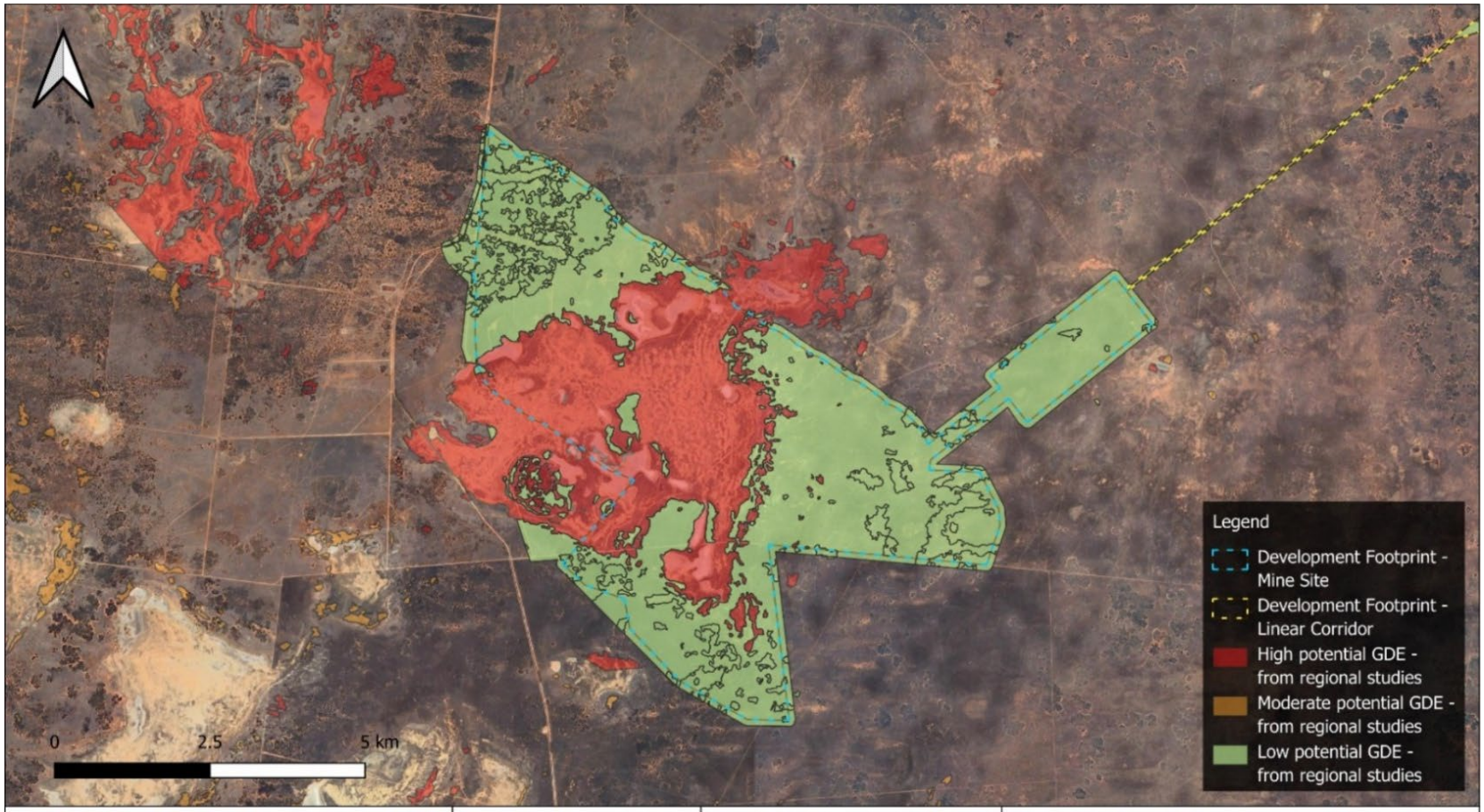


Figure 20: Important Areas Map showing absence of any important areas



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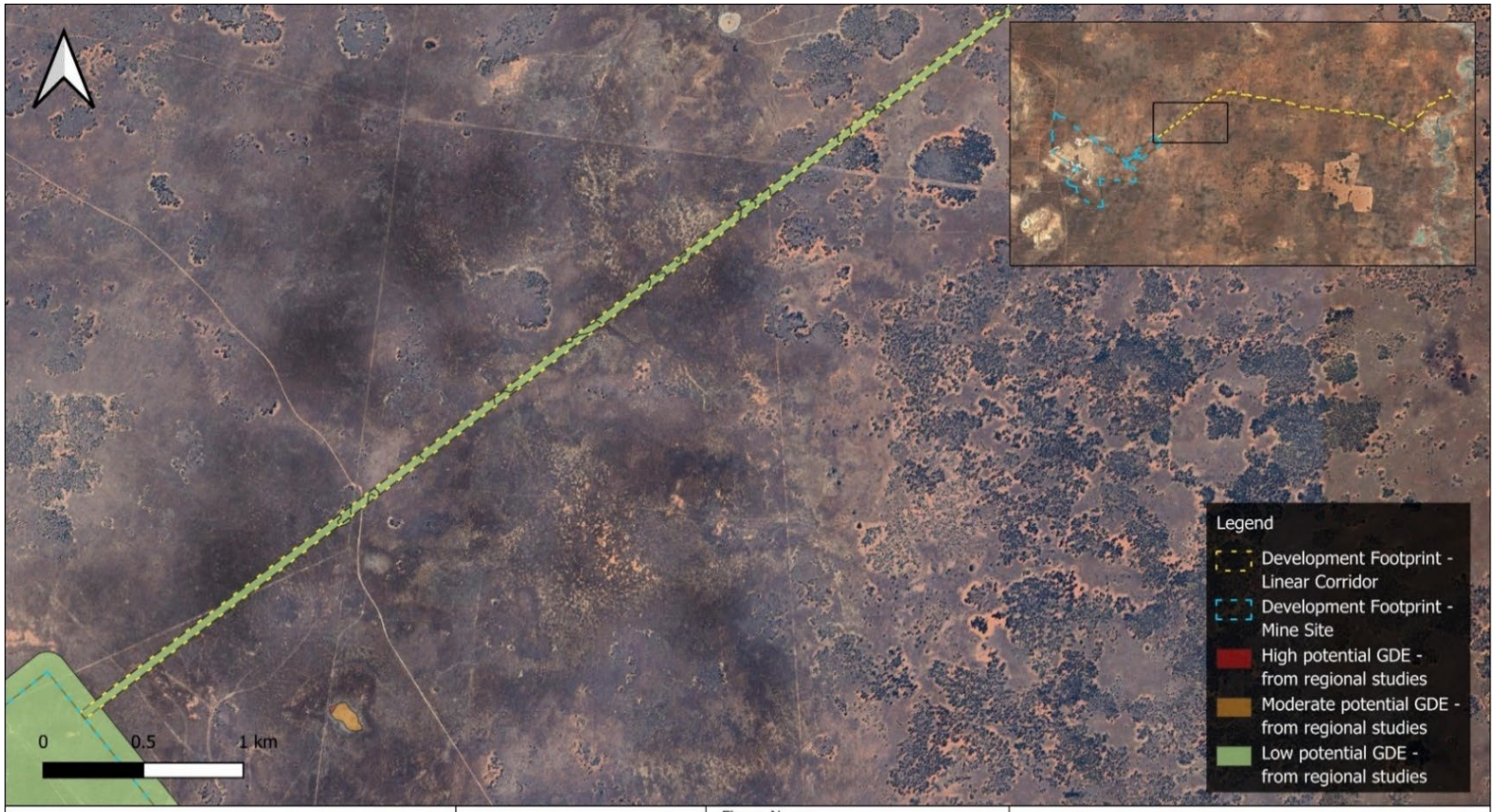
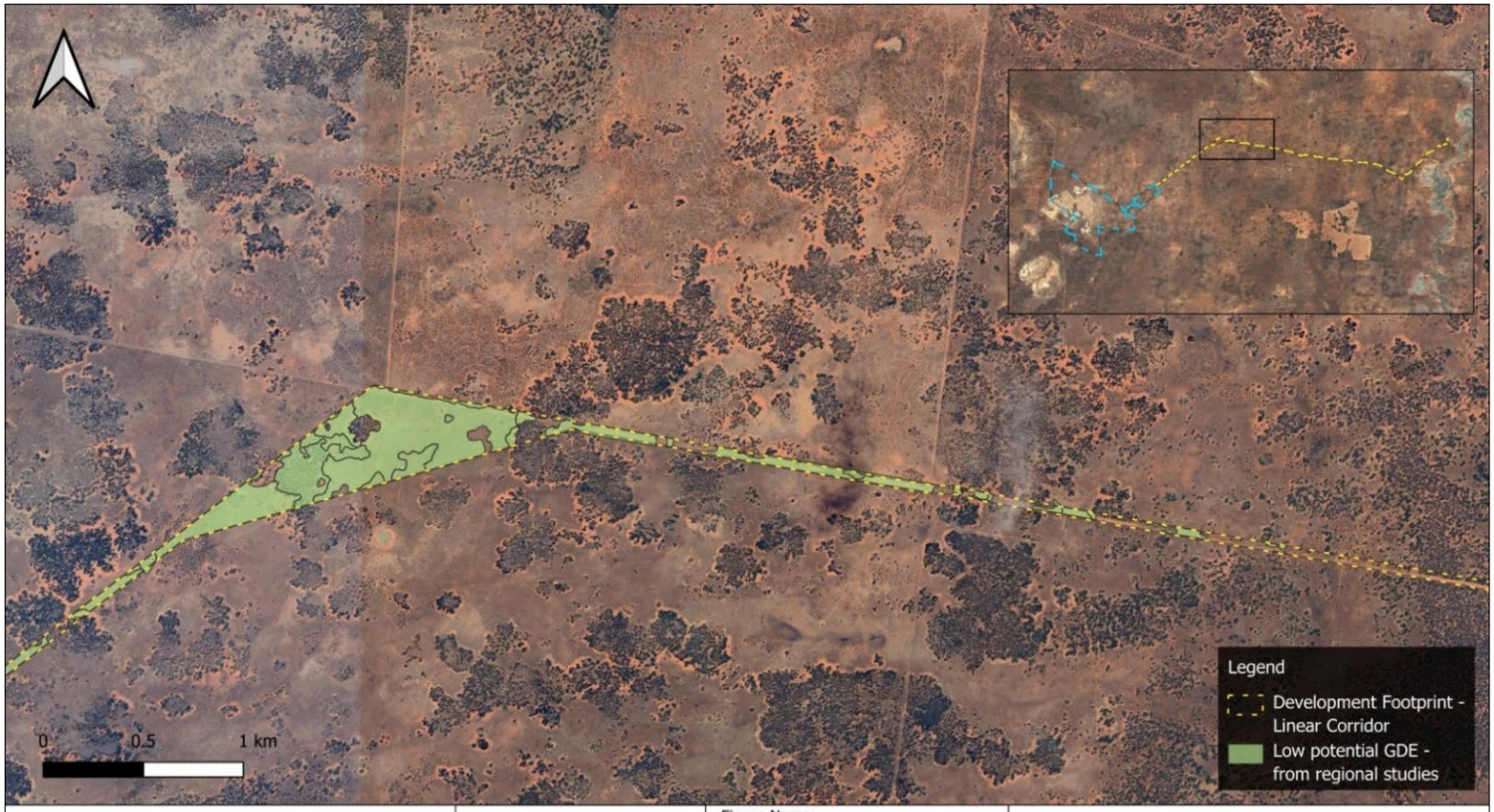
	Drawn by: NE	Location: Warwick Station		
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:80000

Figure 21: Groundwater Dependent Ecosystem – Development Footprint – Mine Site



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Groundwater Dependent Ecosystems - Development Footprint - Linear Corridor 1/5	Biodiversity AUSTRALIA
	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:25000

Figure 22: Groundwater Dependent Ecosystem - Development Footprint – Linear Corridor 1 / 5

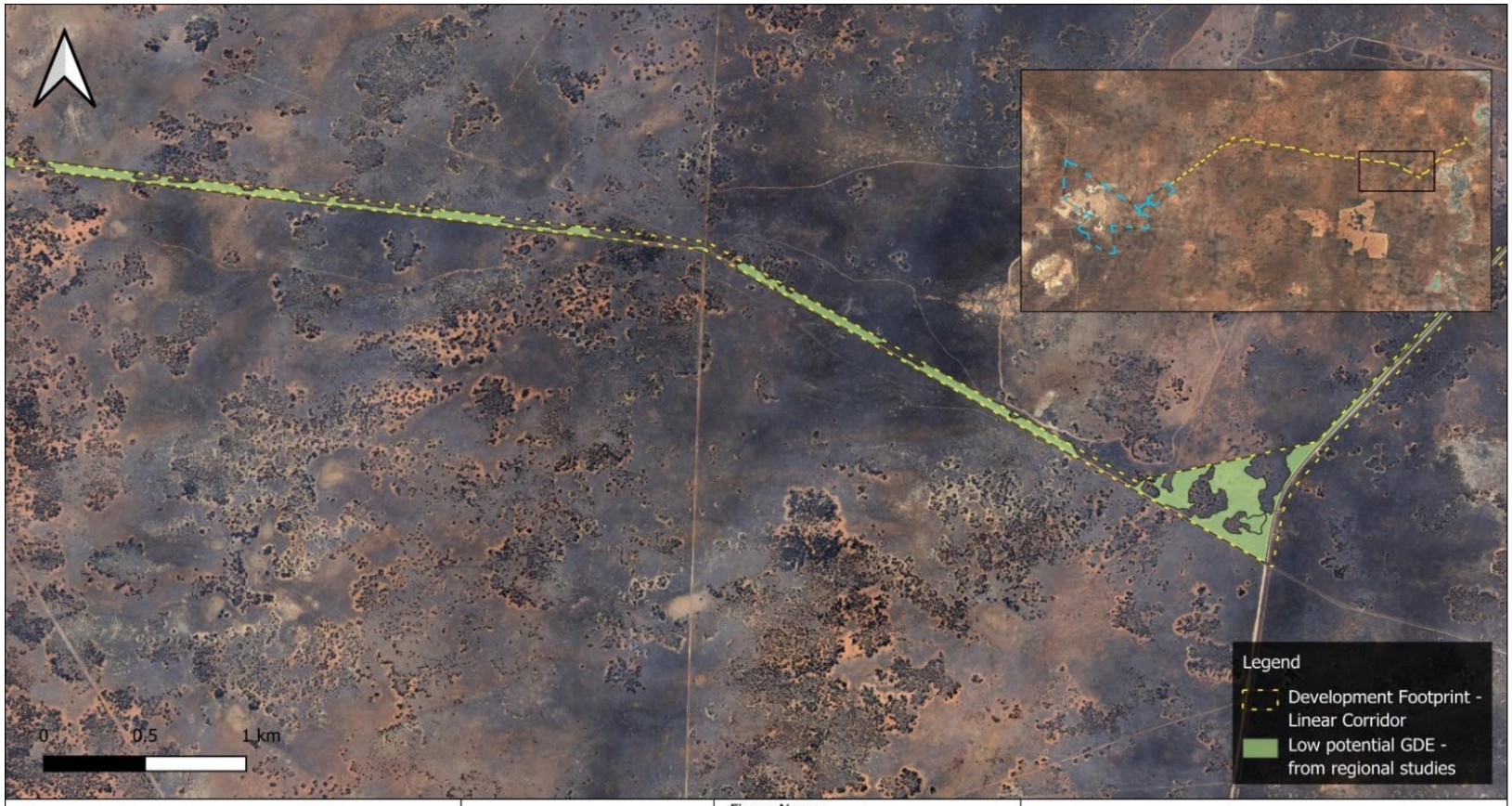


This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Groundwater Dependent Ecosystems - Development Footprint - Linear Corridor 2/5	Biodiversity AUSTRALIA	
	Drawn by: NE	Location: Warwick Station		
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54 Scale: 1:25000

Figure 23: Groundwater Dependent Ecosystem – Development Footprint – Linear Corridor 2 / 5

This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Groundwater Dependent Ecosystems - Development Footprint - Linear Corridor 3/5	Biodiversity AUSTRALIA	
	Drawn by: NE	Location: Warwick Station		
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:25000

Figure 24: Groundwater Dependent Ecosystem – Development Footprint – Linear Corridor 3 / 5



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.

Project Manager: NC	Figure Name: Groundwater Dependent Ecosystems - Development Footprint - Linear Corridor 4/5	Biodiversity AUSTRALIA	
Drawn by: NE	Location: Warwick Station		
Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:25000

Figure 25: Groundwater Dependent Ecosystem– Development Footprint – Linear Corridor 4 / 5

This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.

Project Manager: NC	Figure Name: Groundwater Dependent Ecosystems - Development Footprint - Linear Corridor 5/5	Biodiversity AUSTRALIA	
Drawn by: NE	Location: Warwick Station		
Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:25000

Figure 26: Groundwater Dependent Ecosystem –Development Footprint – Linear Corridor 5 / 5

3. Native Vegetation

Vegetation surveys were undertaken from 2020-2024 by Accredited Persons employed by EnviroKey and from November 2024 to November 2025 by Bio Aus Accredited Persons Nigel Cotsell, John Foster and Alison Martin (CVs – Appendix A-12).

3.1.1 Vegetation Integrity Survey

Vegetation Integrity Plots were undertaken within the Development Footprint. Each consisting of a 20 x 20 m plot in which floristic composition and structural attributes were collected, and a 20 m x 50 m plot which collects ecosystem function attributes.

The vegetation within the Subject Land has been disturbed over many years and as such the structure of the Vegetation Zones (VZ) varies substantially. The establishment of multiple VZs is the method adopted to categorise the differences in the structure of Vegetation Integrity (VI). In most VZs, more than the required number of plots were conducted to ensure that variations within VZs were accounted for.

The Subject Land occurs in a mosaic of the PCTs mapped by the NSW State Vegetation Type Mapping available on NSW SEED (Figure 28, through Figure 34) and consists of historically disturbed habitat. For this reason, plots were located to ensure they captured the attributes relevant to the Vegetation Zone as per Section 4.3.4 (3)(c) of the BAM 2020. Section 4.3.4 (5) was also fully considered and adopted in this process. In some circumstances, this meant that plot locations fell within 50 m of ecotones.

The following information was collected within each vegetation plot:

- Observer, location and date,
- Plot dimensions and orientation,
- Photographic record of vegetation,
- Vegetation Class and Plant Community Type (PCT),
- Physical features and disturbance history,
- Full flora list,
- Growth-form cover and abundance of each species,
- Exotic and High Threat Exotic (HTE) plant cover,
- Number of large trees,
- Recruitment,
- Presence of hollow-bearing trees,
- Length of logs, &
- Litter cover.

The field data collected was tallied and input into the BAM calculator to determine a VI score for each vegetation zone. Field datasheets are located in Appendix A-9.

3.1.2 Vegetation Integrity Assessment - Application of Modified Vegetation Condition Benchmarks

The landscape across the Development Footprint is known to experience frequent droughts, therefore an assessment of rainfall during the time period of VI score collection was undertaken to determine whether it is appropriate to apply modified benchmarks to the data.

It is recommended that an assessor considers the use of modified benchmarks, in accordance with BAM Subsection 1.4.2, when:

- Extreme climatic variation is adversely affecting the composition and structure of growth form groups important to a PCT,
- Finer-scale benchmarks are available for the relevant PCT from a published peer-reviewed source,

- The vegetation class by the IBRA bioregion benchmark is demonstrated to be unsuitable for the PCT (due to the broad scale of the benchmark classification), &
- The available BAM-C benchmark data has a low confidence rating.

After analysing weather data, it was decided that the application of benchmarks was not required.

Weather Station (No. 47016) located closest to the Development Footprint is approximately 43 km away at Lake Victoria Storage (Figure 27), at an elevation of 26 m (Lat: 34.04° S and Long: 141.27° E). In 2019, Station 47016 recorded annual rainfall of just 82.3 mm. This is the driest year; lowest rainfall recorded and falls below the dry condition benchmark for all PCTs located within the Development Footprint. The range of dry condition benchmarks for all thirteen (13) PCTs is 173-207 mm. The mean annual rainfall (since records began at the Station in 1922), is 256.72 mm. The oldest VI plot data, recorded by EnviroKey, used in this report date back to the end of June 2020. The rainfall recorded in the year prior to the oldest VI plot, is 82.3 mm. Table 5 shows the annual rainfall recorded since 2019 is above the dry benchmark threshold. Therefore, the annual rainfall recorded for the years in which this report focuses is considered to be average and above the dry benchmark threshold. In conclusion, the data from 2021-2025 is valid, does not require modification and there is no need to consider local benchmarks further.

Table 5: Average annual rainfall at station 47016

Year	Average Rainfall (mm)
2013	203.5
2014	258.4
2015	198.2
2016	331.0
2017	236.6
2018	161.7
2019	82.3
2020	276.9
2021	186.2
2022	371
2023	191.3
2024	274.3

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	Drawn by: NE	Location: Warwick Station	
	Date: November 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:400000

Figure 27: Location of nearest weather station – Lake Victoria Storage Station No. 470

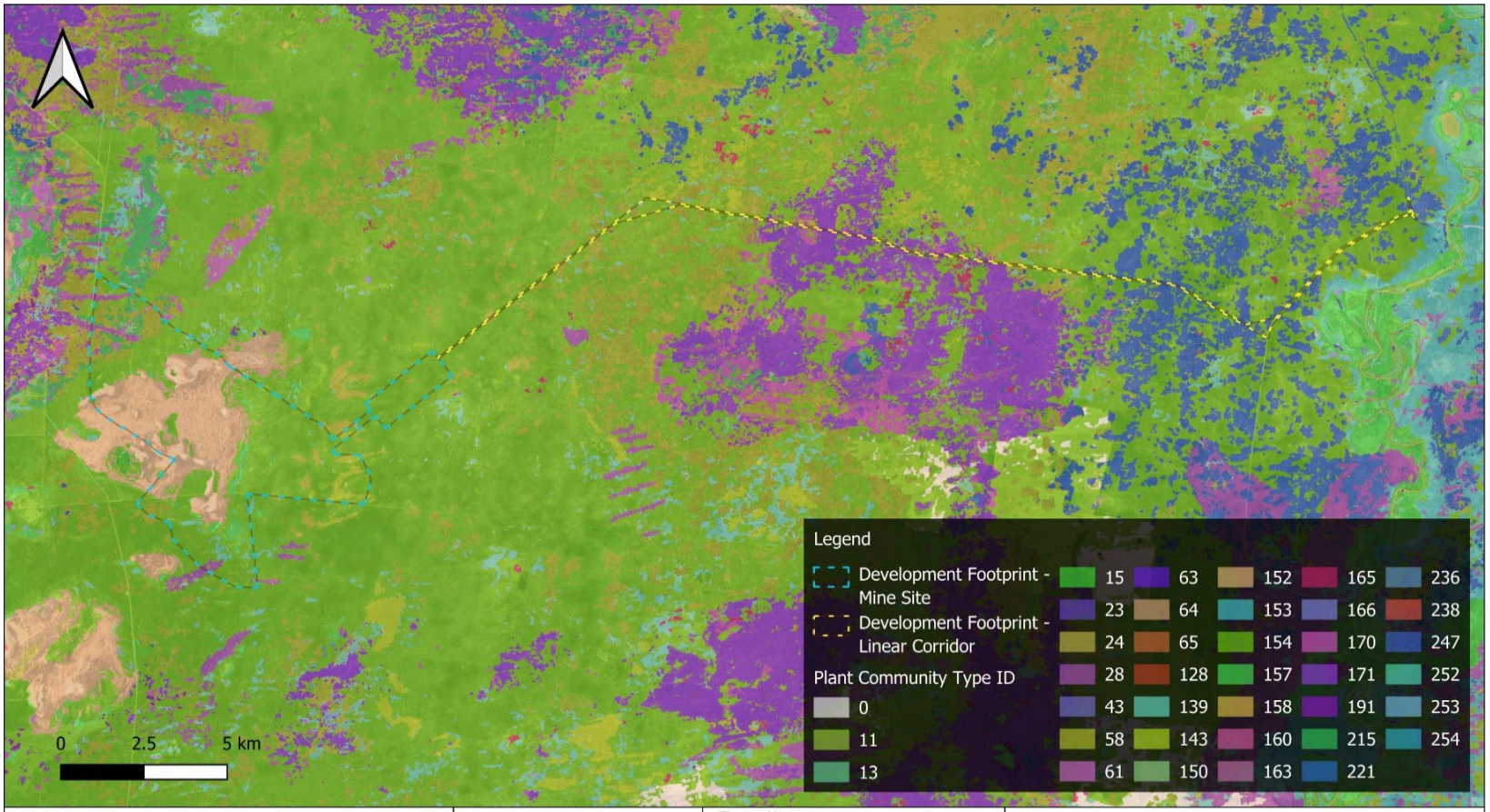
3.1.3 Vegetation Classification and Mapping

The vegetation classification is based on the NSW PCT Classification. Prior to undertaking field verification of the vegetation present within the Development Footprint, a desktop assessment was carried out reviewing the NSW State Vegetation Type Mapping available on NSW SEED (Figure 28). The following PCTs are mapped as occurring on the Subject Land:

- PCT 15 - Black Box open woodland wetland with chenopod understorey mainly on the outer floodplains in south-western NSW (mainly Riverina Bioregion and Murray Darling Depression Bioregion).
- PCT 24 - Canegrass swamp tall grassland wetland of drainage depressions, lakes and pans of the inland plains.
- PCT 28 - White Cypress Pine open woodland of sand plains, prior streams, and dunes mainly of the semi-arid (warm) climate zone.
- PCT 58 - Black Oak – Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion.
- PCT 61 - Mitchell Grass - saltbush grassland/shrubland of the gibber downs of the arid climate zone.
- PCT 64 - Samphire - Water Weed - Sea-Heath shrubland saline wetland of depressions of the arid and semi-arid (warm) zones.
- PCT 65 - *Halosarcia lylei* low, open shrubland saline wetland of arid and semi-arid regions.
- PCT 139 - Prickly Wattle tall open shrubland of dunes and sandplains of semi-arid and arid regions.
- PCT 143 - Narrow-leaved Hopbush - Scrub Turpentine - Senna shrubland on semi-arid and arid sandplains and dunes.
- PCT 150 - Bottlewasher - Copperburr grassland of the arid zone.
- PCT 152 - Lunette chenopod shrubland mainly of the Murray Darling Depression Bioregion.
- PCT 154 - Pearl Bluebush low open shrubland of the arid and semi-arid plains.
- PCT 157 - Bladder Saltbush shrubland on alluvial plains in the semi-arid (warm) zone including Riverina Bioregion.
- PCT170 - Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones.
- PCT 171 - Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion.
- PCT 191 - Snap and Rattle Mallee - Moonah open mallee shrubland in the Murray Darling Depression Bioregion.
- PCT 215 - Woollybutt Grass open grassland on red earths of the inland plains.
- PCT 221 - Black Oak - Pearl Bluebush open woodland of the sandplains of the semi-arid warm and arid climate zones.
- PCT 253 - Gypseous shrubland on rises in the semi-arid and arid plains. &
- PCT 254 - Black Oak - Bladder Saltbush on light clays in the arid zone.

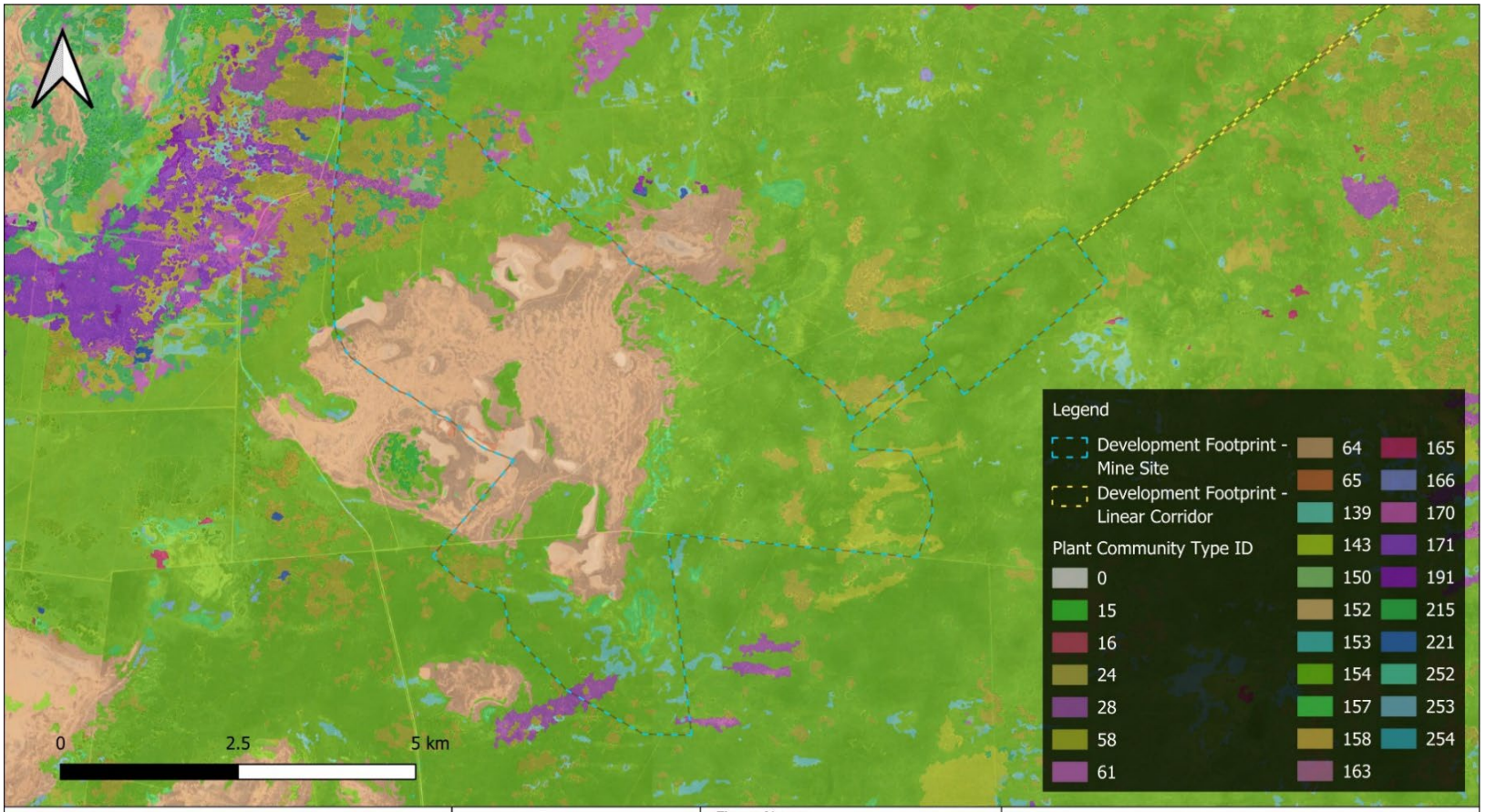
Vegetation communities and Vegetation Zones were sampled using Plots as described above and structured using the grid-based coverage of the Development Footprint. This provided 100% coverage and can be viewed within Figure 35, Figure 45, Figure 47, Figure 48, Figure 49 and Figure 50. In addition to Plots, and large area grid-based transects, random meander surveys were also conducted to add a more comprehensive flora inventory of the Development Footprint (Figure 51).

The vegetation communities were described from data collected from the VI plots and grid-based coverage. Plant species were identified to the most specific level possible using current nomenclature recognised by the Royal Botanic Gardens and in line with PlantNET descriptions.



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: NSW State Vegetation Type Mapping - Plant Community Type - Development Footprint	Biodiversity AUSTRALIA
	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:150000

Figure 28: NSW State Vegetation Type Mapping – Development Footprint

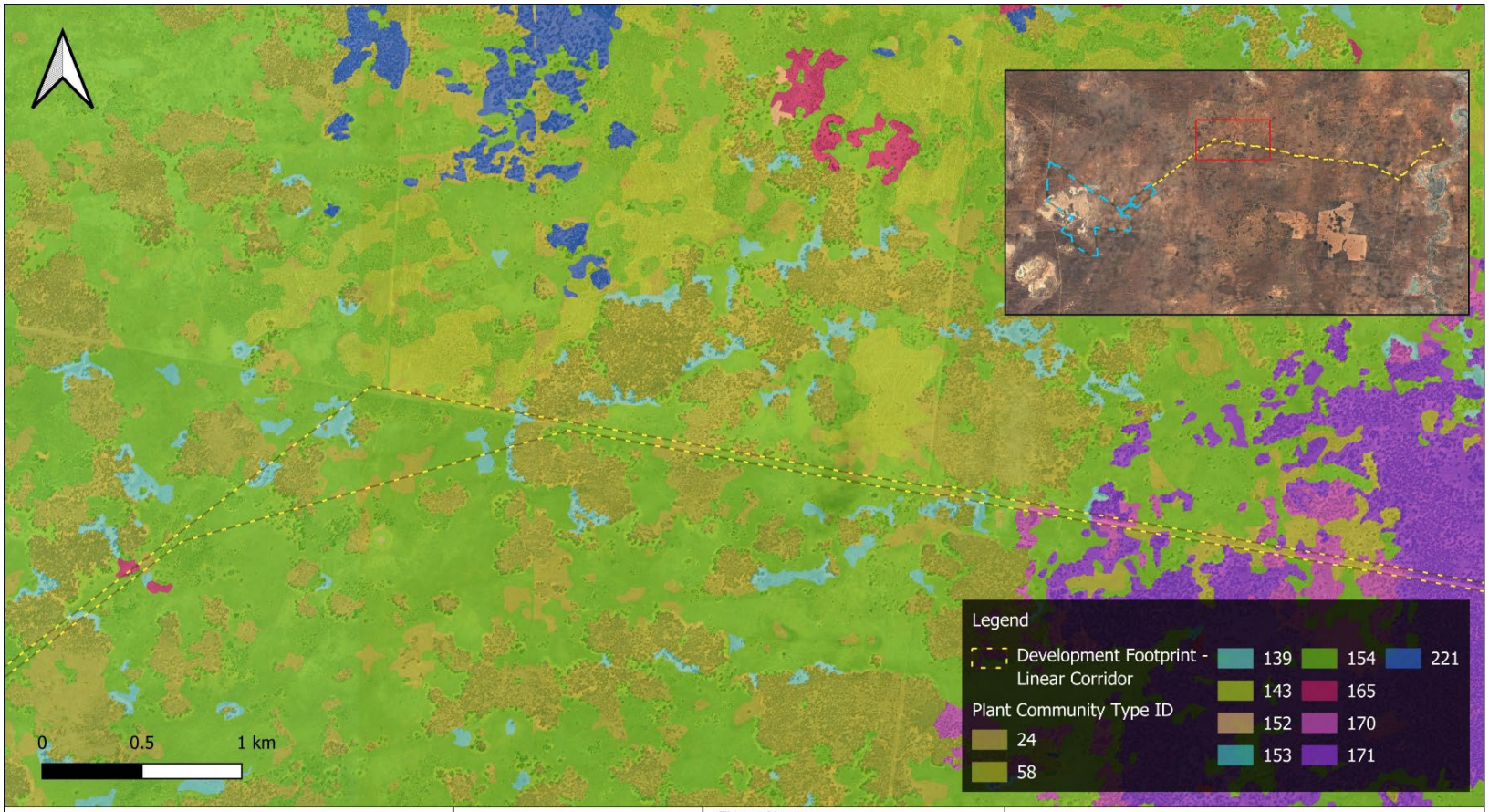


This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: NSW State Vegetation Type Mapping - Plant Community Type - Development Footprint - Mine Site	Biodiversity AUSTRALIA
	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:70000

Figure 29: NSW State Vegetation Type Mapping – Development Footprint - Mine Site

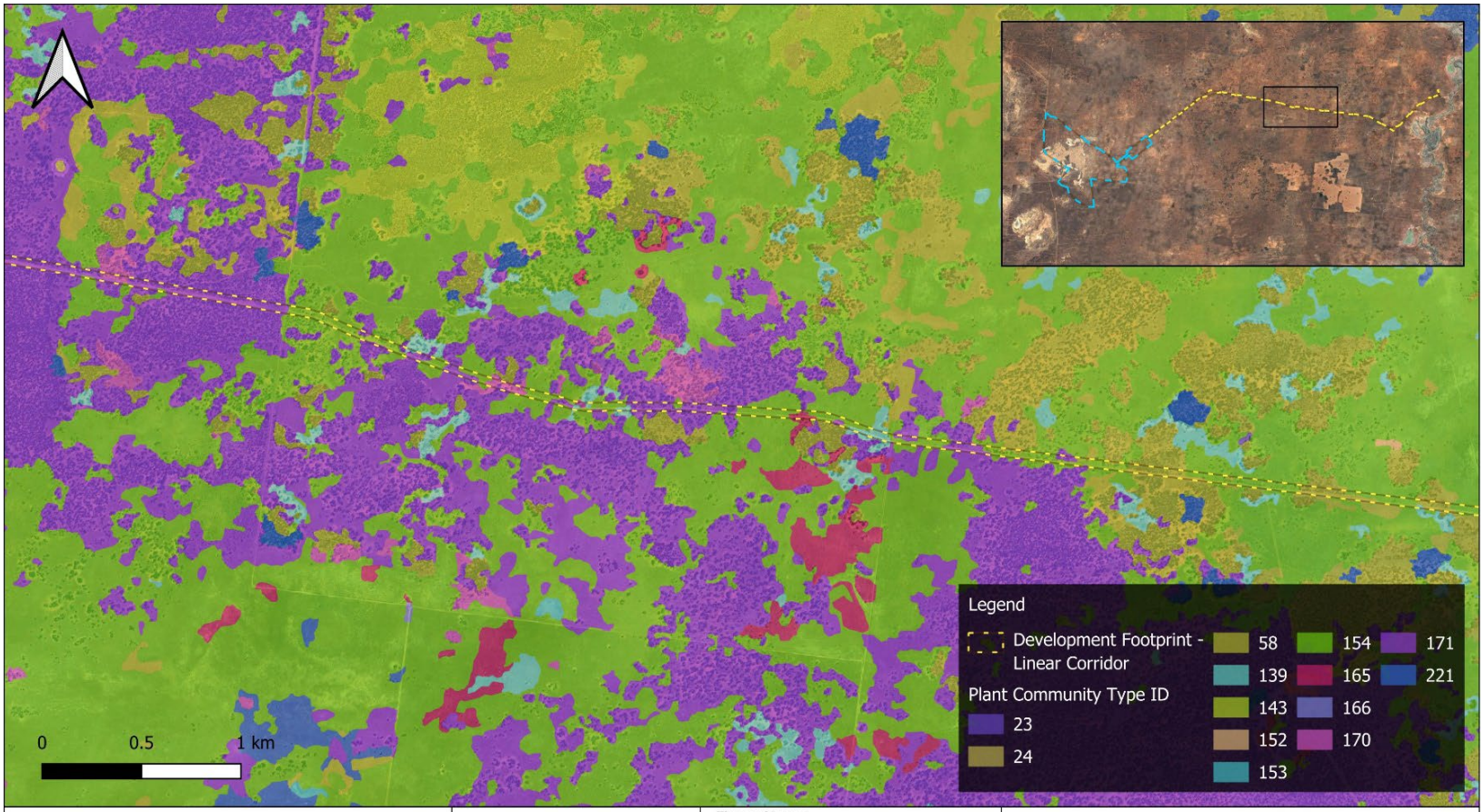
This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: NSW State Vegetation Type Mapping - PCT - Development Footprint - Linear Corridor 1/5	Biodiversity AUSTRALIA	
	Drawn by: NE	Location: Warwick Station		
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54 Scale: 1:25000

Figure 30: NSW State Vegetation Type Mapping – Development Footprint - Linear Corridor 1 / 5



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: NSW State Vegetation Type Mapping - PCT - Development Footprint - Linear Corridor 2/5	Biodiversity AUSTRALIA
	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:25000

Figure 31: NSW State Vegetation Type Mapping – Development Footprint - Linear Corridor 2 / 5



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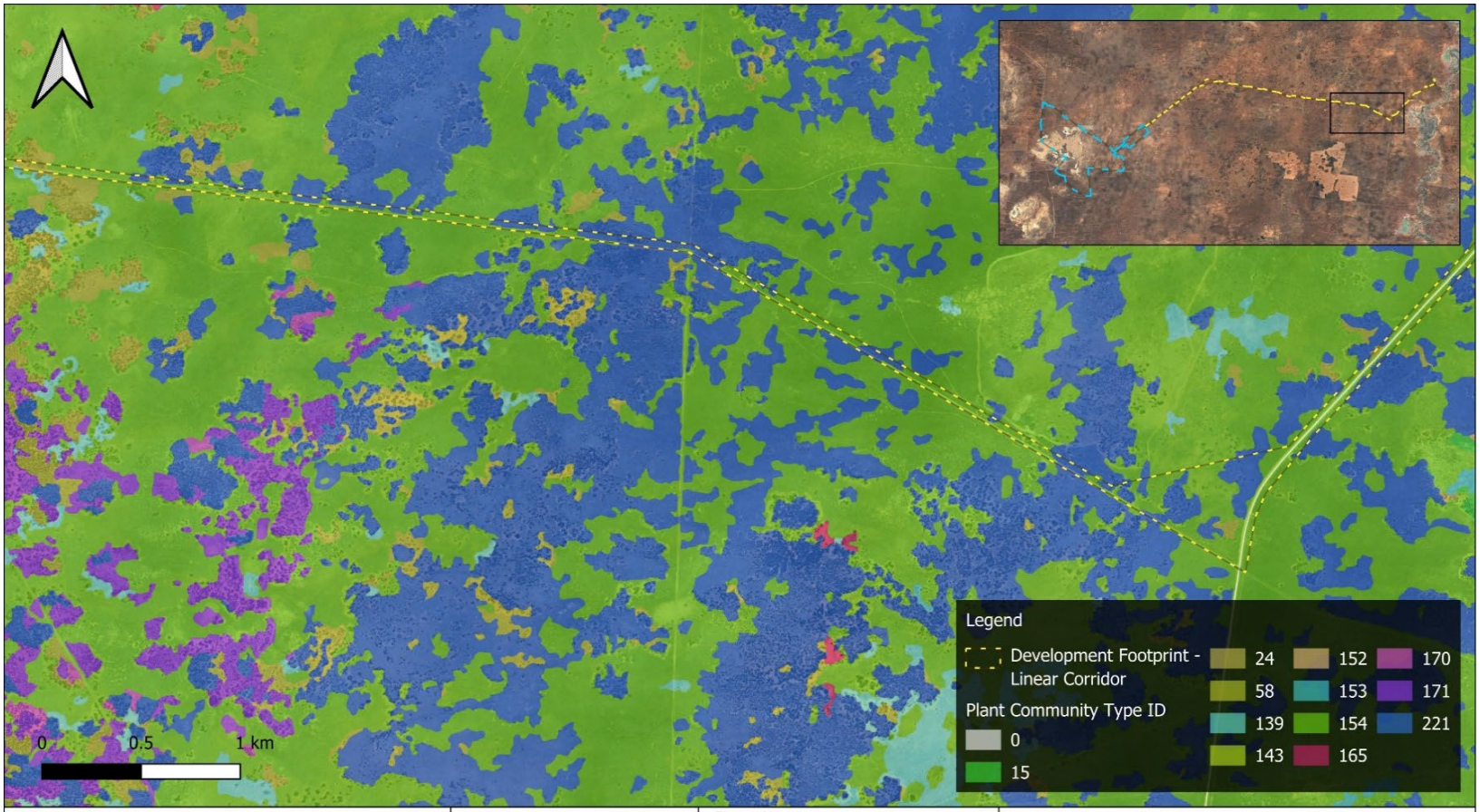
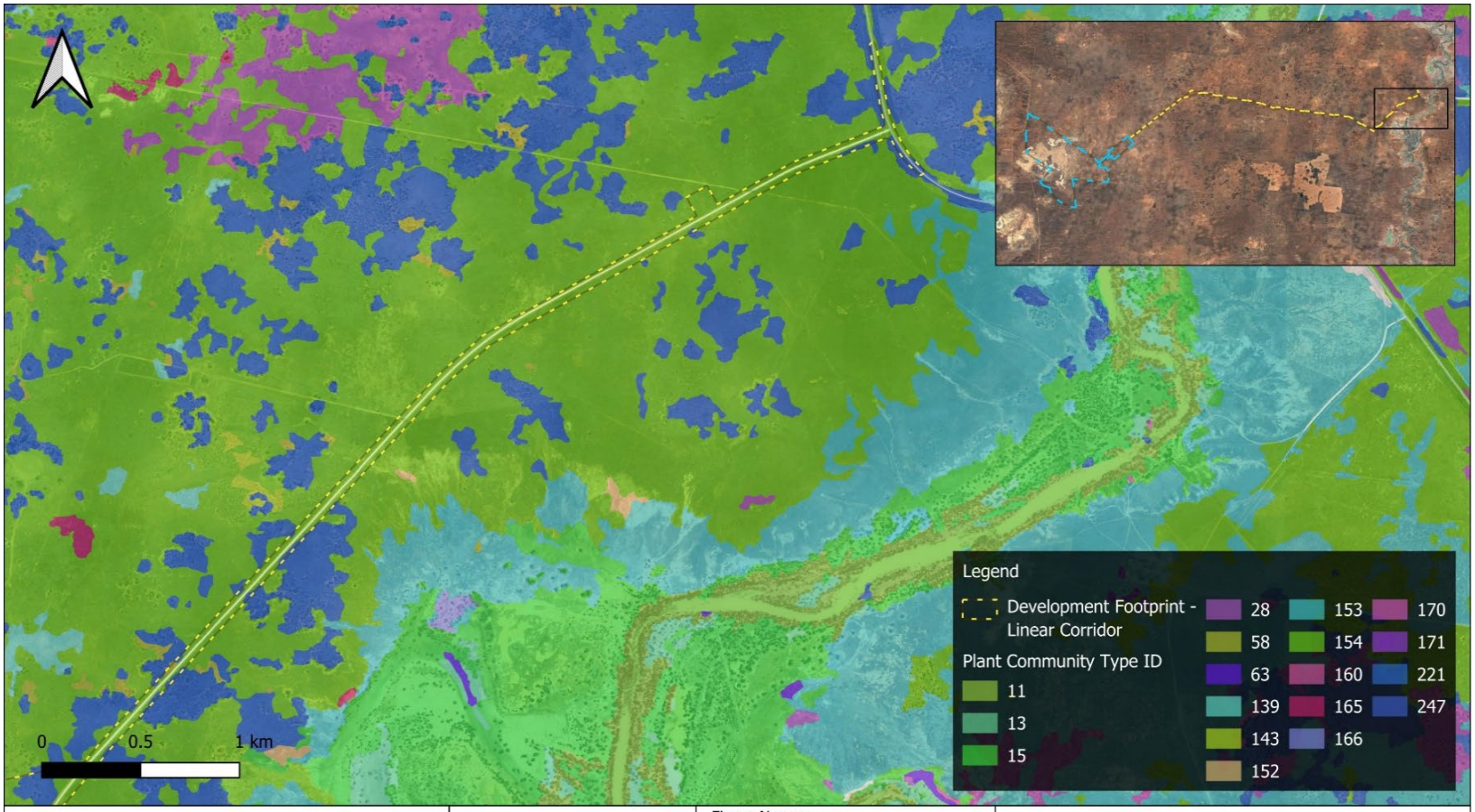
	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:25000

Figure 32: NSW State Vegetation Type Mapping – Development Footprint - Linear Corridor 3 / 5



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: NSW State Vegetation Type Mapping - PCT - Development Footprint - Linear Corridor 4/5	Biodiversity AUSTRALIA
	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:25000

Figure 33: NSW State Vegetation Type Mapping – Development Footprint - Linear Corridor 4 / 5



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: NSW State Vegetation Type Mapping - PCT - Development Footprint - Linear Corridor 5/5	Biodiversity AUSTRALIA
	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:25000

Figure 34: NSW State Vegetation Type Mapping – Development Footprint - Linear Corridor 5 / 5

3.2 Plant Community Type Descriptions

The Subject Land has undergone substantial historical grazing disturbance over decades from ongoing pastoral activity including sheep and goats. The area had regular drought records over the past 40 years which has likely exacerbated these grazing pressures. Nevertheless, the majority of the Development Footprint consists of Native Vegetation which is broadly in a high to moderate condition state across representative PCTs. NSW State Vegetation Type Mapping only partially aligns with ground-truthed PCTs within the Development Footprint (Figure 87).

The field surveys determined that the areas of Native Vegetation within the Development Footprint conform to PCTs for each of the Assessment Areas provided in Table 6.

The PCTs' descriptions and site observations are provided in Table 7 to Table 19.

Table 6: Plant Community Types confirmed within the Development Footprint during the 2025 Field Survey

PCT ID	PCT Name	Potential TEC/EEC	Area (ha)	Occurrence Assessment area
28	White Cypress Pine open woodland of sand plains, prior streams and dunes mainly of the semi-arid (warm) climate zone	Sandhill Pine Woodland in the Riverina, Murray Darling Depression and NSW South Western Slopes bioregions and *Acacia melvillei* Shrubland in the Riverina and Murray-Darling Depression bioregions, listed under the BC Act.	0.77	Linear Corridor
58	Black Oak – Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion	Associated with the EEC *Acacia loderi* shrublands and *Acacia melvillei* Shrubland in the Riverina and Murray-Darling Depression bioregions, listed under the BC Act.	48.82	Linear Corridor
			189.82	Mine Site
64	Samphire - Water Weed - Sea-Heath shrubland saline wetland of depressions of the arid and semi-arid	None	641.45	Mine Site
143	Narrow-leafed Hopbush – Scrub Turpentine – Senna shrubland on semi-arid and arid sandplains and dunes	Associated with *Acacia loderi* shrublands (EEC)	17.2	Linear Corridor
152	Lunette chenopod shrubland mainly of the Murray Darling Depression Bioregion	None	249.82	Mine Site
154	Pearl Bluebush low open shrubland of the arid and semi-arid plains	Associated with *Acacia loderi* shrublands (TEC)	102.09	Linear Corridor
			1564.73	Mine Site
157	Bladder Saltbush shrubland in the semi-arid (warm) zone including Riverina Bioregion	None	495.7	Mine Site
170	Chenopod sandplain mallee woodland/shrubland	Associated with the EEC *Acacia loderi* shrublands and *Acacia melvillei* Shrubland in the Riverina and Murray-Darling Depression bioregions, listed under the BC Act.	13.6	Linear Corridor
			1.98	Mine Site

PCT ID	PCT Name	Potential TEC/EEC	Area (ha)	Occurrence Assessment area
171	Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion	None	6.56	Linear Corridor
			5.57	Mine Site
215	Woollybutt Grass open grassland on red earths of the inland plains	None	5.89	Mine Site
221	Black Oak – Pearl Bluebush open woodland of the sandplains of the semi-arid warm and arid climate zones	None	394.97	Mine Site
253	Gypseous shrubland on rises in the semi-arid and arid plains	None	140.14	Mine Site
254	Black Oak - Bladder Saltbush on light clays in the arid zone	None	1.16	Mine Site

The following provides a detailed description of the Native Vegetation within the Development Footprint that will be affected by the proposal. A total of 13 PCTs occur within the Development Footprint including 11 within the Development Footprint - Mine Site and six within the Development Footprint - Linear Corridor. PCTs 28 (Table 7) and 143 (Table 10) are confined to the Linear Corridor.

The Development Footprint - Linear Corridor intersects five PCTs that are potentially associated with an Endangered Ecological Communities (EEC) listed under the BC Act:

- PCT 28 is associated with the EEC - Sandhill Pine Woodland in the Riverina, Murray Darling Depression and NSW South Western Slopes bioregions and *Acacia melvillei* Shrubland in the Riverina and Murray-Darling Depression bioregions. This is an Endangered Ecological Community listed under the BC Act.
- PCT 143 and 154 (Table 12) are associated with *Acacia loderi* shrublands. This community has a threat status of Endangered under the BC Act.
- PCT 58 (Table 8) and 170 (Table 14) are associated with the EEC *Acacia loderi* shrublands and *Acacia melvillei* Shrubland in the Riverina and Murray-Darling Depression bioregions. These communities have a threat status of Endangered under the BC Act.

Vegetation Zones have been accurately mapped following the field verifications. These are presented in Figure 35 through Figure 41.

The PCTs' descriptions and site observations are provided from Sections 3.2.1 to 3.2.13 and Table 7 to Table 19.

3.2.1 Vegetation Community 1 – PCT 28

Table 7: Vegetation Community 1

PCT	**28 - White Cypress Pine open woodland of sand plains, prior streams and dunes mainly of the semi-arid (warm) climate zone.**
Vegetation Formation	Semi-arid Woodlands (Shrubby sub-formation)
Vegetation Class	Riverine Sandhill Woodlands
Land Zones & Area	0.77 ha Development Footprint - Linear Corridor
EEC Status	Listed under the BC Act as Endangered: Sandhill Pine Woodland in the Riverina, Murray Darling Depression and NSW South Western Slopes bioregions and *Acacia melvillei* Shrubland in the Riverina and Murray-Darling Depression bioregions.
Clearing Extent	73%
Vegetation Zones	0.77 ha Moderate Condition (LC-VZ#1-28_Mod) within the Development Footprint - Linear Corridor
Number of Plots	2 (plots required 1)
Plot numbers	1, 2
Location	The PCT is present in Moderate Condition over small areas along the Linear Corridor (Haul Road)
Description	**Moderate Condition 28.** **Canopy:** This PCT is dominated by a Black Oak *(Casuarina pauper)* canopy of scattered trees, with some *Callitris glaucophylla* present. **Shrub layer:** Shrub species include Black Bluebush (*Maireana pyramidata), Maireana appressa, Maireana pentatropis,* Ruby Saltbush *(Enchylaena tomentosa)* and Thorny Saltbush (*Rhagodia spinescens*). **Ground layer:** Ground cover includes forbs of Corrugated Sida *(Sida corrugata).* Other species found in this PCT include: *Asphodelus fistulosus, Psilocaulon granulicaule, Salvia verbenaca* and *Convolvulus remotus.*
Condition	This community exists in a moderate integrity condition. It occurs on the southern portion of the Development Footprint and adjoins existing intact terrestrial and aquatic vegetation in the northern sectors. Where it is present, the canopy is mature although it does not contain white cypress pine (*Callitris glaucophylla*), either in pure stands or with a range of other less abundant trees or tall shrubs such as yarran (*Acacia melvillei*) or *Acacia oswaldii*. Land clearing and grazing by sheep and goats have reduced the understorey and ground cover of this community. Notwithstanding, this community meets the diagnostic criteria detailed in the NSW Scientific Committee – final determination to be considered an EEC.

Photograph 1: PCT28 – Moderate

3.2.2 Vegetation Community 2 – PCT 58

Table 8: Vegetation Community 2

PCT	**58 - Black Oak - Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion.**
Vegetation Formation	Semi-arid Woodlands (Shrubby sub-formation)
Vegetation Class	Semi-arid Sand Plain Woodlands
Land Zones & Area	A total area of 238.64 ha 48.82 ha with Development Footprint - Linear Corridor and 189.82 ha within Development Footprint – Mine Site.
EEC Status	Listed under the BC Act as Endangered: *Acacia loderi* shrublands and *Acacia melvillei* Shrubland in the Riverina and Murray-Darling Depression bioregions.
Clearing Extent	50%
Vegetation Zones	48.82 ha Moderate Condition (LC-VZ#2-58_Mod) within the Development Footprint - Linear Corridor. 189.82 ha Moderate Condition (MS-VZ#1-58_Mod) within the Development Footprint - Mine Site.
Number of Plots	8 plots within Development Footprint – Mine Site (Required - 6). 14 within Development Footprint – Linear Corridor (Required - 4).

Plot numbers	18, 16, 15, 13, 14, 17, 10, 6, 8, 4, 12, 9, 7, 5, 11, 19, 3, 20, 21, 22
Location	The PCT is present in a moderate condition over much of the northwest, southern and eastern portion of the Development Footprint - Mine Site and dispersed throughout the Development Footprint - Linear Corridor.
Description	**Moderate Condition 58** **Canopy:** Isolated clumps of trees dominated by Black Oak (*Casuarina pauper*) and *Alectryon oleifolius subsp. canescens.* **Shrub layer:** The shrub layer is very sparse, with Black Bluebush (*Maireana pyramidata)* as the dominant species with other species including *Atriplex spp. Atriplex vesicaria, Chenopodium curvispicatum, Dissocarpus paradoxus, Sclerolaena diacantha, Sclerolaena patenticuspis, Sclerolaena spp., Atriplex stipitate, Chenopodium desertorum, Chenopodium spp., Enchylaena tomentosa, Exocarpos aphyllus, Maireana brevifolia, Maireana georgei, Maireana pentatropis, Maireana sedifolia, Maireana spp., Rhagodia spinescens,* scattered throughout the site. The shrub layer is scattered sparsely over the spaces between canopies. **Ground layer:** The ground cover is sparse and dry, with *Austrostipa scabra* and *Enneapogon avenaceus* present with minimal leaf litter present. Forbs were present in low abundance and cover for the species; *Boerhavia domini, Boerhavia spp., Brachyscome spp., Euphorbia drummondii, Sida corrugata, Tetragonia moorei, Vittadinia cuneata, Atriplex holocarpa, Portulaca oleracea* and *Vittadinia cuneata var. hirsuta.* Leaf litter is present in small areas over the ground but is severely degraded from agricultural and weather conditions. With the presence of emerging shrubs of Black Oak (*Casuarina pauper*). *Dissocarpus paradoxus*, *Sclerolaena patenticuspis*, *Austrostipa scabra, Atriplex stipitate, Enneapogon avenaceus, Brachyscome spp., Boerhavia spp., Thysanotus spp., Sclerolaena patenticuspis* occur scattered over the ground next to Black Bluebush (*Maireana pyramidata).* Leaf litter covers the areas of bare ground.
Condition	The overall condition of this community is moderate integrity. The NSW Scientific Committee – Final Determination for the two EEC emphasises the importance of *Acacia loderi* and *Acacia melvillei* as an important component of the shrubland composition. Section 3.5 contains a detailed assessment of this community against the NSW Scientific Committee Final Determination. Neither of these two shrubs are represented in this community. This EEC typically occupies sandhills and undulating sandplains in south-western NSW where the community occurs on red-brown, sandy loam soils which are represented within the Development Footprint. Despite occupying the correct geographical location, topography and soil type, the representative species associated with the EEC are not present within the Development Footprint and it cannot be considered to be in a condition state consistent with the Final Determination for this EEC.

Photograph 2: PCT 58 - Moderate

3.2.3 Vegetation Community 3 – PCT 64

Table 9: Vegetation Community 3

PCT	64 - Samphire - Water Weed - Sea-Heath shrubland saline wetland of depressions of the arid and semi-arid (warm) zones
Vegetation Formation	Saline Wetlands
Vegetation Class	Inland Saline Lakes
Land Zones & Area	641.45 ha Development Footprint - Mine Site
EEC Status	Not listed
Clearing Extent	0.0%
Vegetation Zones	641.45 ha Moderate Condition (MS-VZ#2-64_Mod) within the Development Footprint - Mine Site.
Number of Plots	23 (Required - 8)
Plot numbers	26, 23, 27, 28, 25, 29, 24

Location	The PCT is present in varying conditions over much of the central and western portion of the Mine Site footprint
Description	**<u>Moderate Condition 64</u>** **Canopy:** The canopy layer is absent **Shrub and Ground layer:** Sparse chenopod shrubland Dominated by *Tecticornia pergranulata subsp. pergranulata*. Scattered shrubs of Bladder Saltbush *(Atriplex vesicaria),* Goosefoot, Crumbweed *(Chenopodium spp.),* Cannonball Burr (*Dissocarpus paradoxus),* Sticky Hop-bush *(Dodonaea viscosa), Maireana appressa,* Slit-wing Bluebush *(Maireana georgei),* Black Bluebush *(Maireana pyramidata),* Water Weed *(Osteocarpum acropterum), Rhagodia gaudichaudiana, Rhagodia spp.,* Short-winged Copperburr *(Sclerolaena brachyptera),* Grey Copperburr *(Sclerolaena diacantha), Tangled Copperburr (Sclerolaena divaricate), Sclerolaena patenticuspis and Tecticornia pergranulata subsp. pergranulata.* Grasses are present, including Speargrass *(Austrostipa scabra),* Mallee Lovegrass *(Eragrostis dielsii*), Neverfail *(Eragrostis setifolia*) and Five-minute Grass *(Tripogon loliiformis)* but appear as die-off with minimal leaf litter. Small forbs including Pop Saltbush *(Atriplex holocarpa)*, Tarvine *(Boerhavia domini*), Corrugated Sida *(Sida corrugata)*, *Calandrinia spp*., *Disphyma crassifolium subsp. clavellatum*, *Disphyma crassifolium subsp. subclavellatum*, *Frankenia serpyllifolia*, *Oxalis perennans*, *Sida corrugata*, *Tetragonia moorei*, *Vittadinia cervicularis*, *Vittadinia cuneata*. The Ward's Weed (*Carrichtera annua)* and Cat-head (*Tribulus terrestris)* are also present in small quantity and abundance.
Condition	This community exists within the Development Footprint – Mine Site in a Moderate integrity condition. Areas of this community are affected by elevated groundwater during flooding events where the increased moisture causes dieback.

Photograph 3: PCT 64 – Moderate

3.2.4 Vegetation Community 4 – PCT 143

Table 10: Vegetation Community 4

PCT	**143 - Narrow-leafed Hopbush - Scrub Turpentine - Senna shrubland on semi-arid and arid sandplains and dunes**
Vegetation Formation	Arid Shrublands (Acacia sub-formation)
Vegetation Class	Sand Plain Mulga Shrublands
Land Zones & Area	17.2 ha Development Footprint – Linear Corridor
TEC Status	Listed under the BC Act as Endangered: *Acacia loderi* shrublands
Clearing Extent	30%
Vegetation Zones	17.2 ha Moderate Condition (LC-VZ#3-143_Mod) within the Development Footprint - Linear Corridor
Number of Plots	4 (Required - 3)
Plot numbers	30, 34, 31
Location	The PCT is present in Moderate condition along the Haul Road of the Subject Land in small, scattered patches
Description	**<u>Moderate Condition 143</u>** **Canopy:** The Canopy Layer is absent **Shrub layer:** Small clumps and scattering of dominant Narrow-leaf Hop-bush (*Dodonaea viscosa* subsp. *Angustissima),* are surrounded by *Chenopodium curvispicatum* and Black Bluebush (*Maireana pyramidata*). Other present shrubs include Cannonball Burr *(Dissocarpus paradoxus),* Grey Copperburr (*Sclerolaena diacantha),* Ruby Saltbush *(Enchylaena tomentosa),* Turpentine Bush *(Eremophila sturtii),* Pearl Bluebush *(Maireana sedifolia), Olearia pimeleoides,* Thorny Saltbush *(Rhagodia spinescens),* and *Sclerolaena patenticuspis.* **Ground layer:** Lack of emerging shrubs with small forbs present including *Boerhavia domini., Euphorbia drummondii, Vittadinia cervicularis, Vittadinia cuneata, Vittadinia cuneata var. hirsuta.* The presence of weeds; *Asphodelus fistulosus, Convolvulus arvensis, Medicago polymorpha, Salvia verbenaca, Tribulus terrestris* and *Convolvulus remotus,* reinstate the degraded landscape.
Condition	This community exists in a Moderate integrity condition. The long-term pressures of land clearing, drought and overgrazing have fragmented this community. The EEC *Acacia loderi* Shrubland community is dominated by this small shrub or tree and are known from the Murray-Darling Depression Bioregion on solonized brown soils within a rainfall range of 240 mm to 280 mm. While the geographic, topographic and soil conditions match this EEC, the absence of the shrub *Acacia loderi* discounts PCT 143 as having EEC status in accordance with the Final Determination.

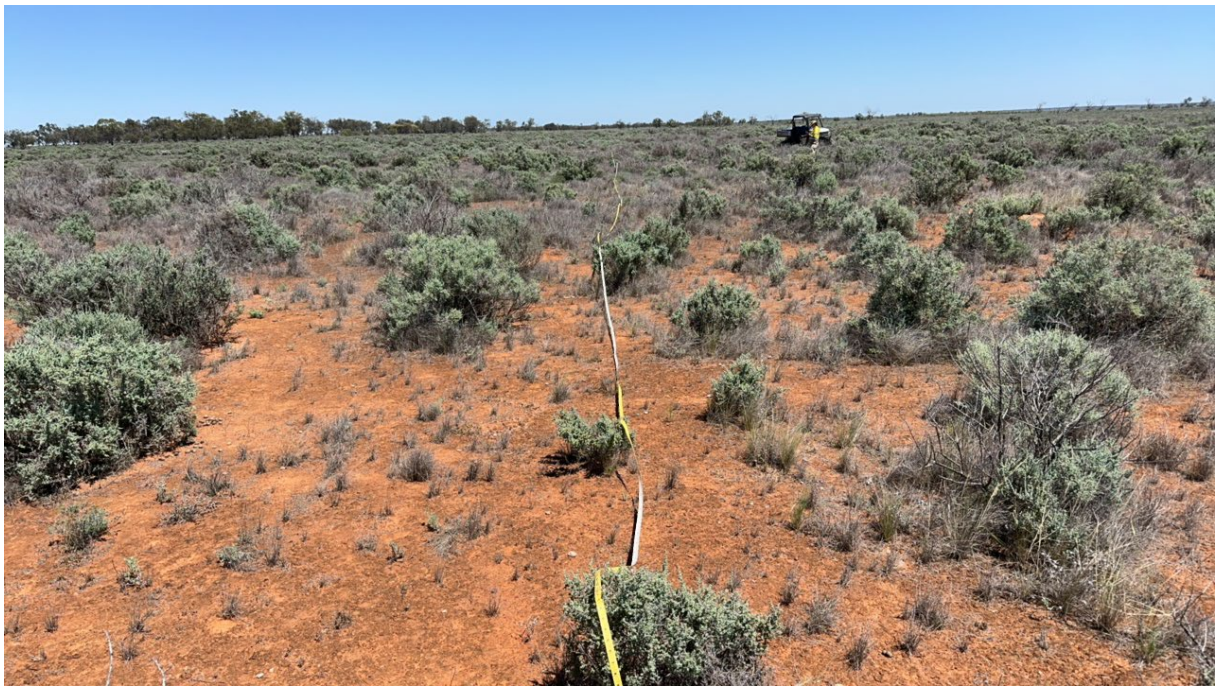
Photograph 4: PCT 143 – Moderate

3.2.5 Vegetation Community 5 – PCT 152

Table 11: Vegetation Community 5

PCT	152 - Lunette chenopod shrubland mainly of the Murray Darling Depression Bioregion
Vegetation Formation	Arid Shrublands (Chenopod sub-formation)
Vegetation Class	Aeolian Chenopod Shrublands
Land Zones & Area	249.82 ha within Development Footprint - Mine Site
EEC Status	Not listed
Clearing Extent	27.0%
Vegetation Zones	249.82 ha Moderate Condition (MS-VZ#3-152_Mod) within Development Footprint - Mine Site
Number of Plots	9 (Required - 6)
Plot numbers	40, 36, 41, 35, 38, 39, 37
Location	The PCT is present in a Moderate Condition over parts of the southern portion of the Mine Site of the Subject Land
Description	**Moderate Condition 152** **Canopy:**

	The Canopy Layer is absent **Shrub layer:** Black Bluebush (*Maireana pyramidata*) dominated with other shrubs including; *Chenopodium nitrariaceum*, Pearl Bluebush (Maireana sedifolia), Cannonball Burr *(Dissocarpus paradoxus),* Narrow-leaf Hop-bush *(Dodonaea viscosa subsp. angustissima),* Slit-wing Bluebush *(Maireana georgei),* Grey Copperburr *(Sclerolaena diacantha), Sclerolaena patenticuspis, Chenopodium curvispicatum,* Ruby Saltbush *(Enchylaena tomentosa),* Green Copperburr *(Sclerolaena decurrens)* and Tangled Copperburr (*Sclerolaena divaricate).* Grasses are present but are eaten or dried from weather conditions including Speargrass (*Austrostipa scabra),* Bottle Washers *(Enneapogon avenaceus*), Five-minute Grass *(Tripogon loliiformis).* **Ground layer:** Bare ground present with small forbs of *Boerhavia domini, Chrysocephalum apiculatum, Euphorbia drummondii, Sida corrugata, Tetragonia moorei, Vittadinia cuneata, Vittadinia cuneata var. hirsuta, Chenopodium melanocarpum, Portulaca oleracea, Tetragonia spp., Thysanotus baueri.* Weeds are present including; *Medicago polymorpha, Salvia verbenaca, Tribulus terrestris, Carrichtera annua, Medicago laciniata, Tagetes minuta* and *Convolvulus remotus.* Most of the grasses are dried and eaten, resulting in minimal leaf litter.
Condition	A high number of exotic weed species occur including Onion Weed (*Asphodelus fistulosus*), tobacco bush (*Nicotiana glauca*), *Brassica tournefortii, Bromus rubens, Chenopodium murale, Cucumis myriocarpus Pittosporum angustifolium leptodermis* and *Medicago* spp. While most of it has not been physically cleared, this community has been heavily grazed and subjected to high levels of erosion making it difficult to appreciate the composition of the original vegetation. Soil erosion and grazing by rabbits threaten elements of this community - large areas of lunettes are now bare of vegetation. Requires fencing off from stock, rabbits, feral goats, kangaroos and improved representation in reserves.



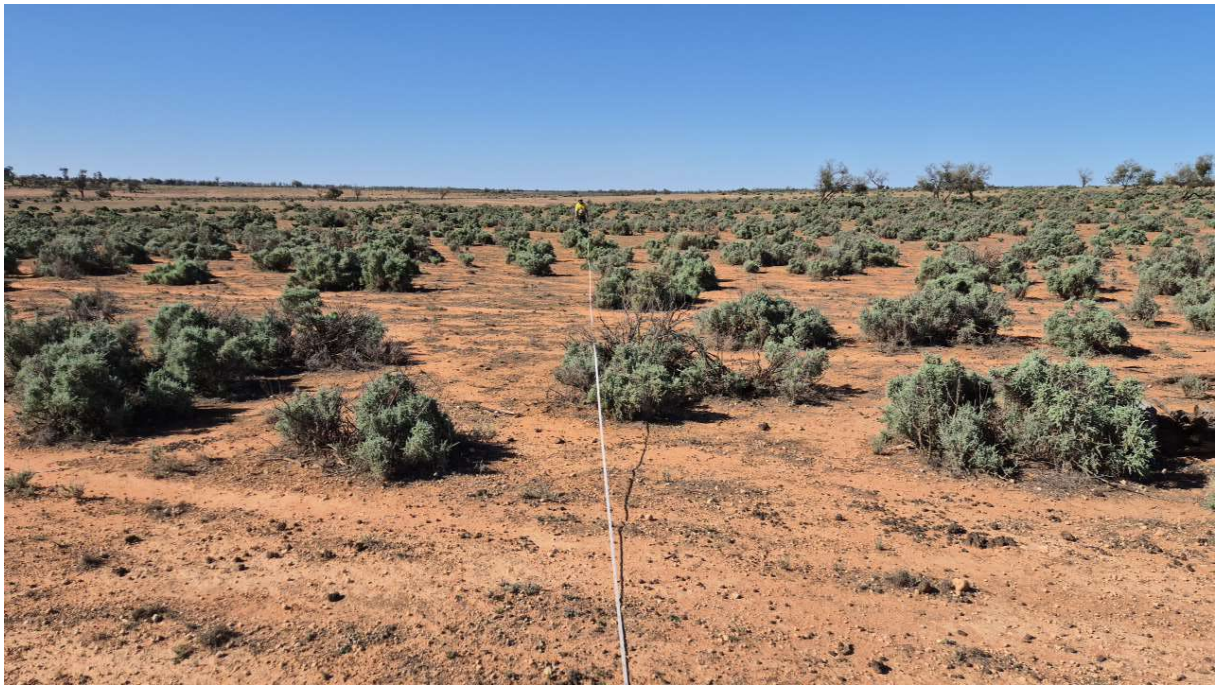
Photograph 5: PCT 152 - Moderate

3.2.6 Vegetation Community 6 – PCT 154

Table 12: Vegetation Community 6

PCT	154 - Pearl Bluebush low open shrubland of the arid and semi-arid plains
Vegetation Formation	Arid Shrublands (Chenopod sub-formation)
Vegetation Class	Aeolian Chenopod Shrublands
Land Zones & Area	A total of 1,666.82 ha 1564.73 ha in the Development Footprint – Mine Site. 102.09 ha in the Development Footprint – Linear Corridor
EEC Status	Listed under the BC Act as Endangered: *Acacia loderi* shrublands
Clearing Extent	43%
Vegetation Zones	1564.73 ha Moderate Condition (MS-VZ#4-154_Mod) in the Development Footprint – Mine Site 102.09 ha Moderate Condition (LC-VZ#4-154_Mod) in the Development Footprint – Linear Corridor
Number of Plots	48 at the Development Footprint – Mine Site (Required - 8) 25 at the Development Footprint – Linear Corridor (Required - 7)
Plot numbers	45, 58, 47, 57, 73, 59, 48, 60, 74, 75, 46, 49, 61, 63, 56, 42, 43, 62, 44, 52, 67, 53, 64, 55, 65, 51, 72, 66, 54, 69, 70, 71, 68, 50, 78, 79, 80, 81
Location	The PCT is present in varying condition over much of the western portion of the Mine Site, reaching along the boundaries to the north and south as well as occupying the majority of the Haul Road of the Subject Land.
Description	**Moderate Condition 154** **Canopy:** The Canopy Layer is absent **Shrub layer:** Presence of shrubs dominated by Pearl Bluebush *(Maireana sedifolia) and Maireana pyramidata* **Ground layer:** Grasses are scarce and scattered around the shrubs and include *Enneapogon avenaceus*, *Austrostipa scabra*, *Eragrostis setifolia*, *Austrostipa scabra subsp. Scabra*. Leaf litter is present around the base of the plants. Some forbs are present and scattered. Forbs include, *Vittadinia cuneata*, *Boerhavia domini*, *Sida corrugata*, *Portulaca oleracea*, *Vittadinia cuneata var. hirsuta*, *Tetragonia moorei*, *Goodenia sp, Tribulus spp.* Weeds are few, including *Salvia verbenaca, Medicago polymorpha, Tribulus terrestris, Convolvulus remotus, Cardamine hirsuta, Onopordum spp., Sonchus oleraceus, Tagetes minuta.*
Condition	This community exists in one condition state (Moderate) and may have been derived from Bladder Saltbush-dominated communities, and the saltbush has been grazed out. Wards weed (*Carrichtera annua*) is common. In some areas it grades into Bladder Saltbush (*Atriplex vesicaria*) shrubland, grassland or mallee woodland communities. Continuous, heavy grazing by goats and sheep have caused bluebush to disappear to be replaced by grasses and forbs.

	The EEC *Acacia loderi* Shrubland community is dominated by this small shrub or tree and is known from the Murray-Darling Depression Bioregion on solonized brown soils within a rainfall range of 240 mm to 280 mm. While the geographic, topographic, edaphic and soil conditions match this EEC, the absence of the shrub *Acacia loderi* and poor condition state discounts PCT 154 as having EEC status in accordance with the Final Determination.



Photograph 6: PCT 154 – Moderate

3.2.7 Vegetation Community 7 – PCT 157

Table 13: Vegetation Community 7

PCT	**157 - Bladder Saltbush shrubland in the semi-arid (warm) zone including Riverina Bioregion**
Vegetation Formation	Arid Shrublands (Chenopod sub-formation)
Vegetation Class	Riverine Chenopod Shrublands.
Land Zones & Area	495.7 ha Development Footprint - Mine Site
EEC Status	Not Listed
Clearing Extent	60%
Vegetation Zones	3.58 ha High Condition (MS-VZ#6-157_High) within the Development Footprint – Mine Site 492.12 ha Moderate Condition (MS-VZ#5-157_Mod) within the Development Footprint – Mine Site

Number of Plots	20 (Required – 9)
Plot numbers	Moderate: 86, 91, 89, 92, 87, 90, 88, 93 High: 94, 95
Location	The PCT is present in moderate-high condition over much of the inner portion of the Mine Site of the Subject Land
Description	**<u>High Condition 157</u>** (Plot Copi Mine 90) **Canopy:** The Canopy Layer is absent **Shrub layer:** Shrub layer is present with *Atriplex vesicaria* as the dominant species. Other shrubs are scattered leaving areas of bare ground and include, *Atriplex spp., Atriplex vesicaria subsp. macrocystidia, Dissocarpus paradoxus, Enchylaena tomentosa, Maireana appressa, Maireana georgei, Maireana pentatropis, Maireana pyramidata, Maireana spp., Osteocarpum acropterum, Rhagodia gaudichaudiana, Sclerolaena brachyptera, Sclerolaena decurrens, Sclerolaena diacantha, Sclerolaena divaricate, Sclerolaena patenticuspis, Sclerolaena spp., Sclerolaena stelligera, Tecticornia halocnemoides, Tecticornia spp.* **Ground layer:** Grasses include *Austrostipa scabra, Austrostipa spp., Enneapogon avenaceus, Eragrostis spp.* and *Tripogon loliiformis.* Forbs are present, connecting some areas of shrubs and include *Atriplex holocarpa, Boerhavia domini, Boerhavia spp., Calandrinia spp., Chenopodium melanocarpum, Disphyma crassifolium subsp. clavellatum, Euphorbia drummondii, Frankenia serpyllifolia, Sarcozona praecox, Sida corrugata, Thysanotus baueri, Thysanotus spp, Vittadinia cervicularis, Vittadinia cuneata.* Large areas of bare ground present. **<u>Moderate Condition 157</u>** **Canopy:** The Canopy Layer is absent **Shrub layer:** Shrub layer is present with *Atriplex vesicaria* as the dominant species. Other shrubs are scattered with large areas of bare ground. Other shrubs include, *Dissocarpus paradoxus, Maireana appressa, Maireana pentatropis, Maireana pyramidata, Rhagodia gaudichaudiana, Sclerolaena brachyptera, Sclerolaena decurrens, Sclerolaena diacantha, Sclerolaena divaricate, Tecticornia spp.* This layer has been severely impacted by overgrazing and drought. **Ground layer:** Very few grasses in this zone; include *Austrostipa scabra. Some* forbs present, connecting areas of shrubs including *Boerhavia domini, Sida corrugata, and Malva parviflora.* Very large areas of bare ground present.
Condition	This community occurs in two integrity condition within the Development Footprint – Mine Site. It has been cleared or severely altered through grazing and dieback. A combination of stock and rabbit grazing, droughts and grub-herbivory dieback has lowered the condition of this community and caused Bladder Saltbush to retreat west on the Riverine Plain leaving behind "derived" grasslands.

Photograph 7: PCT 157 - Moderate

Photograph 8: PCT 157 - High

3.2.8 Vegetation Community 8 – PCT 170

Table 14: Vegetation Community 8

PCT	170 - Chenopod sandplain mallee woodland/shrubland
Vegetation Formation	Semi-arid Woodlands (Shrubby sub-formation)
Vegetation Class	Sand Plain Mallee Woodlands
Land Zones & Area	A total of 15.58 ha 13.6 ha within the Development Footprint – Linear Corridor 1.98 ha within the Development Footprint – Mine Site
EEC Status	Listed under the BC Act as Endangered: *Acacia loderi* shrublands and *Acacia melvillei* Shrubland in the Riverina and Murray-Darling Depression bioregions. Listed under the EPBC Act as Critically Endangered *Plains mallee box woodlands of the Murray darling depression, Riverina and Naracoorte Coastal plain Bioregion and Endangered: Mallee Bird Community of the Murray Darling depression*
Clearing Extent	41%
Vegetation Zones	13.6 ha Moderate Condition (LC-VZ#5-170_Mod) within the Development Footprint – Linear Corridor 1.98 ha Moderate Condition (MS-VZ#7-170_Mod) within the Development Footprint – Mine Site
Number of Plots	1 at the Development Footprint - Mine Site (Required – 1) 11 at the Development Footprint - Linear Corridor (Required - 3)
Plot numbers	98, 101, 102, 103, 104, 105, 106
Location	The PCT is present in degraded condition over small areas at the northern and southern end of the Mine Site and in small patched along the Haul Road of the Subject Land.
Description	**Moderate Condition 170** **Canopy:** The Mallee woodland is dominated by White Mallee *(Eucalyptus dumosa)* **Shrub layer:** Shrubs are minimal in cover and abundance including *Atriplex stipitate, Dissocarpus paradoxus, Enchylaena tomentosa, Eremophila sturtii, Maireana brevifolia, Maireana pentatropis, Maireana pyramidata, Maireana spp., Sclerolaena diacantha, Sclerolaena patenticuspis.* **Ground layer:** Forbs include *Boerhavia domini, Einadia nutans subsp. oxycarpa, Euphorbia drummondii, Portulaca oleracea, Roepera eremaea* and *Vittadinia cuneata*. Grasses include *Austrostipa scabra* and *Enneapogon avenaceus*. Other species found include *Mesembryanthemum crystallinum, Salvia verbenaca* and *Tribulus terrestris.* The environment is highly degraded by agricultural and weather conditions.
Condition	Significant areas have been cleared for grazing or cropping however, small areas remain uncleared in the Development Footprint. Most areas outside road reserves are grazed by stock and trampling of

	soils has led to soil erosion. Fire is a key disturbance factor in mallee located along the Linear Corridor in several locations. The NSW Scientific Committee – Final Determinations for the two relevant EECs emphasises the importance of *Acacia loderi* and *Acacia melvillei* as an important component of the shrubland composition. Neither of these two species are represented in this community. This EEC typically occupies sandhills and undulating sandplains in south-western NSW where the community occurs on red-brown, sandy loam soils which are represented at the site. Despite meeting the correct geographic, topographic and edaphic conditions, the representative species associated with the EEC are not present and it cannot be considered to be in a condition state consistent with the Final Determination for either of the two possible EECs.

Photograph 9: PCT 170 – Moderate

3.2.9 Vegetation Community 9 – PCT 171

Table 15: Vegetation Community 9

PCT	171 - Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion.
Vegetation Formation	Semi-arid Woodlands (Shrubby sub-formation)
Vegetation Class	Dune Mallee Woodlands
Land Zones & Area	A total of 12.13 ha 6.56 ha within the Development Footprint – Linear Corridor 5.57 ha within the Development Footprint – Mine Site
EEC Status	*Mallee Bird Community of the Murray Darling Depression Bioregion* (EPBC – threat status Endangered). There are no EECs listed under the BC Act for PCT. 171

Clearing Extent	19%
Vegetation Zones	6.56 ha Moderate Condition (LC-VZ#6-171_Mod) within the Development Footprint – Linear Corridor 5.57 ha Moderate Condition (MS-VZ#8-171_Mod) within the Development Footprint – Mine Site
Number of Plots	5 at the Development Footprint - Linear Corridor (Required - 3) 3 at the Development Footprint - Mine Site (Required – 3)
Plot numbers	110, 109, 108, 112, 113, 114, 115
Location	The PCT is present in varying condition over small areas at the northern end of the Mine Site and in small patched along the Haul Road of the Subject Land.
Description	**Moderate Condition 171** **Canopy:** The Mallee woodland is dominated by White Mallee *(Eucalyptus dumosa).* **Shrub layer:** Shrubs are minimal in cover and abundance including *Atriplex vesicaria, Chenopodium desertorum, Dissocarpus paradoxus, Enchylaena tomentosa, Maireana georgei, Maireana pyramidata, Maireana sedifolia, Sclerolaena diacantha, Sclerolaena patenticuspis, Chenopodium spp.* and *Sclerolaena spp.* **Ground layer:** Forbs include *Vittadinia cuneata var. hirsuta* and *Ehrharta spp. Grasses include Austrostipa scabra, Enneapogon avenaceus, Paspalidium constrictum* and *Triodia scariosa.* Other species also include *Convolvulus remotus.*
Condition	This community occurs across the Development Footprint in a Moderate condition State where it has been impacted by land clearing, grazing by domestic and feral animals and occasionally burnt.

Photograph 10: PCT 171 – Moderate

3.2.10 Vegetation Community 10 – PCT 215

Table 16: Vegetation Community 10

PCT	215 - Woollybutt Grass open grassland on red earths of the inland plains.
Vegetation Formation	Arid Shrublands (Acacia sub-formation)
Vegetation Class	Sand Plain Mulga Shrublands
Land Zones & Area	A total area of 5.89 ha within the Development Footprint - Mine Site
EEC Status	No associated TEC
Clearing Extent	20%
Vegetation Zones	0.82 ha High Condition (MS-VZ#10-215_High) and 5.07 ha Moderate Condition (MS-VZ#9-215_Mod) within the Development Footprint – Mine Site.
Number of Plots	4 (Required – 4)
Plot Numbers	Moderate: 116, 118, 117 High: 119
Location	The PCT is present in degraded condition in small patches over the northwestern portion of the Mine Site footprint.
Description	**High Condition 215** (Plot COPI Mine 95) **Canopy:** The Canopy is not present **Shrub layer:** There is no shrub layer present **Ground layer:** Grasses are present in larger, denser, more connected patches, dominated by *Eragrostis setifolia* and *Sclerolaena patenticuspis*, with Sida corrugata, *Austrostipa scabra*, *Euphorbia drummondii*, *Tetragonia moorei*, *Dissocarpus paradoxus, Enneapogon avenaceus, Tribulus terrestris, Boerhavia domini,* and *Paspalidium constrictum*. Ground cover with forbs in minimal cover including *Vittadinia cuneata var. hirsute, Ehrharta spp.* and *Convolvulus remotus.* **Moderate Condition 215** **Canopy:** The Canopy Layer is not present **Shrub layer:** There is no shrub layer present **Ground layer:** Grasses are present in smaller, thinner, less connected clumps, dominated by *Eragrostis setifolia* and *Sclerolaena patenticuspis*, with *Austrostipa scabra*, *Enneapogon avenaceus* and *Paspalidium constrictum*. Ground cover with forbs in minimal in cover including *Vittadinia cuneata var. hirsute.*

Condition	Occurs in two condition states, within the Development Footprint where it has been heavily grazed by domestic and feral animals including sheep and goats. Clearing has fragmented this community which occurs in small patches. Largely derived community as a result of clearing and dieback of Mulga, however, some areas of this grassland may occur naturally.

Photograph 11: PCT 215 – Moderate

Photograph 12: PCT 215 – High

3.2.11 Vegetation Community 11 – PCT 221

Table 17: Vegetation Community 11

PCT	**221 - Black Oak - Pearl Bluebush open woodland of the sandplains of the semi-arid warm and arid climate zones.**
Vegetation Formation	Semi-arid Woodlands (Shrubby sub-formation)
Vegetation Class	Semi-arid Sand Plain Woodlands
Land Zones & Area	A total of 394.97 ha within the Development Footprint - Mine Site.
EEC Status	Not listed
Clearing Extent	30%
Vegetation Zones	3.12 ha High Condition (MS-VZ#12-221_High) and 391.85 ha Moderate Condition (MS-VZ#11-221_Mod) within the Development Footprint - Mine Site.
Number of Plots	10 (Required - 9)
Plot Numbers	Moderate: 126, 124, 123, 125, 122, 120, 121 High: 129, 128
Location	The PCT is present in varying condition over much of the northern portion of the Mine Site as well as areas to the south and east of the Subject Land.
Description	**<u>High Condition 221</u>** **Canopy:** Dominated by Black Oak (*Casuarina pauper*) in multiple plots but some absent of canopy cover. **Shrub layer:** A moderate density layer of shrubs dominated by *Maireana sedifolia*, also including *Chenopodium curvispicatum, Chenopodium desertorum, Dissocarpus paradoxus, Maireana georgei, Maireana pyramidata, Maireana sedifolia, Maireana spp., Maireana turbinata, Sclerolaena diacantha* and *Sclerolaena patenticuspis* **Ground layer:** The ground cover moderately sparse with grasses of *Austrostipa scabra, Austrostipa spp., Enneapogon avenaceus* and *Paspalidium constrictum.* Forbs are present in minimal cover and abundance including *Boerhavia domini, Sida corrugata, Tetragonia moorei, Thysanotus baueri., Vittadinia cuneata, Vittadinia cuneata var. hirsuta* and *Vittadinia muelleri.* Other flora present include *Conyza spp., Sonchus oleraceus, Tribulus terrestris* and *Convolvulus remotus.* **<u>Moderate Condition 221</u>** **Canopy:** Open sparce canopy of Black Oak (*Casuarina pauper*) across most of this zone, however a few areas with large open spaces with no canopy at all. **Shrub layer:** A sparse layer of shrubs dominated by *Maireana sedifolia*, also including *Chenopodium curvispicatum, Chenopodium desertorum, Dissocarpus paradoxus, Maireana georgei, Maireana pyramidata, Maireana sedifolia, Maireana spp., Maireana turbinata, Sclerolaena diacantha* and *Sclerolaena patenticuspis*

	Ground layer: Very sparse with large areas of bare earth, with grasses of *Austrostipa scabra, Austrostipa spp., Enneapogon avenaceus.* Forbs present in minimal cover and abundance include *Boerhavia domini, Sida corrugata, Tetragonia moorei, Vittadinia cuneata, Vittadinia cuneata var. hirsuta* and *Vittadinia muelleri.* Other flora present includes *Conyza spp., Sonchus oleraceus and Tribulus terrestris.*
Condition	This community occurs in two condition states, Moderate and High within the Development Footprint – Mine Site and has become degraded over the long term due to drought, grazing pressure and lack of regeneration of key species. The High condition vegetation zone contains higher plant and habitat structure, as well as a higher composition of plant species. Abundance and cover is also higher in this vegetation zone as well and the apparent resilience of the surviving vegetation.

Photograph 13: PCT 221 – Moderate

Photograph 14: PCT 221 High

3.2.12 Vegetation Community 12 – PCT 253

Table 18: Vegetation Community 12

PCT	253 - Gypseous shrubland on rises in the semi-arid and arid plains.
Vegetation Formation	Saline Wetlands
Vegetation Class	Inland Saline Lakes
Land Zones & Area	A total of 140.14 ha within the Development Footprint - Mine Site
TEC Status	Not listed
Clearing Extent	30%
Vegetation Zones	140.14 ha Moderate Condition (MS-VZ#13-253_Mod) within the Development Footprint - Mine Site.
Number of Plots	14 (required – 6)
Plot Numbers	134, 133, 130, 132, 131, 135, 136
Location	The PCT is present in a moderate condition over the centre of the Mine Site within the Subject Land.
Description	**Moderate Condition 253**

	Canopy: The canopy layer is absent **Shrub layer:** Open very sparse dry shrubland dominated by *Maireana pyramidata* and *Sclerolaena patenticuspis.* Large areas of bare earth are present in this zone. Other shrubs present include *Dissocarpus paradoxus, Maireana appressa, Rhagodia spp.,* and *Sclerolaena diacantha.* **Ground layer:** Grasses are present in low abundance including *Austrostipa scabra, Austrostipa nullanulla* and *Enneapogon avenaceus.* Forbs present are in minimal cover and abundance including *Boerhavia domini, Chenopodium melanocarpum, Euphorbia drummondii, Sida corrugata, Tetragonia moorei, Tetragonia tetragonoides.* Flora present include *Medicago polymorpha, Sonchus oleraceus* and *Tribulus terrestris.* Large areas of bare ground is present with very little leaf litter. *Austrostipa nullanulla* is present in thick patches across the exposed gypsum substrate.
Condition	This community occurs in a moderate condition-state within the Development Footprint – Mine Site. Drought and long-term land clearing and overgrazing by both domestic sheep and feral goats, have prevented regeneration of key species, causing a degraded condition throughout this community. This vegetation zone is heavily impacted by rabbit activity.

Photograph 15: PCT 253 - Moderate

3.2.13 Vegetation Community 13 – PCT 254

Table 19: Vegetation Community 13

PCT	254 Black Oak - Bladder Saltbush on light clays in the arid zone
Vegetation Formation	Arid Shrublands (Chenopod sub-formation)
Vegetation Class	Riverine Chenopod Shrublands
Land Zones & Area	1.16 ha within the Development Footprint - Mine Site
EEC Status	Not listed
Clearing Extent	10%
Vegetation Zones	1.16 ha Moderate Condition (MS-VZ#14-254_Mod) within the Development Footprint - Mine Site.
Number of Plots	1 (Required – 1)
Plot Numbers	137
Location	The PCT is present in degraded condition over a small patch of the western portion of the Mine Site of the Development Footprint.
Description	**Moderate Condition 254** **Canopy:** Canopy cover consists of *Alectryon oleifolius* and *Casuarina pauper* **Shrub layer:** The shrub layer is dominated with *Maireana pyramidata* with the presence of *Atriplex vesicaria, Maireana appressa, Maireana pentatropis, , Sclerolaena patenticuspis* and another unidentified *Sclerolaena spp.* **Ground layer:** Ground cover is sparce in most areas and consists of the grass *Austrostipa scabra* and forb *Boerhavia domini*. Leaf litter is present with *Boerhavia domini* interconnecting between shrubs.
Condition	This community occurs in a degraded moderate integrity condition due to historic land clearing and overgrazing by feral goats. Patches of bare earth are scattered within the community as a result of rabbit activity, domestic grazing animals, and Kangaroos. Feral goats have had a large negative impact on the vegetation in this zone and have prevented regeneration throughout.

Photograph 16: PCT 254 - Moderate

3.3 Justification of PCTs and Vegetation Zones

The PCT filter tool within the BioNet Vegetation Classification Database was used to identify potential PCTs. IBRA region, subregion, vegetation formation and dominant species were added to refine PCT selection. In addition, landscape positioning, soils and topography were also used to determine best fit PCTs.

3.3.1 PCT 28 - White Cypress Pine open woodland of sand plains, prior streams and dunes mainly of the semi-arid (warm) climate zone

Table 20 below shows the justification for selecting PCT 28 as being present on the Subject Land and within the Development Footprint.

This community has the necessary diagnostic features, substrate and landscape position to enable positive identification within the Development Footprint. This includes being located with the Wentworth LGA, having a canopy dominated by *Callitris glaucophylla* and a ground stratum dominated by *Enchylaena tomentosa* and *Dissocarpus paradoxus.*

Table 20: Justification of PCT 28 selection

PCT 28 - White Cypress Pine open woodland of sand plains, prior streams and dunes mainly of the semi-arid (warm) climate zone		
Justification of PCT selection	**Search Term**	Selection
	Plot numbers	1 & 2
	IBRA Bioregion	Murray Darling Depression (136 options)
	IBRA Sub-region	South Olary Plain (72 options)
	Vegetation Formation	Semi-arid Woodlands (Shrubby sub-formation) (22 options)
	Upper Stratum Species	White Cypress Pine (*Callitris glaucophylla*) (12 options)
	Long List	19, 20, 28, 57, 72, 104, 105, 106, 134, 172, 173, 631
	LGA	Wentworth
	Short List	28, 172, 631 (3 options)
	Ground Stratum Species	*Enchylaena tomentosa* and *Dissocarpus paradoxus*
	Selection	PCT 28

PCT 172 was excluded as an option because this community is not represented by mallee shrubland or open shrubland with a whipstick habit. It also does not occur on deep, non-calcareous red sands. While PCT 631 is very closely aligned to PCT 28, the community also includes an association with Western Rosewood (*Alectryon oleifolius* subsp. *canescens*) and a range of mistletoes. The ground cover of PCT 631 is also sparse or very sparse and is conspicuous with the dominance of Porcupine Grass (Spinifex) *Triodia scariosa* subsp. *Scariosa*,

which is absent from the subject community. Based on the floristics, soil and landscape characteristics, the community was assigned PCT 28.

3.3.2 PCT 58 Black Oak - Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion

Table 21 below shows the justification for selecting PCT 58 as being present on the Subject Land and within the Development Footprint.

This community has the necessary diagnostic features, substrate and landscape position to enable positive identification within the Development Footprint. This includes being located within the Wentworth LGA, having a canopy dominated by *Casuarina pauper* and *Alectryon oleifolius* and a ground stratum dominated by *Sclerolaena diacantha.*

Table 21: Justification of PCT 58 selection

PCT 58 Black Oak – Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion		
Justification of PCT selection	**Search Term**	Selection
	Plot numbers	18,16,15,13,14,17,10,6,8,4,12,9,7,5,11,19,3,20,21,22
	IBRA Bioregion	Murray Darling Depression
	IBRA Sub-region	South Olary Plain
	Vegetation Formation	Semi-arid Woodlands (Shrubby sub-formation) (22 options)
	Upper Stratum Species	*Casuarina pauper; Alectryon oleifolius*
	Long List	23, 29, 35, 87, 118, 120, 170, 139, 198, 216, 221, 252, 454, 466
	Ground Stratum Species	*Sclerolaena diacantha*
	Short List	58, 170, 221, 252
	Selection	PCT 58

PCT 58 has mid-high (about 7 m high) low open woodland or isolated clumps of trees dominated by Black Oak (*Casuarina pauper*) and Western Rosewood (*Alectryon oleifolius* subsp. *canescens*) with either a shrubby or grassy understorey. Across the Assessment Area these two tree species often form clumps and may or may not mix. This can be distinguished from PCT 170 by the absence of Mallee trees and White Cypress Pine (*Callitris glaucophylla*). The community is also separated from PCT 221 by the presence and/or dominance of Western Rosewood, which is more common in PCT 58. Can be distinguished from PCT 252 by the absence of Sugarwood (*Myoporum platycarpum*).

3.3.3 PCT 64 Samphire - Water Weed - Sea-Heath shrubland saline wetland of depressions of the arid and semi-arid.

Table 22 below shows the justification for selecting PCT 64 as being present on the Subject Land and within the Development Footprint.

This community has the necessary diagnostic features, substrate and landscape position to enable positive identification within the Development Footprint. This includes being located within the Wentworth LGA, no canopy layer and a mid-layer dominated by *Tecticornia sp.*

Table 22: Justification of PCT 64 Selection

PCT 64 Samphire - Water Weed - Sea-Heath shrubland saline wetland of depressions of the arid and semi-arid		
Justification of PCT selection	**Search Term**	Selection
	Plot numbers	26,23,27,28,25,29,24
	IBRA Bioregion	Murray Darling Depression (136)
	IBRA Sub-region	South Olary Plain (72 options)
	Vegetation Formation	Saline Wetlands (6)
	Upper Stratum Species	None
	Long List	63, 64, 65, 166
	Mid Stratum Species	*Halosarcia sp.*
	Selection	PCT 64

PCT 64 is generally found in the centre of lake beds, whereas PCT 63 is mainly found on the edges. Additionally, PCT 63 is also dominated by Lignum (*Muehlenbeckia florulenta*) and Black Bluebush (*Maireana pyramidata*) while PCT 64 is dominated by a range of *Tecticornia* spp. and several other middle and ground stratum species.

PCT 65 is a TEC and characterised by *Tecticornia lylei* on low, open shrubland saline wetland of arid and semi-arid regions, however, the *Tecticornia lylei* species was searched for in and around the salt lakes but not recorded within the Assessment Area.

3.3.4 PCT 143 Narrow-leafed Hopbush - Scrub Turpentine - Senna shrubland on semi-arid and arid sandplains and dunes

Table 23 below shows the justification for selecting PCT 143 as being present on the Subject Land and within the Development Footprint.

This community has the necessary diagnostic features, substrate and landscape position to enable positive identification within the Development Footprint. This includes being located within the Wentworth LGA, with an open shrubland to 4 m high dominated by Narrow-leaved Hopbush (*Dodonaea viscosa* subsp. *angustissima*), Turpentine (*Eremophila sturtii*) and various sub-species of *Senna artemisioides* often with Mulga (*Acacia aneura*), *Olearia pimeleoides*, Black Bluebush (*Maireana pyramidata*) and Thorny Saltbush (*Rhagodia spinescens*). The ground layer is dominated by *Enchylaena tomentosa* and *Dissocarpus paradoxus.*

Table 23: Justification of PCT 143 selection

PCT 143 Narrow-leafed Hopbush – Scrub Turpentine – Senna shrubland on semi-arid and arid sandplains and dunes		
Justification of PCT selection	**Search Term**	Selection
	Plot numbers	30,34,31
	IBRA Bioregion	Murray Darling Depression
	IBRA Sub-region	South Olary Plain
	Vegetation Formation	Arid Shrublands (Acacia sub-formation)
	Long List	119, 123, 124, 128, 139, 143, 199, 215, 220
	LGA	Wentworth
	Short List	119, 139, 143, 199
	Ground Species	*Enchylaena tomentosa; Dissocarpus paradoxus*
	Selection	PCT 143

Can be distinguished from PCT 119 as this community is dominated by Mulga (*Acacia aneura*) often with Black Oak (*Casuarina pauper*), Sandhill Wattle (*Acacia ligulata*) and woody native regrowth species such as Turpentine Bush (*Eremophila sturtii*) and Punty Bush (*Senna* form taxon '*filifolia*'). PCT 139 includes tall open shrubland dominated by Prickly Wattle (*Acacia victoriae*), Narrow-leaved Hopbush (*Dodonaea viscosa* subsp. *angustissima*) which is absent from the subject community. The community is not dominated by Hooked Needlewood (*Hakea tephrosperma*) or Needlewood (*Hakea leucoptera*) which are characteristic species of PCT 199.

3.3.5 PCT 152 Lunette chenopod shrubland mainly of the Murray Darling Depression Bioregion

Table 24 below shows the justification for selecting PCT 152 as being present on the Subject Land and within the Development Footprint.

This community has the necessary diagnostic features, substrate and landscape position to enable positive identification within the Development Footprint. This includes a vegetation formation of Arid Shrublands (Chenopod sub-formation), located within the Wentworth LGA, having a canopy dominated by *Callitris glaucophylla*.

Table 24: Justification of PCT 152 selection

PCT 152 Lunette chenopod shrubland mainly of the Murray Darling Depression Bioregion		
Justification of PCT selection	**Search Term**	Selection
	Plot numbers	40,36,41,35,38,39,37
	IBRA Bioregion	Murray Darling Depression
	IBRA Sub-region	South Olary Plain
	Vegetation Formation	Arid Shrublands (Chenopod sub-formation)
	LGA	Wentworth
	Long List	152, 153, 154, 157, 159, 163, 196, 216, 254
	Upper Stratum Species	*Callitris glaucophylla*
	Selection	PCT 152

3.3.6 PCT 154 Pearl Bluebush low open shrubland of the arid and semi-arid plains

Table 25 below shows the justification for selecting PCT 154 as being present on the Subject Land and within the Development Footprint.

This community has the necessary diagnostic features, substrate and landscape position to enable positive identification within the Development Footprint. This includes a vegetation formation of Arid Shrublands (Chenopod sub-formation), being located within the Wentworth LGA, having an upper stratum dominated by *Alectryon oleifolius subsp. Canescens, Myoporum montanum,* and a mid-stratum dominated by *Maireana sedifolia.*

Table 25: Justification of PCT 154 Selection

PCT 154 Pearl Bluebush low open shrubland of the arid and semi-arid plains		
Justification of PCT selection	**Search Term**	Selection
	Plot numbers	45,58,47,57,59,48,60,74,75,46,49,61,63, 56,42,43,62,44,52,67,53,64,55,65,51,72, 66,54,69,70,71,68,50,78,79,80,81,82,83
	IBRA Bioregion	Murray Darling Depression
	IBRA Sub-region	South Olary Plain
	Vegetation Formation	Arid Shrublands (Chenopod sub-formation)
	LGA	Wentworth
	Long List	152, 153, 154, 157, 159, 163, 196, 216, 254
	Mid Stratum Species	*Maireana sedifolia*
	Short List	153, 154, 157, 196, 254
	Upper Stratum	*Alectryon oleifolius subsp. Canescens, Myoporum montanum,*
	Selection	PCT 154

PCT 153 was removed from the short list because the community does not contain mid-high open shrubland generally less than one meter high dominated by Black Bluebush (*Maireana pyramidata*). Similarly, PCT 157 was removed because the community does not contain open to sparse chenopod shrubland dominated by Bladder Saltbush (*Atriplex vesicaria*) often with Desert Glasswort (*Pachycornia triandra*). PCT 196, while a low growing community, was also removed due to the absence of Australian Boxthorn (*Lycium australe*) in the subject community.

The absence of woodland containing Black Oak (*Casuarina pauper*) also resulted in the removal of PCT 254 from the short list, resulting in a final choice of PCT 154.

3.3.7 PCT 157 Bladder Saltbush shrubland in the semi-arid (warm) zone including Riverina Bioregion

Table 26 below shows the justification for selecting PCT 157 as being present on the Subject Land and within the Development Footprint.

This community has the necessary diagnostic features, substrate and landscape position to enable positive identification within the Development Footprint. This includes an Arid Shrublands - Chenopod sub-formation, located within the Wentworth LGA, having a canopy dominated by *Casuarina pauper* and a mid-stratum dominated by *Maireana pyramidata.*

Table 26: Justification of PCT 157 Selection

PCT 157 Bladder Saltbush shrubland in the semi-arid (warm) zone including Riverina Bioregion		
Justification of PCT selection	**Search Term**	Selection
	Plot numbers	94,95
	IBRA Bioregion	Murray Darling Depression
	IBRA Sub-region	South Olary Plain
	Vegetation Formation	Arid Shrublands (Chenopod sub-formation)
	LGA	Wentworth
	Long List	94, 95, 152, 153, 154, 157, 159, 163, 196, 216, 254
	Upper Stratum Species	Casuarina pauper
	Medium List	153, 154, 157, 196, 254
	Description	Low to 90 cm high
	Short List	157, 254
	Mid stratum species	*Maireana pyramidata*
	Selection	PCT 157

Only one other PCT was shortlisted which included PCT 254. This community was excluded due to its characteristic woodland community type dominated by Black Oak (*Casuarina pauper*), features which are not present in the subject community. Final analyses determined that the most appropriate community type was PCT 157.

3.3.8 PCT 170 Chenopod sandplain mallee woodland/shrubland

Table 27 below shows the justification for selecting PCT 170 as being present on the Subject Land and within the Development Footprint.

This community has the necessary diagnostic features, substrate and landscape position to enable positive identification within the Development Footprint. This includes having a Semi-arid Woodlands - Shrubby sub-formation, being located within the Wentworth LGA, having a canopy dominated by *Eucalyptus dumosa* and a mid-stratum dominated by *Maireana sedifolia,* and ground layer of *Dissocarpus paradoxus.*

Table 27: Justification of PCT 170 Selection

PCT 170 Chenopod sandplain mallee woodland/shrubland		
Justification of PCT selection	**Search Term**	Selection
	Plot numbers	98,101,102,103,104,105,106
	IBRA Bioregion	Murray Darling Depression
	IBRA Sub-region	South Olary Plain
	Vegetation Formation	Semi-arid Woodlands (Shrubby sub-formation)
	Upper Stratum Species	*Eucalyptus dumosa*
	Long List	170, 171, 172, 221, 631
	Mid Stratum Species	*Maireana sedifolia*
	Short List	170, 221
	Ground Stratum Species	*Dissocarpus paradoxus*
	Selection	PCT 170

Only one other PCT was shortlisted which included PCT 221. This community was excluded due to the absence of a woodland community dominated by Black Oak (*Casuarina pauper*). The subject community also contained an upper stratum of *Eucalyptus* spp.

3.3.9 PCT 171 Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion

Table 28 below shows the justification for selecting PCT 171 as being present on the Subject Land and within the Development Footprint.

This community has the necessary diagnostic features, substrate and landscape position to enable positive identification within the Development Footprint. This includes being located within the Wentworth LGA, having a canopy dominated by *Eucalyptus dumosa* and a mid-stratum dominated by *Maireana pentatropis* and a ground layer dominated by *Vittadinia cuneata, Triodia scariosa subsp. Scariosa.*

Table 28: Justification of PCT 171 Selection

PCT 171 Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion		
Justification of PCT selection	**Search Term**	Selection
	Plot numbers	110,109,108,112,113,114,115
	IBRA Bioregion	Murray Darling Depression
	IBRA Sub-region	South Olary Plain
	Vegetation Formation	Semi-arid Woodlands (Shrubby sub-formation) (22 options)
	Upper Stratum Species	*Eucalyptus dumosa*
	Long List	170, 171, 172, 221, 631
	Mid Stratum Species	*Maireana pentatropis*
	Short List	170, 171, 631
	Ground Stratum Species	*Vittadinia cuneata, Triodia scariosa subsp. scariosa*
	Selection	PCT 171

Although both PCT 171 and 170 contain a mix of Mallee species in the upper stratum, PCT 170 can be excluded due to the absence of *Triodia scariosa* subsp. *scariosa* in the ground stratum. PCT 631 was also excluded because it is an open woodland community with White Cypress Pine (*Callitris glaucophylla*) with Western Rosewood (*Alectryon oleifolius* subsp. *canescens*). Based on the analyses, PCT 171 was selected as the most appropriate PCT.

3.3.10 PCT 215 Woollybutt Grass open grassland on red earths of the inland plains

Table 29 below shows the justification for selecting PCT 215 as being present on the Subject Land and within the Development Footprint.

This community has the necessary diagnostic features, substrate and landscape position to enable positive identification within the Development Footprint. This includes having an Arid Shrublands - Acacia sub-formation, described as a Mid-high open tussock grassland, being located within the Wentworth LGA, and a ground stratum dominated by *Sclerolaena patenticuspis.*

Table 29: Justification of PCT 215 Selection

PCT 215 Woollybutt Grass open grassland on red earths of the inland plains		
Justification of PCT selection	**Search Term**	Selection
	Plot numbers	116,118,117, 119
	IBRA Bioregion	Murray Darling Depression
	IBRA Sub-region	South Olary Plain
	Vegetation Formation	Arid Shrublands (Acacia sub-formation)
	Long List	119, 123, 124, 128, 139, 143, 199, 215, 220
	Ground Stratum Species	*Sclerolaena patenticuspis*
	Short List	128, 215, 220
	Description	Mid-high open tussock grassland
	Selection	PCT 215

PCT 215 is a mid-high open tussock grassland or forbland dominated by Woollybutt (*Eragrostis eriopoda*) with Bottlewasher (*Enneapogon intermedius*), Curly Mitchell Grass (*Astrebla lappacea*), *Eriochloa australiensis* and Speargrass (*Austrostipa nitida*). Scattered shrubs of Mulga (*Acacia aneura*), Prickly Wattle (*Acacia victoriae* subsp. *arida*) and Narrow-leaved Hopbush (*Dodonaea viscosa* subsp. *angustissima*) occur. Alternatively, the short-listed PCT 128 is more an open shrubland up to 8 m dominated by Neila (*Acacia loderi*) occurring with low trees of Black Oak (*Casuarina pauper*) with clumps of Western Rosewood (*Alectryon oleifolius*) and Leopardwood (*Flindersia maculata*). Similarly, PCT 220 is dominated by stands of Purple Wood (*Acacia carneorum*) often with Black Bluebush (*Maireana pyramidata*) and sometimes with Mulga (*Acacia aneura*), Black Oak (*Casuarina pauper*) or Western Rosewood (*Alectryon oleifolius* subsp. *canescens*). Based on the above diagnosis the selected community was PCT 215.

3.3.11 PCT 221 Black Oak - Pearl Bluebush open woodland of the sandplains of the semi-arid warm and arid climate zones

Table 30 below shows the justification for selecting PCT 221 as being present on the Subject Land and within the Development Footprint.

This community has the necessary diagnostic features, substrate and landscape position to enable positive identification within the Development Footprint. This includes having a Semi-arid Woodlands - Shrubby sub-formation, being located within the Wentworth LGA, having a canopy dominated by *Casuarina pauper* and *Alectryon oleifolius subsp. canescens,* a mid-stratum of *Maireana sedifolia* and a ground stratum dominated by *Sclerolaena diacantha.*

Table 30: Justification of PCT 221 Selection

PCT 221 Black Oak – Pearl Bluebush open woodland of the sandplains of the semi-arid warm and arid climate zones		
Justification of PCT selection	**Search Term**	Selection
	Plot numbers	126,124,123,125,122,120,121, 128, 129
	IBRA Bioregion	Murray Darling Depression
	IBRA Sub-region	South Olary Plain
	Vegetation Formation	Semi-arid Woodlands (Shrubby sub-formation)
	Upper Stratum Species	*Casuarina pauper; Alectryon oleifolius subsp. canescens*
	Long List	58, 170, 221, 252
	Mid Stratum Species	*Maireana sedifolia*
	Short List	170, 221
	Ground Stratum	*Sclerolaena diacantha*
	Selection	PCT 221 (is a high open woodland)

Only one other community was short listed for consideration which was PCT 170. This PCT was excluded due to the absence of Mallee species in the subject community which is dominated by Black Oak (*Casuarina pauper*) and Western Rosewood (*Alectryon oleifolius subsp. canescens*). Final selection was therefore PCT 221.

3.3.12 PCT 253 Gypseous shrubland on rises in the semi-arid and arid plains.

Table 31 below shows the justification for selecting PCT 253 as being present on the Subject Land and within the Development Footprint.

This community has the necessary diagnostic features, substrate and landscape position to enable positive identification within the Development Footprint. This includes being located on a Gypsum rise, within the Wentworth LGA, having no canopy layer, and a ground stratum dominated by *Austrostipa nullanulla*, a spear-grass.

Table 31: Justification of PCT 253 Selection

PCT 253 Gypseous shrubland on rises in the semi-arid and arid plains		
Justification of PCT selection	**Search Term**	Selection
	Plot numbers	134,133,130,132,131,135,136
	IBRA Bioregion	Murray Darling Depression
	IBRA Sub-region	South Olary Plain
	Vegetation Formation	Semi-arid Woodlands (Shrubby sub-formation)
	Long List	18, 63, 64, 65, 166, 253
	Soil	Occurs on gypsum and gypseous clays
	Short list	63, 253
	Ground Stratum	*Austrostipa nullanulla*
	Selection	PCT 253

PCT 253 contains open or sparse low shrubland that often contains Fleshy Minuria (*Kippistia suaedifolia*). Other species present from VI plot results include the shrub Black Bluebush (*Maireana pyramidata*) and Narrow-leaved Hopbush (*Dodonaea viscosa* subsp*. angustissima*). Bladder Saltbush (*Atriplex vesicaria*) and Nulla Nulla Grass (*Austrostipa nullanulla*) are also associated with this community which occurs on the western side of the gypseous areas associated with the Salt Lake. Although PCT 63 occurs on lake edges, similar to PCT 253, and in the arid climatic zone, the community is dominated by Lignum (*Muehlenbeckia florulenta*) and Black Bluebush (*Maireana pyramidata*) which were largely absent.

3.3.13 PCT 254 Black Oak - Bladder Saltbush on light clays in the arid zone

Table 32 below shows the justification for selecting PCT 254 as being present on the Subject Land and within the Development Footprint.

This community has the necessary diagnostic features, substrate and landscape position to enable positive identification within the Development Footprint. This includes being located within the Wentworth LGA, having a canopy dominated by *Casuarina pauper,* a low midstory structure and a ground stratum dominated by *Sclerolaena patenticuspis.*

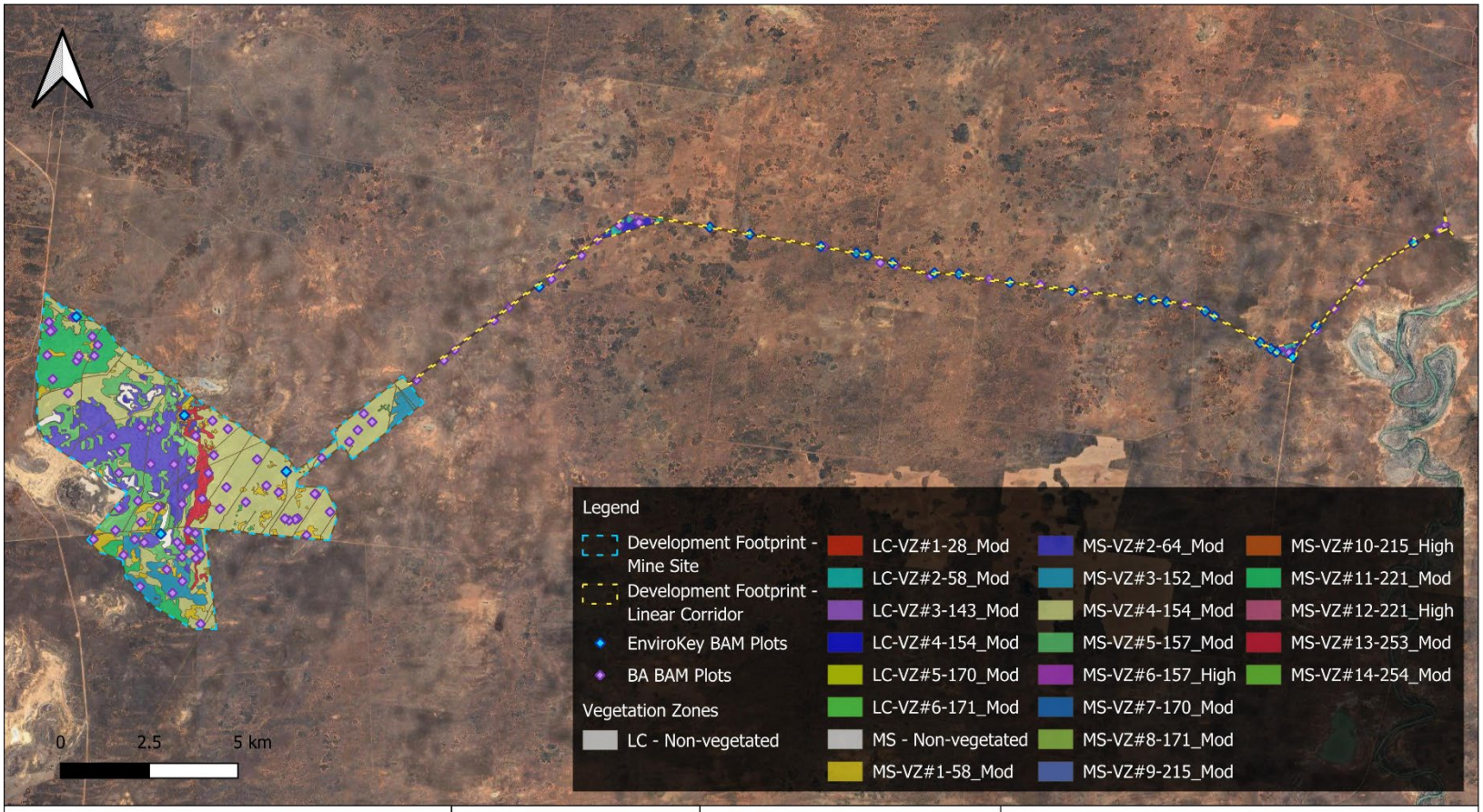
Table 32: Justification of PCT 254 Selection

PCT 254 Black Oak - Bladder Saltbush on light clays in the arid zone		
Justification of PCT selection	**Search Term**	Selection
	Plot numbers	137
	IBRA Bioregion	Murray Darling Depression
	IBRA Sub-region	South Olary Plain
	Vegetation Formation	Arid Shrublands (Chenopod sub-formation)
	LGA	Wentworth
	Long List	152, 153, 154, 157, 159, 163, 196, 216, 254
	Upper Stratum Species	*Casuarina pauper*
	Short List	153, 154, 157, 196, 254
	Vegetation Description	Low
	Short list	157, 254
	Ground Stratum	*Sclerolaena patenticuspis*
	Selection	PCT 254

The vegetation description for PCT 157 does not include the presence of *Casuarina pauper*, although the Species by Stratum does include it within the upper stratum. Areas dominated by *Casuarina pauper* have therefore been assigned to PCT 254. The community is observed on the far south-western edge of the south-western plain of NSW often near saline lakes. There is a sub-association to the widespread PCT 157 on alluvium association, hence the shortlisting with this community type.

3.4 Vegetation Zones and Integrity Scores

VI assessments were undertaken within the Development Footprint in accordance with BAM 2020. Refer to Figure 35 for Vegetation Zones and BAM VI plot locations. The VI scores are shown in Table 33 for the Mine Site and Table 34 for the Linear Corridor. Vegetation Zones, VI scores and all plot names and numbers are listed in Table 35.

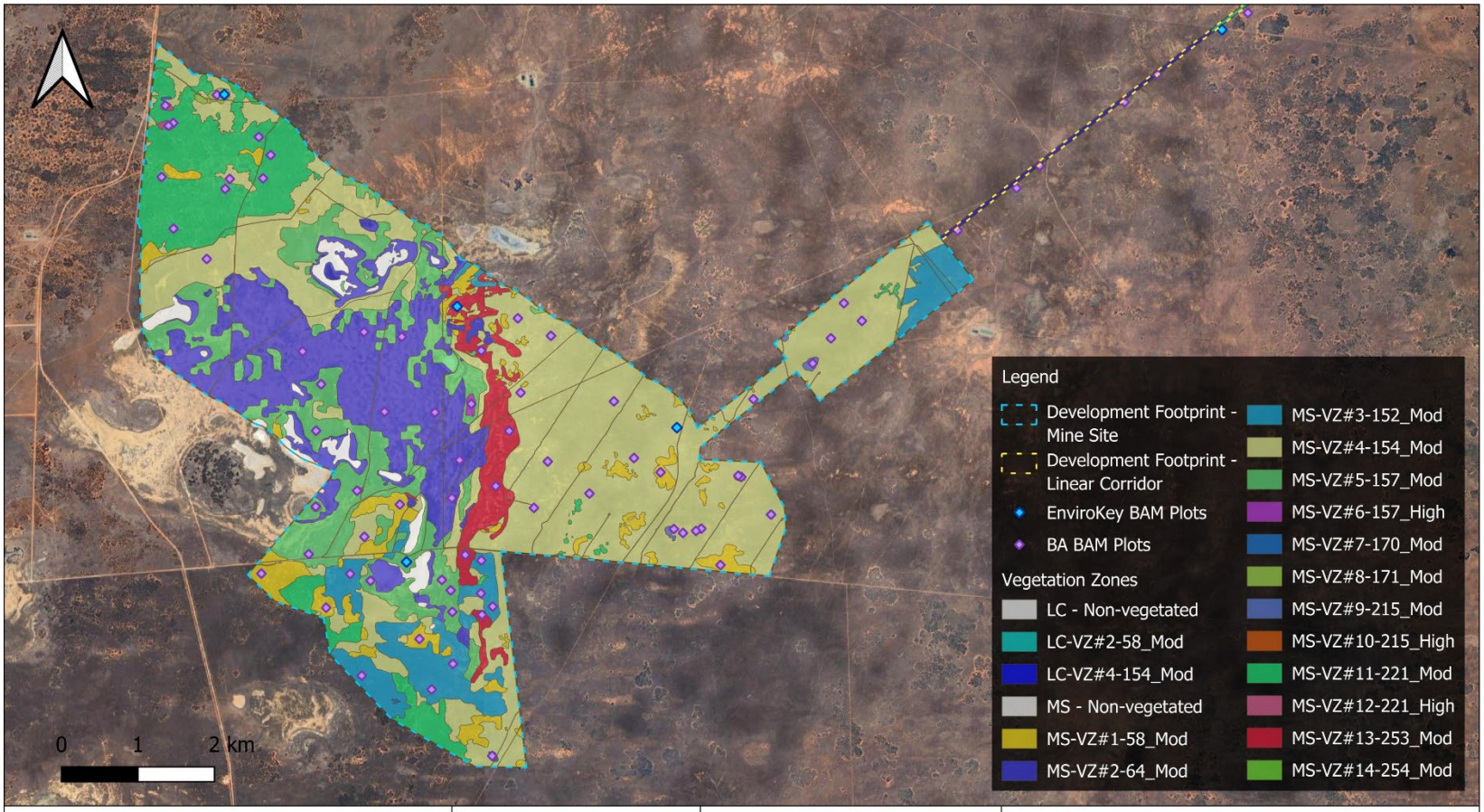


This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Vegetation Zones and Plot locations – Development Footprint	Biodiversity AUSTRALIA	
	Drawn by: NE	Location: Warwick Station		
	Date: November 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54 Scale: 1:140000

Figure 35: Vegetation Zones and VI Plot locations – Development Footprint

Table 33: Vegetation Zone and Vegetation integrity Score, Development Footprint – Mine Site

Vegetation Community	MS Vegetation Zone	Condition Class	No. of plots	Patch Size	Area Impacted (ha)	VI Composition	VI Structure	VI Function	VI Total
58	MS-VZ#1-58_Mod	Mod	20	≥100 ha	189.82	45.3	62.8	54.9	53.8
64	MS-VZ#2-64_Mod	Mod	7	≥100 ha	641.45	43.1	57.8	-	49.9
152	MS-VZ#3-152_Mod	Mod	7	≥100 ha	249.82	65	38.1	-	49.8
154	MS-VZ#4-154_Mod	Mod	42	≥100 ha	1564.73	84.9	13.8	-	34.2
157	MS-VZ#6-157_High	High	2	≥100 ha	3.58	65.6	90.5	-	77.1
157	MS-VZ#5-157_Mod	Mod	8	≥100 ha	492.12	52.5	93.4	-	70
170	MS-VZ#7-170_Mod	Mod	7	≥100 ha	1.98	45.5	16.2	24.1	26.1
171	MS-VZ#8-171_Mod	Mod	7	≥100 ha	5.57	76.1	75.2	43.6	63
215	MS-VZ#10-215_High	High	1	≥100 ha	0.82	43.3	23.1	-	31.6
215	MS-VZ#9-215_Mod	Mod	3	≥100 ha	5.07	14.7	27.6	-	20.1
221	MS-VZ#12-221_High	High	2	≥100 ha	3.12	52.2	81.9	55.6	62
221	MS-VZ#11-221_Mod	Mod	7	≥100 ha	391.85	31.4	69.1	86.9	57.3
253	MS-VZ#13-253_Mod	Mod	7	≥100 ha	140.14	43.2	68.1	-	54.3
254	MS-VZ#14-254_Mod	Mod	1	≥100 ha	1.16	45.2	81.1	-	60.5

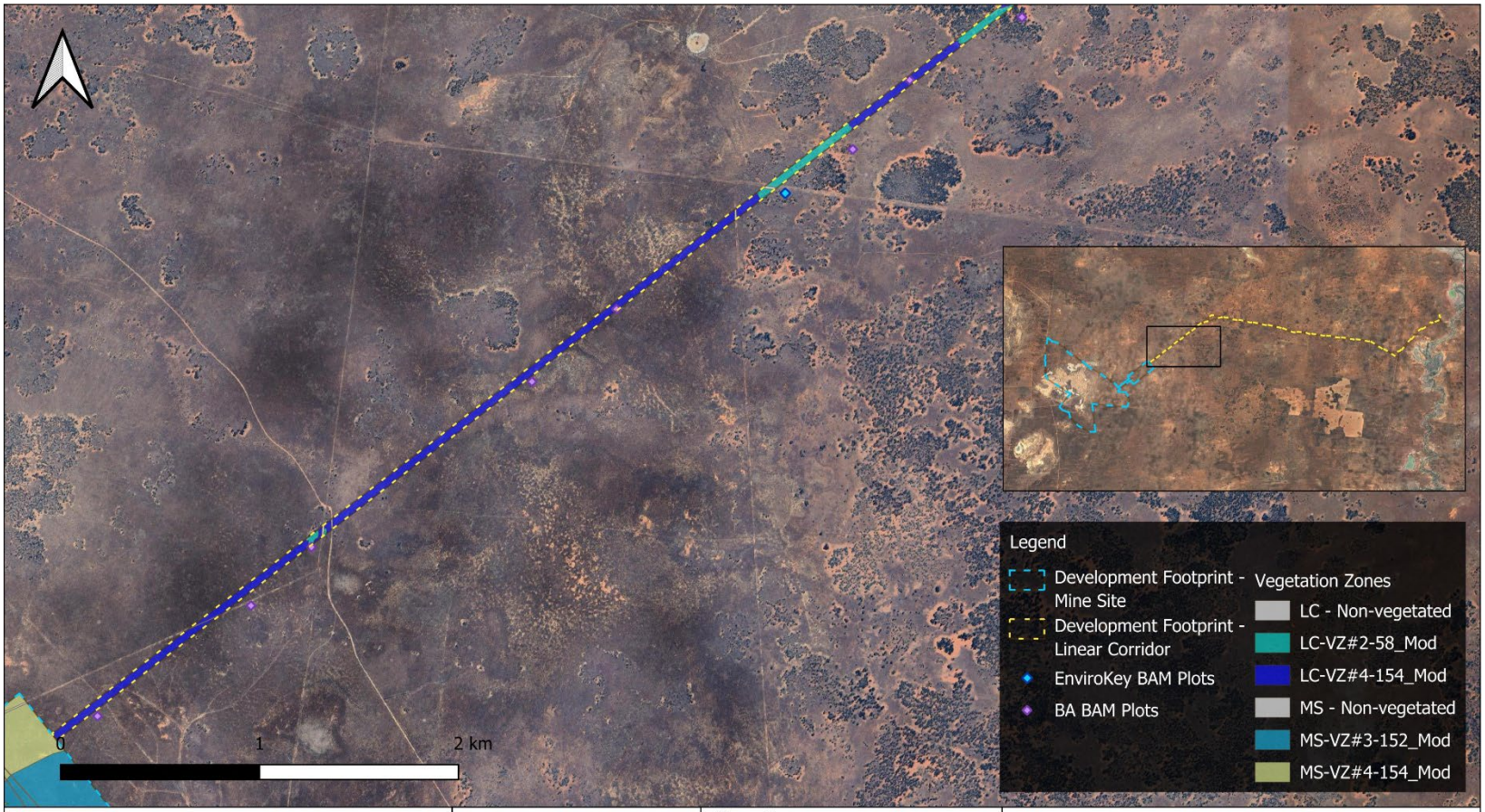


This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Vegetation Zones and Plot locations – Development Footprint – Mine Site	Biodiversity AUSTRALIA	
	Drawn by: NE	Location: Warwick Station		
	Date: November 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:65000

Figure 36: Vegetation Zones and VI Plot locations – Development Footprint – Mine Site

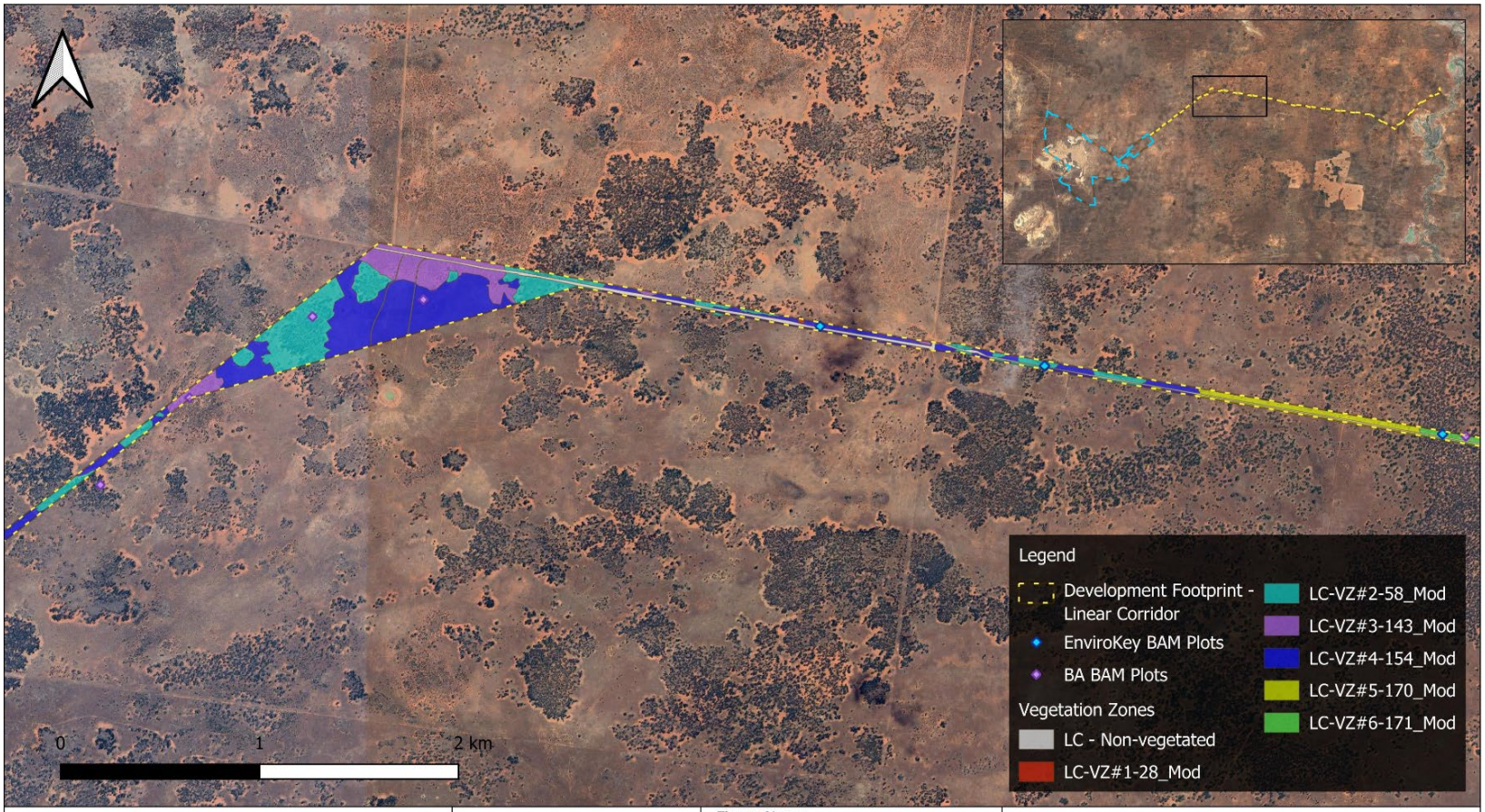
Table 34: Vegetation Zone and Vegetation integrity, Development Footprint – Linear Corridor

Vegetation Community	LC Vegetation Zone	Condition Class	No. of plots	Patch Size	Area Impacted	VI Composition	VI Structure	VI Function	VI Total
28	LC-VZ#1-28_Mod	Mod	2	≥100 ha	0.77	80.8	94.2	21.4	54.6
58	LC-VZ#2-58_Mod	Mod	20	≥100 ha	48.82	45.3	62.8	54.9	53.8
143	LC-VZ#3-143_Mod	Mod	3	≥100 ha	17.2	71.5	89.9	-	80.2
154	LC-VZ#4-154_Mod	Mod	42	≥100 ha	102.09	84.9	13.8	-	34.2
170	LC-VZ#5-170_Mod	Mod	7	≥100 ha	13.6	45.5	16.2	24.1	26.1
171	LC-VZ#6-171_Mod	Mod	7	≥100 ha	6.56	76.1	75.2	43.6	63



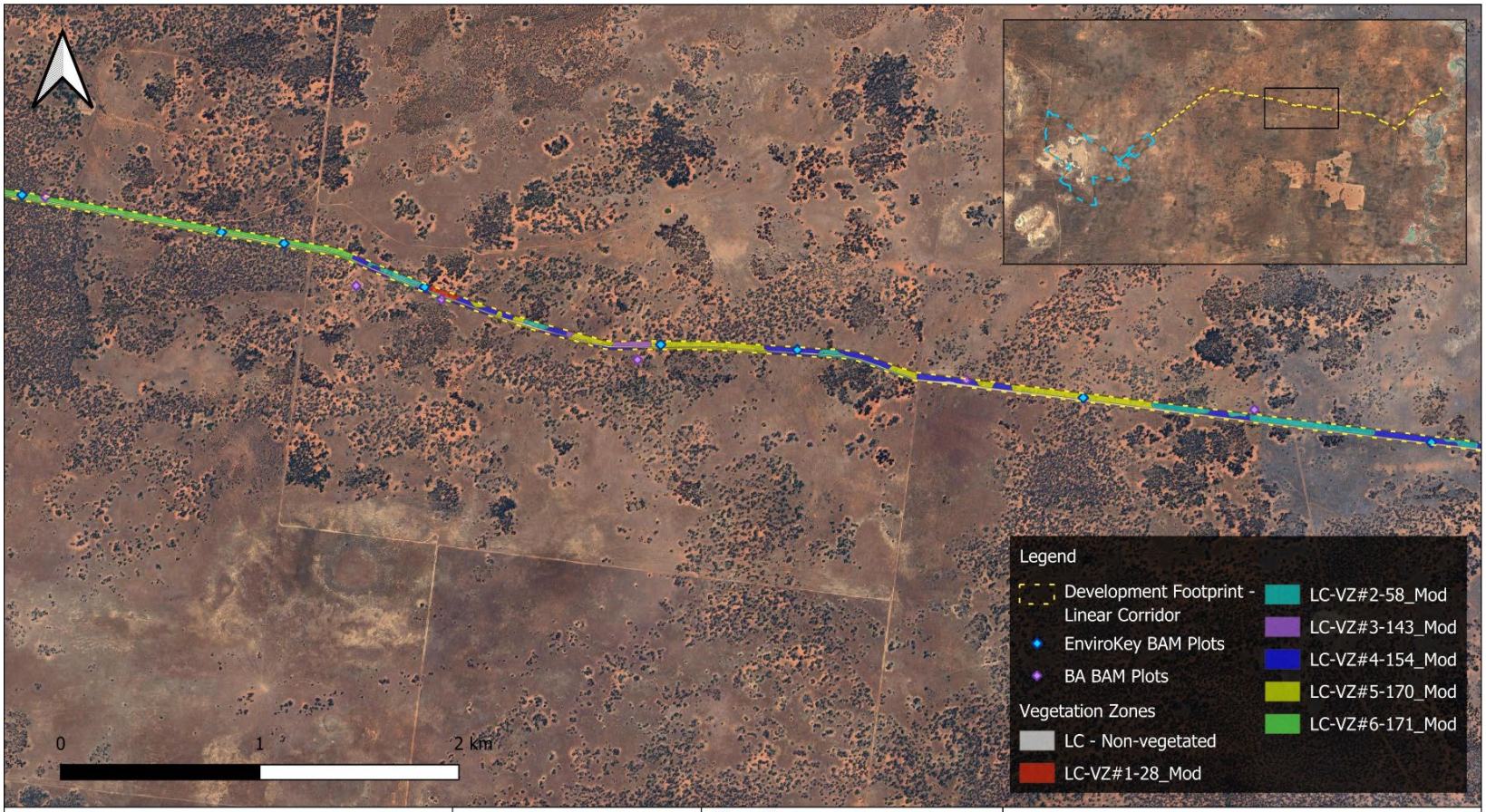
This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Vegetation Zones and Plot locations – Development Footprint – Linear Corridor 1/5	Biodiversity AUSTRALIA	
	Drawn by: NE	Location: Warwick Station		
	Date: November 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:25000

Figure 37: Vegetation Zones and VI Plot locations – Development Footprint – Linear Corridor 1 / 5



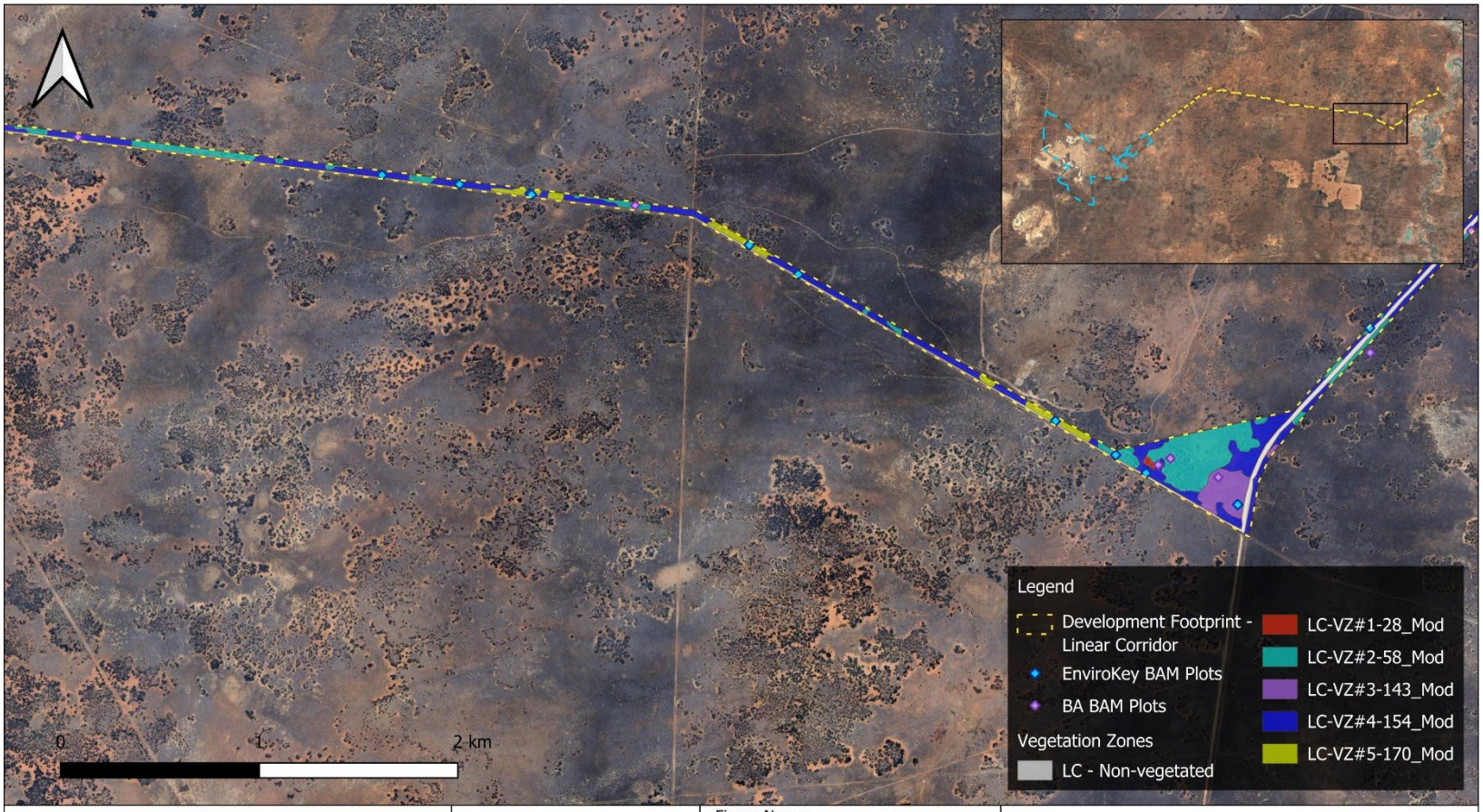
This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Vegetation Zones and Plot locations – Development Footprint – Linear Corridor 2/5	Biodiversity AUSTRALIA	
	Drawn by: NE	Location: Warwick Station		
	Date: November 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54 Scale: 1:25000

Figure 38: Vegetation Zones and VI Plot locations - Development Footprint - Linear Corridor 2 / 5



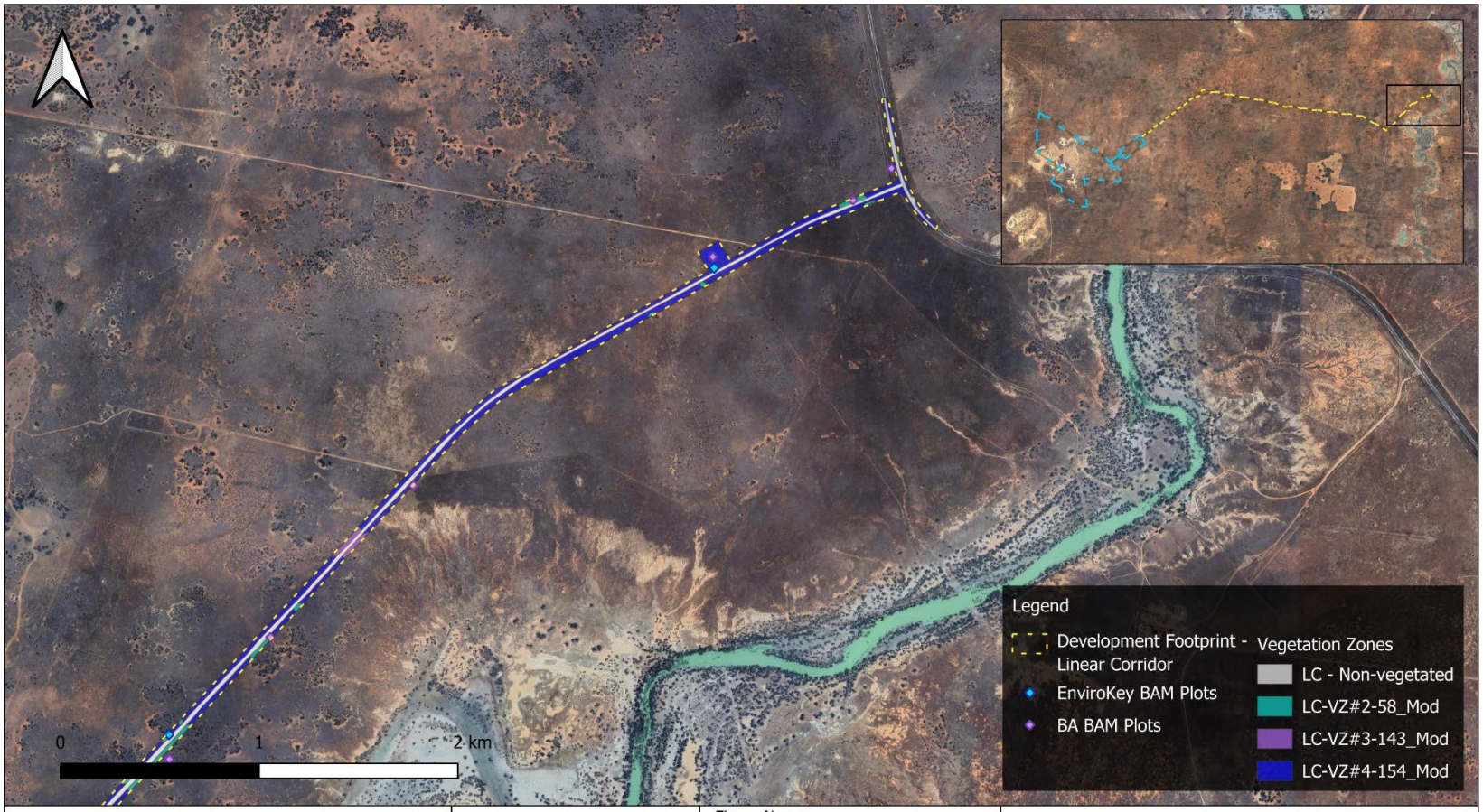
This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Vegetation Zones and Plot locations – Development Footprint – Linear Corridor 3/5	Biodiversity AUSTRALIA
	Drawn by: NE	Location: Warwick Station	
	Date: November 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:25000

Figure 39: Vegetation Zones and VI Plot locations - Development Footprint - Linear Corridor 3 / 5



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Vegetation Zones and Plot locations – Development Footprint – Linear Corridor 4/5	Biodiversity AUSTRALIA	
	Drawn by: NE	Location: Warwick Station		
	Date: November 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54 Scale: 1:25000

Figure 40: Vegetation Zones and VI Plot locations - Development Footprint - Linear Corridor 4 / 5



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Vegetation Zones and Plot locations – Development Footprint – Linear Corridor 5/5	Biodiversity AUSTRALIA
	Drawn by: NE	Location: Warwick Station	
	Date: November 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:25000

Figure 41: Vegetation Zones and VI Plot locations - Development Footprint - Linear Corridor 5 / 5

Table 35: Vegetation Zones, PCTs, Condition States and plots

Child Case #	Site	Vegetation Zone	BAM-C Veg Zone #	PCT	Condition	Area (ha)	Plots Names	No. of Plots
0005120	LC	LC-VZ#1-28_Mod	1	28	Mod	0.77	1,2	2
		LC-VZ#2-58_Mod	2	58	Mod	48.82	18,16,15,13,14,17,10,6,8,4,12,9,7,5,11,19,3,20,21,22	20
		LC-VZ#3-143_Mod	3	143	Mod	17.2	30,34,31	3
		LC-VZ#4-154_Mod	4	154	Mod	102.09	45,58,47,57,59,48,60,74,75,46,49,61,63,56,42,43,62,44,52,67, 53,64,55,65,51,72,66,54,69,70,71,68,50,78,79,80,81,82,83	42
		LC-VZ#5-170_Mod	5	170	Mod	13.6	98,101,102,103,104,105,106	7
		LC-VZ#6-171_Mod	6	171	Mod	6.56	110,109,108,112,113,114,115	7
		LC - Non-vegetated		0		29	-	-
00052609	MS	MS-VZ#1-58_Mod	1	58	Mod	189.82	18,16,15,13,14,17,10,6,8,4,12,9,7,5,11,19,3,20,21,22	20
		MS-VZ#2-64_Mod	2	64	Mod	641.45	26,23,27,28,25,29,24	7
		MS-VZ#3-152_Mod	3	152	Mod	249.82	40,36,41,35,38,39,37	7
		MS-VZ#4-154_Mod	4	154	Mod	1564.73	45,58,47,57,59,48,60,74,75,46,49,61,63,56,42,43,62,44,52,67, 53,64,55,65,51,72,66,54,69,70,71,68,50,78,79,80,81,82,83	42
		MS-VZ#5-157_Mod	5	157	Mod	492.12	86,91,89,92,87,90,88,93	8
		MS-VZ#6-157_High	6	157	High	3.58	94,95	2
		MS-VZ#7-170_Mod	7	170	Mod	1.98	98,101,102,103,104,105,106	7
		MS-VZ#8-171_Mod	8	171	Mod	5.57	110,109,108,112,113,114,115	7
		MS-VZ#9-215_Mod	9	215	Mod	5.07	116,118,117	3
		MS-VZ#10-215_High	10	215	High	0.82	119	1
		MS-VZ#11-221_Mod	11	221	Mod	391.85	126,124,123,125,122,120,121	7
		MS-VZ#12-221_High	12	221	High	3.12	129,128	2
		MS-VZ#13-253_Mod	13	253	Mod	140.14	134,133,130,132,131,135,136	7
		MS-VZ#14-254_Mod	14	254	Mod	1.16	137	1
		MS - Non-vegetated		0		109.97	-	-

3.5 Endangered Ecological Communities (EECs)

Biodiversity Australia reviewed the NSW Scientific Committee Final Determination of four Endangered Ecological Communities- EEC Final Determination (OEH 2004, 2011, 2017, 2021);

- Sandhill Pine Woodland in the Riverina, Murray–Darling Depression and NSW South Western Slopes Bioregions,
- *Acacia loderi Shrublands* and *Acacia melvillei Shrubland in the Riverina and Murray-Darling Depression bioregions, and*
- *Tecticornia lylei, Wiry Glasswort, low open-shrubland in the Murray Darling Depression Bioregion*.

The EECs associated with the PCTs occurring within the Development Footprint/s are presented in Table 36.

Acacia melvillei Shrubland shares several species with *A. loderi* Shrublands, both listed as Endangered under the BC Act. These ecological communities occupy analogous soils and landforms and have some overlapping distribution, however, *A. loderi* Shrublands are more common in the northern part of the Riverina and Murray-Darling Depression bioregions. The abundance of tree species and differences in the composition of understory species are key characteristics in distinguishing these shrubland communities.

PCT 28 is associated with the EEC *Sandhill Pine Woodland in the Riverina, Murray–Darling Depression and NSW South Western Slopes Bioregions*. This community is characterised by an open woodland, or a derived grassland with no or scattered trees, that typically occupies red-brown loamy sands with alkaline sub-soils on prior streams, rises, source-bordering dunes, sandhills and lunettes of the alluvial plain of the Murray River and its tributaries, and on parts of the sandplain in south-western NSW.

PCT 65 *Halosarcia lylei* low, open shrubland saline wetland of arid and semi-arid regions, which is associated with EEC *Tecticornia lylei, Wiry Glasswort, low open-shrubland in the Murray Darling Depression Bioregion* occurs on the beds of small salt lakes and on the fringes of larger ones in far south western NSW and is associated with the South Olary Plain. This community occurs near the more widespread samphire shrubland PCT 64 in the Scotia region and could be considered a sub-association of this community.

Biodiversity Australia has determined, through the combination of ground-truthed flora survey (Figure 87) and analysis of the diagnostic key features described in the Final Determinations, the PCTs present within the Development Footprint do not completely conform to the diagnostic criteria of the associated EECs. The PCTs do not meet the requirements for the EECs under the BC Act. This assessment is based upon the requirements of the Final Determination and the results of field-based assessments of geology, landscape features, vegetation structure, condition and site history. A full breakdown of the Final Determination is provided in Table 37, Table 38 and Table 39.

Table 36: PCTs with EEC associations within the Development Footprint Mine Site and Linear Corridor

PCT ID	PCT Name	BC Act - EEC associated	Area within Development Footprint	Presence of EEC within Development Footprint
28	White Cypress Pine open woodland of sand plains, prior streams and dunes mainly of the semi-arid (warm) climate zone	Sandhill pine woodland *Acacia melvillei* Shrubland	0.77	Present

PCT ID	PCT Name	BC Act - EEC associated	Area within Development Footprint	Presence of EEC within Development Footprint
58	Black Oak – Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion	*Acacia loderi* Shrublands *Acacia melvillei* Shrubland	238.64	Absent
65	*Halosarcia lylei low, open shrubland saline wetland of arid and semi-arid regions*	*Tecticornia lylei,* Wiry Glasswort, low open-shrubland in the Murray Darling Depression Bioregion	Not recorded	Absent
143	Narrow-leafed Hopbush – Scrub Turpentine – Senna shrubland on semi-arid and arid sandplains and dunes	*Acacia loderi* Shrublands	17.2	Absent
154	Pearl Bluebush low open shrubland of the arid and semi-arid plains	*Acacia loderi* Shrublands	1666.82	Absent
170	Chenopod sandplain mallee woodland/shrubland	*Acacia loderi* Shrublands, *Acacia melvillei* Shrubland	15.58	Absent

3.5.1 *Acacia melvillei* Shrubland in the Riverina and Murray-Darling Depression bioregions EEC

Table 37: Diagnostic criteria for the Final Determination *Acacia melvillei Shrubland in the Riverina and Murray-Darling Depression bioregions* EEC.

Diagnostic Criteria	Assessment
The combination of features that distinguish *Acacia melvillei* Shrubland in the Riverina and Murray-Darling Depression bioregions EEC from *Acacia loderi* Shrubland EEC include:	
1- *Acacia melvillei* dominates the community and typically occupies sandhills and undulating sandplains in south-western NSW. In both bioregions, the community occurs on red-brown, sandy loam soils as scattered patches grading into surrounding woodlands of Belah and Rosewood, White Cypress Pine or sandplain mallee. *Acacia melvillei* Shrubland is characterised by the assemblage of species listed in paragraph 2 and typically has an open canopy of shrubs or small trees, sometimes with scattered mid-stratum shrubs, and with a sometimes sparse, but highly variable ground layer dominated by grasses, chenopods and herbs. The structure and species composition of the community varies depending on disturbance history and temporal variability in rainfall.	Does not meet diagnostic criteria The dominant diagnostic species *Acacia melvillei* is absent from the associated PCT present within the Subject Land. No specimens of *A. melvillei* were identified within plots or flora searches conducted within the Subject Land during Bio Aust surveys. Therefore, vegetation present within PCTs associated with *Acacia melvillei Shrubland in the Riverina and Murray-Darling Depression bioregions* do not meet the diagnostic criteria for the EEC.
2- *Acacia melvillei* Shrubland is characterised by the following assemblage of species:	Does not meet diagnostic criteria

Diagnostic Criteria	Assessment
• *Acacia loderi* • *Acacia melvillei* • *Alectryon oleifolius subsp. canescens* • *Atriplex limbata* • *Atriplex stipitata* • *Austrostipa nitida* • *Brachyscome lineariloba* • *Casuarina pauper* • *Crassula colorata var. acuminata* • *Dissocarpus paradoxus* • *Einadia nutans subsp. nutans* • *Enchylaena tomentosa* • *Eremophila sturtii* • *Erodium crinitum* • *Eucalyptus socialis* • *Harmsiodoxa blennodioides* • *Lepidium pseudohyssopifolium* • *Maireana georgei* • *Maireana pyramidata* • *Maireana sclerolaenoides* • *Maireana trichoptera* • *Myoporum platycarpum* • *Nitraria billardierei* • *Plantago cunninghamii* • *Rhagodia spinescens* • *Rhodanthe pygmaea* • *Salsola tragus* • *Sclerolaena diacantha* • *Sclerolaena obliquicuspis* • *Sida corrugata* • *Tetragonia tetragonioides* • *Triptilodiscus pygmaeus* • *Triraphis mollis* • *Zygophyllum ammophilum*	Only 11 of the 34 plant species belonging to the characteristic species assemblage for the *A. melvillei* EEC (listed in paragraph 2 opposite) were present within the associated PCT in the Subject Land. Therefore, the vegetation present does not meet diagnostic criteria for *Acacia melvillei Shrubland in the Riverina and Murray-Darling Depression bioregions.*
3- The total species list of the community is larger than that given above, with many species present in only one or two sites or in low abundance. The species composition of a site will be influenced by the size of the site, recent rainfall or drought conditions and by its disturbance (including grazing, land clearing and	Does not Meet diagnostic criteria The Subject Land on which the associated PCT is present has been

Diagnostic Criteria		Assessment
	fire) history. The number and relative abundance of species will change with time since fire may also change in response to fire frequency or grazing regime. At any one time, above-ground individuals of some species may be absent, but the species may be represented below ground in soil seed banks or as dormant structures such as bulbs, corms, rhizomes, rootstocks or lignotubers. The list of species given above is mainly of vascular plant species, however, the community also includes micro-organisms, fungi, cryptogamic plants and both vertebrate and invertebrate faunas. These components of the community are poorly documented.	highly modified by long periods of agricultural use (Sheep grazing), extended periods of drought and the impacts of feral animals such as goats overgrazing the vegetation, preventing regeneration and recruitment of characteristic and diagnostic species. Overgrazing and impacts by feral goats has degraded seedbanks, bulbs, corms, rhizomes, rootstocks and lignotubers in the surface soils. A lack of regenerating species prevents the associated PCT from meeting the diagnostic criteria.
4-	*Acacia melvillei* Shrubland is characterised by an open stratum of large shrubs or small trees, which may be reduced to isolated individuals or may be absent as a result of past clearing. The shrub/tree layer is dominated by *Acacia melvillei* (Yarran), either in pure stands or with a range of other less abundant trees or tall shrubs. These may include *Acacia loderi* (Nelia), *Alectryon oleifolius* subsp. *canescens* (Rosewood), *Casuarina pauper* (Belah) and/or *Myoporum platycarpum* (Sugarwood). A scattered small shrub layer is sometimes present and may include *Enchylaena tomentosa* (Ruby Saltbush), *Eremophila sturtii*, *Nitraria billardierei* (Dillon Bush), *Rhagodia spinescens* (Thorny Saltbush) and/or *Maireana pyramidata* (Black Bluebush). The groundcover is highly variable in structure and composition. It may be sparse or more continuous, depending on the history of disturbance, grazing and rainfall events. It comprises chenopod subshrubs such as *Atriplex stipitata*, *Dissocarpus paradoxus* (Cannonball Burr), *Maireana* spp., Sclerolaena spp. (Copperburrs), *Einadia nutans* subsp. *nutans* (Climbing Saltbush) and grasses and forbs including *Austrostipa nitida*, *Crassula colorata*, *Erodium crinatum* (Blue Storksbill), *Tetragonia tetragonioides*. *Triraphis mollis* and *Zygophyllum ammophilum* (Sand Twinleaf). The structure of the community varies depending on past and current disturbances, particularly clearing, logging, grazing and soil erosion and on the timing and magnitude of recent rainfall.	Meets diagnostic criteria The structural and floristic data recorded within the Subject Land is consistent with the outlined criteria. Species include *Alectryon oleifolius* subsp. *canescens* (Rosewood), *Casuarina pauper* (Belah) and/or *Myoporum platycarpum* (Sugarwood), *Enchylaena tomentosa* (Ruby Saltbush), *Rhagodia spinescens* (Thorny Saltbush), *Maireana pyramidata* (Black Bluebush), *Atriplex* spp, *Dissocarpus paradoxus* (Cannonball Burr), other *Maireana* spp., Sclerolaena spp. (Copperburrs) and *Tetragonia tetragonioides*.
5-	*Acacia melvillei* Shrubland shares a number of species with *Acacia loderi* Shrublands, another ecological community currently listed as Endangered under the *Biodiversity Conservation Act 2016*. These two ecological communities inhabit similar soils and landforms and have some overlap in their distributions, but *Acacia loderi* Shrublands are more common in the northern part of the Riverina and Murray-Darling Depression bioregions and extend further north into several other bioregions. They may be distinguished on the basis of the relative abundance of their tree species (with *A. melvillei* generally uncommon within *Acacia loderi* shrublands) and differences in the composition of their understories. Differences in understorey composition may be obscured as a result of the history of heavy disturbance throughout both communities. *Acacia melvillei* is very difficult to distinguish from the closely related species *Acacia homalophylla*. Kodela (2001) reviewed herbarium specimens of both species to provide information on their distribution. Both species were found to be widespread in NSW with overlapping distributions. To reliably identify the species in the field, the presence of seed pods is required (Kodela 2001).	Does not meet diagnostic criteria The associated PCT vegetation present within the Subject Land does not contain *Acacia Melville or Acacia loderi and therefore* does not meet diagnostic criteria.
6-	*Acacia melvillei* Shrubland is currently recorded from south-western portion of NSW in the Riverina and Murray-Darling Depression bioregions in the local government areas of Balranald, Carrathool, Central Darling, Conargo, Wakool and Wentworth. The community may occur elsewhere in the Riverina and Murray-Darling Depression bioregions, particularly in the Hay and Jerilderie local government areas. Bioregions.	Meets diagnostic criteria The Subject Land is located within the Wentworth LGA and Murray Darling Depression IBRA bioregion.

Diagnostic Criteria	Assessment
7- *Acacia melvillei* Shrubland is scattered over a relatively large distribution, with an estimated extent of occurrence in the order of 50000 km^2. Throughout this distribution, *Acacia melvillei* Shrubland occurs in relatively small patches. Vegetation maps (1:250000 scale delineate about 500 ha of the community as '*Acacia melvillei* Woodland (map unit 17) and a further 5200 ha of mosaics containing patches of this community with other types of vegetation. These maps cover most of the community's distribution. Within the eastern part of this region, Horner *et al.* (2002) mapped 1400 ha of the community as '*Acacia melvillei / Acacia homalophylla* woodlands on sandy rises'. Based on available mapping and site records and using a grid scale of 4 km^2 (as recommended by IUCN 2006), *Acacia melvillei* Shrubland is estimated to occupy an area of about 800 km^2. This latter estimate indicates that the community has a moderately restricted distribution.	Meets diagnostic criteria The Subject Land contains a shrubland mosaic of many small vegetation patches, which are made up of numerous species which correspond with the diagnostic criteria species.
8- *Acacia melvillei* Shrubland is generally not found on soils of high suitability for agriculture. However, some stands of the community are threatened by clearing for cropping, particularly in the east of its range (Porteners 1993, Benson *et al.* 2006). 'Clearing of native vegetation' is listed as a Key Threatening Process under the *Biodiversity Conservation Act 2016.*	Meets diagnostic criteria The soils within the Subject Land are not of high suitability for agriculture.
9- Most of the remaining stands of *Acacia melvillei* Shrubland are heavily degraded by overgrazing, which has resulted in simplification of community structure, changes in species composition, invasion of weeds and soil erosion. Overgrazing by domestic livestock and feral herbivores, including rabbits and goats, has resulted in a scarcity of woody understorey plants and a lack of regeneration of palatable trees and shrubs in the community. Consequently, senescent trees are not replaced with new individuals and there is a prolonged trend of stand degeneration, which is difficult to reverse, even under active conservation management. Overgrazing also reduces structural complexity, plant species diversity and habitat suitability for vertebrate fauna of the community. Collectively, the processes associated with overgrazing have resulted in a large reduction in the ecological function of the community. 'Competition and grazing by the feral European Rabbit, *Oryctolagus cuniculus*' and 'Competition and habitat degradation by Feral Goats, *Capra hircus* are listed as Key Threatening Processes under the *Biodiversity Conservation Act 2016.*	Does not meet diagnostic criteria The Subject Land has undergone substantial historical grazing disturbance over decades from ongoing pastoral activity including sheep and goats. The area had regular drought records over the past 40 years which has likely exacerbated these grazing pressures. Therefore, the associated PCT vegetation present within the Subject Land does not meet the required diagnostic criteria for the EEC.
10- Fragmentation, grazing and small-scale physical disturbance have resulted in weed invasion throughout the distribution of *Acacia melvillei* Shrubland, which continues to threaten the ecological function of the community. Principal weed species include: • *Asphodelus fistulosus* • *Brassica tournefortii* • *Bromus rubens* • *Erodium cicutarium* • *Hordeum spp.* • *Medicago minima* • *Medicago polymorpha* • *Sisymbrium erysimoides*	N/A
11- Examples of *Acacia melvillei* Shrubland have been recorded from Mungo and Willandra National Parks, and Kajuligah and Yanga Nature Reserves. However, some of these reserves contain only a few hectares of the community, and all	N/A

Diagnostic Criteria	Assessment
exhibit signs of degradation associated with past land uses and the continuing impacts of feral herbivores.	

3.5.2 *Acacia loderi* Shrubland EEC

Table 38: Diagnostic criteria for the Final Determination *Acacia loderi Shrublands* EEC.

Diagnostic Criteria	Assessment
The combination of features that distinguish *Acacia loderi* Shrubland EEC from *Acacia melvillei* Shrubland in the Riverina and Murray-Darling Depression bioregions EEC include:	
1- The tall shrub/small tree *Acacia loderi* typically dominates the community. Other tree species that may occur in association with *Acacia loderi* are *Acacia aneura*, *Acacia oswaldii*, *Callitris gracilis*, *Casuarina pauper* and *Flindersia maculosa*. The mistletoes *Amyema quandang* and *Lysiana exocarpi* frequently occur on *Acacia loderi*. Understorey species within the *Acacia loderi* Shrublands include: • *Aristida contorta* • *Atriplex* spp. (such as *A. angulata*, *A. holocarpa*, *A. stipitata*) • *Brachyscome* spp. • *Dissocarpus paradoxus* • *Dodonaea viscosa* • *Enchylaena tomentosa* • *Enneapogon avenaceus* • *Eremophila maculata* • *Eremophila sturtii* • *Grevillea huegelii* • *Haloragis glauca* • *Ixiolaena tomentosa* • *Lotus cruentus* • *Lycium australe* • *Maireana georgei* • *Maireana pyramidata* • *Maireana sclerolaenoides* • *Maireana sedifolia* • *Myoporum deserti* • *Pimelea microcephala* • *Plantago drummondii* • *Ptilotus atriplicifolius* • *Pycnosorus pleiocephalus* • *Rhagodia spinescens* • *Rhodanthe floribunda* • *Sauropus trachyspermus* • *Sida fibulifera* • *Sclerolaena* spp. (such as *S. divaricata*, *S. obliquicuspis* and *S. patenticuspis*) • *Senna artemisioides* • *Stipa* spp. • *Swainsona formosa*	Does not meet diagnostic criteria The dominant diagnostic species *Acacia loderi* is absent from the associated PCT present within the Subject Land. No specimens of *A. loderi* were identified within plots or flora searches conducted within the Subject Land during Bio Aust surveys. Therefore, vegetation present within PCTs associated with *Acacia loderi Shrublands* do not meet the diagnostic criteria for the EEC.

Diagnostic Criteria		Assessment
	• *Templetonia egena* • *Tetragonia tetragonioides* • *Teucrium racemosum* • *Zygophyllum simile*	
2-	The community has a naturally open structure of individual shrubs to small trees (to 8 m high) with a low, diverse understorey dominated by chenopod subshrubs, herbs and grasses. The community is often interspersed by woodlands of *Casuarina pauper* (Belah), *Alectryon oleifolius* (Rosewood) or *Flindersia maculosa*. Fox (1993), Pickard and Norris (1994) and Westbrooke and Miller (1995) discuss floristic composition, distribution, and structure of the *Acacia loderi* Shrublands.	Meets diagnostic criteria The structural and floristic data recorded within the Subject Land is consistent with the outlined criteria; *Casuarina pauper* (Belah), *Alectryon oleifolius* (Rosewood) is common throughout the wooded patches present within the Subject Land.
3-	The total species list of the community is considerably larger than that given in 1 (above), with many species present in only one or two sites or in very small abundance. In any particular site not all of the assemblage listed in 1 may be present. At any one time, there may only be seeds of some species present in the soil seed bank with no above-ground individuals present. This is particularly the case for the large ephemeral floral component of the community. Species composition will vary between sites depending on geographical location and local conditions. The species composition of a site will be influenced by the size of the site and by its recent disturbance history and in particular the pattern (season, magnitude) of recent rainfall.	Meets diagnostic criteria *The Subject Land contains Tetragonia tetragonioides, Sclerolaena* spp., *Atriplex* spp., *Brachyscome* spp., *Dissocarpus paradoxus, Dodonaea viscosa, Enchylaena tomentosa, Enneapogon avenaceus, Haloragis glauca, Maireana georgei, Maireana pyramidata, Maireana sclerolaenoides, Maireana sedifolia and Rhagodia spinescens.*
4-	The *Acacia loderi* Shrublands are known from the Broken Hill Complex, Murray-Darling Depression, Cobar Peneplain, Riverina, Mulga Lands and Darling Riverine Plains Bioregions. They occur from South Western New South Wales (NSW) to North Western Victoria and Eastern South Australia. In NSW, the community is mainly confined to South Western NSW extending east to Hillston and north to White Cliffs. The major stands of the community occur between Broken Hill, Ivanhoe and Wilcannia, while only isolated stands occur beyond these areas.	Meets diagnostic criteria The Subject Land is located within the Wentworth LGA and Murray Darling Depression IBRA bioregion.
5-	The *Acacia loderi* Shrublands are found on solonized brown and duplex soils on level to undulating plains or on calcareous red earths. Typical habitat has a rainfall range of 240 mm to 280 mm.	Meets diagnostic criteria The Subject Land contains calcareous red earth soils.
6-	Most remnant stands of the community are located on pastoral leases although small patches occur in conservation reserves including Mungo and Kinchega National Parks.	Meets diagnostic criteria The Subject Land is located within the Wentworth LGA and Murray Darling Depression IBRA bioregion.
7-	Most current stands of *Acacia loderi* Shrublands have an understorey modified by grazing and include unpalatable natives and a range of exotic weeds. Many examples of the community exist as isolated and degraded patches. Threats to the community include clearing and a lack of regeneration of tree species through heavy grazing pressure, particularly from stock and rabbits. Although there is some limited regeneration by vegetative means (suckering) in the dominant *Acacia loderi*, most existing stands consist of old age cohorts. Even within conservation reserves such as Kinchega National Park, rabbit grazing pressure has severely limited regeneration of the community dominant *Acacia loderi* (Auld 1995) and flooding from over-filling of the Menindee Lakes has resulted in destruction of several stands of the community. A number of former stands now consist of only rings of dead trees.	Does not meet diagnostic criteria The Subject Land has undergone substantial historical grazing disturbance. Over decades from ongoing pastoral activity including sheep and goats. The area had regular drought records over the past 40 years which has likely exacerbated these grazing pressures.
8-	In view of the fragmented nature of many stands, the widespread lack of regeneration in the dominant tree (*Acacia loderi*), the continued threat of heavy grazing pressure and further clearing, the Scientific Committee is of the opinion that *Acacia loderi* Shrublands are likely to become extinct in nature unless factors threatening its survival or evolutionary development cease to operate and that listing as an endangered ecological community is warranted.	N/A

3.5.3 Sandhill Pine Woodland in the Riverina, Murray–Darling Depression and NSW South Western Slopes Bioregions EEC

Table 39: Diagnostic criteria for the Final Determination *Sandhill Pine Woodland in the Riverina, Murray–Darling Depression and NSW South Western Slopes Bioregions.*

Diagnostic Criteria	Assessment
The combination of features that distinguish *Sandhill Pine Woodland in the Riverina, Murray–Darling Depression and NSW South Western Slopes Bioregions* EEC include:	
1- The community is dominated by *Callitris glaucophylla*, that typically occupies red-brown loamy sands with alkaline sub-soils on the alluvial plain of the Murray River and its tributaries, and on parts of the sandplain in South-Western NSW. In the Murray-Darling Depression bioregion, the community occurs as scattered patches on sandhills and lunettes within an extensive aeolian sandplain dominated by Woodlands of Mallee Eucalypts or Belah.	Does not meet diagnostic criteria The PCT occurring within the Subject Land which is associated with *Sandhill Pine Woodland in the Riverina, Murray–Darling Depression and NSW South Western Slopes Bioregions*, contains, but is not dominated by Woodlands of Mallee Eucalypts or Belah. Therefore, the PCT does not meet the diagnostic criteria for the EEC In addition, the soils on which the PCT occurs do not originate from aeolian source-bordering dunes. The distribution of the community is described as; from the Urana– Narrandera district in the east, into the southern part of the Murray-Darling Depression bioregion, as far west as the South Australian border. The Subject Land is not in the southern part of the Murray-Darling Depression bioregion. It is located in the north of the Murray-Darling Depression bioregion.
2- Sandhill Pine Woodland is characterised by the assemblage of species listed in paragraph 2 and typically comprises an open tree canopy with a sometimes sparse, but highly variable ground layer dominated by grasses and herbs, sometimes with scattered shrubs and/or small trees. The structure and species composition of the community varies depending on disturbance history and temporal variability in rainfall. Sandhill Pine Woodland is characterised by the following assemblage of species: • *Actinobole uliginosum* • *Allocasuarina luehmannii* • *Atriplex semibaccata* • *Austrodanthonia caespitosa* • *Austrodanthonia setacea* • *Austrostipa nodosa* • *Austrostipa scabra* • *Boerhavia dominii* • *Callitris glaucophylla* • *Cotula australis* • *Crassula colorata* • *Crassula decumbens* var. *decumbens* • *Crassula sieberiana* • *Einadia nutans* • *Enteropogon acicularis* • *Erodium crinitum* • *Glycine clandestine* • *Maireana enchylaenoides* • *Oxalis perennans* • *Panicum effusum*	Does not meet diagnostic criteria The assemblage of species comprising the PCT occurring within the Subject Land, which is associated with *Sandhill Pine Woodland in the Riverina, Murray–Darling Depression and NSW South Western Slopes Bioregions*, loosely meets diagnostic criteria for the EEC listed in paragraph 2 opposite. Five out of the forty-five species listed occur within the associated PCT present. The subject vegetation may marginally meet this criteria.

	• *Paspalidium constrictum* • *Salsola tragus* • *Senecio quadridentatus* • *Sida corrugata* • *Stuartina muelleri* • *Wahlenbergia graniticola* A large number of infrequently recorded species also characterise the community. These include: • *Acacia melvillei* • *Acacia oswaldii* • *Acacia victoriae* subsp. *arida* • *Alectryon oleifolius* subsp. *canescens* • *Calandrinia eremaea* • *Callitris gracilis* subsp. *murrayensis* • *Dissocarpus paradoxus* • *Dodonaea viscosa* subsp. *angustissima* • *Enchylaena tomentosa* • *Eremophila longifolia* • *Geijera parviflora* • *Hakea leucoptera* subsp. *leucoptera* • *Hakea tephrosperma* • *Maireana pyramidata* • *Myoporum platycarpum* subsp. *platycarpum* • *Pittosporum angustifolium* • *Rhagodia spinescens* • *Sclerolaena obliquicuspis* • *Wahlenbergia gracilenta*	
3-	The total species list of the community is larger than that given above, with many species present in only one or two sites or in low abundance. The species composition of a site will be influenced by the size of the site, recent rainfall or drought conditions and by its disturbance (including grazing, land clearing and fire) history. The number and relative abundance of species will change with time since fire and may also change in response to changes in fire frequency or grazing regime. At any one time, above-ground individuals of some species may be absent, but the species may be represented below ground in soil seed banks or as dormant structures such as bulbs, corms, rhizomes, rootstocks or lignotubers. The list of species given above is mainly of vascular plant species, however the community also includes micro-organisms, fungi, cryptogamic plants and both vertebrate and invertebrate faunas. These components of the community are poorly documented.	Meets diagnostic criteria The total species recorded within the Subject Land is larger than that given above.
4-	Sandhill Pine Woodland is characterised by an open tree stratum, which may be reduced to isolated individuals or may be absent as a result of past clearing. The tree layer is dominated by *Callitris glaucophylla* (White Cypress Pine), either in pure stands or with a range of other less abundant trees or tall shrubs. These may include *Acacia melvillei, A. oswaldii, Allocasuarina luehmannii* (Buloke), *Callitris gracilis* subsp. *murrayensis* (Slender Cypress Pine), *Hakea leucoptera* (Needlewood), *H. tephrosperma* (Hooked Needlewood), *Myoporum platycarpum* (Sugarwood) and *Pittosporum angustifolium* (Berrigan). A scattered shrub layer is sometimes present and may include *Dodonaea viscosa* subsp. *angustifolia, Enchylaena tomentosa* (Ruby Saltbush), *Sclerolaena muricata* (Black Rolypoly) and/or *Maireana enchylaenoides* (Bluebush). The groundcover is highly variable in structure and composition. It may be sparse or more continuous, depending on the history of disturbance, grazing and rainfall events. It comprises grasses, such as *Austrodanthonia caespitosa* (Ringed Wallaby Grass), *A. setacea* (Small-flowered Wallaby Grass), *Austrostipa nodosa* (a spear grass), *A. scabra* (Rough Speargrass), *Enteropogon*	Meets diagnostic criteria The Subject Land has been significantly cleared and contains small patches and individuals of the species *Callitris glaucophylla* (White Cypress Pine), as well as shrubs *Enchylaena tomentosa* (Ruby Saltbush) and Maireana spp. Other species present are *Austrostipa scabra* (Rough Speargrass), *Oxalis perennans, Sida corrugata* (Corrugated Sida).

	acicularis (Curly Windmill Grass), *Panicum effusum* and *Paspalidium constrictum*; and forbs including *Atriplex semibaccata* (Creeping Saltbush), *Einadia nutans* (Climbing Saltbush), *Erodium crinatum* (Blue Storksbill), *Oxalis perennans*, *Sida corrugata* (Corrugated Sida) and *Wahlenbergia* spp. (bluebells). The structure of the community varies depending on past and current disturbances, particularly clearing, logging, grazing and soil erosion. Is the vegetation an open woodland, or a derived grassland with scattered or no trees?	
5-	Sandhill Pine Woodland shares a number of species with another endangered ecological community listed under the *Biodiversity Conservation Act 2016*.: *Allocasuarina luehmannii* Woodland in the Riverina and Murray-Darling Depression bioregions. These two ecological communities inhabit similar soils and landforms and have similar geographic distributions. They may be distinguished on the basis of the relative abundance of their tree species and subtle differences in composition of their understorey. When tree abundance is assessed at hectare scales, *Callitris glaucophylla* is the most abundant tree species in Sandhill Pine Woodland, whereas in *Allocasuarina luehmannii* Woodland, *A. luehmannii* is the most abundant tree species. Differences in understorey composition are likely to be obscured as a result of the history of heavy disturbance throughout both communities. Vegetation with characteristics that are intermediate between Sandhill Pine Woodland and *Allocasuarina luehmannii* Woodland are covered collectively under the two Determinations.	N/A
6-	Does a shrub layer, if present, contain any of the following: *Dodonaea viscosa subsp. angustifolia*, ruby saltbush, black rolypoly, black bluebush, thorny saltbush, *Calytrix tetragona*, Banksia marginata?	Meets diagnostic criteria The shrub layer present within the Subject Land contains the required species, *Enchylaena tomentosa* (Ruby Saltbush).
7-	Sandhill Pine Woodland has been recorded in the far south-western portion of the NSW South Western Slopes bioregion near Urana, extending through the Riverina bioregion, from the Urana – Narrandera district in the east, into the southern part of the Murray-Darling Depression bioregion, as far west as the South Australian border. It is currently known from the Balranald, Berrigan, Carrathool, Central Darling, Conargo, Corowa, Deniliquin, Hay, Murray, Narrandera, Urana, Wakool and Wentworth Local Government Areas, but may occur elsewhere in the Riverina, Murray-Darling Depression and NSW South Western Slopes bioregions. Throughout its distribution, the community occurs in relatively small patches, typically on red-brown sandy loams. In the Riverina and NSW South Western Slopes bioregions, these soils are associated with the beds of prior streams or source-bordering dunes adjacent to streams and lake beds, which are restricted and distinctive landforms on the extensive riverine plain. Further west, in the Murray-Darling Depression Bioregion, the community occurs on lunettes associated with dry lake beds, and as patches within a mosaic of vegetation types on extensive sandplains.	Meets diagnostic criteria The Subject Land is located within the Wentworth LGA and Murray Darling Depression IBRA bioregion.
8-	Does the tree layer, if present, contain any of the following: White cypress pine, Slender cypress pine? Does a small tree or tall shrub layer, if present, contain any of the following: Sugarwood, Western rosewood, Buloke, Drooping sheoak, Needlewood, Hooked needlewood, Berrigan.	Meets diagnostic criteria The Subject Land contains the species slender cypress pine; a species listed in (Criteria 8) the adjacent list.
9-	Sandhill Pine Woodland has undergone a large reduction in its geographic distribution as a consequence of clearing for cropping and pasture improvement. This has occurred within a period appropriate to the life cycle of the dominant species of the community, with much of the clearing taking place between 1880 and 1910. Some clearing for cereals and irrigated agriculture has occurred later in the twentieth century. A recent synthesis of available map data indicates that the distribution of this community has been reduced by 40 - 75 %. Fragmentation of the remaining stands is likely to have resulted in a large reduction in the ecological function of the community due to the small population sizes of many constituent species, enhanced risks from environmental stochasticity, disruption	N/A

	to pollination and dispersal of fruits or seeds, and likely reductions in the genetic diversity of isolated populations. The geographic distribution of the community continues to decline as a consequence of small-scale clearing. Clearing of native vegetation' is listed as a Key Threatening Process under the *Biodiversity Conservation Act 2016*.	
10-	Most of the stands of Sandhill Pine Woodland that have escaped broad-scale clearing have been maintained as sources of timber, either in state forests or on private land. Logging of cypress pines for the construction of fences and buildings has resulted in significant changes in the vegetation structure, indicating a large reduction in the ecological function of Sandhill Pine Woodland. Consequently, many contemporary stands lack large old trees and, where tree recruitment has been limited by grazing, trees in other size classes may have been reduced in density or eliminated altogether. Conversely, abundant regeneration of *C.glaucophylla* has occurred after logging at some sites when there has been a temporary reduction in the numbers of livestock, feral rabbits and goats. This results in relatively dense even-aged stands of trees that have yet to attain the mature structure of the community. The structure of these dense even-aged stands contrasts markedly with that of some remnants in pastures, in which large senescent trees are the only remaining size class of trees present, as a result of the continual removal of regeneration by grazing animals.	N/A
11-	Most of the remaining stands of Sandhill Pine Woodland are degraded by overgrazing, which has resulted in simplification of community structure, changes in species composition, invasion of weeds and soil erosion. Overgrazing by domestic livestock and feral herbivores, including rabbits and goats, has resulted in a scarcity of woody understorey plants and a lack of regeneration of palatable trees and shrubs. Consequently, senescent trees are not replaced with new individuals and There is a prolonged trend of stand degeneration. This is particularly evident in stands of Sandhill Pine Woodland in the western areas of its distribution in the Murray-Darling Depression bioregion (Scott 1992). Overgrazing also reduces structural complexity, plant species diversity and habitat suitability for vertebrate fauna of the community. The sandy-textured soils of Sandhill Pine Woodland are sensitive to erosion when de-stabilised as a result of trampling by hooved animals and burrowing by rabbits. These impacts are exacerbated under drought conditions. Lunettes that support Sandhill Pine Woodland are particularly vulnerable to erosion after overgrazing because their relatively steep slopes predispose them to erosion by water during and after rainfall events, as well as by wind. Collectively, the processes associated with overgrazing have resulted in a large reduction in the ecological function of the community. 'Competition and grazing by the feral European Rabbit, *Oryctolagus cuniculus'* and 'Competition and habitat degradation by Feral Goats, *Capra hircus'* are listed as Key Threatening Processes under the *Biodiversity Conservation Act 2016.*	Meets diagnostic criteria The Subject Land has undergone substantial historical grazing disturbance over decades from ongoing pastoral activity including sheep and goats. The area had regular drought records over the past 40 years which has likely exacerbated these grazing pressures.
12-	Fragmentation, grazing and small-scale physical disturbance have resulted in weed invasion throughout the distribution of Sandhill Pine Woodland, which continues to threaten the ecological function of the community. Principal weed species include: • *Arctotheca calendula* • *Avena* spp. • *Bromus rubens* • *Citrellus lanatus var lanatus* • *Echium plantagineum* *Paterson's Curse* • *Erodium cicutarium* • *Heliotropium* spp • *Hordeum leporinum* • *Hypochaeris glabra* • *Lolium* spp. • *Lycium ferocissimum* • *Marrubium vulgare*	N/A

• *Medicago* spp. • *Mesembryanthemum crystallinum* • *Pentaschistis airoides* • *Salvia verbenacea* • *Schismus barbatus* • *Sonchus oleraceus* • *Tribulus terrestris* • *Trifolium arvense* • *Vulpia myuros* forma *megalura*	
13- Examples of Sandhill Pine Woodland have been recorded from Kalyarr, Mallee Cliffs, Mungo, Oolambeyan and Willandra National Parks, and Tarawi Nature. However, some of these reserves contain only a few hectares of the community, and all exhibit signs of degradation associated with past land uses and the continuing impacts of feral herbivores. Examples of Sandhill Pine Woodland with a diverse and healthy understorey that retain its native shrub component and contain a low abundance and diversity of weed species, are extremely rare in the region.	N/A

4. Threatened Species

4.1 Ecosystem Credit Species

Ecosystem credit species are threatened species which can be reliably predicted to occur by vegetation surrogates and landscape features. Targeted survey is not required for these species.

The BAM calculator produces a list of ecosystem credit species based on several attributes including Bioregion and subregion; patch size and the vegetation and habitat data collected in the field.

4.1.1 List of Derived Species

The threatened species derived from the BAM calculator are presented in Table 40 below.

4.1.2 Additional Species

Any additional species determined likely to be present were also considered and added to the list and entered as additional species in the BAM calculator.

These species have been predicted to occur based on the vegetation and habitat types present and are classed with ecosystem credits. Additional species, predicted to occur by the BAM calculator, which have been excluded from this list due to not meeting habitat and/or geographic requirements are listed in Table 42.

BioNet Threatened Species recorded within the Development Footprint – Mine Site and Linear Corridor areas are shown in Figure 42 and Figure 43. All Biodiversity Australia Threatened Species Records for the project are shown in Figure 44.

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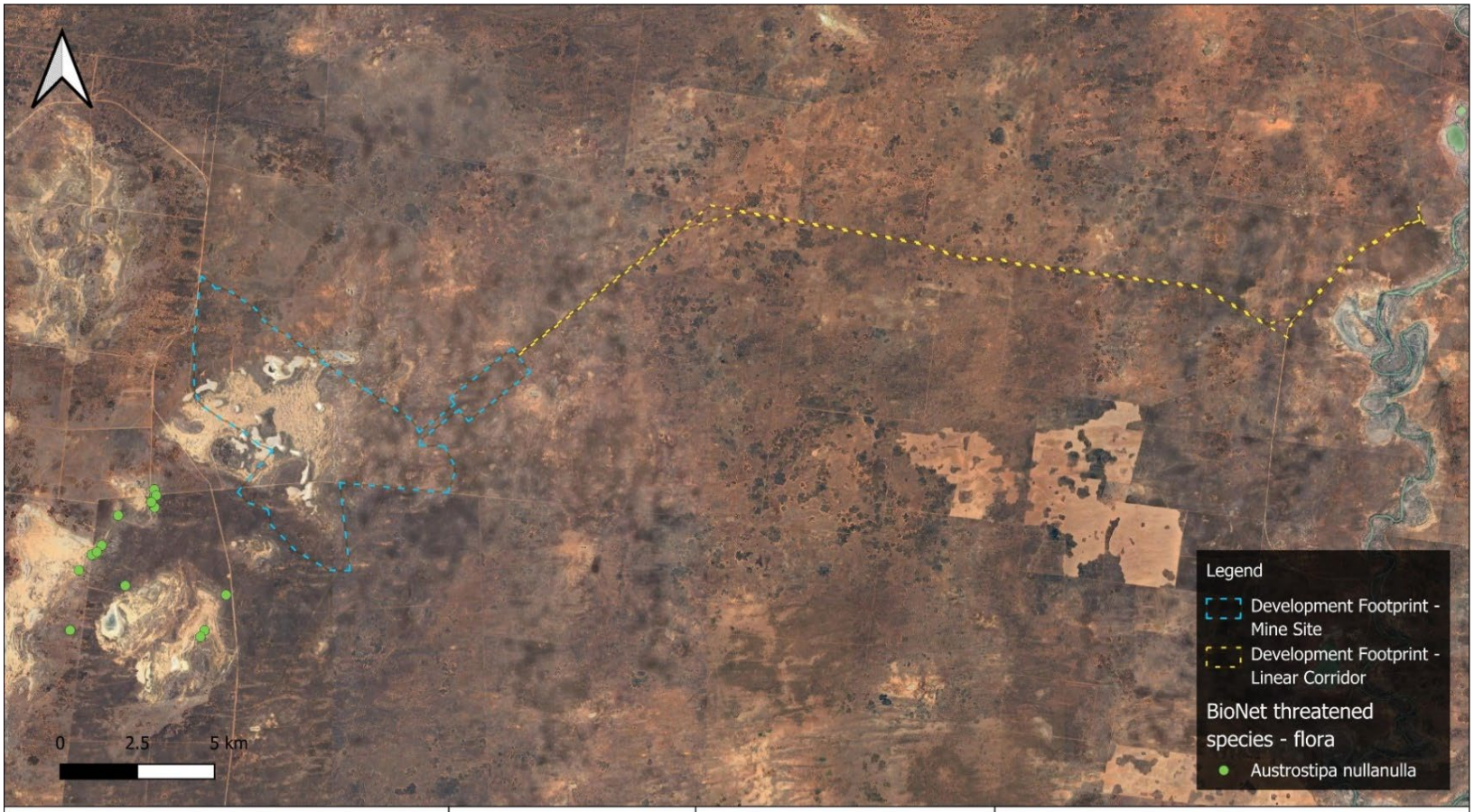
Table 40: Ecosystem credit species predicted to occur within the Development Footprint

Common Name	Scientific Name	Suitable habitat for ecosystem credit species										
		PCT 58	PCT 64	PCT 152	PCT 154	PCT 157	PCT 170	PCT 171	PCT 215	PCT 221	PCT 253	PCT 254
Bardick	*Echiopsis curta*							x				
Black Falcon	*Falco subniger*	x		x	x	x	x	x			x	
Black-breasted Buzzard	*Hamirostra melanosternon*	x		x	x	x	x	x		x		x
Blue-winged Parrot	*Neophema chrysostoma*	x				x	x		x		x	
Bolam's Mouse	*Pseudomys bolami*	x					x	x		x		x
Chestnut Quail-thrush	*Cinclosoma castanotum*							x				
Corben's Long-eared Bat	*Nyctophilus corbeni*	x					x	x		x		
Diamond Firetail	*Stagonopleura guttata*	x					x					
Dusky Woodswallow	*Artamus cyanopterus cyanopterus*	x	x	x	x	x	x	x	x	x	x	x
Gilbert's Whistler	*Pachycephala inornata*	x					x	x				
Grey Falcon	*Falco hypoleucos*	x	x	x	x	x	x	x	x	x	x	x
Grey-crowned Babbler (eastern subspecies)	*Pomatostomus temporalis temporalis*	x										
Inland Forest Bat	*Vespadelus baverstocki*	x					x	x		x		x
Interior Blind Snake	*Ramphotyphlops endoterus*				x				x			
Jewelled Gecko	*Strophurus elderi*						x	x				
Kultarr	*Antechinomys laniger*	x		x	x	x	x	x	x	x		
Little Eagle	*Hieraaetus morphnoides*	x	x	x	x	x	x	x	x	x	x	x
Little Pied Bat	*Chalinolobus picatus*	x	x	x	x	x	x	x	x	x	x	x
Mallee Slender Blue-tongue Lizard	*Cyclodomorphus melanops elongatus*								x			
Mallee Worm-lizard	*Aprasia inaurita*							x	x			

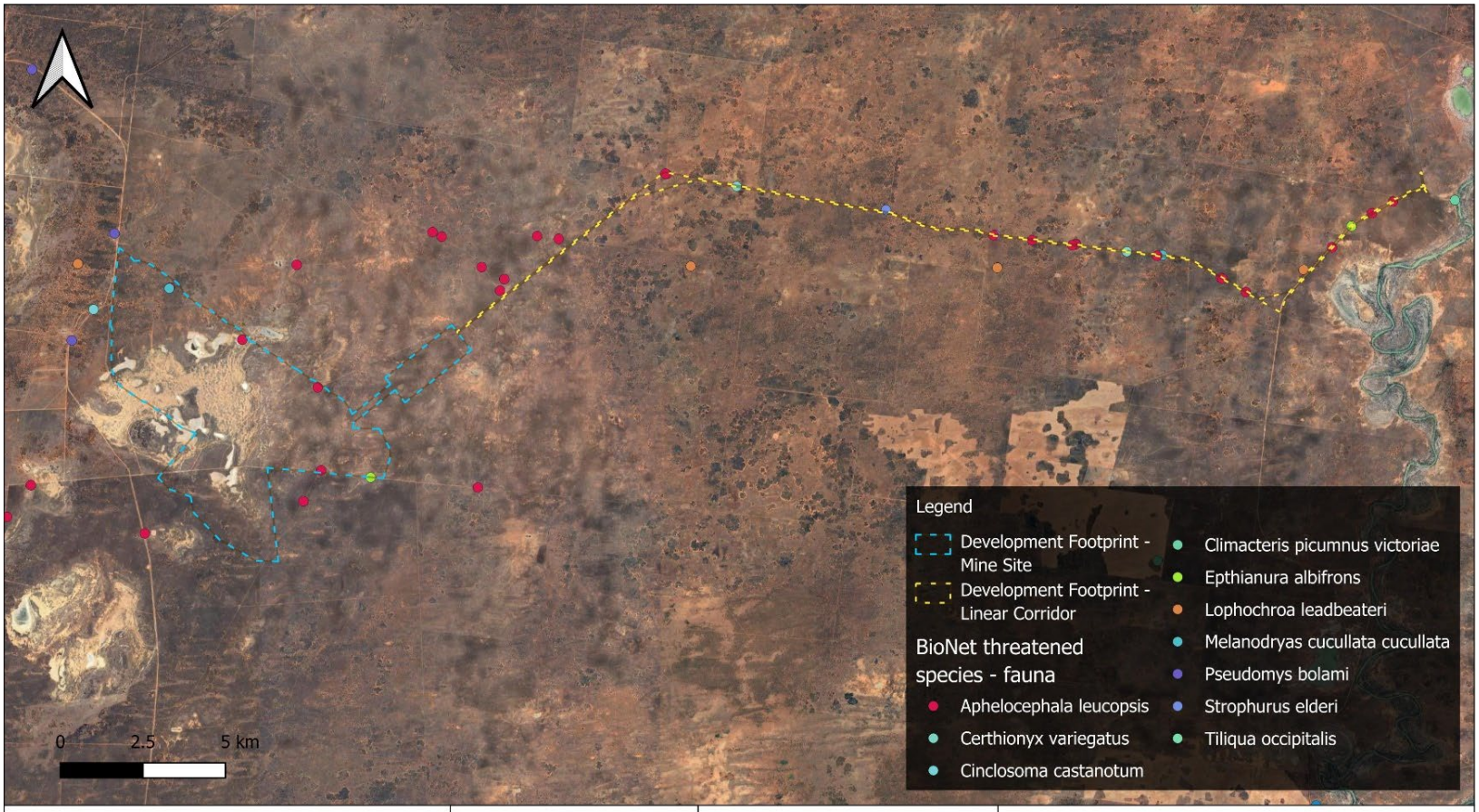
Common Name	Scientific Name	Suitable habitat for ecosystem credit species										
		PCT 58	PCT 64	PCT 152	PCT 154	PCT 157	PCT 170	PCT 171	PCT 215	PCT 221	PCT 253	PCT 254
Malleefowl	*Leipoa ocellata*							x	x			
Marble-faced Delma	*Delma australis*						x	x				
Painted Honeyeater	*Grantiella picta*	x							x			
Pied Honeyeater	*Certhionyx variegatus*	x		x	x		x	x		x		
Pink Cockatoo	*Cacatua (Lophochroa) leadbeateri*	x		x	x		x	x	x	x	x	x
Purple-crowned Lorikeet	*Glossopsitta porphyrocephala*						x	x				
Purple-gaped Honeyeater	*Lichenostomus cratitius*						x	x				
Redthroat	*Pyrrholaemus brunneus*			x	x							
Ringed Brown Snake	*Pseudonaja modesta*	x					x	x	x			
Rufous Fieldwren	*Calamanthus campestris*		x			x						
Sandy Inland Mouse	*Pseudomys hermannsburgensis*	x			x			x	x			
Scarlet-chested Parrot	*Neophema splendida*						x	x				
Shy Heathwren	*Hylacola cautus*							x				
South-eastern Hooded Robin	*Melanodryas cucullata cucullata*	x					x	x	x	x		x
Southern Ningaui	*Ningaui yvonneae*						x	x				
Southern Scrub-robin	*Drymodes brunneopygia*							x				
Southern Whiteface	*Aphelocephala leucopsis*	x		x	x	x	x	x	x		x	
Spotted Harrier	*Circus assimilis*	x	x	x	x	x	x	x	x	x	x	x
Square-tailed Kite	*Lophoictinia isura*	x								x		x
Stripe-faced Dunnart	*Sminthopsis macroura*	x			x			x	x	x		
Varied Sittella	*Daphoenositta chrysoptera*	x					x	x		x		x
Wedgesnout Ctenotus	*Ctenotus brooksi*							x	x			

Common Name	Scientific Name	Suitable habitat for ecosystem credit species										
		PCT 58	PCT 64	PCT 152	PCT 154	PCT 157	PCT 170	PCT 171	PCT 215	PCT 221	PCT 253	PCT 254
Western Blue-tongued Lizard	*Tiliqua occipitalis*				x		x	x				
Western Pygmy Possum	*Cercartetus concinnus*	x					x	x		x		x
White-bellied Sea-Eagle	*Haliaeetus leucogaster*	x				x	x	x				
White-fronted Chat	*Epthianura albifrons*		x	x	x	x					x	
Yellow-bellied Sheathtail-bat	*Saccolaimus flaviventris*	x					x	x	x	x		



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: BioNet Threatened Species Flora Records - Developoment Footprint	Biodiversity AUSTRALIA
	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:160000

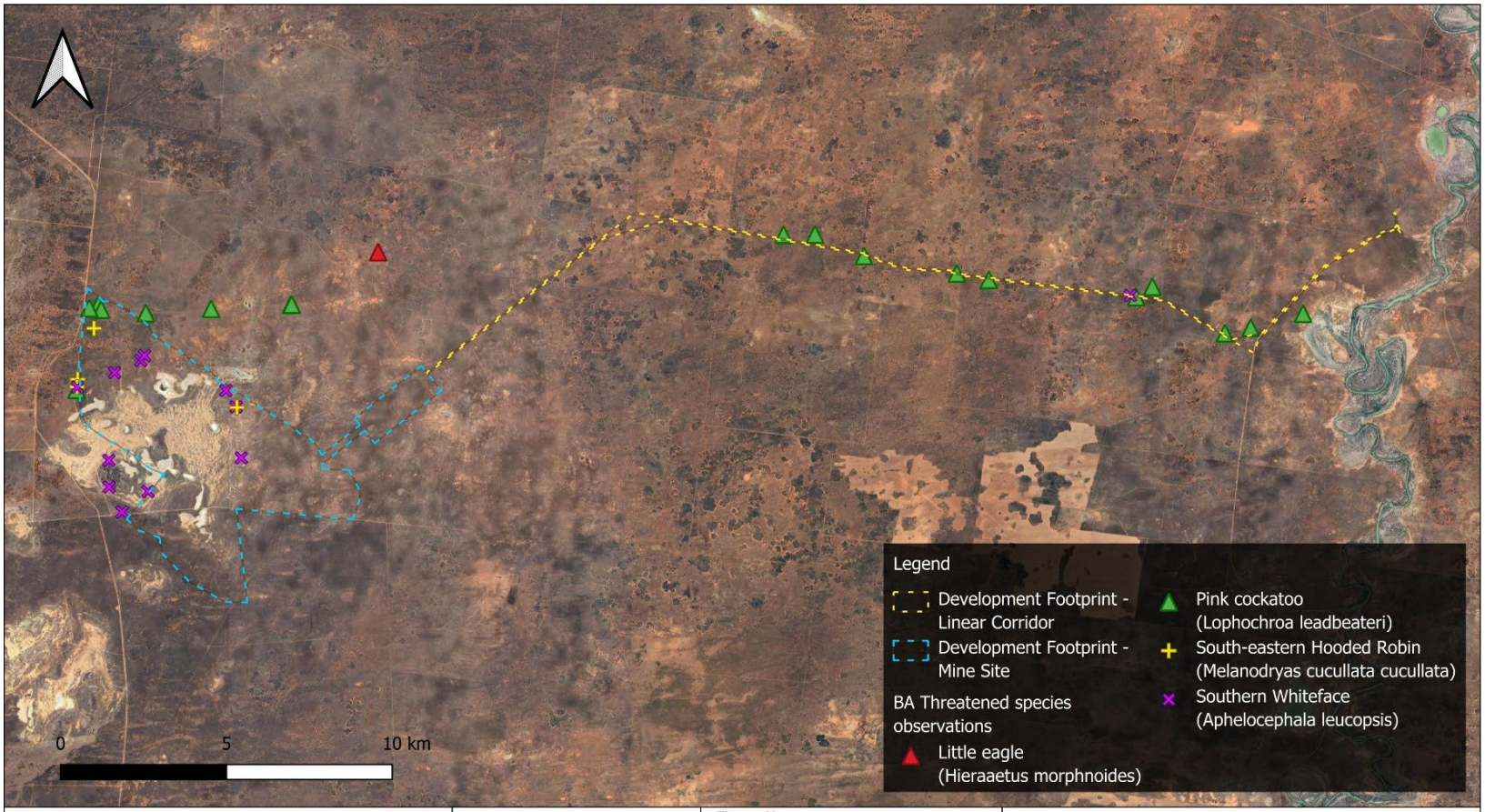
Figure 42: BioNet threatened species flora records - Development Footprint



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.

Project Manager: NC	Figure Name: BioNet Threatened Survey Fauna Records - Developoment Footprint	Biodiversity AUSTRALIA	
Drawn by: NE	Location: Warwick Station		
Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:150000

Figure 43: BioNet threatened species fauna records - Development Footprint



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Threatened Fauna Species Observations - Biodiversity Australia - Development Footprint	Biodiversity AUSTRALIA
	Drawn by: NE	Location: Warwick Station	
	Date: November 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:150000

Figure 44: All Biodiversity Australia Threatened Species Records for the project

4.2 Species Credit Species

Species Credit Species are threatened species or elements of their habitat that cannot be confidently predicted by vegetation surrogates and landscape features. These candidate species are identified as Species Credit Species in the NSW BioNet TBDC. A targeted survey or an expert report is required to confirm the presence or absence of these species in the investigation area, or alternatively the species can be assumed to be present (DPIE, 2020).

Assessments were undertaken to determine if the habitat and geographic requirements within the Subject Land provide suitable habitat for Species Credit Species.

A total of thirty-two (32) species credit species, including nineteen (19) flora species and thirteen (13) fauna species were determined to be candidates within the Development Footprint area.

Some species credit species have habitat constraints and/or geographic limitations outlined in the TBDC, which may exclude the species from surveys. The Regent Parrot (*Polytelis anthopeplus monarchoides*) is the only species credit species which can be excluded from surveys due to geographic limitations; owing to the Subject Land being beyond 30 km from the Murray and Murrumbidgee Rivers. All other habitat constraints and/or geographic limitations are met for the other species credit species within the Development Footprint.

Some species which have specialised breeding requirements have dual credit classes to account for differences in foraging and breeding habitat.

The Pink Cockatoo (*Lophochroa leadbeateri*) is one such 'dual credit' species, where foraging habitat can be reliably predicted through vegetation associations, however breeding habitat is specialised and requires hollow-bearing trees with hollows greater than 10 cm diameter, as described in the species survey comments within the NSW BioNet Threatened Biodiversity Data Collection (TBDC). A minimum hollow height threshold of >2 m was applied to suitable HBT in line with research findings where minimum hollow height was found to be 2.25 m (Higgins 1999)

Targeted threatened species surveys were conducted in November and December 2024, as well as in August, October and November 2025 within the assessment area in the associated PCTs 28, 58, 143, 152, 154, 170, 171, 215, 221, 253, & 254, during the appropriate breeding months (August - December) for Pink Cockatoos. Several Pink Cockatoos were observed within the assessment area and Development Footprint. However, as a result of very few suitable hollow-bearing breeding trees and no breeding behaviour observed at any time during targeted surveys, the Pink Cockatoo was excluded from this report as a species credit species. The Pink Cockatoo has been assessed as an ecosystem credit species and generates ecosystem credits due to the potential for the species to utilise the Development Footprint to forage.

According to the TBDC, suitable habitat for Pink Cockatoos includes living or dead trees with hollows greater than 10 cm in diameter. Higgins (1999) confirms the suitability of tree hollows greater than 10 cm in diameter and adds that those located more than 2 m aboveground are preferentially used for breeding. In addition, Higgins (1999) states that the species commonly nests in very old, mature hollow-bearing trees (HBTs) and occasionally in large, abandoned raptor nests (Higgins, 1999). The TBDC lists signs of breeding as: (a) begging birds of any age or sex; (b) lone individuals of the species identified during the breeding season (August to November); or (c) an occupied nest.

In the case of the Pink Cockatoo (*Lophochroa leadbeateri*), although several individuals were recorded within the Subject Land, thus meeting one breeding criteria in the TBDC (Survey Comments Signs of Breeding (b) lone individuals of the species were identified during the breeding season - August to November), prior to, and during surveys; no individuals were

observed to be using the suitable (>10 cm hollow) 12 HBTs located within the Subject Land. Therefore the species was included as an ecosystem credit, due to its foraging activity/behaviour; however the species was excluded as a species credit species due to the absence of an active breeding tree and therefore a species polygon was not created. However, this species will be offset under the ecosystem credits due to foraging habitat.

Targeted surveys conducted at dawn and dusk, combined with opportunistic and daytime observations, provided a comprehensive representation of Pink Cockatoos and their movements across the Development Footprint, particularly around the HBTs (Smith et al. 2020; Jones & Brown, 2018). Conducting surveys during these periods increases the likelihood of detecting individuals entering or exiting hollows, as well as identifying their flight paths to and from these locations (Taylor et al. 2019; Wilson & Green, 2021). All Species Credit Species habitat constraints and geographic limitations that were met, were assessed within the Development Footprint. Species credit species survey details are presented in Table 41; with all species credit species habitat constraints, geographic limitations and justifications provided in Table 42.

Table 41: Targeted threatened flora and fauna candidate species requiring surveys - associated PCTs, habitat area, survey area, survey methods, survey window, survey dates, search area and Vegetation Zone identifiers

Scientific Name	Listing Status BC & EPBC	Common Name	Associated PCTs (TBDC)	Combined PCT Area (ha)	Life Form (TBDC)	Height (TBDC)	Survey Methodology	Survey Window (TBDC)	Date Survey Completed	Suitable habitat (ha)	Suitable habitat searched (ha)	VZ ID # per assessment area: Non-linear (MS) and Linear (LC) with VZ Names
FLORA												
Acacia acanthoclada	E & None	Harrow Wattle	170, 171	27.7	Shrub	0.3 - 1.5	Small Area 10 m Parallel field traverses	August-November	27-28 October & 4-12 November 2025	27.7	27.7	LC-VZ#5-170_Mod, LC-VZ#6-171_Mod, MS-VZ#7-170_Mod, MS-VZ#8-171_Mod
Acacia carneorum	V & V	Purple-wood Wattle	58	238.42	Tall Shrub/Small tree	2-4	Large Area Two Phase survey plots	All Year	12-29 November 2024 & 4-12 November 2025	238.42	238.42	LC-VZ#2-58_Mod, MS-VZ#1-58_Mod
Atriplex infrequens	V & V	A saltbush	152, 157, 170, 215	767.31	Forb	0.3	Large Area Two Phase survey plots	November-February	12-29 November 2024 & 4-12 November 2025	767.31	767.31	MS-VZ#3-152_Mod, MS-VZ#5-157_Mod, MS-VZ#6-157_High, LC-VZ#5-170_Mod, MS-VZ#7-170_Mod, MS-VZ#9-215_Mod, MS-VZ#10-215_High
Austrostipa metatoris	V & V	A spear-grass	28, 170	16.36	Grass	1	Small Area 10 m Parallel field traverses	October-November	4-12 November 2025	16.36	16.36	LC-VZ#1-28_Mod, LC-VZ#5-170_Mod, MS-VZ#7-170_Mod
Austrostipa nullanulla	E & None	A spear-grass	152, 154, 253	2059.95	Grass	0.5	Large Area Two Phase survey plots	September-December	12-29 November 2024 & 4-12 November 2025	2059.95	2059.95	MS-VZ#3-152_Mod, MS-VZ#3-152_Mod, LC-VZ#4-154_Mod, MS-VZ#4-154_Mod, MS-VZ#13-253_Mod
Brachyscome papillosa	V & V	Mossgiel Daisy	152, 154, 157	2415.61	Herb	0.4	Large Area Two Phase survey plots	September-November	12-29 November 2024 & 4-12 November 2025	2415.61	2415.61	MS-VZ#3-152_Mod, MS-VZ#3-152_Mod, LC-VZ#4-154_Mod, MS-VZ#4-154_Mod, MS-VZ#5-157_Mod, MS-VZ#6-157_High
Calotis moorei	E & E	A burr-daisy	143, 152, 154, 157, 170	661.26	Herb	0.45	Large Area Two Phase survey plots	September-November	12-29 November 2024 & 4-12 November 2025	661.26	661.26	LC-VZ#3-143_Mod, MS-VZ#3-152_Mod, MS-VZ#3-152_Mod, LC-VZ#4-154_Mod, MS-VZ#4-154_Mod, MS-VZ#5-157_Mod, MS-VZ#6-157_High, LC-VZ#5-170_Mod, MS-VZ#7-170_Mod

Scientific Name	Listing Status BC & EPBC	Common Name	Associated PCTs (TBDC)	Combined PCT Area (ha)	Life Form (TBDC)	Height (TBDC)	Survey Methodology	Survey Window (TBDC)	Date Survey Completed	Suitable habitat (ha)	Suitable habitat searched (ha)	VZ ID # per assessment area: Non-linear (MS) and Linear (LC) with VZ Names
Cratystylis conocephala	E & None	Bluebush Daisy	58,170, 171, 221	2448.72	Shrub	1	Large Area Two Phase survey plots	All Year	12-29 November 2024 & 4-12 November 2025	2448.72	2448.72	LC-VZ#2-58_Mod, MS-VZ#1-58_Mod, LC-VZ#5-170_Mod, LC-VZ#6-171_Mod, MS-VZ#7-170_Mod, MS-VZ#8-171_Mod, MS-VZ#11-221_Mod, MS-VZ#12-221_High
Dodonaea stenozyga	CE & None	Desert Hopbush	170, 171	27.7	Shrub	2	Small Area 10 m Parallel field traverses	All Year	4-12 November 2025	27.7	27.7	LC-VZ#5-170_Mod, LC-VZ#6-171_Mod, MS-VZ#7-170_Mod, MS-VZ#8-171_Mod
Kippistia suaedifolia	E & None	Fleshy Minuria	143, 154, 253	1827.04	Sub-Shrub	0.6	Large Area Two Phase survey plots	All Year	12-29 November 2024 & 4-12 November 2025	1827.04	1827.04	LC-VZ#3-143_Mod, Mod, LC-VZ#4-154_Mod, MS-VZ#4-154_Mod, MS-VZ#13-253_Mod
Lasiopetalum behrii	CE & None	Pink Velvet Bush	170, 171	27.7	Shrub	1.5	Small Area 10 m Parallel field traverses	All Year	4-12 November 2025	27.7	27.7	LC-VZ#5-170_Mod, LC-VZ#6-171_Mod, MS-VZ#7-170_Mod, MS-VZ#8-171_Mod
Lepidium monoplocoides	E & E	Winged Peppercress	170	15.59	Herb/Forb	0.15 - 0.2	Small Area 10 m Parallel field traverses	September-December	4-12 November 2025	15.59	15.59	LC-VZ#5-170_Mod, MS-VZ#7-170_Mod
Leptorhynchos waitzia	E & None	Button Immortelle	170, 254	16.75	Herb	0.2	Small Area 10 m Parallel field traverses	September-November	4-12 November 2025	16.75	16.75	LC-VZ#5-170_Mod, MS-VZ#7-170_Mod, MS-VZ#14-254_Mod
Pimelea serpyllifolia subsp. serpyllifolia	E & None	Thyme Rice-Flower	170, 171	27.7	Shrub	0.5	Small Area 10 m Parallel field traverses	July-November	4-12 November 2025	27.7	27.7	LC-VZ#5-170_Mod, LC-VZ#6-171_Mod, MS-VZ#7-170_Mod, MS-VZ#8-171_Mod
Pterostylis cobarensis		Greenhood Orchid	170, 171	27.7	Orchid	0.4	Small Area 10 m transects	October	27-28 October 2025	27.7	27.7	LC-VZ#5-170_Mod, LC-VZ#6-171_Mod, MS-VZ#7-170_Mod, MS-VZ#8-171_Mod
Santalum murrayanum		Bitter Quandong	170, 171	27.7	Tall Shrub/Small tree	5	Small Area 10 m Parallel field traverses	All Year	4-12 November 2025	27.7	27.7	LC-VZ#5-170_Mod, LC-VZ#6-171_Mod, MS-VZ#7-170_Mod, MS-VZ#8-171_Mod
Swainsona colutoides		Bladder Senna	170, 171	27.7	Shrub	0.4 - 1.5	Small Area 10 m Parallel field traverses	All Year	4-12 November 2025	27.7	27.7	LC-VZ#5-170_Mod, LC-VZ#6-171_Mod, MS-VZ#7-170_Mod, MS-VZ#8-171_Mod
Swainsona pyrophila		Yellow Swainson-pea	170, 171	27.7	Sub-shrub	1	Small Area 10 m Parallel field traverses	September-November	4-12 November 2025	27.7	27.7	LC-VZ#5-170_Mod, LC-VZ#6-171_Mod, MS-VZ#7-170_Mod, MS-VZ#8-171_Mod

Scientific Name	Listing Status BC & EPBC	Common Name	Associated PCTs (TBDC)	Combined PCT Area (ha)	Life Form (TBDC)	Height (TBDC)	Survey Methodology	Survey Window (TBDC)	Date Survey Completed	Suitable habitat (ha)	Suitable habitat searched (ha)	VZ ID # per assessment area: Non-linear (MS) and Linear (LC) with VZ Names
Swainsona sericea		Silky Swainson-pea	28, 215	6.36	Herb/Forb	0.1	Small Area 10 m Parallel field traverses	September-November	4-12 November 2025	6.36	6.36	LC-VZ#1-28_Mod, MS-VZ#9-215_Mod, MS-VZ#10-215_High
							FAUNA					
Ardeotis australis		Australian Bustard	28, 58, 64, 143, 152, 154, 157, 215, 221, 253, 254	3855.38	Aves	N/A	Raptor survey points along transects in suitable habitat	All Year	11–29 November 2024, 13-16 January, 5-23 February, 6-11 August 2025	3855.38	3855.38	-
Burhinus grallarius		Bush Stone-curlew	28, 58	239.19	Aves	N/A	Diurnal and Nocturnal surveys in suitable wooded habitat	All Year	11–29 November 2024, 13-16 January, 5-23 February, 6-11 August 2025	239.19	239.19	-
Haliaeetus leucogaster		White-bellied Sea-Eagle	28, 58, 143, 157, 170, 171	779.79	Aves	N/A	Raptor survey points along transects in suitable habitat	July-December	11–29 November 2024 & 6-11 August 2025	779.79	779.79	-
Hamirostra melanosternon		Black-breasted Buzzard	58, 152, 154, 157, 170, 171, 221, 254	2827.6	Aves	N/A	Raptor survey points along transects in suitable habitat	September - November	11–29 November 2024	2827.6	2827.6	-
Hieraaetus morphnoides		Little Eagle	58, 64, 152, 154, 157, 170, 171, 215, 221, 253, 254	3864.79	Aves	N/A	Raptor survey points along transects in suitable habitat	August - October	6-11 August 2025	3864.79	3864.79	-
Lasiorhinus latifrons	E & None	Southern Hairy-nosed Wombat	58, 152, 154, 170, 171	2186.35	Aves	N/A	Nocturnal surveys in suitable habitat	All Year	11–29 November 2024 & 5-23 February 2025	2186.35	2186.35	-
Lophochroa leadbeateri	V & E	Pink Cockatoo	28, 58, 143, 152, 154, 170,	2746.57	Aves	N/A	Diurnal survey points along transects in	August - December	11–29 November, 4-14 December	2746.57	2746.57	-

Scientific Name	Listing Status BC & EPBC	Common Name	Associated PCTs (TBDC)	Combined PCT Area (ha)	Life Form (TBDC)	Height (TBDC)	Survey Methodology	Survey Window (TBDC)	Date Survey Completed	Suitable habitat (ha)	Suitable habitat searched (ha)	VZ ID # per assessment area: Non-linear (MS) and Linear (LC) with VZ Names
			171, 215, 221, 253, 254				suitable habitat		2024, 6-11 August, 27-29 October, 4-11 November 2025			
Lophoictinia isura	V & None	Square-tailed Kite	58, 221, 254	634.72	Aves	N/A	Raptor survey points along transects in suitable habitat	September - December	11–29 November 2024	634.72	634.72	-
Lucasium stenodactylum	V & None	Crowned Gecko	143, 154, 170, 215, 221	2103.96	Reptile	N/A	Pitfall traps and nocturnal searches in suitable habitat	October - March	10–14 December 2024	2103.96	2103.96	-
Myotis macropus	V & None	Southern Myotis	64, 253	780.85	Mammal	N/A	Surveys using Ultrasonic recording in suitable habitat	October - March	9–12 & 13-16 January 2025	780.85	780.85	-
Neobatrachus pictus	E & None	Painted Burrowing Frog	58, 152, 154, 157, 170, 171, 221, 254	3078.03	Amphibian	N/A	Suitable survey conditions not met - Expert report provided (Appendix A-7)	All Year	25 May 2025 (Habitat evaluation)	-	-	-
Polytelis anthopeplus monarchoides	E & V	Regent Parrot (eastern subspecies)	58, 170, 171	266.12	Aves	N/A	Excluded from surveys due to geographic limitations - Site is beyond 30 km from Murray and Murrumbidgee Rivers	August - November	N/A - Excluded from surveys due to geographic limitation	266.12	266.12	-
Pseudomys desertor	CE & None	Desert Mouse	171	12.11	Mammal	N/A	Pitfall trapping in suitable habitat	March - June &	10–14 December 2024	12.11	12.11	-

Scientific Name	Listing Status BC & EPBC	Common Name	Associated PCTs (TBDC)	Combined PCT Area (ha)	Life Form (TBDC)	Height (TBDC)	Survey Methodology	Survey Window (TBDC)	Date Survey Completed	Suitable habitat (ha)	Suitable habitat searched (ha)	VZ ID # per assessment area: Non-linear (MS) and Linear (LC) with VZ Names
								August - December				

Table 42: List of Species Credit Species surveyed for within the Development Footprint

Common Name	Scientific Name	Justification
	FLORA	
A Burr-daisy	*Calotis moorei*	BAM Habitat constraint: None Not found during seasonal targeted surveys
A Saltbush	*Atriplex infrequens*	BAM Habitat constraint: None Not found during seasonal targeted surveys
A Spear-grass	*Austrostipa metatoris*	BAM Habitat constraint: None Not found during seasonal targeted surveys
A Spear-grass	*Austrostipa nullanulla*	BAM Habitat constraint: Land containing gypseous lunettes and copi rises Found during seasonal targeted surveys
Bitter Quandong	*Santalum murrayanum*	BAM Habitat constraint: Sandy loam or loamy sand Not found during seasonal targeted surveys
Bladder Senna	*Swainsona colutoides*	BAM Habitat constraint: None Not found during seasonal targeted surveys
Bluebush Daisy	*Cratystylis conocephala*	BAM Habitat constraint: None Not found during seasonal targeted surveys
Button Immortelle	*Leptorhynchos waitzia*	BAM Habitat constraint: None Not found during seasonal targeted surveys
Desert Hopbush	*Dodonaea stenozyga*	BAM Habitat constraint: None Not found during seasonal targeted surveys
Fleshy Minuria	*Kippistia suaedifolia*	BAM Habitat constraint: Saline lakes, depressions and claypans with Gypseous or calcareous soils, gypseous dunes, or within 50 m Not found during seasonal targeted surveys
Greenhood Orchid	*Pterostylis cobarensis*	BAM Habitat constraint: None Not found during seasonal targeted surveys
Harrow Wattle	*Acacia acanthoclada*	BAM Habitat constraint: Deep silicious sands Not found during seasonal targeted surveys
Mossgiel Daisy	*Brachyscome papillosa*	BAM Habitat constraint: None Not found during seasonal targeted surveys
Pink Velvet Bush	*Lasiopetalum behrii*	BAM Habitat constraint: Shallow, sandy soils Not found during seasonal targeted surveys
Purple-wood Wattle	*Acacia carneorum*	BAM Habitat constraint: None Not found during seasonal targeted surveys
Silky Swainson-pea	*Swainsona sericea*	BAM Habitat constraint: None Not found during seasonal targeted surveys

Thyme Rice-flower	*Pimelea serpyllifolia subsp. serpyllifolia*	BAM Habitat constraint: None BAM Geographic limitations: Within 50 km of the Murray River Not found during seasonal targeted surveys
Winged Peppercress	*Lepidium monoplocoides*	BAM Habitat constraint: None Not found during seasonal targeted surveys
Yellow Swainson-pea	*Swainsona pyrophila*	BAM Habitat constraint: None Not found during seasonal targeted surveys
FAUNA		
Australian Bustard	*Ardeotis australis*	BAM Habitat Constraint: None Not found during seasonal targeted surveys
Black-breasted Buzzard	*Hamirostra melanosternon*	BAM Habitat Constraint: Waterbodies; Land within 40 m of riparian woodland on inland watercourses/waterholes containing dead or dying eucalypts BAM constraints met: No Not found during seasonal targeted surveys
Little Eagle	*Hieraaetus morphnoides*	BAM Habitat Constraint: Nest trees - live (occasionally dead) large old trees within vegetation. BAM constraints met: Yes Not found during seasonal targeted surveys
Black-eared Miner	*Manorina melanotis*	BAM Habitat constraint: None Not found during seasonal targeted surveys
Bush Stone-curlew	*Burhinus grallarius*	BAM Habitat Constraint: Fallen/standing dead timber including logs BAM constraints met: Yes. Not found during seasonal targeted surveys
Crowned Gecko	*Lucasium stenodactylum*	BAM Habitat Constraint: None. Not found during seasonal targeted surveys.
Desert Mouse	*Pseudomys desertor*	BAM Habitat Constraint: None. Not found during seasonal targeted surveys.
Painted Burrowing Frog	*Neobatrachus pictus*	BAM Habitat constraints: None BAM Survey Requirements not met - Expert Report provided (Appendix A-7)
Pink Cockatoo	*Lophochroa leadbeateri*	BAM Habitat constraints: Hollow bearing trees; Living or dead tree with hollows greater than 10 cm diameter. BAM Habitat constraints met: Yes. No active breeding habitat or behaviour observed during seasonal targeted surveys.
Red-lored Whistler	*Pachycephala rufogularis*	BAM Habitat constraint: None. Not found during seasonal targeted surveys.
Regent Parrot (eastern subspecies)	*Polytelis anthopeplus monarchoides*	Habitat constraints: Hollow bearing trees; Living or dead E. camaldulensis with hollows greater than 5 cm diameter, greater than 5 m above the ground OR trees

		with DBH of greater than 40 cm, within 1 km of watercourses or billabongs. Trees can be isolated but within 20 km of mallee. Geographic Limitations: Within 30 km of the Murray and Murrumbidgee Rivers. Geographic limitation met: No. Site located more than 45 km from Murray and Murrumbidgee Rivers. Not found during seasonal targeted surveys.
Southern Hairy-nosed Wombat	*Lasiorhinus latifrons*	BAM Habitat Constraint: None. Not found during seasonal targeted surveys.
Southern Myotis	*Myotis macropus*	BAM Habitat Constraint: Waterbodies; Waterbodies with permanent pools/stretches 3 m or wider, including rivers, large creeks, billabongs, lagoons, estuaries, dams and other waterbodies, on or within 200 m of the site. BAM constraints met: Yes. No ultrasonic calls detected during seasonal targeted surveys within suitable habitat 200m from waterbodies located outside the Subject Land.
Square-tailed Kite	*Lophoictinia isura*	BAM Habitat Constraint: Nest trees. BAM Habitat constraint met: Yes. Not found during seasonal targeted surveys.
White-bellied Sea-Eagle	*Haliaeetus leucogaster*	BAM Habitat Constraint: Living or dead mature trees within suitable vegetation within 1 km of rivers, lakes, large dams or creeks, wetlands and coastlines. BAM constraints met: Yes. Not found during seasonal targeted surveys.

4.3 Target Survey Methods

Targeted surveys were undertaken from 11 November 2024 to 12 November 2025, for the Species Credit Species identified in Table 42 and assessed by a BAM Accredited Person under the Bio. Aus. Scientific License and Animal Research Authority. A detailed description of the survey methods used is provided in the following sections.

4.3.1 Weather Conditions

Weather conditions during the field survey were appropriate for the detection of target Species Credit Species. A summary of weather conditions in the wider LGA (BOM Weather Station 076031– Mildura – VIC and Station 047016 Lake Victoria NSW – Approximately 43km away) during the field surveys is provided in Table 43.

Table 43: Weather conditions during field surveys

Date	Minimum Temp.	Maximum Temp.	Rainfall (mm)	Wind Direction	Wind Speed (KM/h)
2024 11th November	16.7	29.2	0	-	Calm
12th November	17.6	31.9	0.5	S	2
13th November	14.9	26.2	25	-SW	11
14th November	10.4	26.3	0	-SSE	6
15th November	10.7	29.8	0	E	4
16th November	15.6	37	0	N	2
17th November	20.5	25.9	-	W	15
18th November	9.9	26.7	0.6	SW	11
19th November	11.3	27.7	0	S	11
20th November	11.7	30.4	0	E	4
21st November	13	35.9	0	ESE	2
22nd November	21.5	37.5	0	-	Calm
23rd November	21.9	37.9	0	-	Calm
24th November	20.4	23.2	1.6	-	Calm
25th November	19	24.3	30	-	-
26th November	19.3	32.4	7	-	-
27th November	20.1	28.4	13.6	W	13
28th November	14.3	27.1	0.2	WSW	6
29th November	15.6	32.3	0	-	-
4th December	13	30.2	0	SSE	2
5th December	18	38.7	0	-	-
6th December	24.4	37.6	0	-	-
7th December	20.6	36.5	0	SSW	Calm
8th December	12.3	28.5	0	-	-
9th December	16.4	28.8	0	S	4

10th December	15.5	30.6	0	S	6
11th December	14	29.5	0	SW	4
12th December	14.2	32.2	0	-	Calm
13th December	16.3	32.4	0	SW	4
14th December	15.7	36.8	0	S	2
2025 7th January	12	29.7	2	SE	6
8th January	15.2	35.7	0	-	-
9th January	23	36.3	0	-	-
10th January	17	37.2	1.2	SSE	2
11th January	19.6	38.3	0.2	-	-
12th January	19.8	39.6	0	SSW	4
13th January	21.5	39.3	0	-	Calm
14th January	22.6	41.4	0	-	Calm
15th January	22.8	29.4	0	WSW	6
16th January	12.4	28.2	0	SSW	6
3rd February	24.2	38	0	E	2
4th February	23.1	41.5	0	SE	-
5th February	18.4	35.3	0	SSW	9
6th February	18.8	40.5	0	W	2
7th February	23.9	38.3	0	SSW	7
8th February	17.1	32.6	0	SSE	9
9th February	16.1	33.4	0	SSE	4
10th February	17.2	34.9	0	SSE	-
11th February	19.6	37.2	0	SE	-
12th February	19.8	40.6	0	ENE	-
13th February	27.6	36.2	0	NE	-
14th February	14.6	29.3	0	WSW	-
17th February	9.7	27.9	0	ESE	4
18th February	11.5	30.9	0	-	-
19th February	12.3	27.8	0	S	9
20th February	12.7	28.8	0	SE	7
21st February	13.2	35.1	0	SE	4
22nd February	17.4	41.4	0	-	-
23rd February	26.2	33.3	0	SW	6
24th February	12.7	31.4	0	-	Calm
25th February	14.2	35.2	0	-	Calm
6 August	8.0	19.0	0	W	2
7 August	7.0	17.0	0	S	2
8 August	6.0	16.0	0		
9 August	9.0	19.0	0.1	E	2

10 August	10.5	21.0	0	E	2
11 August	8.0	22.0	0	-	Calm
27 October	16	20	0	SW	11
28 October	7	23	0	S	9
29 October	9	-	0	E	2
4 November	7	20	6	W	13
5 November	10	25	0	w	6
6 November	14	24	0	Calm	0
7 November	15	33	0	Calm	0
8 November	12	23	0	S	19
9 November	8	24.5	0	S	9
10 November	8.5	25	0	S	9
11 November	10	22	0	SW	9
12 November	5	25	0	S	2

4.3.2 Targeted Survey – Flora Species Credit Species

Targeted surveys for nineteen (19) threatened flora species were undertaken over the Development Footprint between 11th – 30th November 2024, 27th–29th October 2025 and 4th – 12th November 2025.

The nineteen targeted threatened flora species are comprised of numerous different life forms which occur across three different strata.

Stratum 1 - Trees and Tall shrubs >1 metre: Six (6) species of trees, medium and tall shrubs occur in and above the shrub layer.

Stratum 2 - Subshrubs <1 metre: Two (2) species of subshrubs occur in the lower shrub layer.

Stratum 3 - Herb, form, grass and orchid <1 metre: Eleven (11) species of herbs, forbs, grasses and orchids occur within the ground stratum from ground level up to 1 m (Stratum 3).

See Table 44 below for a list of species surveyed for together within each vegetation stratum.

4.3.2.1 Two-phase grid-based systematic survey approach for large areas

The large area survey method for the target species followed the *Surveying Threatened Plants and Their Habitats* and the *NSW Survey guide for the Biodiversity Assessment Method 2020* consisting of botanists walking over large areas of suitable habitat using a two-phase grid-based systematic survey approach. Survey locations were positioned on a 100 m grid intersect, facilitating planning and enabling rapid assessment across larger areas. At each survey location (grid intersect), a 40 m diameter area was surveyed (Figure 45, Figure 46, Figure 47, Figure 48, Figure 49, Figure 50). This survey technique typically involves searches along a grid of parallel traverses within the Subject Land.

Several threatened plant species were searched for during the same traverse. However, to ensure detectability was not compromised the survey followed methodology recommended in section 5.1 (page 16) of the Surveying threatened plants and their habitats – NSW survey guide for the Biodiversity Assessment Method (DPIE 2020); where multiple-species searches are required within one PCT, searches must be restricted to a maximum of five species in the same stratum (i.e. search for five ground species, five mid-layer species or five canopy species) per traverse (Table 45). The surveys were conducted within the area covered by the 100-square-metre grid, as the habitat and life forms were similar to the same type and have the same optimal survey time as specified by the TBDC.

If the initial 100 m grid survey (nested within a one-square-kilometre topographic map grid) fails to detect the target species, no further surveys are required in that location (BAM, 2020).

During all large area targeted threatened flora searches, no more than five (5) flora species were searched for simultaneously PCT.

4.3.2.2 Small area 10 m parallel field traverses

For search areas less than 50 ha, targeted surveys for threatened flora species were undertaken over the Development Footprint between 27th-29th October and 4th - 12th November 2025.

The survey method for the small area target flora species followed the *Surveying Threatened Plants and Their Habitats* and the *NSW Survey guide for the Biodiversity Assessment Method 2020,* consisting of botanists walking over areas of suitable habitat using the parallel traverse survey technique, which involves searching along a grid of parallel traverses a set distance apart.

Searches for herbs, forbs, grasses and Orchid species were conducted in open vegetation by applying 10 m field traverses.

Searches for trees, tall shrubs (>6 metres), medium shrubs (1-6 metres), sub-shrubs (including chenopods) <1 metre, were conducted in both open and dense vegetation by applying 10 metre field traverses.

Where more than five (5) species required searches in the same vegetation stratum, two surveyors walked the same transect and searched for separate species. This was to ensure detectability was not compromised. This requirement was only needed where 14 threatened flora species are associated with PCT 170. Seven (7) herbs/forbs (to 0.5 metre), five (5) tree/tall-medium shrubs (1-6 metre) and three (2) sub-shrubs (to 1 metre). Each surveyor searched for 3 or 4 herb/forb species and then divided the remaining seven (7) trees and shrubs equally, allocating the seven (7) species between surveyors, thus ensuring no more than 5 species were searched for within each stratum and the search methodology criteria from section 5.1 (page 16) of the Surveying threatened plants and their habitats – NSW survey guide for the Biodiversity Assessment Method (DPIE 2020) was met.

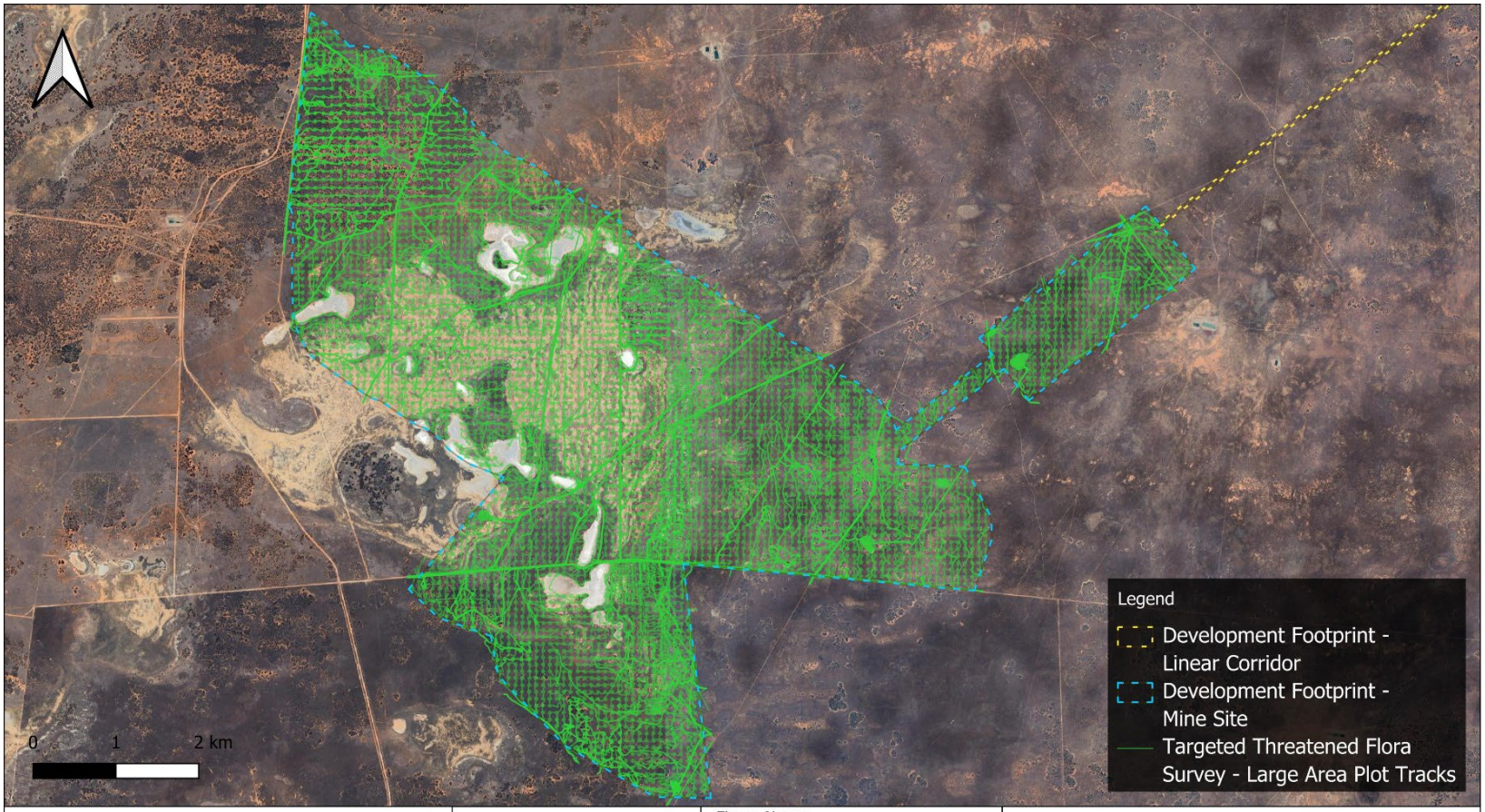
Each threatened species was surveyed within the required survey timing window as listed in the TBDC.

During all small area targeted threatened flora searches, no more than five (5) flora species were searched for simultaneously in any PCT vegetation stratum.

Table 44: Threatened species surveyed together in associated PCTs

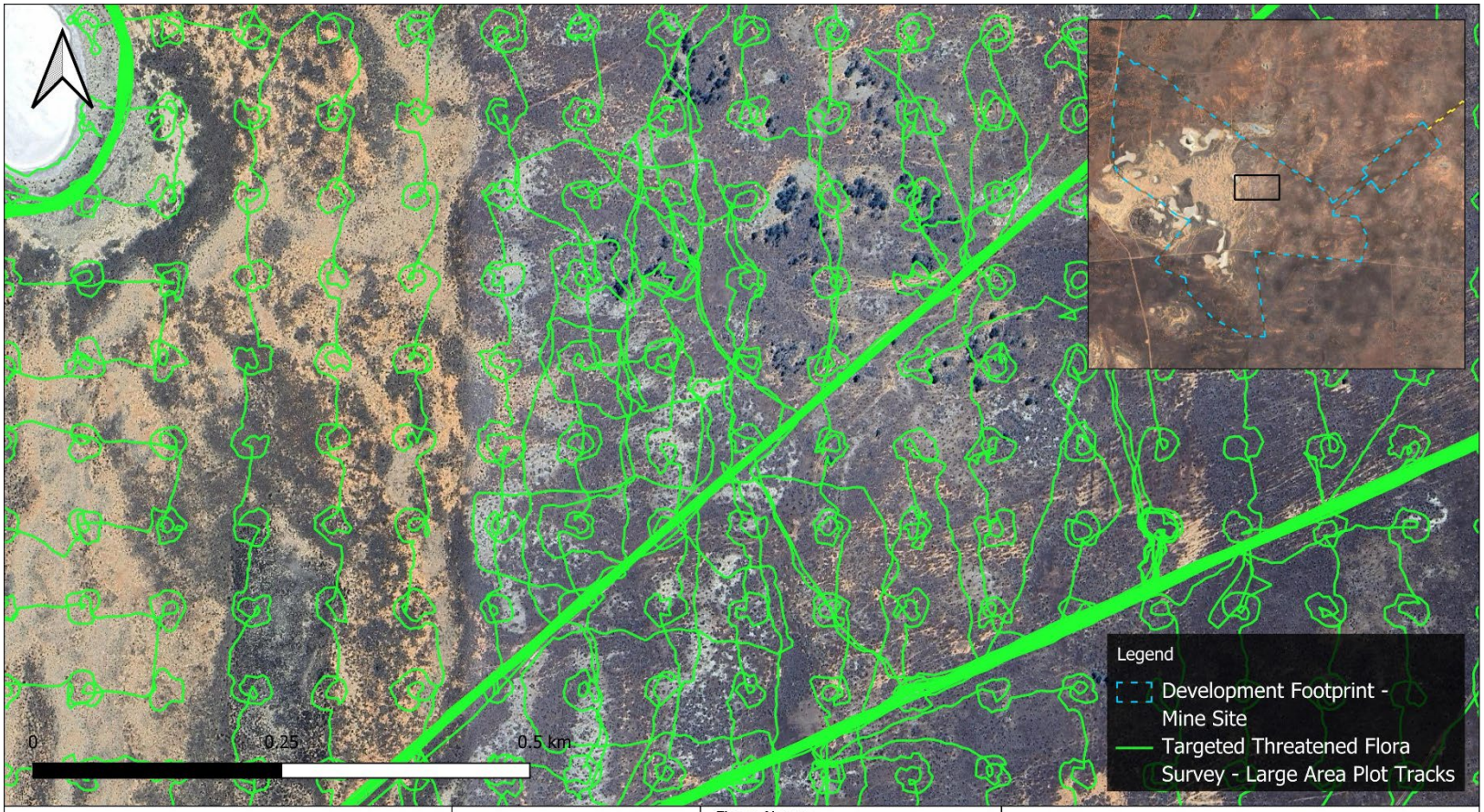
PCT	Associated Species (TBDC)	Stratum 1 Trees, Tall & Medium Shrubs 1-6 m	Stratum 2 Sub-shrubs 1m	Stratum 3 Herbs, Forbs, Grasses & Orchids <1 m	No. of Species Searched simultaneously	Area (ha)	Survey Methodology	Surveyors per transect	VZ IDs
28	*Austrostipa metatoris & Swainsona sericea*		-	*Austrostipa metatoris & Swainsona sericea*	2	0.77	Small Area 10 m Parallel field traverses	1	LC-VZ#1-28_Mod, MS-VZ#1-58_Mod
58	*Acacia carneorum, Cratystylis conocephala*	*Acacia carneorum*	*Cratystylis conocephala*	-	2	238.4	Large Area Two Phase survey plots	1	LC-VZ#2-58_Mod
64	-	-	-	-	0	641.1	Large Area Two Phase survey plots	0	MS-VZ#2-64_Mod
143	*Calotis moorei, Kippistia suaedifolia,*	-	-	*Calotis moorei & Kippistia suaedifolia*	2	17.52	Small Area 10 m Parallel field traverses	1	LC-VZ#3-143_Mod
152	*Atriplex infrequens, Austrostipa nullanulla, Brachyscome papillosa, Calotis moorei*	-	-	*Atriplex infrequens, Austrostipa nullanulla, Brachyscome papillosa & Calotis moorei*	4	250.4	Large Area Two Phase survey plots	1	MS-VZ#3-152_Mod
154	*Austrostipa nullanulla, Brachyscome papillosa, Calotis moorei, Kippistia suaedifolia*	-	-	*Austrostipa nullanulla, Brachyscome papillosa, Calotis moorei & Kippistia suaedifolia*	4	1670	Large Area Two Phase survey plots	1	LC-VZ#4-154_Mod, MS-VZ#4-154_Mod
157	*Atriplex infrequens, Brachyscome papillosa & Calotis moorei*	-	-	*Atriplex infrequens, Brachyscome papillosa & Calotis moorei*	3	495.4	Large Area Two Phase survey plots	1	MS-VZ#5-157_Mod, MS-VZ#6-157_High
170	*Acacia acanthoclada, Atriplex infrequens, Austrostipa metatoris, Calotis moorei, Cratystylis*	*Acacia acanthoclada, Dodonaea stenozyga, Lasiopetalum behrii,*	*Cratystylis conocephala*	*Atriplex infrequens, Austrostipa metatoris, Calotis moorei, Lepidium*	14	15.59	Small Area 10 m Parallel field traverses	2	LC-VZ#5-170_Mod,

PCT	Associated Species (TBDC)	Stratum 1 Trees, Tall & Medium Shrubs 1-6 m	Stratum 2 Sub-shrubs 1m	Stratum 3 Herbs, Forbs, Grasses & Orchids <1 m	No. of Species Searched simultaneously	Area (ha)	Survey Methodology	Surveyors per transect	VZ IDs
	conocephala, Dodonaea stenozyga, Lasiopetalum behrii, Lepidium monoplocoides, Leptorhynchos waitzia, Pimelea serpyllifolia subsp. Serpyllifolia, Pterostylis cobarensis, Santalum murrayanum, Swainsona colutoides & Swainsona pyrophila	*Santalum murrayanum & Swainsona colutoides (5)*	*& Swainsona pyrophila (2)*	*monoplocoides, Leptorhynchos waitzia, Pimelea serpyllifolia subsp. Serpyllifolia & Pterostylis cobarensis (7)*			(conducted by two surveyors)		MS-VZ#7-170_Mod
171	*Acacia acanthoclada, Cratystylis conocephala, Dodonaea stenozyga, Lasiopetalum behrii, Pimelea serpyllifolia subsp. Serpyllifolia, Pterostylis cobarensis, Santalum murrayanum, Swainsona colutoides & Swainsona pyrophila*	*Acacia acanthoclada, Dodonaea stenozyga, Lasiopetalum behrii, Santalum murrayanum & Swainsona colutoides (5)*	*Cratystylis conocephala & Swainsona pyrophila (2)*	*Pimelea serpyllifolia subsp. Serpyllifolia & Pterostylis cobarensis (2)*	9	12.11	Small Area 10 m Parallel field traverses	1	LC-VZ#6-171_Mod, MS-VZ#8-171_Mod
215	*Atriplex infrequens & Swainsona sericea*	-	-	*Atriplex infrequens & Swainsona sericea*	2	5.91	Small Area 10 m Parallel field traverses	1	MS-VZ#9-215_Mod, MS-VZ#10-215_High
221	*Cratystylis conocephala*	-	*Cratystylis conocephala*	-	1	395.1	Large Area Two Phase survey plots	1	MS-VZ#11-221_Mod, MS-VZ#12-221_High
253	*Austrostipa nullanulla & Kippistia suaedifolia*	-	-	*Austrostipa nullanulla & Kippistia suaedifolia*	2	139.7	Large Area Two Phase survey plots	1	MS-VZ#13-253_Mod
254	*Leptorhynchos waitzia*	-	-	*Leptorhynchos waitzia*	1	1.16	Small Area 10 m Parallel field traverses	1	MS-VZ#14-254_Mod



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Targeted Threatened Species Survey - Large Area - Development Footprint - Mine Site	Biodiversity AUSTRALIA	
	Drawn by: NE	Location: Warwick Station		
	Date: November 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54 Scale: 1:60000

Figure 45: Large area targeted threatened flora surveys within the Development Footprint – Mine Site

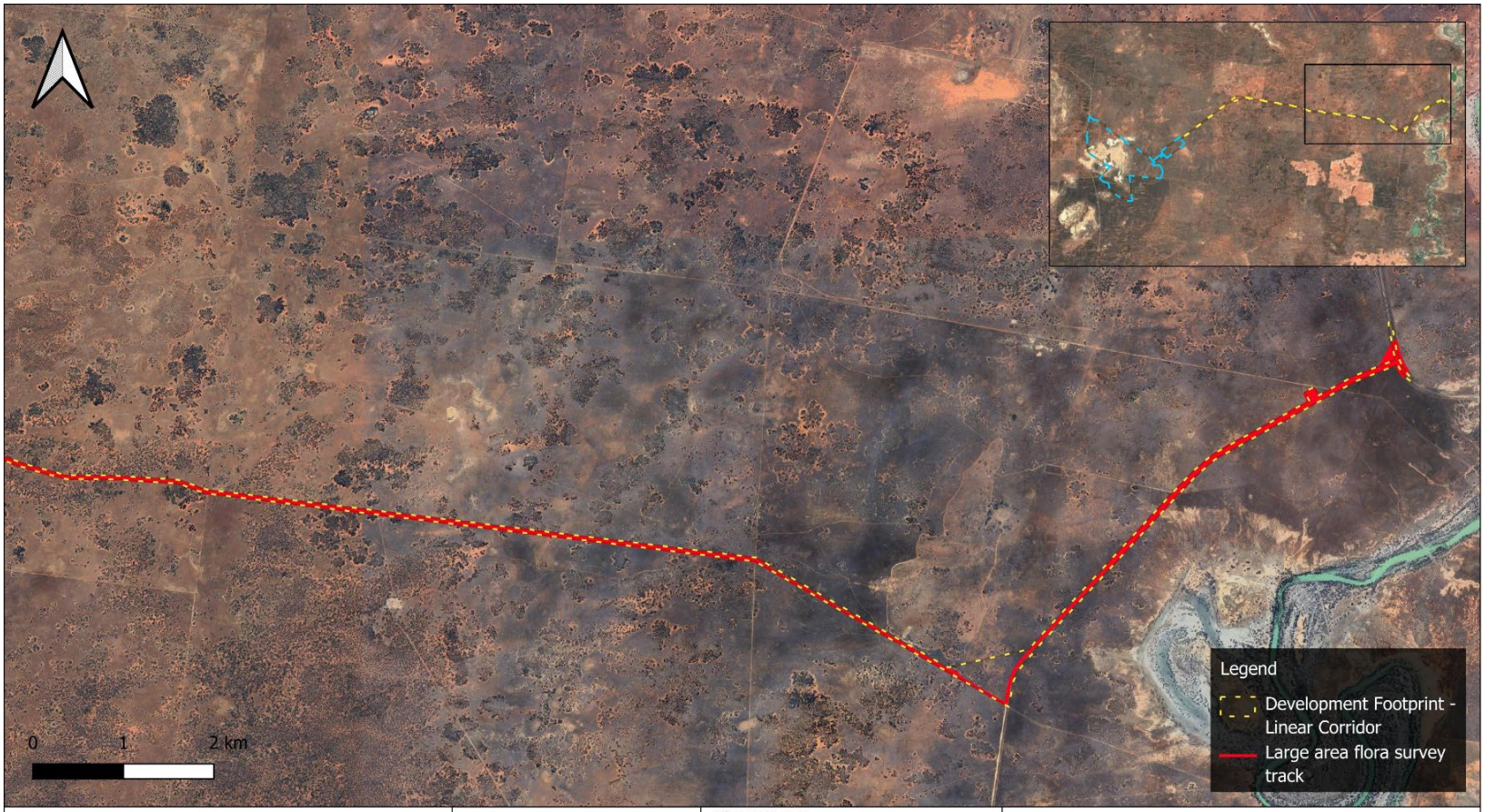


This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Large Area Targeted Threatened Flora Survey Tracks - Development Footprint - Mine Site	Biodiversity AUSTRALIA
	Drawn by: NE	Location: Warwick Station	
	Date: November 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:5000

Figure 46: Large area targeted threatened flora survey tracks within the Development Footprint – mine Site

This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Targeted Threatened Species Survey - Large Area - Development Footprint - Linear Corridor 1/2	Biodiversity AUSTRALIA	
	Drawn by: NE	Location: Warwick Station		
	Date: November 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:55000

Figure 47: Large area targeted threatened flora surveys within the Development Footprint – Linear Corridor 1 / 2

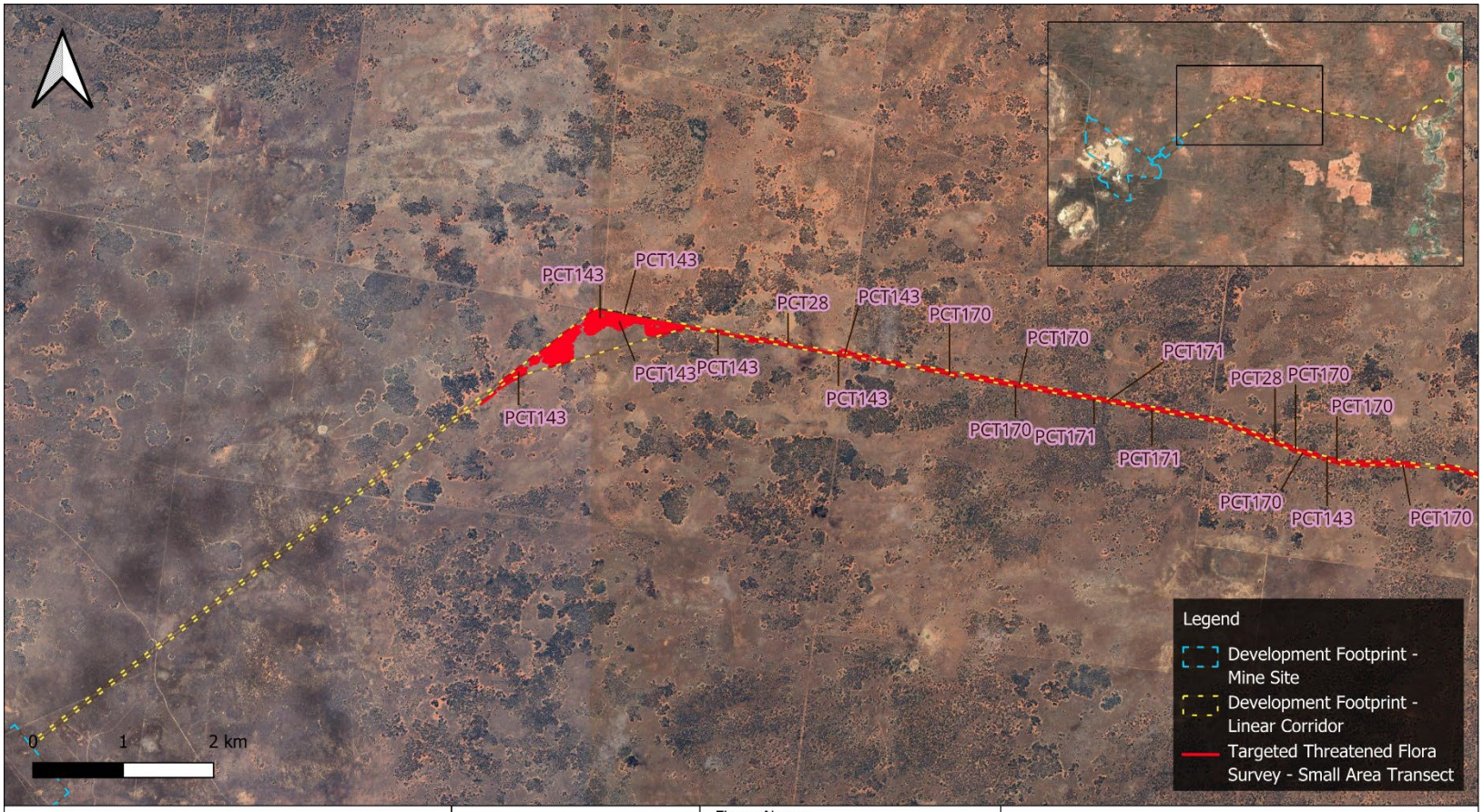


This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Targeted Threatened Species Survey - Large Area - Development Footprint - Linear Corridor 2/2	Biodiversity AUSTRALIA	
	Drawn by: NE	Location: Warwick Station		
	Date: November 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54 Scale: 1:55000

Figure 48: Large area targeted threatened flora surveys within the Development Footprint – Linear Corridor 2 / 2

This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Targeted Threatened Species Survey - Small Area - Development Footprint - Mine Site	Biodiversity AUSTRALIA	
	Drawn by: NE	Location: Warwick Station		
	Date: November 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:60000

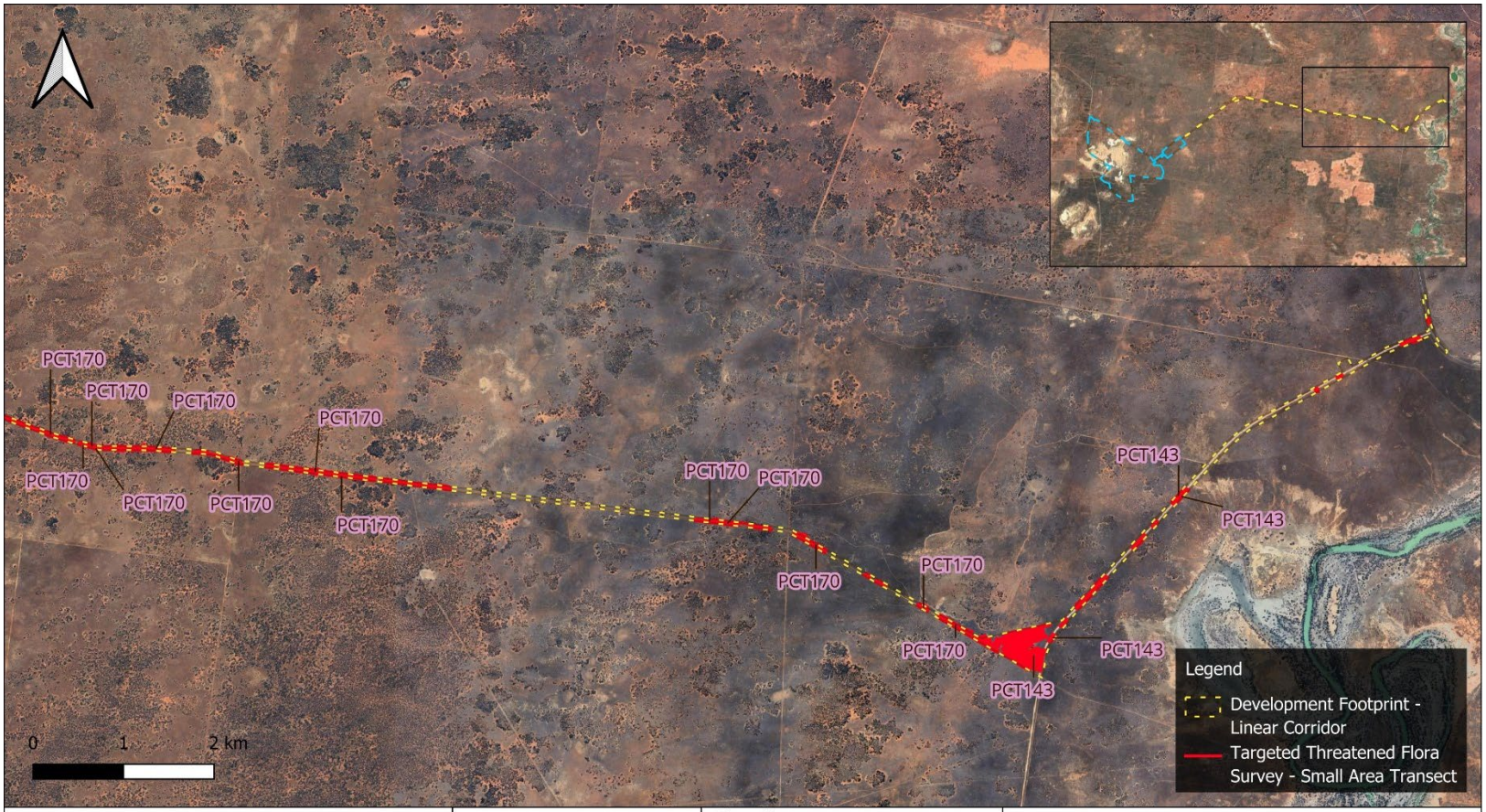
Figure 49: Small area targeted threatened flora surveys within the Development Footprint – Mine Site



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.

Project Manager: NC	Figure Name: Targeted Threatened Species Survey - Small Area - Development Footprint - Linear Corridor 1/2		
Drawn by: NE	Location: Warwick Station		
Date: November 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:55000

Figure 50: Small area targeted threatened flora surveys within the Development Footprint – Linear Corridor 1 / 2



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Targeted Threatened Species Survey - Small Area - Development Footprint - Linear Corridor 2/2	Biodiversity AUSTRALIA	
	Drawn by: NE	Location: Warwick Station		
	Date: November 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:55000

Figure 51: Small area targeted threatened flora surveys within the Development Footprint – Linear Corridor 2 / 2

Table 45: Threatened plant species grouped by stratum and survey period

Common Name	Scientific Name	BC Status	Survey Timing required	Survey Timing conducted	Survey Method Applied
Tree / Shrub / Sub-shrub					
Harrow Wattle	*Acacia acanthoclada*	Endangered	Aug-Nov	November	Small Area 10 m Parallel field traverses
Purple-wood Wattle	*Acacia carneorum*	Vulnerable	All year	12-29 November 2024 & 4-12 November 2025	Two-phase grid-based System
Bluebush Daisy	*Cratystylis conocephala*	Endangered	All year	November	Two-phase grid-based System
Desert Hopbush	*Dodonaea stenozyga*	Critically Endangered	All year	November	Small Area 10 m Parallel field traverses
Fleshy Minuria	*Kippistia suaedifolia*	Endangered	All year	November	Two-phase grid-based System
Pink Velvet Bush	*Lasiopetalum behrii*	Critically Endangered	All year	November	Small Area 10 m Parallel field traverses
Thyme Rice-Flower	*Pimelea serpyllifolia subsp. serpyllifolia*	Endangered	Jul-Nov	November	Small Area 10 m Parallel field traverses
Bitter Quandong	*Santalum murrayanum*	Endangered	All year	November	Small Area 10 m Parallel field traverses
Bladder Senna	*Swainsona colutoides*	Endangered	All year	November	Small Area 10 m Parallel field traverses
Yellow Swainson-pea	*Swainsona pyrophila*	Vulnerable	Sep-Nov	November	Small Area 10 m Parallel field traverses
Forb					
A Saltbush	*Atriplex infrequens*	Vulnerable	Nov-Feb	November	Two-phase grid-based System
Mossgiel Daisy	*Brachyscome papillosa*	Vulnerable	Sep-Nov	November	Two-phase grid-based System
A Burr-daisy	*Calotis moorei*	Endangered	Sep-Nov	November	Two-phase grid-based System
Winged Peppercress	*Lepidium monoplocoides*	Endangered	Sep-Dec	November	Small Area 10 m Parallel field traverses
Button Immortelle	*Leptorhynchos waitzia*	Endangered	Sep-Nov	November	Small Area 10 m Parallel field traverses
Greenhood Orchid	*Pterostylis cobarensis*	Vulnerable	Oct	October 2025	Small Area 10 m Parallel field traverses
Silky Swainson-pea	*Swainsona sericea*	Vulnerable	Sep-Nov	November	Small Area 10 m Parallel field traverses
Grass					
A Spear-grass	*Austrostipa metatoris*	Vulnerable	Oct-Nov	November	Small Area 10 m Parallel field traverses
A Spear-grass	*Austrostipa nullanulla*	Endangered	Sep-Dec	November	Two-phase grid-based System

Austrostipa nullanulla was recorded within the Mine Site Development area. As a result the finer-scale grid surveys were used to locate and map the population extent, which along with identification of suitable habitat areas containing gypsum derived soils associated with salt lakes, land containing gypseous lunettes and Copi rises defined the extent of the species polygon. This subsequent phase

ensured a greater intensity of survey effort in locations where the target species and it's suitable habitat occurs.

Targeted threatened flora species plot traverses are a pre-determined distance apart depending on the plant life form type and the density of vegetation cover. The entire extent of potential habitat for each target plant species was searched. Due to the density of vegetation occurring within the Subject Land, traverses were conducted along all vegetated areas and guided by 10 m parallel traverses with occasional random meandering to inspect for smaller or more cryptic species.

Opportunistic searches for threatened flora species were also undertaken during the vegetation plot surveys as well as during other survey-related activities within the Subject Land.

4.3.2.3 *Tecticornia lylei* surveys

In addition to the targeted threatened flora species surveys outlined above, while not a listed threatened species, Biodiversity Australia conducted searches for *Tecticornia lylei* (the dominant flora species in PCT 65 *Halosarcia lylei* low, open shrubland saline wetland of arid and semi-arid regions, which is associated with the BC Act-listed *Tecticornia lylei* EEC) on saline clay soils in salt lake beds and within 50 m perimeters of larger lakes in the mine site, shown in Figure 52. No suitable areas are located within the linear corridor area. No *T. lylei* individuals or communities were found during targeted searches, a finding consistent with the site's lack of grading into Bladder Saltbush shrubland or Black Oak woodland near lake margins (unlike nearby known sites such as Nanya Station, located 60 km north of the mine site).

4.3.2.4 Bluebush Daisy (*Cratystylis conocephala*) and Fleshy Minuria (*Kippistia suaedifolia*) surveys

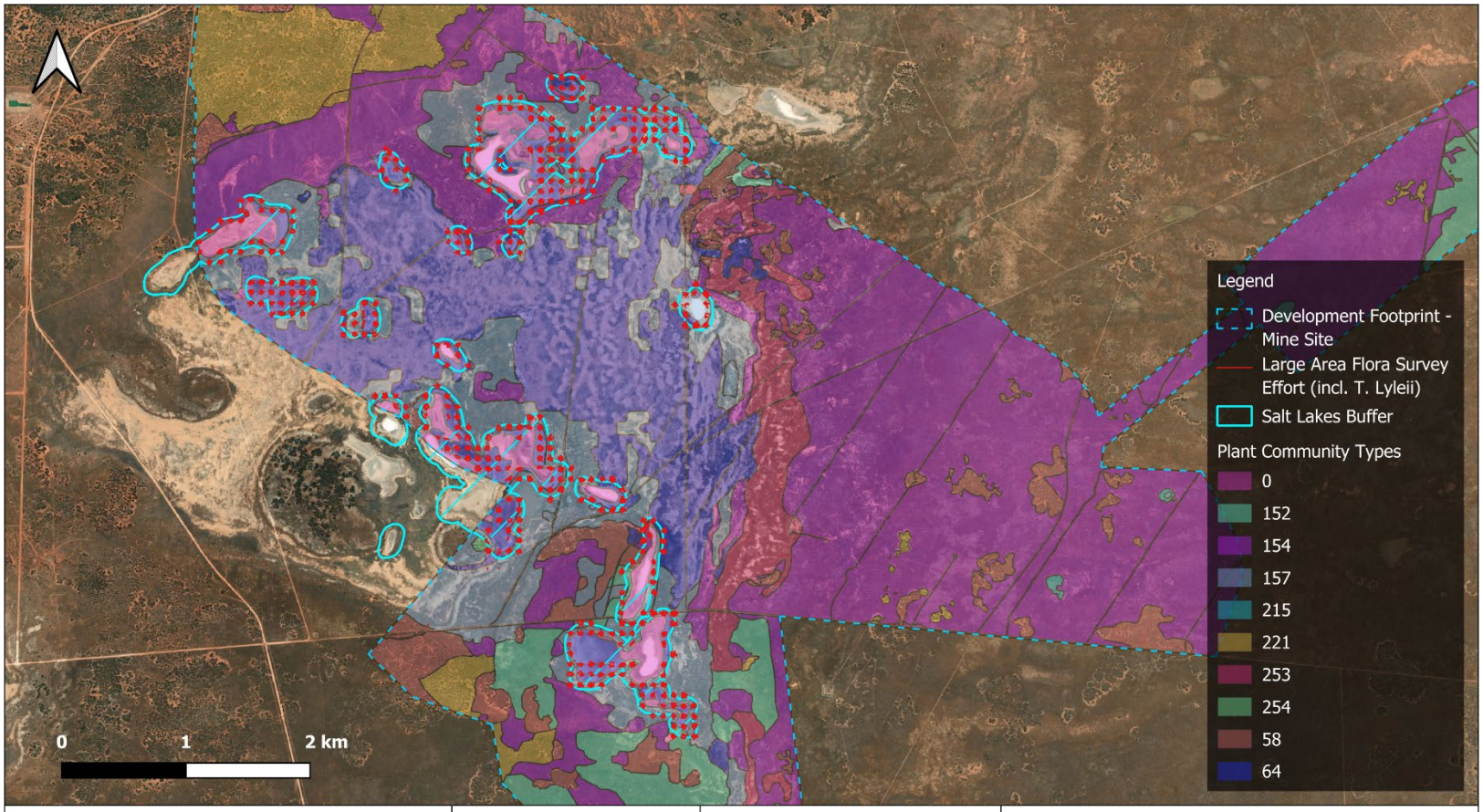
Biodiversity Australia conducted additional targeted flora surveys in November 2025 to address identified gaps in the original November 2024 flora survey effort for Bluebush Daisy (*Cratystylis conocephala*) and Fleshy Minuria (*Kippistia suaedifolia*). These efforts confirm that the minimum survey requirements have been met, and no assumptions of presence are necessary, as no individuals of either species were detected.

Targeted large-area threatened flora surveys were conducted throughout the entirety of PCT 221 for *Cratystylis conocephala* (Bluebush Daisy) between 4–12 November 2025. No individuals were recorded, consistent with the species' absence during prior seasonal surveys.

Similarly, targeted large-area threatened flora surveys were conducted throughout the associated PCTs (143, 154, and 253, as these are the only relevant PCTs occurring on the Subject Land from the TBDC list: 18, 143, 153, 154, 166, 253, and 262), plus saline lakes, depressions, and claypans with gypseous or calcareous soils, gypseous dunes, and within 50 m of those areas, for *Kippistia suaedifolia* (Fleshy Minuria) between 4–12 November 2025. The saline lakes present within the Subject Land are barren and inhospitable to Fleshy Minuria, with surveys intersecting portions of these features as shown in Figure 53. The aforementioned habitat constraints occur throughout the Subject Land across varying PCTs, totalling 105.95 ha where these PCTs and constraints overlap. This allowed for Fleshy Minuria to be surveyed using the two-phase large-area threatened flora survey method in November 2025, within the TBDC-required timing window.

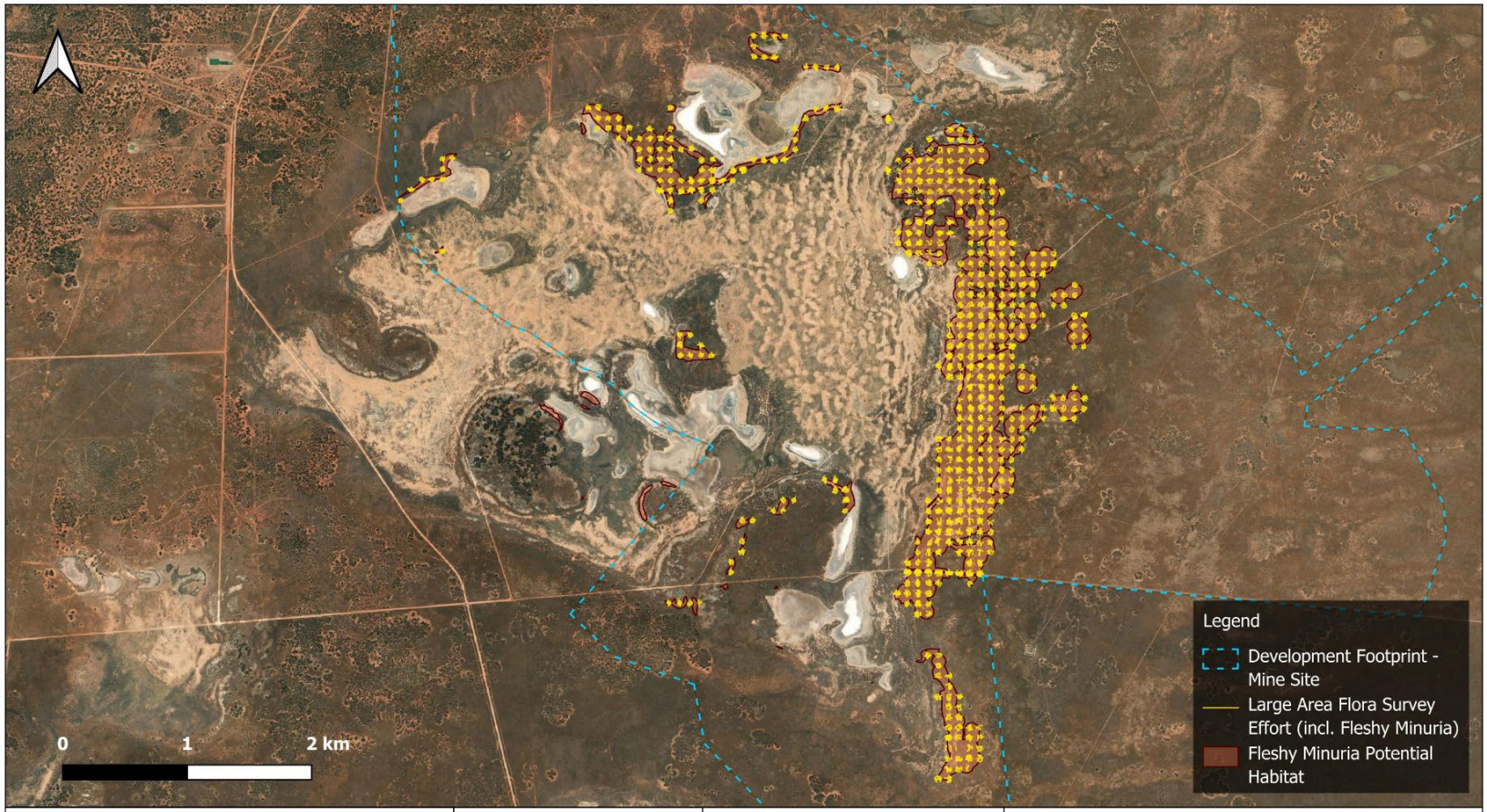
Targeted threatened flora surveys conducted in November 2025 covered the entirety of potential habitat for Fleshy Minuria, resulting in a total of 32.2 km surveyed with a 10 m transect width, equating to 32.2 ha of potential habitat within the Subject Land. The tracks provided in the previous BDAR depicted that some large area circles for Fleshy Minuria had less coverage within the 40-metre diameter circles than others. It should be clear, that the large area survey method calls for the following effort within Section 4.4.1 "At each survey location (grid intersect), a 40-metre diameter area (Circle/s) (1256-square-metre circular area)

must be systematically surveyed for the target species." As the Biodiversity Australia survey correctly allocated the 40 metre diameter circles, attended each circle and systematically searched each circle, with the effort applied being relative to *Suitable Habitat* within that Circle. As a result, the requirements of the BAM and the Surveying threatened plants and their habitats NSW survey guide for the Biodiversity Assessment Method 2020 have been fulfilled. In addition, of the required 5,505 large area two-phase grid-based 40 m diameter circular search plots across the entirety of the mine site, 197 plots were identified within potential habitat for Fleshy Minuria. Of these, 65 plots were perceived to have a lower coverage in 2024. Eight additional plots were subsequently undertaken in 2025 to ensure full and unquestionable compliance, bringing the total compliant plots of suitable Fleshy Minuria habitat to 73.



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Targeted Surveys Around Lakebeds for Tecticorni lyleii	Biodiversity AUSTRALIA
	Drawn by: KK	Location: Warwick Station	
	Date: November 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:40000

Figure 52: *Tecticornia lylei* Targeted Survey Effort



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.

Project Manager: NC	Figure Name: Fleshy Minuria Habitat Constraint within the Development Footprint	Biodiversity AUSTRALIA	
Drawn by: NE	Location: Warwick Station		
Date: November 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:40000

Figure 53: Fleshy Minuria (*Kippistia suaedifolia)* Targeted Surveys

4.3.3 Targeted Survey – Fauna Species Credit Species

All threatened fauna species (with the exception of the Painted Burrowing Frog (*Neobatrachus pictus*)) were surveyed in accordance with recommended survey guidelines and during recommended survey periods as detailed in the BioNet TBDC, specific threatened species survey guidelines, and/or other resources (see sections below for specific sources). Targeted threatened fauna survey results and methods are shown in Table 50.

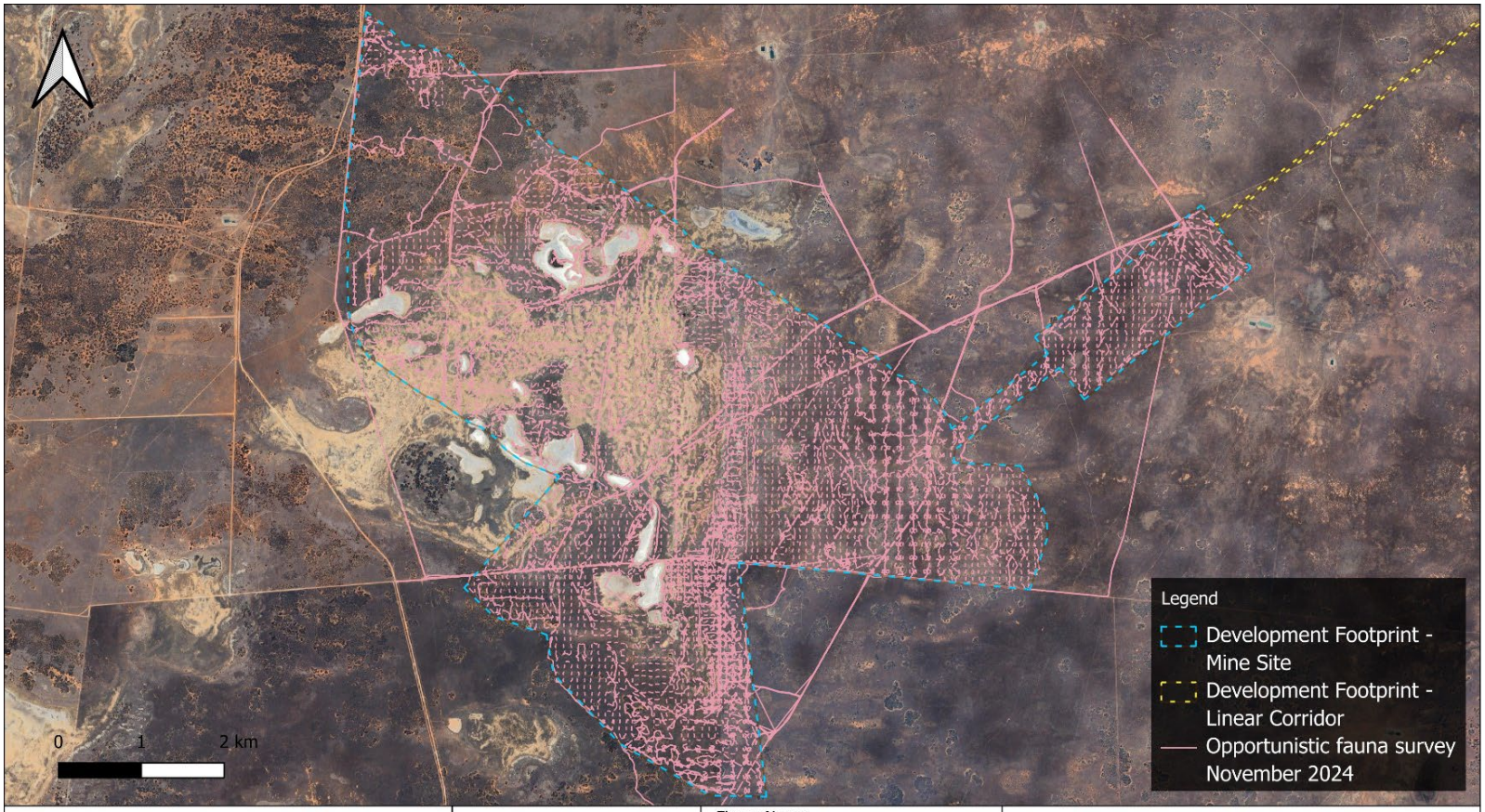
4.3.3.1 Complementary Opportunistic Fauna Surveys

Species targeted: Australian Bustard (*Ardeotis australis*), Bush Stone-curlew (*Burhinus grallarius*), White-bellied Sea-eagle (*Haliaeetus leucogaster*), Black-breasted Buzzard (*Hamirostra melanosternon*), Pink Cockatoo (*Lophochroa leadbeateri*), Square-tailed Kite (*Lophoictinia isura*), and Southern Hairy-nosed Wombat (*Lasiorhinus latifrons*).

Opportunistic fauna surveys, complementary to the method-specific targeted surveys detailed below, were conducted in slow-moving vehicles (SMV) and on foot across the entire Development Footprint between 11 November – 14 December 2024, 7-16 January, 3-14 February, 27-29 October, and 4-11 November 2025. Qualified fauna ecologists experienced in bird identification and equipped with binoculars and fauna identification resources, traversed the areas between Threatened Flora plots whilst searching for individuals and signs of wildlife. Additional surveys were conducted along tracks outside the Development Footprint (Figure 54). Surveyors paid particular attention to soaring birds, stick nests raptor nests and burrows. All other species encountered incidentally were also recorded. The complementary opportunistic fauna surveys covered approximately 1958.70 km (Figure 54).

The surveys were guided by the threatened species survey guidelines for the Pink Cockatoo, listed within the NSW BioNet Threatened Biodiversity Database Collection (TBDC) and the NSW Biodiversity Assessment Method (BAM) 2020 Section 5.3 and subsections 5.2.1 – 5.2.3. Where specific survey details were not available (e.g. hollow height, survey duration), further information was sourced from published literature, including:

- NSW Threatened Biodiversity Survey and assessment guidelines for development and activities Working Draft (DEC 2004),
- Handbook of Australian, New Zealand & Antarctic Birds: volume 4 parrots to dollarbird (Higgins 1999),
- NSW Field Survey Method Guidelines (DPI 2008),
- Conservation Advice for *Lophochroa leadbeateri leadbeateri* (Eastern Major Mitchell's Cockatoo) (DCCEEW 2023),
- Survey guidelines for Australia's threatened birds - Guidelines for detecting birds listed as threatened under the EPBC (DEWHA 2017), and
- Draft Regional Biodiversity Survey and Assessment Guidelines (NPWS & SMEC 2001).



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Locations Complimentary Opportunistic Fauna Survey - Development Footprint - Mine Site	Biodiversity AUSTRALIA	
	Drawn by: NE	Location: Warwick Station		
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54 Scale: 1:60000

Figure 54: Locations of complimentary opportunistic targeted threatened fauna surveys within the Development Footprint – Mine Site

4.3.3.1.1 Habitat Constraints

Desktop assessments and field surveys within the Development Footprint included assessment of habitat constraints and microhabitats for fauna Species Credit Species. This included desktop assessment of the proximity of the Development Footprint to features such as caves, wetlands and waterways and field inspection of microhabitats including leaf litter, stick nests and Hollow Bearing Trees etc.

The fauna surveys undertaken by Biodiversity Australia spanned from November 2024 to August 2025. The EnviroKey fauna surveys were conducted between January 2018 and January 2024. EnviroKey records obtained prior to June 2020 were discarded due to these being gathered outside the 5-year period.

Surveys were undertaken by Accredited Persons and ecologists under both Biodiversity Australia and EnviroKey's scientific licenses and animal research authority. The methods per survey measure are detailed below.

4.3.3.1.2 Habitat Evaluation

Large area field traverses were the main survey method employed to assess the suitability of habitats for threatened species observed in the Assessment Area, or in broadly similar habitats in the region. Habitats within and adjacent to the Development Footprint were defined and assessed according to parameters such as:

- Structural and floristic characteristics of the vegetation e.g. understorey type and development, crown depth, groundcover density, etc.
- Degree and extent of disturbance e.g. fire, grazing by livestock/feral goats, logging, weed invasion, modification to structure and diversity, etc.
- Presence of water in any form e.g. rivers, dams, creeks, drainage lines, soaks.
- Size and abundance of hollows and fallen timber.
- Availability of shelter e.g. rocks, logs, hollows, undergrowth.
- Wildlife corridors, refuges and proximate habitat types.
- Presence of mistletoe, nectar, gum, seed, sap, etc. sources.

This information is considered for evaluation of the potential occurrence of threatened species on or adjacent to the site based on desktop searches including species records, cited ecology and personal experience/knowledge of the species.

Habitat evaluation was conducted from the beginning of the project (November 2024), in a systematic method in conjunction with the large area threatened flora searches which covered the entire Development Footprint.

4.3.3.2 Active Herpetological Surveys

Biodiversity Australia

Species targeted: Crowned Gecko (*Lucasium stenodactylum*)

Targeted surveys involved nocturnal spotlight, physical habitat searches, and Elliot and pitfall trapping. Concurrent Elliot and pitfall trapping surveys were undertaken within the Development Footprint between 10 – 14 December 2024. Three Elliot and pitfall trap arrays were established in suitable habitat (PCTs 171,

221), two within the Development Footprint – Mine Site and one along the Development Footprint – Linear Corridor (Figure 63 and Figure 64). The pitfall arrays consisted of a 30 m drift fence with 7 x 20 litre buckets (410 mm tall) positioned along its length. Ten 'A' sized Elliot traps were set in the area surrounding each pitfall array, each baited with a mix of peanut butter, honey, and oats. Both the Elliot and pitfall traps were checked each morning within two hours of sunrise, and any captured fauna was identified and released. The traps were then closed and re-opened/reset within an hour of sunset the following evening. This survey effort resulted in a total of 84 pitfall trap nights and 120 Elliot trap nights.

The nocturnal spotlight surveys were conducted in suitable habitats (PCTs 154, 221) within the Development Footprint – Mine Site between 9 – 17th January 2025. The surveys were conducted by scanning for eye-shine with hand-held torches either on foot as a random meander (n = 10; ∑ effort = 756 person minutes) or in a slow-moving vehicle (n = 37; ∑ effort = 437 person minutes) (Figure 55 and Figure 56). All observations of eye shine were investigated, and each of the associated species was identified.

The physical habitat searches were also conducted in suitable habitat (PCTs 154 and 221, a combined area of 2,064.94 ha) and involved lifting timber, rocks and debris, and inspecting dense vegetation and leaf litter to locate and identify gecko species. These searches were done opportunistically during nocturnal spotlighting and other surveys. Any habitat elements that were removed during the searches were replaced in the position in which they were found.

Survey guidelines utilised: NSW Government Department of Planning and Environment (DPE) (2022): Threatened reptiles BAM survey guide.

Survey guideline requirements (per 50 ha suitable habitat):

- Four spotlight surveys spanning 120 person minutes, *or*
- Four pitfall trapping surveys spanning 72 trap days.

Survey guidelines met:

- Yes, 10 spotlight surveys on foot spanning 756 person minutes, 37 spotlight surveys in a slow-moving vehicle spanning 437 person minutes, and 3 pitfall trapping surveys spanning 84 trap days.

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Reptile hand searches were conducted by EnviroKey ecologists at 74 locations across the Development Footprint and broader Subject Land. Each survey location was systematically searched by an experienced herpetologist for a period of 30 minutes for active and inactive animals during the field surveys. Fallen timber, Spinifex Grass (live and dead), loose bark, tree and ground hollows, and loose soil and rocks were extensively searched by raking and lifting. Total survey effort was 2,220 minutes (37 hours).

4.3.3.3 Diurnal Bird Surveys

Biodiversity Australia

Mallee Bird Community census surveys

Species targeted: Black-eared Miner (*Malorina melanotis*); Red-lored Whistler (*Pachycephala rufogularis*); South-eastern Hooded Robin (*Melanodryas cucullata*); Southern Whiteface (*Aphelocephala leucopsis*); White-fronted Chat (*Epthianura albifrons*).

Diurnal bird census surveys targeting the Eastern Mallee Bird (MBC) TEC were conducted in suitable habitat (PCTs 170 and 171 – approx. 20.18 ha) within and adjacent to the Development Footprints between

5 – 24 February 2025. Diurnal bird census surveys targeting Pink Cockatoos were conducted in suitable habitat (28, 58, 143, 152, 154, 170, 171, 215, 221, 253, & 254 – Approx 2,746.57) within and adjacent to the Development Footprints From 25-28 November & 4–14 December 2024, 6-11 August, 27-29 October and 4-11 November 2025.

The MBC surveys consisted of a 30-minute area search of an area covering 2 ha. During each survey, observers identified and recorded all bird species seen and heard. Surveys were conducted in the early morning (dawn) or late afternoon (dusk) when bird activity was highest. The dawn surveys commenced at daybreak, once lighting was sufficient to adequately identify species (15 minutes after sunrise), and concluded when bird activity waned (2.5 hours after sunrise). The dusk surveys commenced 2 hours before sunset and concluded when either light was insufficient to identify species or when bird activity waned. A total of 42 surveys were conducted for the MBC, a combined 1,258 minutes (21 hours) over 45.8 kms (Figure 57 and Figure 58).

Survey guideline requirements:

- General - Early morning area searches in suitable habitat.
- Black-eared Miner – Minimum 24 hours survey effort over at least 8 days.
- Red-lored Whistler – Minimum 15 hours survey effort over at least 5 days.

Survey guidelines utilised: Australian Government Department of the Environment, Water, Heritage and the Arts (DEWHA) (2010): Survey guidelines for Australia's threatened birds Guidelines for detecting birds listed as threatened under the E*nvironment Protection and Biodiversity Conservation Act 1999*. NSW BioNet Threatened Biodiversity Database Collection Threatened biodiversity ecological data – retrieved from BioNet Atlas.

Diurnal Pink Cockatoo Surveys

Species targeted: Pink Cockatoo (*Lophochroa leadbeateri*)

A variety of survey methods were employed to target the Pink Cockatoo and its breeding habitat. Initially, walking and slow-moving vehicle (SMV) transects were conducted to detect the presence of Pink Cockatoos and to identify Pink Cockatoo breeding habitat. The walking transects were conducted at an average speed of 4.5 km/hr and SMV surveys at an average speed of 20 km/hr. The surveys were conducted across the entire site, though emphasis was placed on areas of suitable habitat for the Pink Cockatoo. Within the Subject Land, suitable habitat is found within Plant Community Types (PCTs) 25, 28, 58, 143, 152, 154, 170, 171, 215, 221, and 253. Nearby water sources were also considered to be important habitat features, as were paddock trees and raptor nests.

The Pink Cockatoo Surveys consisted of preliminary general area searches and targeted HBT searches conducted across the entire associated PCTs, to detect individuals, pairs, or groups of birds. Once HBTs had been located (one within the Mine Site area and eleven along the Linear Corridor) within the Development Footprint, more focussed searches were then conducted within these areas. Morning and afternoon searches were conducted in the areas around the HBTs (300 m radius). As no fresh surface water sources, such as dams are located within the Development Footprint, surveys were focussed on the areas between the HBTs and the dams.

Surveys conducted on 11-29 November and 4-14 December in 2024, as well on 7-16 January, 3-14 February, 6-11 August, 27-29 October, and 4-11 November in 2025 focussed on the eleven Plant Community Types (PCT) associated with the Pink Cockatoo (PCTs 28, 58, 143, 152, 154, 170, 171, 215, 221, 253, and 254), covering an area of 2746.57 ha.

Eight suitably qualified and experienced Biodiversity Australia Ecologists undertook targeted Pink Cockatoo surveys within the Copi Mineral Sands Project Area from 11 November to 14 December 2024 and again from 6 August to 12 November 2025. This quantum of field work meets the prescribed survey requirements for the Pink Cockatoo detailed within the TBDC. Locations of surveys are provided within Figure 57 and Figure 58, with Total Survey Effort for Pink Cockatoo in Table 46.

Based on requirements listed in the TBDC and published literature, a minimum survey effort of 26.66 hours (40 minutes of searching per day at each of the 10 point-count locations, repeated over 4 days) was required for the Pink Cockatoo over a period of at least 4 days. Biodiversity Australia conducted a total of 53.53 hours of surveys within areas of suitable habitat within the HBT survey area, over 19 days and observed no evidence of breeding activity. Accordingly, the Pink Cockatoo was included in the Biodiversity Development Assessment Report (BDAR) as an ecosystem credit species due to its presence and evidence of foraging activity and behaviour and was excluded as a species credit species due to the absence of active breeding habitat. Therefore, a species polygon was not created for the Pink Cockatoo.

Survey guidelines utilised: Australian Government Department of the Environment, Water, Heritage and the Arts (DEWHA) (2010): Survey guidelines for Australia's threatened birds Guidelines for detecting birds listed as threatened under the E*nvironment Protection and Biodiversity Conservation Act 1999*. NSW BioNet Threatened Biodiversity Database Collection Threatened biodiversity ecological data – retrieved from BioNet Atlas.

Survey guideline requirements:

- Pink Cockatoo – Look For signs of breeding, identify potential nest trees, monitor for this species, all during the breeding season (August to November), area searches or transects in suitable habitat, by vehicle or by foot, and targeted morning and afternoon searches around water sources – Minimum 26.66 hours survey effort over at least 4 days.

Survey guidelines met:

- Pink Cockatoo – Yes 53.53 hours survey effort over 19 days.

Table 46: Survey Effort – Pink Cockatoo

Search Area	SMV (Km)	SMV (Hr)	Walking (Km)	Walking (hr)	Total SMV & Walk (Km)	Survey Pt (Hrs)	Total Hrs	Survey Days
HBT 1	15.76	0.79	46.62	10.36	62.38		11.15	34
HBT 2	33.79	1.69	12.15	2.70	45.94	2.66	7.05	37
HBT 3	25.72	1.29	11.94	2.65	37.66	2.66	6.60	35
HBT 4, 5, 6	28.44	1.42	26.54	5.90	54.98	2.66	9.98	38
HBT 7	19.38	0.97	12.50	2.78	31.88		3.75	33
HBT 8	14.86	0.74	3.61	0.80	18.48		1.55	27
HBT 9	14.37	0.72	10.38	2.31	24.74		3.02	34
HBT 10	17.24	0.86	13.57	3.02	30.81	2.66	6.54	27
HBT 11	9.05	0.45	9.33	2.07	18.39		2.53	19
HBT 12	9.71	0.49	3.97	0.88	13.69		1.37	19
Total	188.32	9.42	150.62	33.47	338.94	10.64	53.53	303.00

Diurnal birds of prey surveys

Species targeted: Black-breasted Buzzard (*Hamirostra melanosternon*), Square-tailed Kite (*Lophoictinia isura*), Little Eagle (*Hieraaetus morphnoides*), Australian Bustard (*Ardeotis australis*); Pink Cockatoo (*Lophochroa leadbeateri*) although not a bird of prey, was also included in these survey points.

Combined foot and vehicle surveys were conducted for birds of prey within the Development Footprint between 29 November and 4 December 2024. The surveys commenced during the heat of the day when it was expected that conditions for thermal soaring would be optimal. Observers surveyed the sky for soaring individuals and scanned their surroundings for individuals perched on trees. Additionally, observers searched for large stick nests in areas with suitable habitat for nest construction (PCTs 58, 170, 171, 221). Any Pink Cockatoos or other bird species of interest located opportunistically while surveying for birds of prey were also recorded. In total, six combined foot and vehicle surveys were conducted, resulting in a combined 732 minutes (12 hours) of survey effort over 191.4 km (Figure 57 and Figure 58).

From 6-11 August 2025, surveys were conducted for Little Eagles consisting of survey points and 15 km slow moving vehicle searches along transects between multiple survey points. Survey points were 20-minute-long observations in a 300 m radius area and beyond, scanning the horizon, vegetation, and sky (between horizon and above survey point) with binoculars for 360 degrees. These Little Eagle survey points were conducted on elevated ground, consisting of wooded hillsides overlooking woodland and shrublands containing emergent live and dead trees (Figure 59 - Figure 61). Eight large raptor nests located within the Development Footprint – Mine Site were inspected for signs of occupancy and 20-minute survey points replicated over two consecutive days were conducted nearby, by two qualified and experienced ecologists. As Pink Cockatoos are known to use abandoned large raptor nests (such as the eight abandoned Wedge-tailed eagle nest in the mine site area), this species was also included in this survey.

Survey guideline requirements:

- There are no survey guidelines for the abovementioned birds of prey as these species are typically recorded opportunistically given their large foraging ranges. However, these are conspicuous diurnal species which can potentially be detected by aerial surveys/observing from vantage points approaching (and from within) suitable foraging and breeding habitat. Surveys were conducted in and around the associated PCTs, suitable foraging and breeding habitat described in the TBDC for each species. The Little Eagle surveys were designed to meet the requirements of the TBDC and advice received from the BOS Helpdesk, which stated that best practices for threatened bird surveys were to be adopted from available literature including Survey guidelines for Australia's threatened birds (Appendix A2.3 Birds of prey), Recommended Techniques – Conspicuous diurnal Sub-Group of Raptors – Eagles, The ACT Little Eagle Action Plan, Working Draft Threatened Species Survey and Assessment Guidelines and Regional Biodiversity Survey & Assessment Guidelines (DCCEEW2017, NSW DEC 2004, DEWHA 2010, ACT 2008).

Survey guidelines met:

- N/A.

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Diurnal bird census surveys including diurnal call playback

EnviroKey ecologists conducted surveys to determine the presence and usage of the Development Footprint by diurnal birds in either the early morning or late afternoon to coincide with peak bird activity. These surveys were completed at 243 locations between January 2018 and January 2024 across the

Development Footprint and Subject Land. Of these surveys, 120 were within the 5-year window (post-June 2020). A total of 76 of the 120 surveys were conducted within the Development Footprint, while the remainder were conducted in the broader Subject Land (Figure 57 and Figure 58). These surveys were guided by a standardised technique (20 minutes survey). Observers actively searched for diurnal birds and identified species by sight and by vocalisation during each 20-minute bird survey. Opportunistic data was also collected during the field survey whenever traversing the Development Footprint and Assessment Area.

Call playback was conducted at the conclusion of each diurnal bird survey to elicit a response from each of the predicted candidate species. These were (in order of call playback): Striated Grasswren; Red-lored Whistler; Bush Stone Curlew; and Black-eared Miner (for all bird survey locations in PCT 171). The call of each species was played for one minute, followed by a one-minute listening period. The call was then played again, followed by another listening period. Diurnal call playback length was about 10 minutes depending on survey location and PCT. For the purpose of this BDAR, minimum survey effort was assumed to be three minutes at each site.

Total survey effort for diurnal bird surveys was 4,860 minutes (81 hours) and diurnal call playback effort was 729 minutes (12.15 hours). Total survey effort for diurnal bird surveys within the 5-year window was 2,400 minutes (1,520 minutes in the Development Footprint and 880 minutes in the broader Subject Land).

Song meters

EnviroKey ecologists used song meter SM4 acoustic recorders during the 2022 field surveys to record bird calls. A song meter was activated at four locations (1 within the Development Footprint and 3 within the broader Subject Land) for a total of 3 full days, giving a total of 12 recording days. Song meters were pre-set to begin recording 30 minutes before sunrise, and record for two hours. Song meters also commenced recording 1 hour prior to sunset and recorded for 1.5 hours. The daily recording time for each song meter was 3.5 hours per day. Total recording time for the song meters was 42 hours (10.5 hours within the Development Footprint and 31.5 hours within the broader Subject Land).

Data was then analysed by Principal Ecologist Steve Sass.

4.3.3.4 Hollow Bearing Tree Search

Biodiversity Australia

Species targeted: Pink Cockatoo (*Lophochroa leadbeateri*); Masked Owl (*Tyto novaehollandiae*).

Data on Hollow Bearing Trees and tree hollows were recorded during targeted habitat searches, general area searches, and opportunistically while conducting large and small area vegetation surveys, diurnal bird surveys and nocturnal spotlighting surveys within and adjacent to the Development Footprint between 11-30 November, 1-14 December 2024, 7-16 January, 5 – 23 February, 6-11 August, 27-29 October, and 4-12 November 2025. Nocturnal surveys were also undertaken for Masked Owl - this is described in more detail in Sections 4.3.3.5 and 4.3.3.6. Where tree hollows were located, the number, size, and height above ground of hollows, as well as the Diameter at Breast Height (DBH) and species of the trees in which hollows were located were recorded (see Table 47). Additionally, the coordinates of the Hollow Bearing Trees were recorded using a hand-held Global Positioning System (GPS). To ensure the time allocated to the bird and spotlighting surveys remained unchanged, the time spent recording Hollow Bearing Tree data was added to their duration (Figure 57 and Figure 58).

Survey guidelines utilised: Advice from DCCEEW (pers. comm.) NSW Bionet Threatened Biodiversity Database Collection Threatened biodiversity ecological data – retrieved from BioNet Atlas

Survey guideline requirements:

- Pink Cockatoo – Searches for living or dead trees with hollows greater than 10 cm diameter.

Survey guidelines met:

- General – Yes, 12 trees containing hollows at least 1 hollow > 10 cm in diameter and located >2 m above the ground were recorded (See Appendix A-1 for HBT Photographs).
- A total of 39 trees with hollows were recorded within the Development Footprint.

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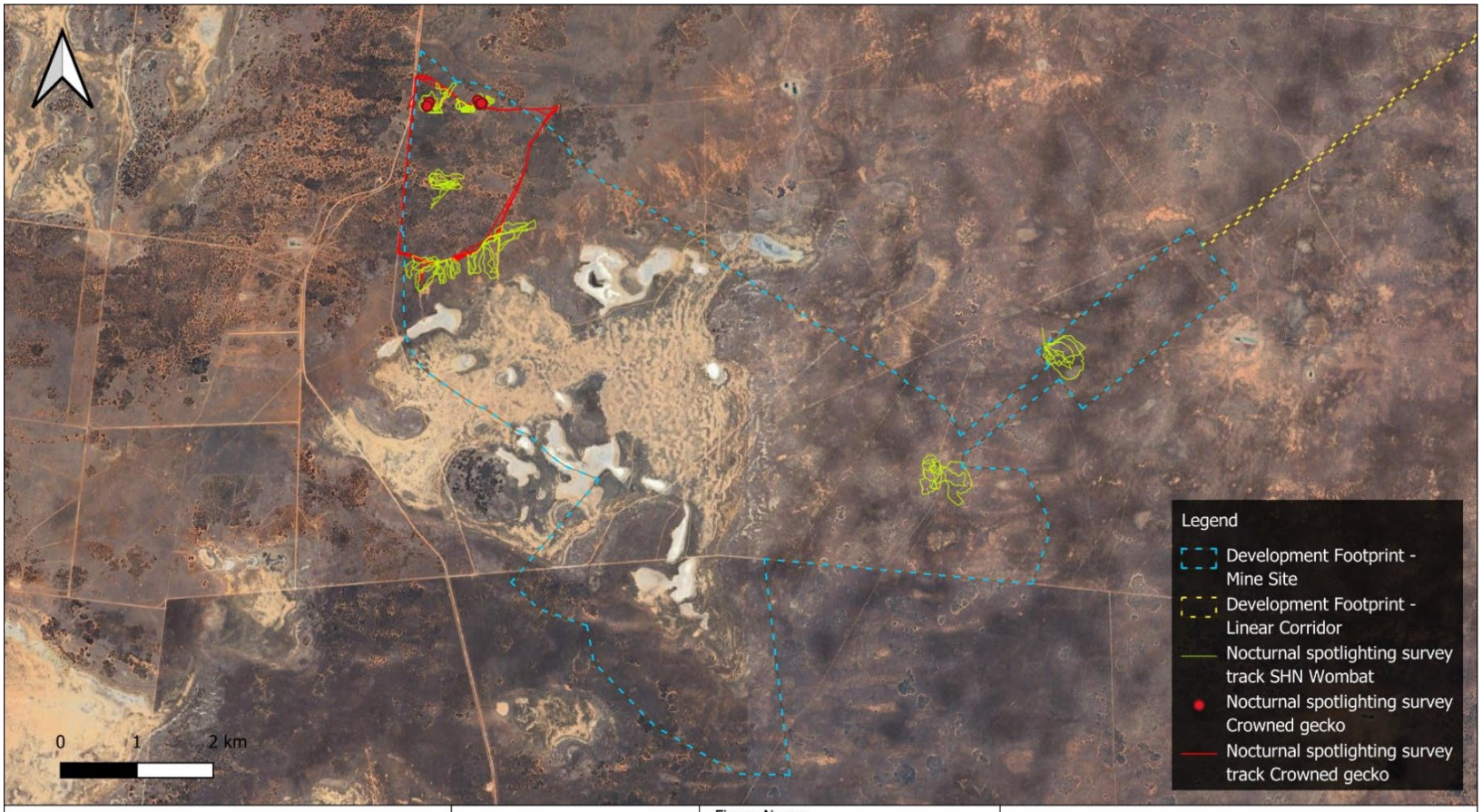
No targeted Hollow Bearing Tree searches were reported in EnviroKey BDAR.

Table 47: Suitable Hollow Bearing Trees located within the Development Footprint

HBT No.	Species	DBH (cm)	Hollows >10 (cm)	Hollow Height (m)	Distance from Development Footprint (m)	Impact Type
1	Eucalyptus	50	3	2	0	Direct Clearance
2	Eucalyptus	32	1	3	21.978188	Indirect Retained
3	Eucalyptus	25	1	2.5	72.470422	Indirect Retained
4	Eucalyptus	35	2	1.65	318.150689	Indirect Retained
5	Eucalyptus	130	3	2.2	0.082916	Indirect Retained
6	Eucalyptus	30	1	3	153.61475	Indirect Retained
7	Eucalyptus	30	1	2.4	99.058104	Indirect Retained
8	Eucalyptus	28	4	2	10.613874	Indirect Retained
9	Eucalyptus	40	1	3	25.602204	Indirect Retained
10	Eucalyptus	30	1	2.5	9.248757	Direct Clearance
11	Casuarina	37	2	4.5	0	Indirect Retained
12	Casuarina	44	1	2.5	38.882866	Indirect Retained



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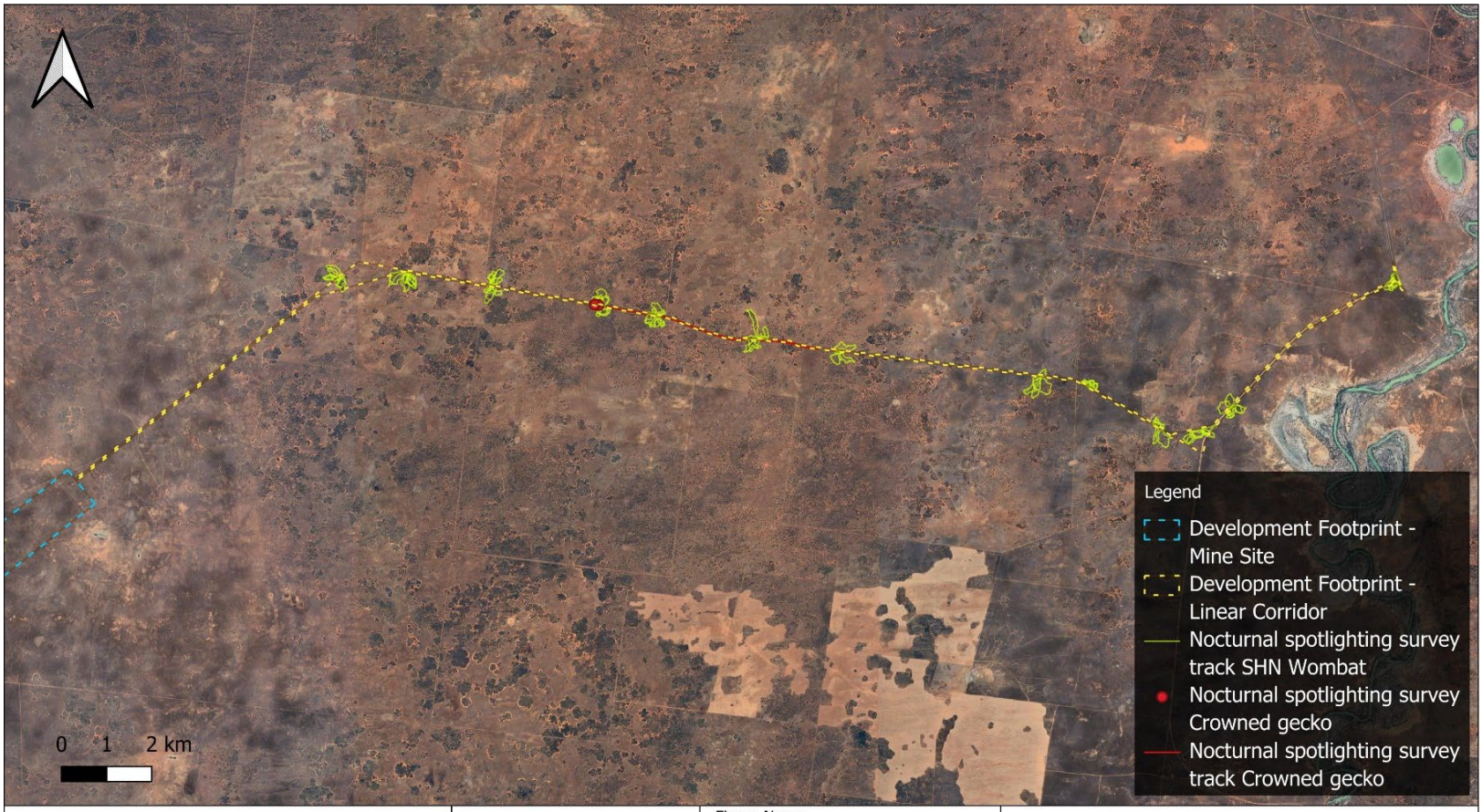
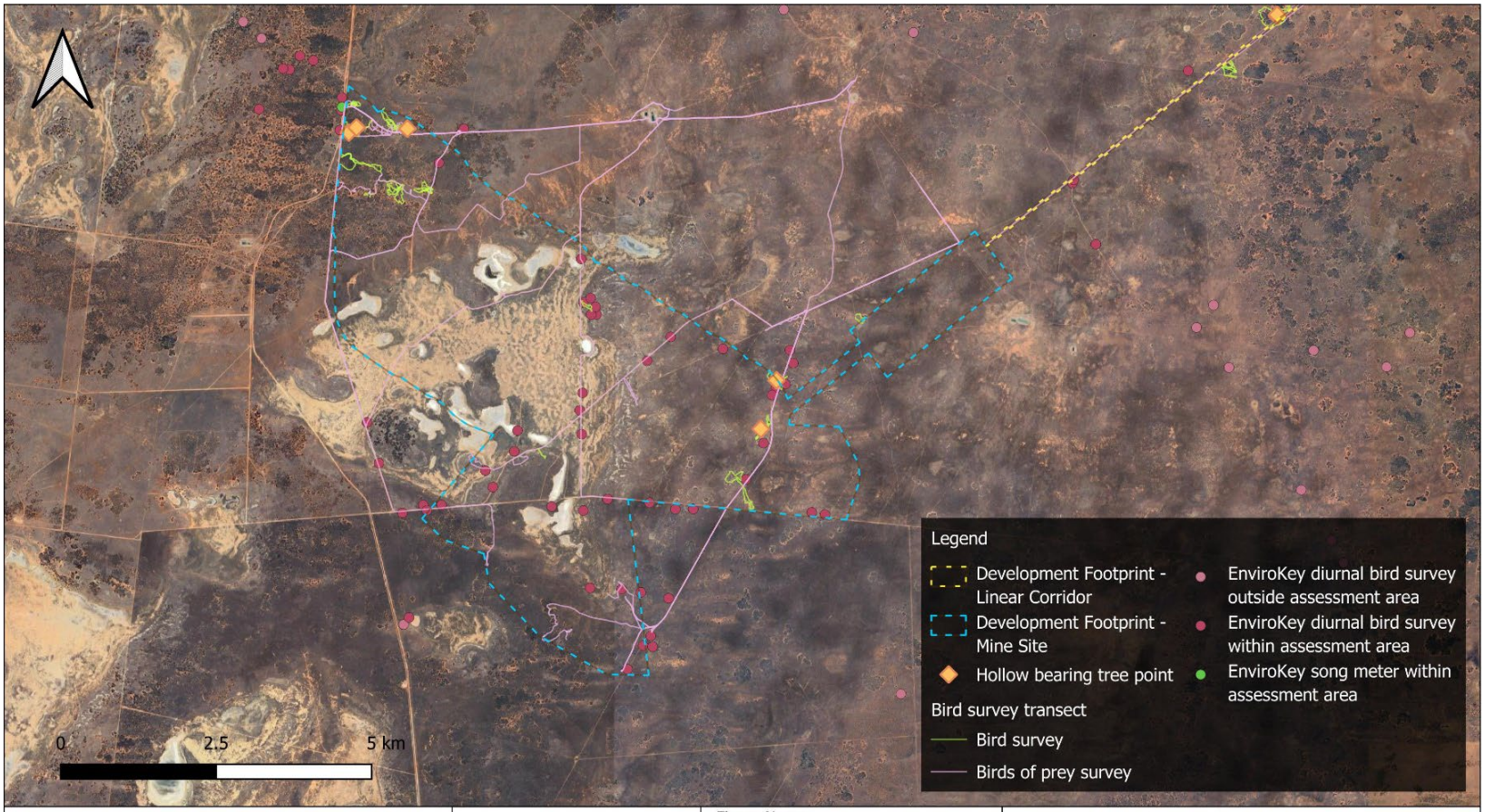
	Drawn by: NE	Location: Warwick Station		
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:65000

Figure 55: Locations of nocturnal spotlighting surveys - Development Footprint - Mine Site



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Locations of Nocturnal Spotlighting Surveys - Development Footprint - Linear Corridor	Biodiversity AUSTRALIA	
	Drawn by: NE	Location: Warwick Station		
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:110000

Figure 56: Locations of nocturnal spotlighting surveys - Development Footprint – Linear Corridor



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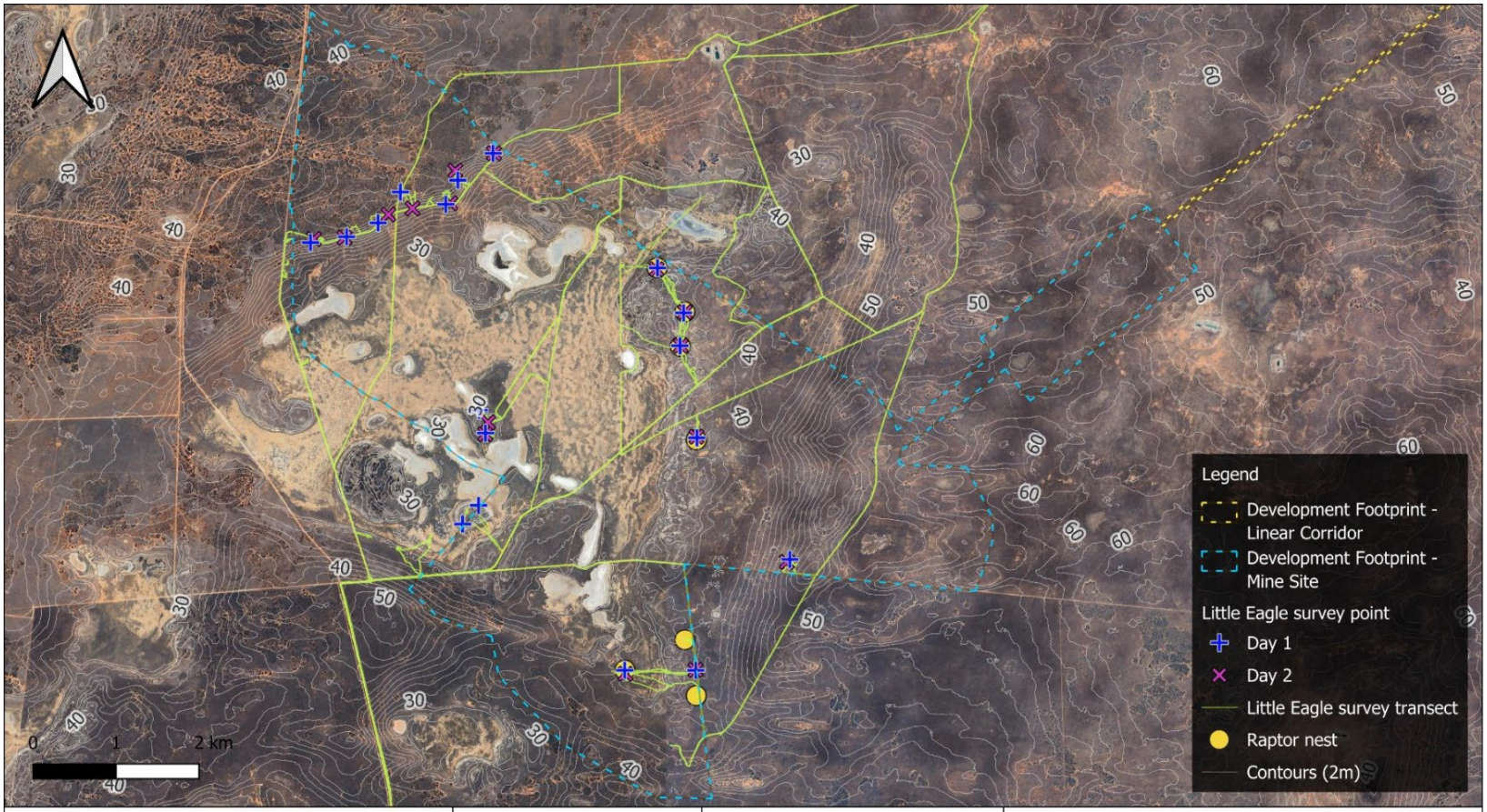
	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:80000

Figure 57: Diurnal bird census surveys & Hollow Bearing Tree points – Development Footprint – Mine Site

This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Diurnal bird census surveys & Hollow Bearing Tree Points - Development Footprint - Linear Corridor	Biodiversity AUSTRALIA	
	Drawn by: NE	Location: Warwick Station		
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54 Scale: 1:110000

Figure 58: Diurnal bird census surveys & Hollow Bearing Tree points – Development Footprint – Linear Corridor



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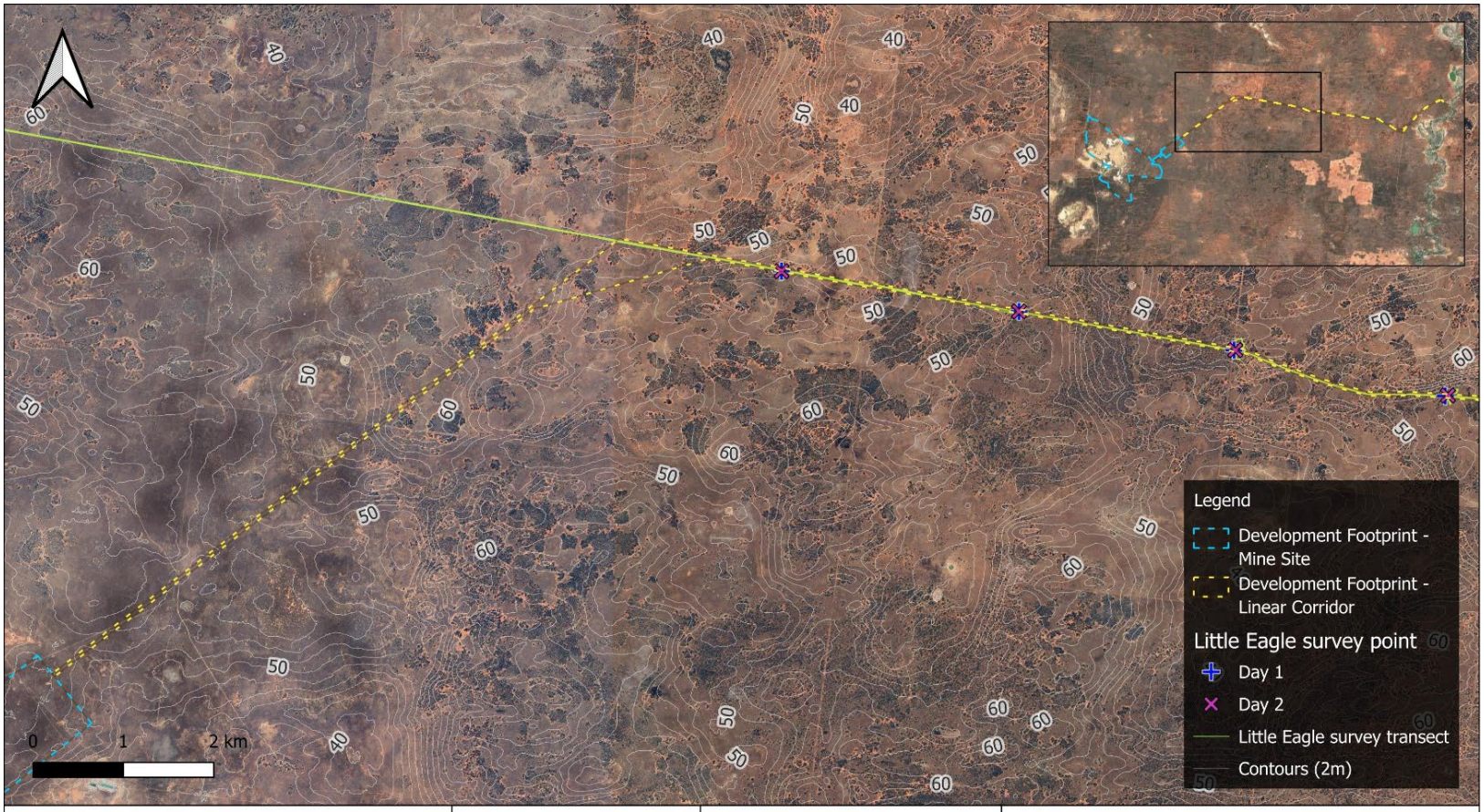
	Drawn by: NE	Location: Warwick Station		
	Date: August 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54 Scale: 1:60000

Figure 59: Little Eagle Survey - Development Footprint Mine Site



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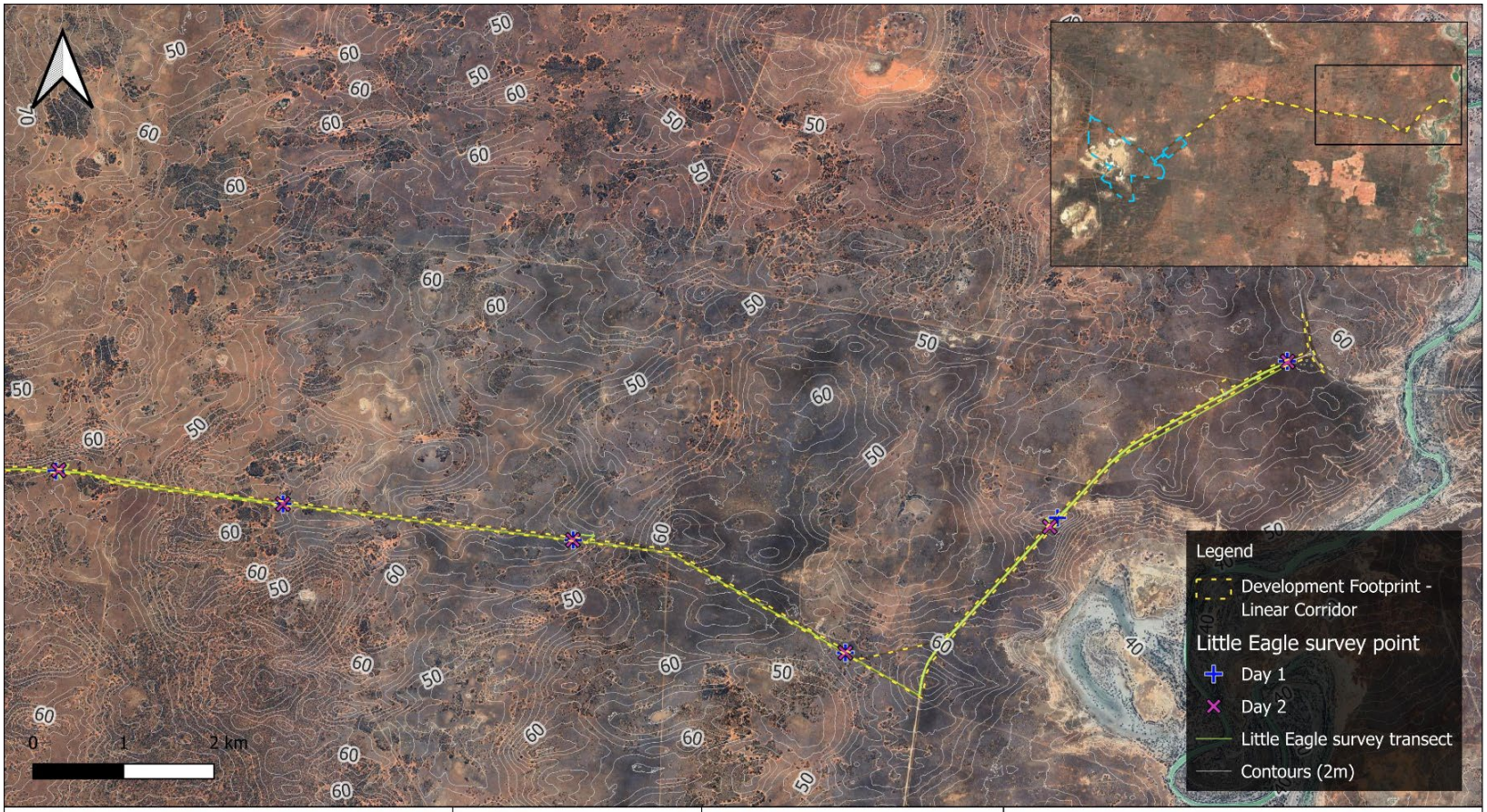
	Drawn by: NE	Location: Warwick Station		
	Date: August 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:55000

Figure 60: Little Eagle Survey - Development Footprint Linear Corridor - Map 1 / 2



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	Drawn by: NE	Location: Warwick Station		
	Date: August 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:55000

Figure 61: Little Eagle Survey - Development Footprint Linear Corridor - Map 2 / 2

4.3.3.5 Nocturnal Spotlighting Surveys

Biodiversity Australia

Species targeted: Southern Hairy-nosed Wombat (*Lasiorhinus latifrons)*

Targeted nocturnal spotlight surveys were conducted within the Development Footprint between 5 – 23 February 2025. In areas of suitable habitat (PCTs 58, 152, 154, 170, and 171), observers searched for burrows/warrens, scats, and individuals, using high-power hand-held torches and thermal binoculars. Each search spanned a minimum of 60 person minutes and was replicated in the same area on the following night. Searches commenced a minimum of two hours after sundown and were completed a minimum of one hour prior to sunrise. A total of 20 transects were searched, equating to 40 individual surveys conducted over 2827 minutes (47 hours) and 164 kilometres (Figure 55 and Figure 56).

Survey guidelines utilised: Advice from DCCEEW (pers. comm.); NSW Bionet Threatened Biodiversity Database Collection Threatened biodiversity ecological data – retrieved from BioNet Atlas

Survey guideline requirements (per 100 ha of suitable habitat):

- Spotlighting surveys spanning 60 person minutes and replicated across 2 consecutive nights.

Survey guidelines met:

- Yes, 40 spotlight surveys (20 transects) conducted spanning 2827 person minutes.

EnviroKey BDAR September 2024

No targeted spotlighting surveys for the Southern Hairy-nosed Wombat were conducted by EnviroKey ecologists, though scat and sign searches were conducted. The details of the scat and sign searches are as follows:

While no dedicated scat and sign searches were completed across the Development Footprint and Assessment Areas, searches for a period of 10 minutes each were carried out at the conclusion of every Diurnal bird survey resulting in 243 scat and sign searches. In addition, any track and scat of interest observed during the field survey while undertaking other survey methods, was inspected. Scat identification was guided by the book 'Tracks, Scats and Other Traces: A field guide to Australian Mammals' (Triggs, 2008). The total survey effort was 2,430 minutes.

4.3.3.6 Nocturnal Call Playback

Biodiversity Australia

Species targeted: Masked Owl (*Tyto novaehollandiae*)

Nocturnal call playbacks were undertaken within the Development Footprint between 10 – 17 January 2025. Observers surveyed for the Masked Owl in suitable habitat (PCT 24) by spotlighting with hand-held torches and listening for the species' calls for a period of 10 minutes. If no sightings or calls were registered during this time, the observers broadcast a recording of the Masked Owl's call over a speaker at a volume of 60 decibels (dB) for a period of 15 seconds. This was followed by a wait period of 30 seconds, during which time the observers again searched for the Masked Owl and listened for its calls. This process was repeated 6 times, with the volume of the recording dialled to 100 dB for the final broadcast. Each of 7 sites was surveyed 6 times, with surveys conducted in the late evening (8 pm – 12 am) and early morning (2:30 – 5:30 am) (Figure 62). No hollows larger than 20 cm were identified >4 metres above the ground within the development footprint areas.

Survey guidelines utilised: Australian Government Department of the Environment, Water, Heritage and the Arts (DEWHA) (2010): Survey guidelines for Australia's threatened birds Guidelines for detecting birds listed as threatened under the E*nvironment Protection and Biodiversity Conservation Act 1999*. NSW Bionet Threatened Biodiversity Database Collection Threatened biodiversity ecological data – retrieved from BioNet Atlas

Survey guideline requirements:

- Survey at night during calm and dry weather. Begin with a 10-minute listening and search period. If no owls detected, broadcast prerecorded calls for 15 seconds at a volume of 60 dB, then listen for responses for at least 30 seconds. If no owls detected, repeat this process for a 15-minute period, gradually increasing volume from 60 to 100 dB. After the conclusion of call playbacks, conduct 15 minutes of spotlighting. Repeat call playback surveys 6 times at each site, preferably across multiple weeks.

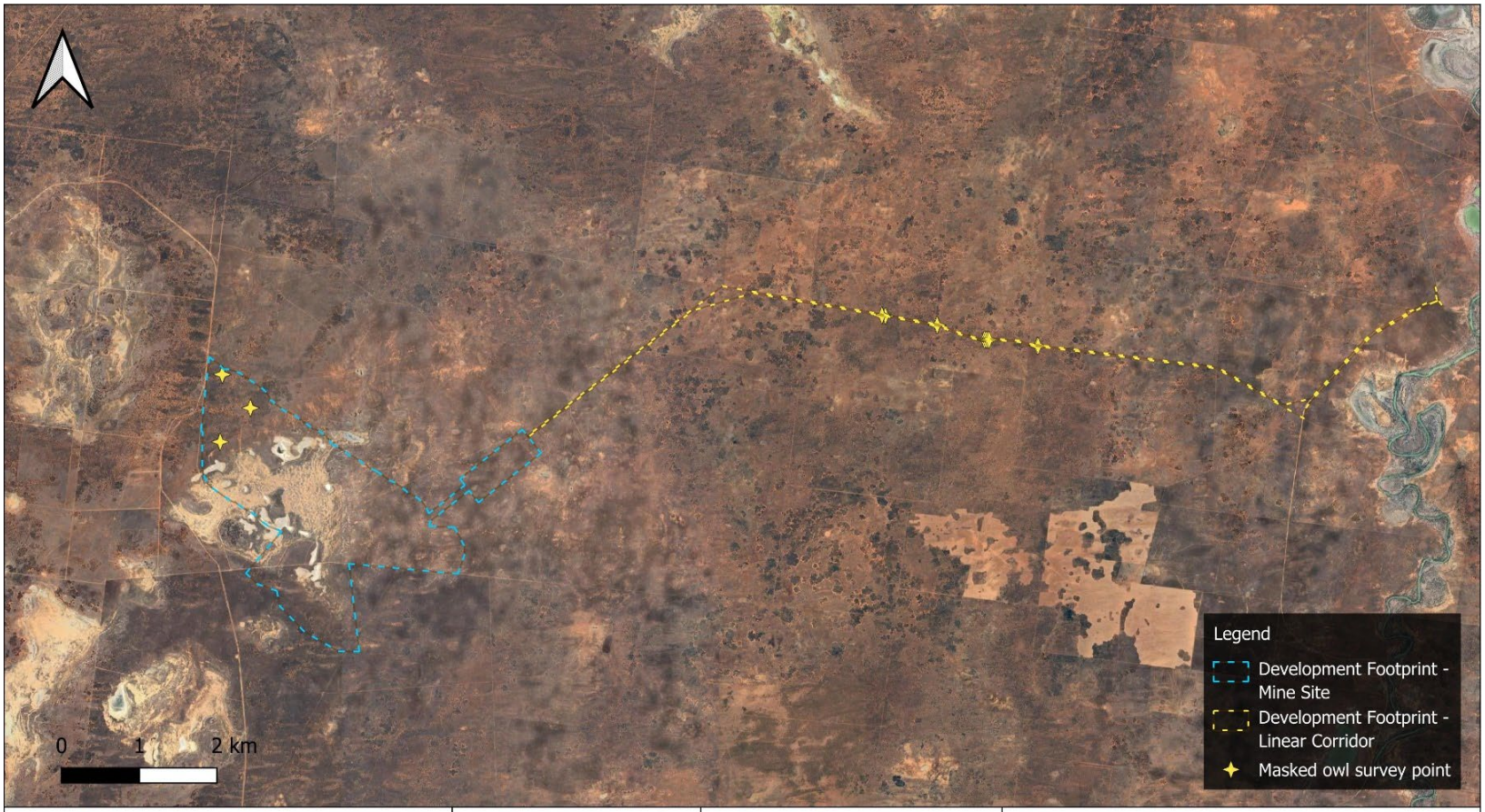
Survey guidelines met:

- Yes, surveys commenced with 15 minutes of call playback, followed by a 10-minute spotlight and listening period. Surveys were repeated 6 times at each site; however, these were conducted over consecutive nights rather than across multiple weeks. Windspeed recorded during surveys was less than 38 km/hr.

EnviroKey BDAR September 2024

EnviroKey ecologists conducted nocturnal call playback surveys for the Bush Stone-curlew (*Burhinus grallarius*) but not for the Masked Owl. At each of the three survey locations, call playback survey commenced with an initial listening period of 10 minutes. The call of the target species (Bush Stone-curlew) was then transmitted intermittently over a period of five minutes, followed by a five-minute listening period. Spotlighting was undertaken at the conclusion of the call playback, with a minimum of 60 minutes at each site by two persons.

Note: Over the course of writing this BDAR, several refinements were made to PCT boundaries, after ground-truthing (Figure 87*) and collection of new data, to accurately calculate and map vegetation zones. These refinements resulted in changes to the overall composition of the mapped vegetation communities and associated condition zones. This resulted in the exclusion of PCT 24 Canegrass swamp tall grassland wetland of drainage depressions, lakes and pans of the inland plains, which is considered suitable habitat linked to the Masked Owl. Although PCT 24 was excluded from the vegetation mapping, it was retained in the survey plan and surveys were conducted for Masked Owl in areas where PCT 24 was previously mapped. The survey effort conducted across both the mine site and associated linear corridor assessment areas and was considered complimentary with the survey undertaken for the Bush Stone-curlew, which also required survey for this assessment.*



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	Drawn by: NE	Location: Warwick Station		
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:160000

Figure 62: Location of nocturnal Call Playback stations – Development Footprint

4.3.3.7 Elliot and Pitfall Trapping

Biodiversity Australia

Species targeted: Desert Mouse (*Pseudomys desertor*); Crowned Gecko

Concurrent Elliot and pitfall trapping surveys were undertaken within the Development Footprint between 10 – 14 December 2024. Three Elliot and pitfall trap arrays were established in suitable habitat (PCTs 171, 221), two within the Development Footprint – Mine Site and one along the Development Footprint – Linear Corridor (Figure 63 and Figure 64). The pitfall arrays consisted of a 30 m drift fence with 7 x 20 litre buckets (410 mm tall) positioned along its length. Ten 'A' sized Elliot traps were set in the area surrounding each pitfall array, each baited with a mix of peanut butter, honey, and oats. Both the Elliot and pitfall traps were checked each morning within two hours of sunrise, and any captured fauna was identified and released. The traps were then closed and re-opened/reset within an hour of sunset the following evening. This survey effort resulted in a total of 84 pitfall trap nights and 120 Elliot trap nights.

Survey guidelines utilised: Department of Environment and Conservation (DEC) (2004), Threatened Species Survey and Assessment: Guidelines for developments and activities (working draft), New South Wales Department of Environment and Conservation, Hurstville, NSW; NSW Bionet Threatened Biodiversity Database Collection Threatened biodiversity ecological data – retrieved from BioNet Atlas

Survey guideline requirements:

- Elliot trapping surveys spanning 100 trap nights over 3 – 4 consecutive nights; or
- Pitfall trapping surveys spanning 24 trap nights over 3 – 4 consecutive nights.

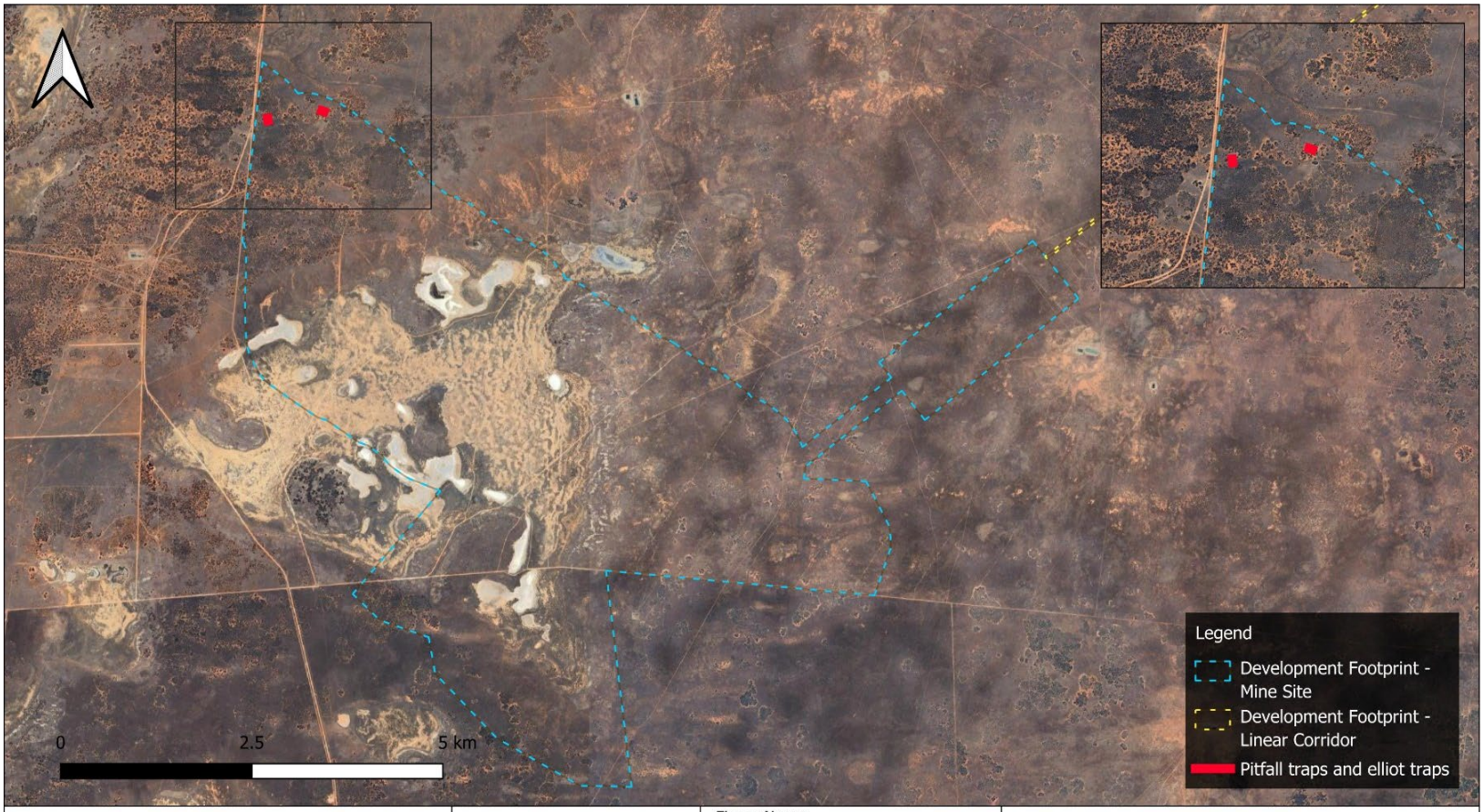
Survey guidelines met:

- Yes, 3 Elliot trapping surveys spanning 120 trap nights over 4 consecutive nights, and 3 pitfall trapping surveys spanning 84 trap nights over 4 consecutive nights.

EnviroKey BDAR September 2024

Prior to the Elliot and pitfall trapping surveys conducted by Biodiversity Australia, several Elliot and funnel trapping surveys targeting the desert mouse were also conducted in suitable habitat (PCT 171) by EnviroKey ecologists. No EnviroKey surveys targeting the Crowned Gecko were conducted in the 5-year window after June 2020. The details of the Elliot and funnel trapping surveys are as follows:

- 'A' sized Elliot traps were baited with a mix of peanut butter, honey and rolled oats to attract small terrestrial mammals. These were spaced about 5 metres (m) apart in transects of 20 traps. They were left in situ for 4 nights during each survey and checked both morning and afternoon. Elliot trapping surveys targeting the Desert Mouse were conducted at 2 sites within the Development Footprints in March 2021 and 1 site in March 2022. Total survey effort targeting the Desert Mouse was 240 trap nights (Figure 63 and Figure 64).
- Three pairs of funnel traps (six funnel traps) were established along a 20 m drift fence (a single site) for a maximum of four nights at 10 different locations. Funnel trapping surveys targeting the Desert Mouse were completed at two sites during the March 2022 field survey. Survey effort was 48 trap nights (Figure 63 and Figure 64).



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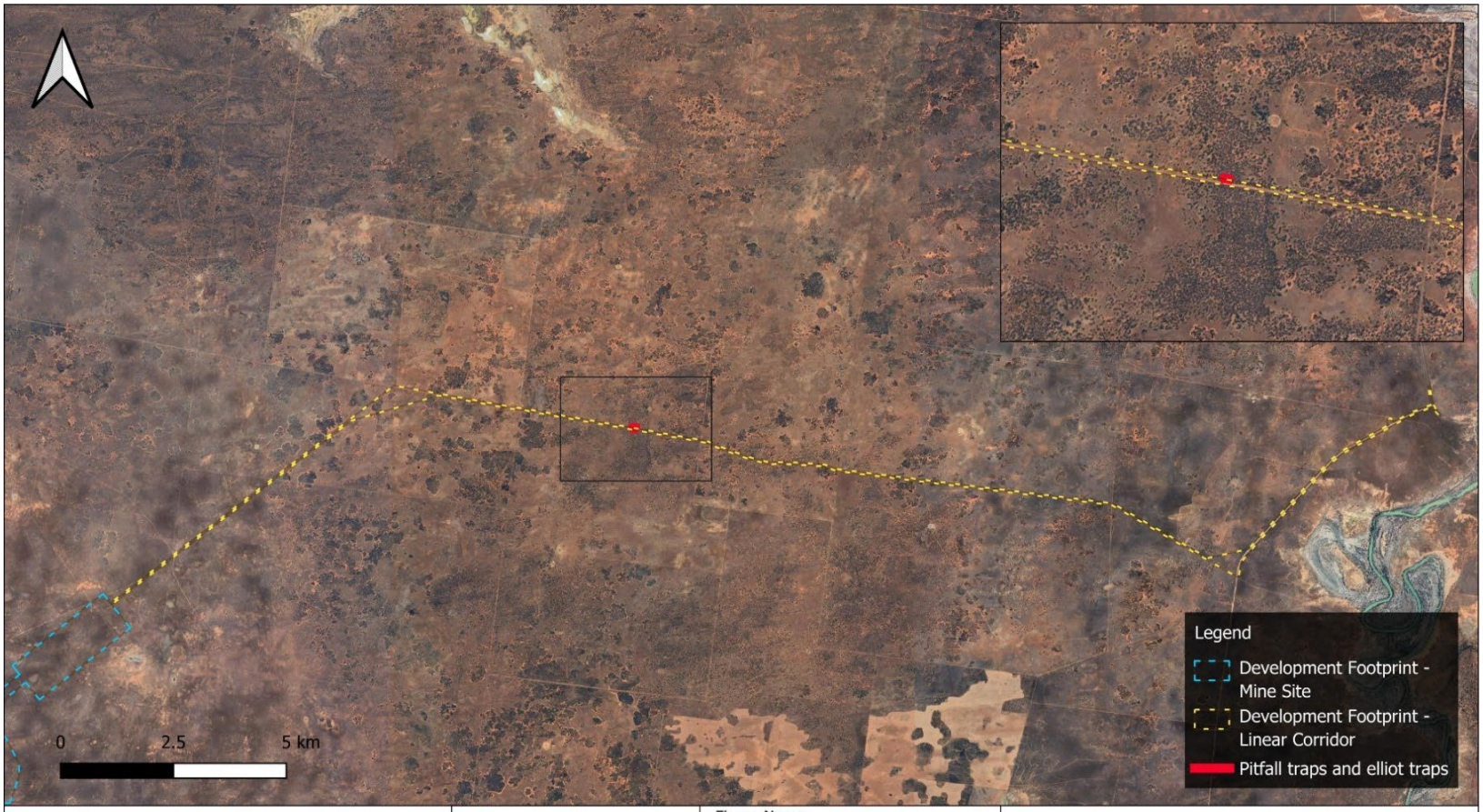
	Drawn by: NE	Location: Warwick Station		
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:65000

Figure 63: Locations of Elliot and pitfall trapping arrays - Development Footprint - Mine Site



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	Drawn by: NE	Location: Warwick Station		
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:110000

Figure 64: Locations of Elliot and pitfall trapping arrays - Development Footprint – Linear Corridor

4.3.3.8 Microbat Call Recording and Analysis

Biodiversity Australia

Species targeted: Southern Myotis (*Myotis macropus*)

Microchiropteran bat calls were recorded using Anabat Swift, Anabat Chorus, and Anabat Express detectors over four deployment periods in 2025 in suitable habitat (PCTs 58, 170, 171, 221) within the Development Footprint. The first deployment was within the Development Footprint – Mine Site, occurred between 9 – 12 January, and consisted of one Swift, two Chorus and five Express detectors (Figure 65). Eight (8) recorders were deployed from 9-12 January within the mine site area and six (6) recorders deployed from 13-16 January. Four (4) recorders were deployed from 5-8 February and another three (3) recorders from 9-12 February within the linear corridor. However, due to unit failure, only 6 units for a total of 24 nights were recorded in the Mine Site area and 7 units for a total 28 nights were recorded in the linear corridor The detectors were fixed to trees at a height of 1.5 metres. In total, 52 survey nights of data were recorded from 6 sites across the two survey areas (Development Footprint - Mine Site and Development Footprint - Linear Corridor) (Figure 65).

Survey guidelines utilised: NSW Government Department of Planning, Industry & Environment (DPIE) (2021): 'Species credit' threatened bats and their habitats, NSW survey guide for the BAM.

Survey guideline requirements:

- Acoustic detection spanning 16 trap nights over 4 consecutive nights.

Survey guidelines met:

- Yes, acoustic detection at 6 separate sites spanning 52 trap nights over 4 consecutive nights.

The data obtained from the Anabat detectors were sent to *Balance! Environmental* for expert analysis. *Balance! Environmental* followed the below method using Anabat Insights (Version 2.1.3; Titley Scientific):

1. The Convert ZCA function was used to extract individual zero-crossing (.ZC) sequence files from the Anabat Express ZCA files.
2. The Search function was then used to scan all resulting ZC files and the Anabat Swift WAV files using a filter designed to find bat calls potentially belonging to *Nyctophilus* spp. and *Myotis macropus*. Filter criteria used in the search included:
    - Characteristic frequency (Fc) minimum 35 kHz – maximum 45 kHz
    - Slope of characteristic section (Sc) minimum 50 octaves per second (OPS)
    - Pulse duration (Dur) minimum 2 ms
    - Difference between maximum frequency and Fc (Fmax-Fc) minimum 5 kHz
    - ZC threshold (relevant only to WAV files) = Auto
    - Smoothness level = 5
    - Minimum number of pulses per sequence meeting the above criteria = 4

3. Files that passed the above Search process were then reviewed manually to compare spectrogram characteristics and derived metrics with those of reference calls and published call descriptions (e.g., Pennay *et al.* 2004) for the target species.

The standard of the report provided by *Balance! Environmental* followed Australasian Bat Society standards for the interpretation and reporting of bat call data (Reardon 2003), available on-line at http://www.ausbats.org.au/.

A full Microbat Call Identification Report id located in Appendix A-4-1

EnviroKey BDAR September 2024

While spotlighting, EnviroKey ecologists targeted microchiropteran bats by using a 'Titley' Anabat SD1 Echolocation Call Recording Unit coupled to a Personal Digital Assistant for active monitoring. Surveys were conducted at three survey locations, with a minimum of 60 minutes at each site by two persons. Additionally, a single stationary Anabat unit was activated at a water point given that microchiropteran bats needs to drink regularly when foraging. Mobile monitoring was also conducted while travelling across the Development Footprint and Mine Site during nocturnal hours with the use of an Anabat Car Mount with High Mount Microphone. Total survey effort for Anabat surveys was 160 person minutes per location, giving a total of 480 minutes (8 hours).

> *The use of Echolocation Call Recording Units is consistent with State and Commonwealth guidelines for surveying microchiropteran bats. All data collected from the Anabat SD1 were then analysed and placed into bat and non-bat origin files. These files were then analysed using the software package AnalookW guided by 'Bat Calls of New South Wales: Region based guide to echolocation calls of microchiropteran bats' (Pennay et al. 2004) and the EnviroKey reference call collection. Members of the Nyctophilus genus could not be identified to species level due to a lack of differentiation between species and are identified to genus level only. Anabat analysis was conducted by Principal Ecologist Steve Sass, who has analysed more than 100,000 files from across Western and Central NSW.*

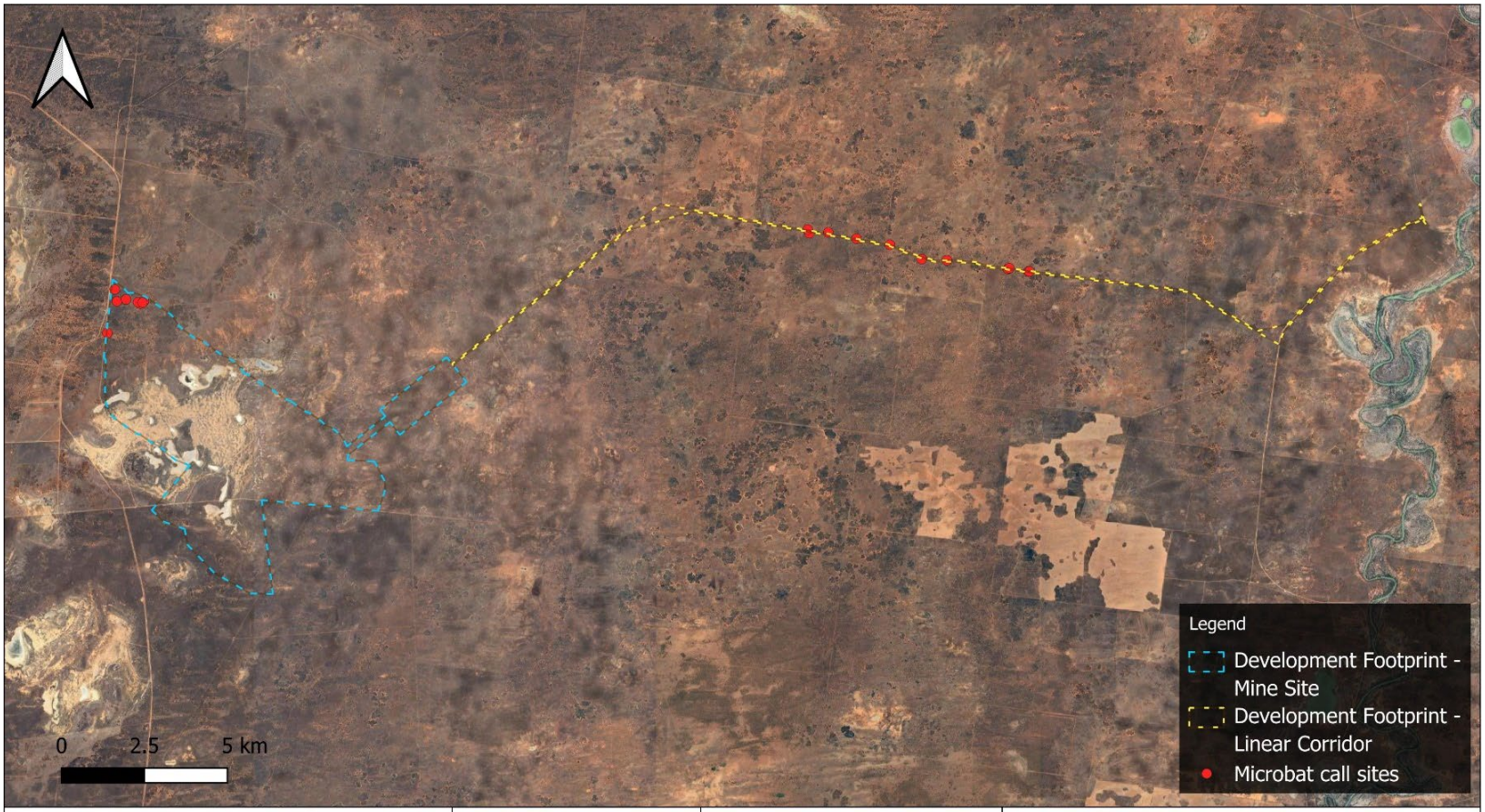
A call was defined as a sequence of three or more consecutive pulses of similar frequency. Due to variability in the quality of calls and the difficulty in distinguishing some species the identification of each call was assigned a confidence rating as follows.

D = Definite: Species identification not in doubt.

PR = Probable: Call most likely to represent a particular species, but there exists a low probability of confusion with species of similar call types.

PO = Possible: Call characteristics are comparable with the species, but there exists a reasonable probability of confusion with one or more similar Bat species, or the quality or length of call prohibits a confident identification.

Those calls unable to be identified due to poor call quality resulting in a lack of diagnostic features were assigned 'Unidentifiable.'



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	Drawn by: NE	Location: Warwick Station		
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:150000

Figure 65: Locations of microbat call recording sites - Development Footprint

4.3.3.9 Acoustic Recorder Surveys

Biodiversity Australia

Species targeted: Painted Burrowing Frog (*Neobatrachus pictus*)

Family: Myobatrachidae

Six (6) Wildlife Acoustics SM4 Song Meter acoustic recorders were deployed on 14 May 2025 (Figure 69) at least three months after the last heavy rainfall (>50 millimetres in 24 hrs). The acoustic recorders were deployed within associated PCTs where rainwater is known to pool after significant downpours (Figure 66 through Figure 68). Acoustic recordings are set to capture calls within period immediately after heavy rainfall. It is projected the required rain will create inundation of the site containing suitable breeding habitat such as claypans, temporary roadside pools, ditches, mallee swales and dry dams. Since the time of deployment, suitable survey conditions have not eventuated. Figure 66 through Figure 68 show areas within the Development Footprint where rainwater pools after significantly large rainfall events, such as more than 50 millimetres in the space of a day. These areas are not confirmed to contain suitable frog breeding habitat, and no frogs have been recorded in these areas.

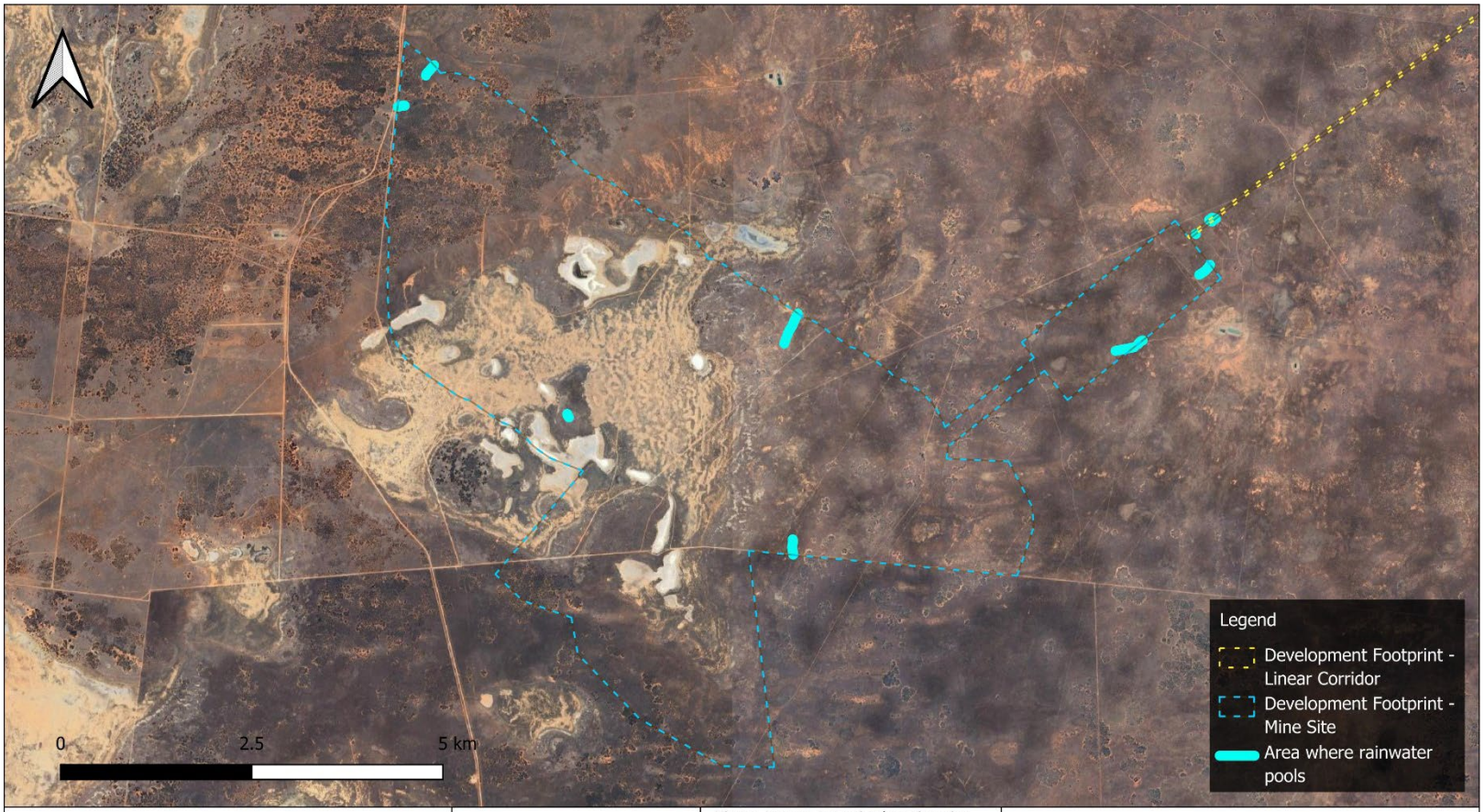
Survey guidelines utilised: NSW Government Department of Planning, Industry & Environment (DPIE) (2020): NSW Survey Guide for Threatened Frogs; A guide for the survey of threatened frogs and their habitats for the BAM.

Survey guideline requirements:

- 4 call days of Acoustic detection over 2 days after >50 millimetres in 24 hrs.

Survey guidelines met:

- Suitable rainfall conditions have not eventuated.
- An Expert Report (Section 4.3.3.10, A-6) has been provided in the absence of suitable survey conditions, see Appendix A-7.



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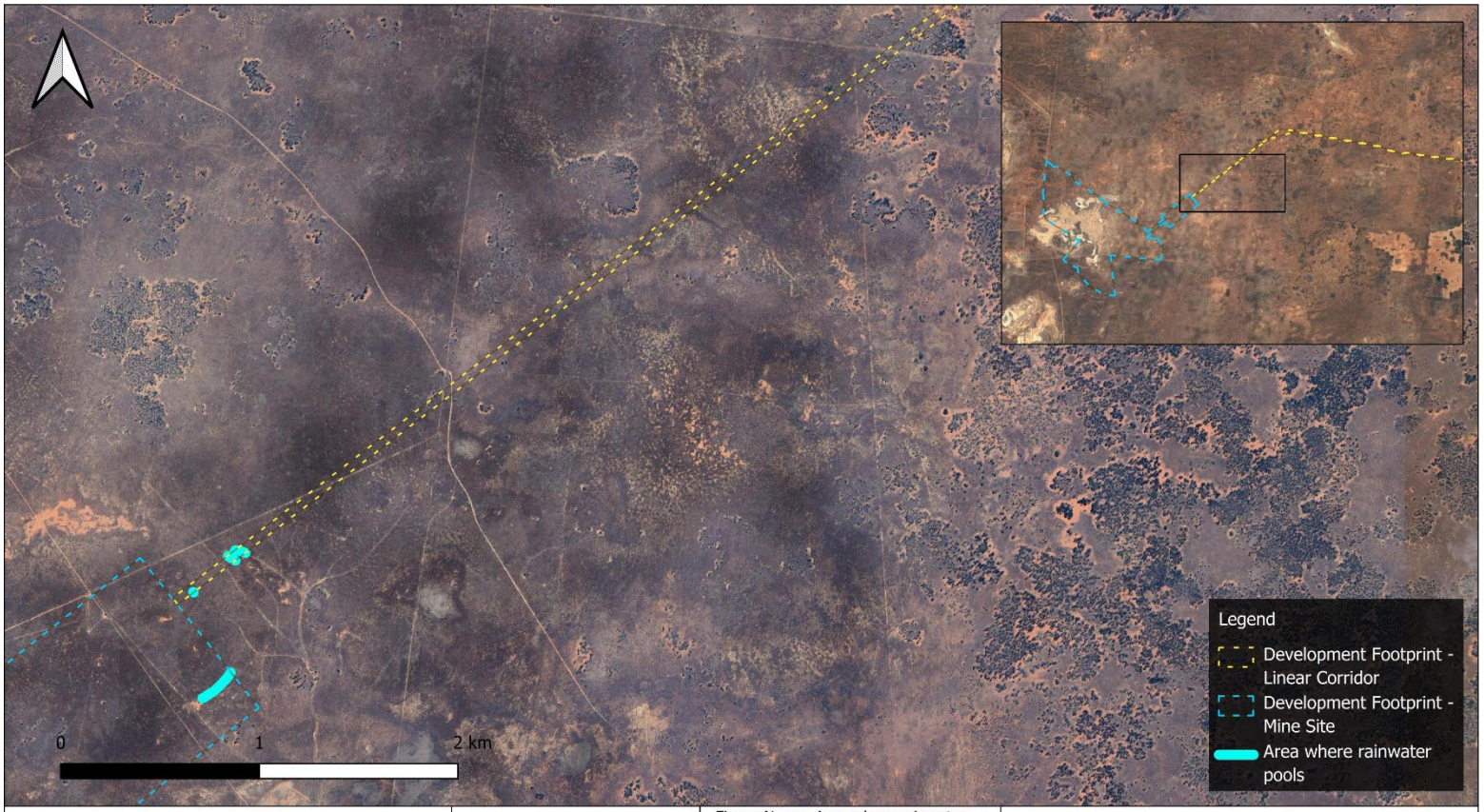
	Drawn by: NE	Location: Warwick Station		
	Date: November 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:65000

Figure 66: Areas in the mine site where rainwater pools after a significantly large rainfall event– Development Footprint - Mine Site



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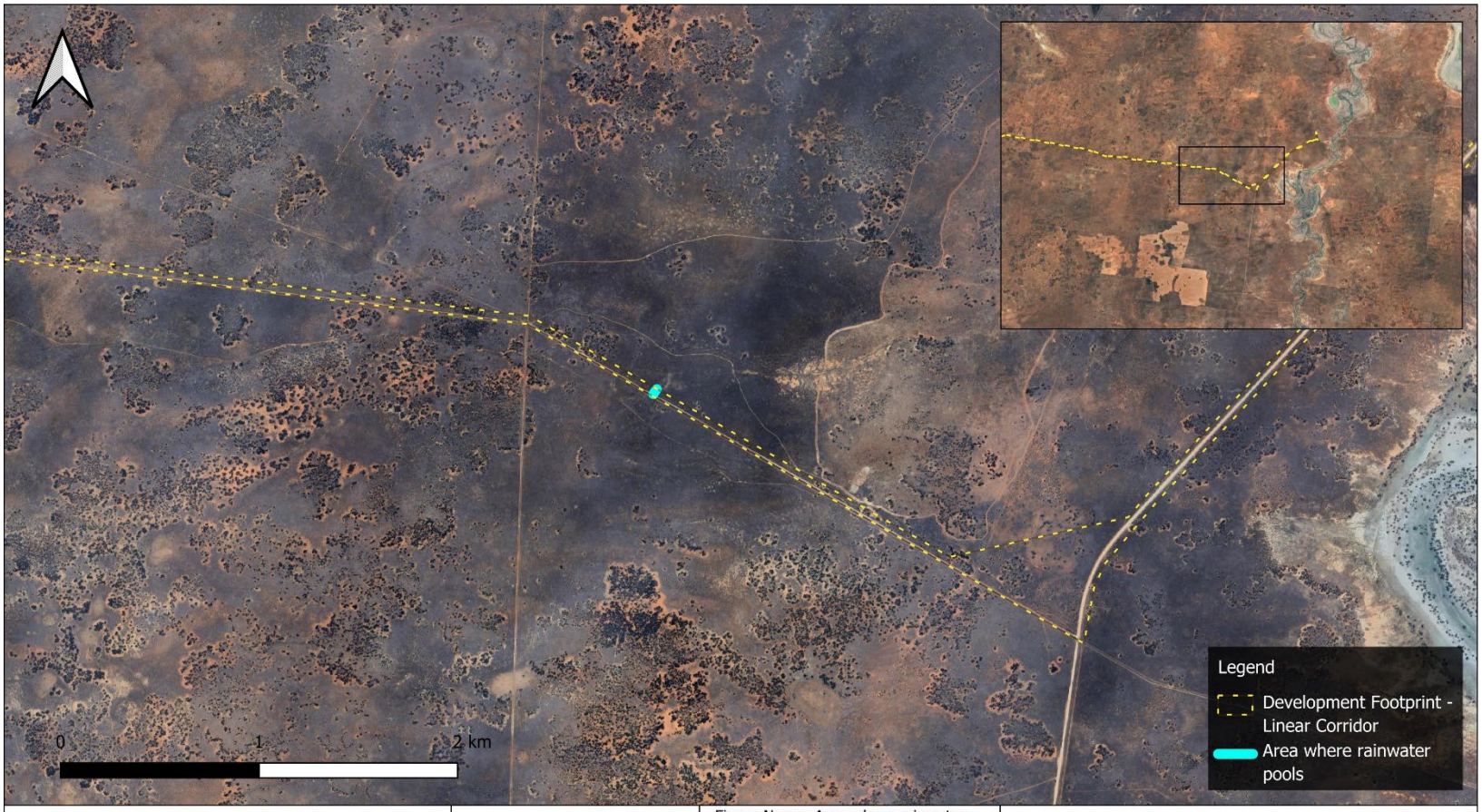
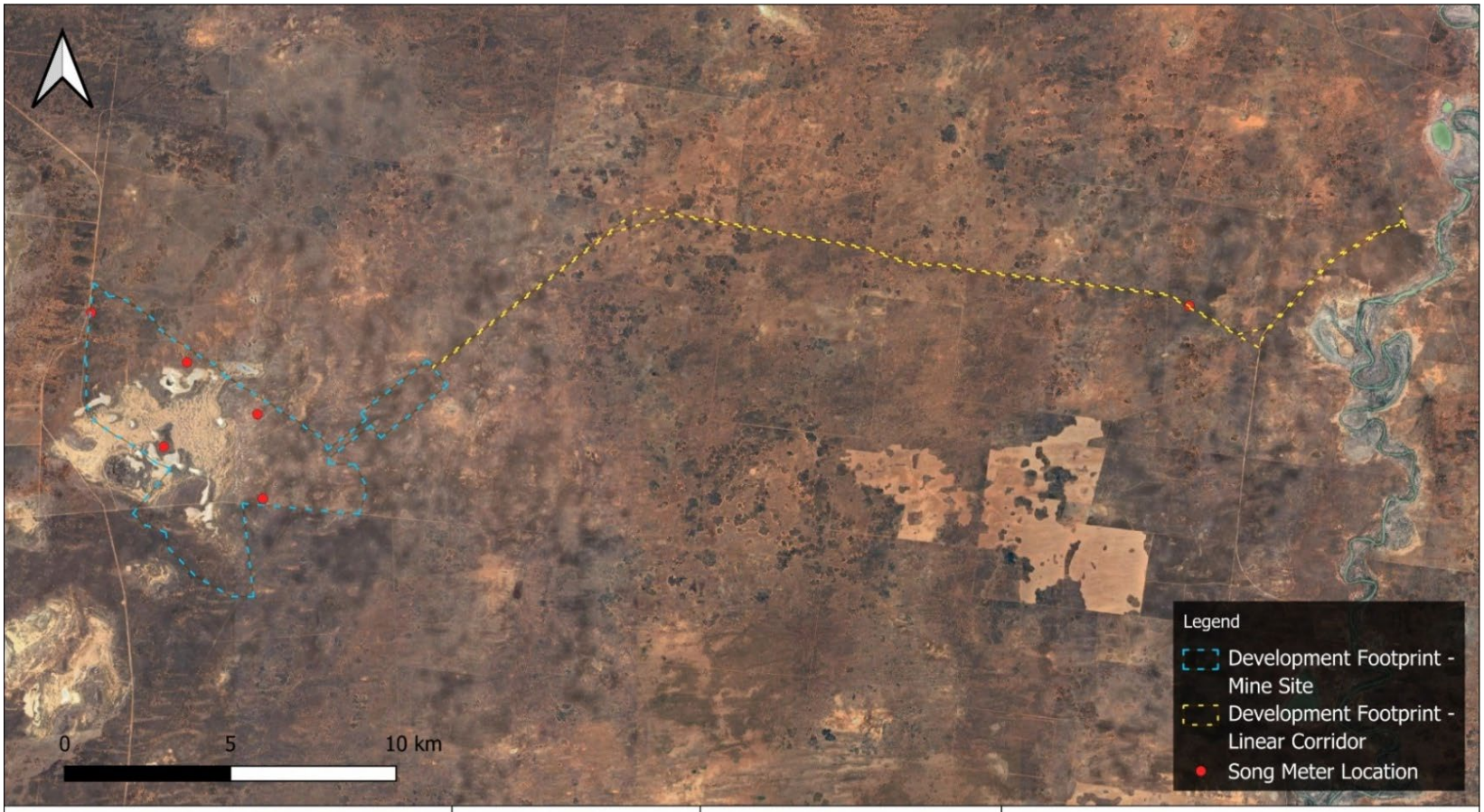
	Drawn by: NE	Location: Warwick Station		
	Date: November 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:25000

Figure 67: Area where rainwater pools after a significantly large rainfall event – Development Footprint - Linear Corridor 1 / 2



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Area where rainwater pools after a significantly large rainfall event - Development Footprint - Linear Corridor 2/2	Biodiversity AUSTRALIA	
	Drawn by: NE	Location: Warwick Station		
	Date: November 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:25000

Figure 68: Area within linear corridor where rainwater pools after significantly large rainfall events – Development Footprint - Linear Corridor 2 / 2



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Locations of Song Meter Recording Sites - Development Footprint	Biodiversity AUSTRALIA
	Drawn by: NE	Location: Warwick Station	
	Date: May 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872 / Spatial Reference: GDA2020 / MGA zone 54 / Scale: 1:150000

Figure 69: Location of targeted acoustic recorder surveys - Development Footprint

4.3.3.10 Expert Reports

Biodiversity Australia, GHD and Ecological Horizons

Species Assessed: Painted Burrowing Frog (*Neobatrachus pictus*) and Desert Mouse (*Pseudomys desertor)*

Habitat surveys were conducted for the Painted Burrowing Frog and Desert Mouse in May 2025, by suitably qualified ecologists to determine areas within the Development Footprint in which these species may occur (Figure 66 through Figure 68). Potential suitable breeding habitat for the Painted Burrowing Frog within the Development Footprint is comprised of PCT 58, 152, 154, 157 and 221, encompassing areas containing depressions, ephemeral saline wetlands and farm dams. Acoustic recorders were deployed in May 2025 within the potential suitable habitat locations (Figure 69) to determine the presence of *Neobatrachus pictus,* however a suitable rain event has not occurred within the region to obtain suitable data to confirm the presence/absence of this species since deployment. Following habitat surveys a preliminary assessment report was provided, identifying the low likelihood of occurrence of both the Painted Burrowing Frog and Desert Mouse (GHD 2025).

To support the undertaken surveys for the Painted Burrowing Frog (*Neobatrachus pictus*) and Desert Mouse (*Pseudomys desertor),* an expert report was sought in accordance with Box 3 of the Biodiversity Assessment Method (DPIE 2020). The preliminary assessment report and identified potential habitat (Figure 66 through Figure 68) was provided to Dr John Read, a recognised authority on *Pseudomys desertor* (SF23/131992) and *Neobatrachus pictus* (SF23/131995). Dr Read's expert status for these two species has been confirmed by the Director of South West, Biodiversity and Conservation Division, Department of Planning and Environment on 17 November 2023.

The expert report provided (A-7) addresses the potential of occurrence of these two species within the Development Footprints. Dr Read concluded that these two species are considered to be highly unlikely to occur within the Development Footprints due to the following reasoning.

1) *Despite records for both species from the Tarawi Reserve (Desert Mouse) and Scotia Sanctuary (Painted Burrowing Frog) within 40km of the study area, scarcity of other nearby records suggest that the Project lies on, or just beyond, the periphery of the consistently occupied range of both species.*
2) *The habitat of the project area is 'heavily grazed' by goats and macropods (GHD 2025), without the extensive tracts of good quality Triodia hummock land or natural or artificial sedgeland that typify P. desertor habitat. The long unburnt Triodia without abundant green foliage required by P. desertor, suggest both food and shelter sites are suboptimal in the region.*
3) *Potentially suitable, yet low likelihood, breeding habitat for Painted Burrowing Frogs was identified at 5 sites. Analyses of song meter data following >50mm rainfall events, and ideally follow-up ground surveys would be required to confirm or rule out their occupancy of these sites. However, the extensive tracts of unsuitable saline wetlands and paucity of quality ephemeral swamps or rock holes makes it highly unlikely that the Copi Mineral Sands site provides habitat for the Painted Burrowing Frog.*
4) *The abundance of foxes (observed nightly across the shrublands, and also feral cats observed consistently in and around the spinifex/mallee (J. Foster pers. comm.; tracks of both species observed (A Holmes pers. comm.) further reduces the likelihood of permanent Desert Mouse populations in the degraded study site.*
5) *The brief site appraisal failed to locate either species or likely habitat for either species within the project area (GHD 2025).*

On the basis of the expert report conclusion, it was determined the identified potential habitat (Figure 66 through Figure 68) lacked connectivity to known records and other habitat for the Painted Burrowing Frog, resulting in it being excluded as a species credit species. Similarly the Desert Mouse has been

excluded as a species credit species on the basis of survey results and the expert report conclusion located in A-7 and A-8.

As per the Frogs of south-west NSW, Painted Burrowing Frogs are primarily threatened by habitat loss and fragmentation caused by over-grazing and the decline of suitable wetland habitats (Ephemeral claypans, swamps, floodplains and permanent rivers), which is present withing the Development Footprint (DCCEEW, 2024).

Occurrence of resident or important populations of *N. pictus* is unlikely at the Copi Mineral Sands site, due to the key threats to the species within the site such as fragmentation by land clearing, loss of habitat through over-grazing by sheep and goats, and the loss of suitable wetland habitats (DCCEEW, 2024). This is supported by the conclusions from the GHD literature, data review and site report.

The Painted Burrowing Frog was determined to be unlikely to occur within the Development Footprints due to the scarcity of nearby records, presence of extensive tracts of unsuitable habitat and presence of predatory animals. As such the Painted Burrowing Frog has been excluded as a species credit species from the assessment.

See Appendix A-7 and A-8**.** for the full reports.

4.3.4 Survey Timing and Limitations

4.3.4.1 Flora

The survey period fell within the BAM-C prescribed survey period for all target flora species.

4.3.4.2 Fauna

Fauna detectability is limited by seasonal, behavioural or lifecycle characteristics of each species, and even by habitat variations (e.g. flowering periods), which can occur within a year, between years, decades, etc. (DEC 2004).

The survey timing coincided with the recommended survey period for all targeted fauna species. A single Little Eagle was recorded on the Subject Land on 17 December 2024, however surveys conducted between 6-11 August 2025 failed to detect the species within the Development Footprint – Mine Site. Surveys were conducted for nests as required for the species however no signs of breeding were observed. This dual credit species will be offset under ecosystem credits.

The survey requirements for the Painted Burrowing Frog, >50 millimetres of rainfall in 24 hrs are yet to be met. The lack of suitable survey conditions has resulted in the lack of suitable acoustic recordings, in lieu of this data, an expert report has been provided with suggestions Copi Mineral Sands site is highly unlikely to be of significance for *N. pictus* (Section 4.3.3.10, A-7 & A-8).

The survey requirements for the Desert Mouse were met in accordance with the species survey requirements. A species expert report was also produced for the mouse which states the Copi Mineral Sands site is highly unlikely to be of significance for the Desert Mouse. (Section 4.3.3.10, A-7 & A-8).

4.3.5 Incidental Observations

Any incidental fauna species that were observed, heard calling, or otherwise detected based on tracks or signs, were recorded and listed in the total species list for the Subject Land.

4.4 Targeted Survey Results

4.4.1 Flora

Threatened flora surveys detected the presence of one threatened flora species within the Development Footprint - *Austrostipa nullanulla* (Nulla spear-grass). Targeted threatened flora survey results and method are shown in Table 50, Figure 70, and

Photograph 18. Site Vegetation List is presented in Appendix A-2

4.4.1.1 Species Polygon

The only threatened flora species recorded within the Development Footprint areas was *Austrostipa nullanulla*. This species was detected during the two-phase grid-based systematic survey approach for large areas and subsequently searched for using the finer scale 10 m grid transect approach to locate and confirm the population extent. This helped define the species polygon, which was further refined to include all suitable substrates on which the species is considered to inhabit. Suitable habitat for the species is defined as land containing gypseous lunettes and copi rises. The species is associated with PCTS 152 Lunette chenopod shrubland mainly of the Murray Darling Depression Bioregion, 154 Pearl Bluebush low open shrubland of the arid and semi-arid plains and 253 Gypseous shrubland on rises in the semi-arid and arid plains. The species polygon was passed on these habitat constraints as listed in the NSW BioNet TBDC.

4.4.2 Fauna

Targeted threatened fauna survey results and methods are shown in Table 50, Photograph 17, and Photograph 18.. Site Fauna List is presented in Appendix A-3.

4.4.2.1 Habitat Features

At the time of field surveys, the Subject Land was assessed to be in a modified state and included disturbances such as, clearing, over grazing by native and feral animals (goats and sheep) and weed invasion.

A range of habitat features were recorded which are described in Table 47 Table 48 and Table 49.

Table 48: Summary of habitat values Development Footprint – Mine Site

Habitat/ Attribute Type	Vegetation Zone 1	Vegetation Zone 2	Vegetation Zone 3
	PCT 58-Black Oak - Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion	PCT 64-Samphire - Water Weed - Sea-Heath shrubland saline wetland of depressions of the arid and semi-arid (warm) zones	PCT 152-Lunette chenopod shrubland mainly of the Murray Darling Depression Bioregion
Groundcover	Moderate density chenopod groundcover	Low - moderate density chenopod groundcover	Moderate density chenopod groundcover throughout Vegetation Zone
Leaf litter	Moderate density casuarina needle and chenopod debris litter	Low to absent litter cover	Moderate litter cover present
Logs and debris	Moderate density woody debris	Low to absent woody debris	Very low density of Logs present throughout the Vegetation Zone
Hollows	Some mature trees with small hollows (< 10 cm) that may provide nesting habitat for small arboreal mammals and birds. Medium-sized (10-20 cm) hollows present in lower abundances (12) which may provide nesting habitat for larger arboreal mammals and birds e.g. possums, cockatoos.	Absent	Absent
Nectar Sources	Absent	Absent	Absent
Sap and gum sources	Absent	Absent	Absent
Allocasuarinas	*Casuarina pauper* present in moderate-high densities	Absent	Absent
Aquatic/ wetland habitats	Absent	Scattered ephemeral depressions/salt pans present	Absent
Fruiting species	Absent	Absent	Absent
Forest bird habitat	Low to average quality bird habitat. Some nesting, forage and refuge habitat value provided by trees and shrubs.	Very poor-quality bird habitat due to absence of trees and associated nesting, refuge and foraging resources.	Poor-quality bird habitat due to low number of paddock trees and associated nesting, refuge and foraging resources.

Habitat/ Attribute Type	Vegetation Zone 1	Vegetation Zone 2	Vegetation Zone 3
	PCT 58-Black Oak - Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion	PCT 64-Samphire - Water Weed - Sea-Heath shrubland saline wetland of depressions of the arid and semi-arid (warm) zones	PCT 152-Lunette chenopod shrubland mainly of the Murray Darling Depression Bioregion
Caves, cliffs, overhangs, culverts, bridges	Absent. Absence of roosts for obligate Microchiropteran bats.	Absent	Absent. Absence of roosts for obligate Microchiropteran bats.
Small terrestrial prey	Likely to be moderate prey abundance over most of the site due to scattered logs, dead and alive Hollow Bearing Trees and grassy ground cover.	Likely to be absent - low prey abundance over most of the zone due to lack of canopy and midstory, absence of logs.	Likely to be low prey abundance over most of the zone due to lack of canopy and midstory, absence of logs.
Habitat Linkages	Vegetation Zone provides some linkage with vegetation that will be retained on the Subject Land.	Patches isolated	Vegetation Zone provides some link with native vegetation to be retained on the Subject Land.

Habitat/ Attribute Type	Vegetation Zone 4	Vegetation Zone 5	Vegetation Zone 6	Vegetation Zone 7
	PCT 154-Pearl Bluebush low open shrubland of the arid and semi-arid plains	PCT 157-Bladder Saltbush shrubland on alluvial plains in the semi-arid (warm) zone including Riverina Bioregion	PCT 170-Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones	PCT 171-Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion
Groundcover	Moderate density chenopod ground cover.	Sparse groundcover comprising of native and exotic herbs and grasses – high disturbance by goats.	Sparse chenopod groundcover moderately grazed by goats.	Sparse spinifex groundcover etc..
Leaf litter	Low to absent litter cover	Low density leaf litter present	Low to absent litter cover	Low to absent litter cover
Logs and debris	Low density woody debris from living and dead bluebush.	Low density of woody debris present.	Fallen timber littered throughout the Vegetation Zone.	Fallen timber littered throughout the Vegetation Zone.

Habitat/ Attribute Type	Vegetation Zone 4	Vegetation Zone 5	Vegetation Zone 6	Vegetation Zone 7
	PCT 154-Pearl Bluebush low open shrubland of the arid and semi-arid plains	PCT 157-Bladder Saltbush shrubland on alluvial plains in the semi-arid (warm) zone including Riverina Bioregion	PCT 170-Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones	PCT 171-Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion
Hollows	Absent	Absent	Twelve mature trees with small hollows (< 10 cm) that may provide nesting habitat for small arboreal mammals and birds. Medium-sized (10-20 cm) and large (> 20 cm) hollows present in lower abundances which may provide nesting habitat for larger arboreal mammals and birds e.g. possums, cockatoos.	Twelve mature trees with small hollows (< 10 cm) that may provide nesting habitat for small arboreal mammals and birds. Medium-sized (10-20 cm) and large (> 20 cm) hollows present in lower abundances which may provide nesting habitat for larger arboreal mammals and birds e.g. possums, cockatoos.
Nectar Sources	Absent	Absent	Mistletoe abundant and flowering. *Eucalyptus dumosa, E. gracilis, E. socialis, Alectryon oleifolius canescens* species present on the Subject Land and would flower throughout the year.	Mistletoe abundant and flowering. *Eucalyptus socialis, E. Dumosa, E. gracilis* species present on the Subject Land and would flower throughout the year.
Sap and gum sources	Absent	Absent	*Eucalyptus dumosa, E. oleosa, E. gracilis, E. socialis, E. leptophylla, Alectryon oleifolius canescens* species present on the Subject Land.	*Eucalyptus socialis, E. Dumosa, E. gracilis, E. costata, E. leptophylla, E. oleosa* species present on the Subject Land.
Allocasuarinas	Absent	Absent	*Casuarina pauper* present in low densities.	*Casuarina pauper* present in low densities.
Aquatic/ wetland habitats	Absent	Absent	Absent	Absent
Fruiting species	Absent	Native apricot (*Pittosporum angustifolium*)	Absent	Some Eucalypt species present
Forest bird habitat	Low quality bird habitat. Shrubs may provide some limited habitat.	Moderate quality bird habitat. Shrubs may provide some limited habitat.	Average to high quality bird habitat due to abundance of refuge, forage and nesting habitat.	Average to high quality bird habitat due to abundance of refuge, forage and nesting habitat.

Habitat/ Attribute Type	Vegetation Zone 4	Vegetation Zone 5	Vegetation Zone 6	Vegetation Zone 7
	PCT 154-Pearl Bluebush low open shrubland of the arid and semi-arid plains	PCT 157-Bladder Saltbush shrubland on alluvial plains in the semi-arid (warm) zone including Riverina Bioregion	PCT 170-Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones	PCT 171-Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion
Caves, cliffs, overhangs, culverts, bridges	Absent. Absence of roosts for obligate Microchiropteran bats.	Absent. Absence of roosts for obligate Microchiropteran bats.	Absent. Absence of roosts for obligate Microchiropteran bats.	Absent. Absence of roosts for obligate Microchiropteran bats.
Small terrestrial prey	Likely to be moderate prey abundance over most of the zone due to presence of ground cover, shrub layer as well as an abundance of logs, litter and dead and alive Hollow Bearing Trees.	Likely to be low-moderate prey abundance over most of the zone due to presence of ground cover, shrub layer as well as an abundance of logs, litter and dead and alive Hollow Bearing Trees.	Likely to be moderate prey abundance over most of the zone due to soil type (suitable for borrowing), presence of ground cover, shrub layer and canopy trees, as well as an abundance of logs, litter and dead and alive Hollow Bearing Trees.	Likely to be moderate prey abundance over most of the zone due to soil type (suitable for borrowing), presence of ground cover, shrub layer and canopy trees, as well as an abundance of logs, litter and dead and alive Hollow Bearing Trees.
Habitat Linkages	Vegetation Zone provides some linkage with vegetation that will be retained on the Subject Land.	Vegetation Zone provides some linkage with vegetation that will be retained on the Subject Land.	Vegetation Zone provides some linkage with vegetation that will be retained on the Subject Land.	Vegetation Zone provides some linkage with vegetation that will be retained on the Subject Land.

Habitat/ Attribute Type	Vegetation Zone 8	Vegetation Zone 9	Vegetation Zone 10	Vegetation Zone 11
	PCT 215-Woollybutt Grass open grassland on red earths of the inland plains	PCT 221-Black Oak - Pearl Bluebush open woodland of the sandplains of the semi-arid warm and arid climate zones	PCT 253-Gypseous shrubland on rises in the semi-arid and arid plains	PCT 254-Black Oak - Bladder Saltbush on light clays in the arid zone
Groundcover	Sparse groundcover comprising of native and exotic herbs and grasses.	Moderate density chenopod groundcover with moderate to high levels of goat disturbance.	Patchy groundcover comprising of native and exotic herbs and grasses.	Moderate density chenopod groundcover with moderate to high levels of goat disturbance.
Leaf litter	Moderate density leaf litter throughout.	Moderate density casuarina needle and chenopod debris litter.	Low to absent litter cover.	Moderate density casuarina needle and chenopod debris litter.

Habitat/ Attribute Type	Vegetation Zone 8	Vegetation Zone 9	Vegetation Zone 10	Vegetation Zone 11
	PCT 215-Woollybutt Grass open grassland on red earths of the inland plains	PCT 221-Black Oak - Pearl Bluebush open woodland of the sandplains of the semi-arid warm and arid climate zones	PCT 253-Gypseous shrubland on rises in the semi-arid and arid plains	PCT 254-Black Oak - Bladder Saltbush on light clays in the arid zone
Logs and debris	Few logs were present. Moderate density woody debris	Moderate density woody debris	Very few logs were present. Low density woody debris	Moderate density woody debris
Hollows	Absent	Some mature trees (39) with small hollows (< 10 cm) that may provide nesting habitat for small arboreal mammals and birds. Medium-sized (10-20 cm) hollows present in lower abundances (12) which may provide nesting habitat for larger arboreal mammals and birds e.g. possums, cockatoos.	Absent	Some mature trees (39) with small hollows (< 10 cm) that may provide nesting habitat for small arboreal mammals and birds. Medium-sized (10-20 cm) hollows present in lower abundances (12) which may provide nesting habitat for larger arboreal mammals and birds e.g. possums, cockatoos.
Nectar Sources	Absent	Occasional *Eucalyptus dumosa* present.	Absent	Occasional *Eucalyptus dumosa* present.
Sap and gum sources	Absent	Occasional *Eucalyptus dumosa* present.	Absent	Occasional *Eucalyptus dumosa* present.
Allocasuarinas	Absent	*Casuarina pauper* present in moderate-high densities.	Absent	*Casuarina pauper* present in moderate-high densities.
Aquatic/ wetland habitats	Absent	Absent	Absent	Absent
Fruiting species	Absent	Absent	Absent	Absent
Forest bird habitat	Low quality habitat due to absence of Hollow Bearing Trees and areas of shrubs for refuge and forage.	Average quality habitat due to presence of trees that may contain hollows and some areas of dense shrubs for refuge and forage.	Low quality habitat due to absence of Hollow Bearing Trees and areas of shrubs for refuge and forage.	Average quality habitat due to presence of trees that may contain hollows and some areas of dense shrubs for refuge and forage.
Caves, cliffs, overhangs, culverts, bridges	Absent. Absence of roosts for obligate Microchiropteran bats.	Absent. Absence of roosts for obligate Microchiropteran bats.	Absent. Absence of roosts for obligate Microchiropteran bats.	Absent. Absence of roosts for obligate Microchiropteran bats.

Habitat/ Attribute Type	Vegetation Zone 8 PCT 215-Woollybutt Grass open grassland on red earths of the inland plains	Vegetation Zone 9 PCT 221-Black Oak - Pearl Bluebush open woodland of the sandplains of the semi-arid warm and arid climate zones	Vegetation Zone 10 PCT 253-Gypseous shrubland on rises in the semi-arid and arid plains	Vegetation Zone 11 PCT 254-Black Oak - Bladder Saltbush on light clays in the arid zone
Small terrestrial prey	Likely to be low-moderate prey abundance over most of the zone due to presence of ground cover, shrub layer as well as an abundance of logs, litter and dead and alive Hollow Bearing Trees.	Likely to be moderate prey abundance over most of the zone due to presence of ground cover, shrub layer and scattered canopy trees, as well as an abundance of logs, litter and dead and alive Hollow Bearing Trees.	Likely to be low prey abundance over most of the zone due to lack of canopy and understorey, very few logs and open ground cover.	Likely to be moderate prey abundance over most of the zone due to soil type (suitable for borrowing), presence of ground cover, shrub layer and canopy trees, as well as an abundance of logs, litter and dead and alive Hollow Bearing Trees.
Habitat Linkages	Vegetation Zone provides some linkage with vegetation that will be retained on the Subject Land.	Vegetation Zone provides some linkage with vegetation that will be retained on the Subject Land.	Vegetation Zone provides some linkage with vegetation that will be retained on the Subject Land.	Vegetation Zone provides some linkage with vegetation that will be retained on the Subject Land.

Table 49: Summary of habitat values within the Development Footprint - Linear Corridor

Habitat/ Attribute Type	Vegetation Zone 1	Vegetation Zone 2	Vegetation Zone 3
	PCT 28-White Cypress Pine open woodland of sand plains, prior streams and dunes mainly of the semi-arid (warm) climate zone	PCT 58-Black Oak - Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion	PCT 143-Narrow-leaved Hopbush - Scrub Turpentine - Senna shrubland on semi-arid and arid sandplains and dunes.
Groundcover	Sparse groundcover comprising of native and exotic herbs and grasses – high disturbance by goats.	Low density chenopod groundcover with moderate – high disturbance by goats.	Sparse groundcover comprising of native and exotic herbs and grasses – high disturbance by goats.
Leaf litter	Low density leaf litter present.	Patches of moderate density casuarina needle and chenopod debris litter.	Low density leaf litter present.
Logs and debris	Logs were present throughout the vegetation zone.	Moderate density of woody debris present.	Low density of woody debris present.
Hollows	Low number (39) of mature trees with small hollows (< 10 cm) that may provide nesting habitat for small arboreal mammals and birds. Medium-sized (10-20 cm) hollows present in lower abundances (12) which may provide nesting habitat for larger arboreal mammals and birds e.g. possums, cockatoos.	Some mature trees (39) with small hollows (< 10 cm) that may provide nesting habitat for small arboreal mammals and birds. Medium-sized (10-20 cm) hollows present in lower abundances (12) which may provide nesting habitat for larger arboreal mammals and birds e.g. possums, cockatoos.	Absent
Nectar Sources	Absent	Absent	Absent
Sap and gum sources	Absent	Absent	Absent
Allocasuarinas	Absent	*Casuarina pauper* present in moderate densities.	Absent
Aquatic/ wetland habitats	Absent	Absent	Absent
Fruiting species	Absent	Absent	Largely absent with few fruiting shrubs
Forest bird habitat	Low to moderate quality bird habitat. Some nesting, forage and refuge habitat value provided by trees and shrubs. However, regrowth is largely absent due to browsing by feral goats.	Low to moderate quality bird habitat. Some nesting, forage and refuge habitat value provided by trees and shrubs. However, regrowth is largely absent due to browsing by feral goats.	Low quality forest bird habitat. Few scattered mature trees present. However, regrowth is largely absent due to browsing by feral goats.

Habitat/ Attribute Type	Vegetation Zone 1	Vegetation Zone 2	Vegetation Zone 3
	PCT 28-White Cypress Pine open woodland of sand plains, prior streams and dunes mainly of the semi-arid (warm) climate zone	PCT 58-Black Oak - Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion	PCT 143-Narrow-leaved Hopbush - Scrub Turpentine - Senna shrubland on semi-arid and arid sandplains and dunes.
Caves, cliffs, overhangs, culverts, bridges	Absent	Absent. Absence of roosts for obligate Microchiropteran bats.	Absent
Small terrestrial prey	Likely to be moderate prey abundance over most of the zone due to soil type (suitable for borrowing), presence of ground cover, shrub layer and canopy trees, as well as an abundance of logs, litter and dead and alive Hollow Bearing Trees.	Likely to be moderate prey abundance over most of the zone due to soil type (suitable for borrowing), presence of ground cover, understorey and canopy trees, as well as an abundance of logs, litter and dead and alive Hollow Bearing Trees.	Likely to be moderate prey abundance over most of the zone due to soil type (suitable for borrowing), presence of ground cover, shrub layer and canopy trees, as well as an abundance of logs, litter and dead and alive Hollow Bearing Trees.
Habitat Linkages	Vegetation Zone provides some linkage with vegetation that will be retained on the Subject Land.	Vegetation Zone provides some linkage with vegetation that will be retained on the Subject Land.	Vegetation Zone provides some linkage with vegetation that will be retained on the Subject Land.

Habitat/ Attribute Type	Vegetation Zone 4	Vegetation Zone 5	Vegetation Zone 6
	PCT 154-Pearl Bluebush low open shrubland of the arid and semi-arid plains	PCT 170-Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones	PCT 171-Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion
Groundcover	Moderate density chenopod ground cover.	Sparse chenopod groundcover moderately grazed by goats	Sparse spinifex groundcover etc..
Leaf litter	Low to absent litter cover	Low to absent litter cover	Low to absent litter cover
Logs and debris	Low density woody debris from living and dead bluebush.	Fallen timber littered throughout the Vegetation Zone.	Fallen timber littered throughout the Vegetation Zone.
Hollows	Absent	Numerous mature trees (39) with small hollows (< 10 cm) that may provide nesting habitat for small arboreal mammals and birds. Medium-sized (10-20 cm) and large (> 20 cm) hollows present in	Numerous mature trees (39) with small hollows (< 10 cm) that may provide nesting habitat for small arboreal mammals and birds. Medium-sized (10-20 cm) and large

Habitat/ Attribute Type	Vegetation Zone 4	Vegetation Zone 5	Vegetation Zone 6
	PCT 154-Pearl Bluebush low open shrubland of the arid and semi-arid plains	PCT 170-Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones	PCT 171-Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion
		lower abundances (12) which may provide nesting habitat for larger arboreal mammals and birds e.g. possums, cockatoos. No hollows were found >20 cm and >4 m above the ground.	(> 20 cm) hollows present in lower abundances (12) which may provide nesting habitat for larger arboreal mammals and birds e.g. possums, cockatoos.
Nectar Sources	Absent	Mistletoe abundant and flowering. *Eucalyptus dumosa, E. gracilis, E. socialis, Alectryon oleifolius canescens* species present on the Subject Land and would flower throughout the year	Mistletoe abundant and flowering. *Eucalyptus socialis, E. Dumosa, E. gracilis* species present on the Subject Land and would flower throughout the year
Sap and gum sources	Absent	*Eucalyptus dumosa, E. oleosa, E. gracilis, E. socialis, E. leptophylla, Alectryon oleifolius canescens* species present on the Subject Land.	*Eucalyptus socialis, E. Dumosa, E. gracilis, E. costata, E. leptophylla, E. oleosa* species present on the Subject Land.
Allocasuarinas	Absent	*Casuarina pauper* present in low densities.	*Casuarina pauper* present in low densities.
Aquatic/ wetland habitats	Absent	Absent	Absent
Fruiting species	Absent	Largely absent with a few fruiting eucalypt species	Largely absent with a few fruiting eucalypt species
Forest bird habitat	Low quality bird habitat. Shrubs may provide some habitat.	Average to high quality bird habitat due to abundance of refuge, forage and nesting habitat.	Average to high quality bird habitat due to abundance of refuge, forage and nesting habitat.
Caves, cliffs, overhangs, culverts, bridges	Absent. Absence of roosts for obligate Microchiropteran bats.	Absent. Absence of roosts for obligate Microchiropteran bats.	Absent. Absence of roosts for obligate Microchiropteran bats.
Small terrestrial prey	Likely to be low-moderate terrestrial prey abundance over most of the site due to scattered logs, low thick shrubs and grassy ground cover.	Likely to be moderate prey abundance over most of the zone due to soil type (suitable for borrowing), presence of ground cover, shrub layer and canopy trees, as well as an abundance of logs, litter and dead and alive Hollow Bearing Trees.	Likely to be moderate prey abundance over most of the zone due to soil type (suitable for borrowing), presence of ground cover, shrub layer and canopy trees, as well

Habitat/ Attribute Type	Vegetation Zone 4	Vegetation Zone 5	Vegetation Zone 6
	PCT 154-Pearl Bluebush low open shrubland of the arid and semi-arid plains	PCT 170-Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones	PCT 171-Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion
			as an abundance of logs, litter and dead and alive Hollow Bearing Trees.
Habitat Linkages	Vegetation Zone provides some linkage with native vegetation that will be retained on the Subject Land.	Vegetation Zone provides some linkage with native vegetation to be retained on the Subject Land.	Vegetation Zone provides some linkage with native vegetation to be retained on the Subject Land.

4.4.2.2 All Observed/Detected Fauna

The surveys detected a range of fauna species over the Subject Land. Birds were the most common species detected (82 species), followed by reptiles (29 species), mammals (17 species), 5 of which are introduced and amphibians (3 species).

Two dual credit species (Ecosystem and species credit species) were detected during the survey; of these only the Pink Cockatoo (*Lophochroa leadbeateri*) was recorded both during and outside of the breeding season, and within and outside of the Development Footprint. Although numerous individuals, pairs, and groups were recorded, no evidence of breeding activity was observed despite persistent tracking and observation of these individuals. None of the Pink Cockatoos were observed using the identified potential nest trees, and none of the identified hollows were observed to have any evidence of nesting or breeding activity during the repeat visits and inspections. The second dual credit species recorded was the Little Eagle (*Hieraaetus morphnoides*) which was observed and photographed outside the Development Footprints, but within the Assessment Area, at the homestead on 17 December 2024. *H. morphnoides* was not recorded during the TBDC listed species survey period or within the Assessment Area, and it has been excluded from this BDAR due to it not being recorded during targeted surveys in August 2025 within potential breeding habitat or near eight large nests recorded within the Development Footprint – Mine Site.

A summary of target species/habitat features detected during the various field survey methods is listed below:

- Active herpetological searches – No threatened species were recorded during active herpetological searches.
- Diurnal bird surveys: - Four threatened bird species (South-eastern Hooded Robin (*Melanodryas cucullata*), Pink Cockatoo (*Lophochroa leadbeateri*), Southern Whiteface (*Aphelocephala leucopsis*), White-fronted Chat (*Epthianura albifrons*)) were identified during the diurnal bird surveys.
- Hollow Bearing Tree search – Thirty-nine (39) Hollow Bearing Trees were located, bearing a total of 65 tree hollows. Of these hollows, 12 were greater than 10 cm in diameter and more than 2 m above the ground (suitable breeding habitat for the Pink Cockatoo). Sixteen (16) are greater than or equal to 20 cm in diameter, and 1 greater than or equal to 30 cm in diameter. One hollow with a diameter of 20 cm and 4.5 m above ground level, potential suitable breeding habitat for large owls and parrots, was observed within the Assessment Area. Only 9 of the Hollow Bearing Trees were situated within the Development Footprints. Only 12 HBTs are suitable for the Pink Cockatoo, containing one or more hollows that is both >10 cm diameter and > 2 m above the ground. Two of the HBTs suitable for Pink Cockatoo breeding are located within the Development Footprint and 10 suitable HBTs are located beyond the footprint, outside the direct impact area. Hollow Bearing Tree Photographs are located in Appendix A-1.
- Nocturnal spotlighting surveys - No threatened fauna species were recorded during the nocturnal spotlighting surveys. Some of the native species recorded include *Podargus strigoides* (Tawny Frog-mouth), *Osphranter rufus* (Red kangaroos) and *Macropus giganteus* (Grey Kangaroo). Non-native fauna recorded were *Capra hircus* (Goats).
- Nocturnal call playback – No threatened fauna or non-threatened fauna species were recorded during the nocturnal call playback surveys.
- Elliot and pitfall trapping – No threatened fauna species were recorded during the Elliot and pitfall trapping surveys.

- Microbat call recording and analysis - No threatened fauna species credit species were recorded during the Anabat surveys. A microbat of the *Nyctophilus* genus was recorded, which may have been Corben's Long-eared Bat (*Nyctophilus corbeni*), a vulnerable ecosystem credit species.
- Opportunistic – One threatened species observed, the Little Eagle (*Hieraaetus morphnoides*).

Photograph 17: Little Eagle (*Hieraaetus morphnoides*) observed at Warwick Station Homestead, 17 December 2024.

4.4.2.3 Threatened Species Detected

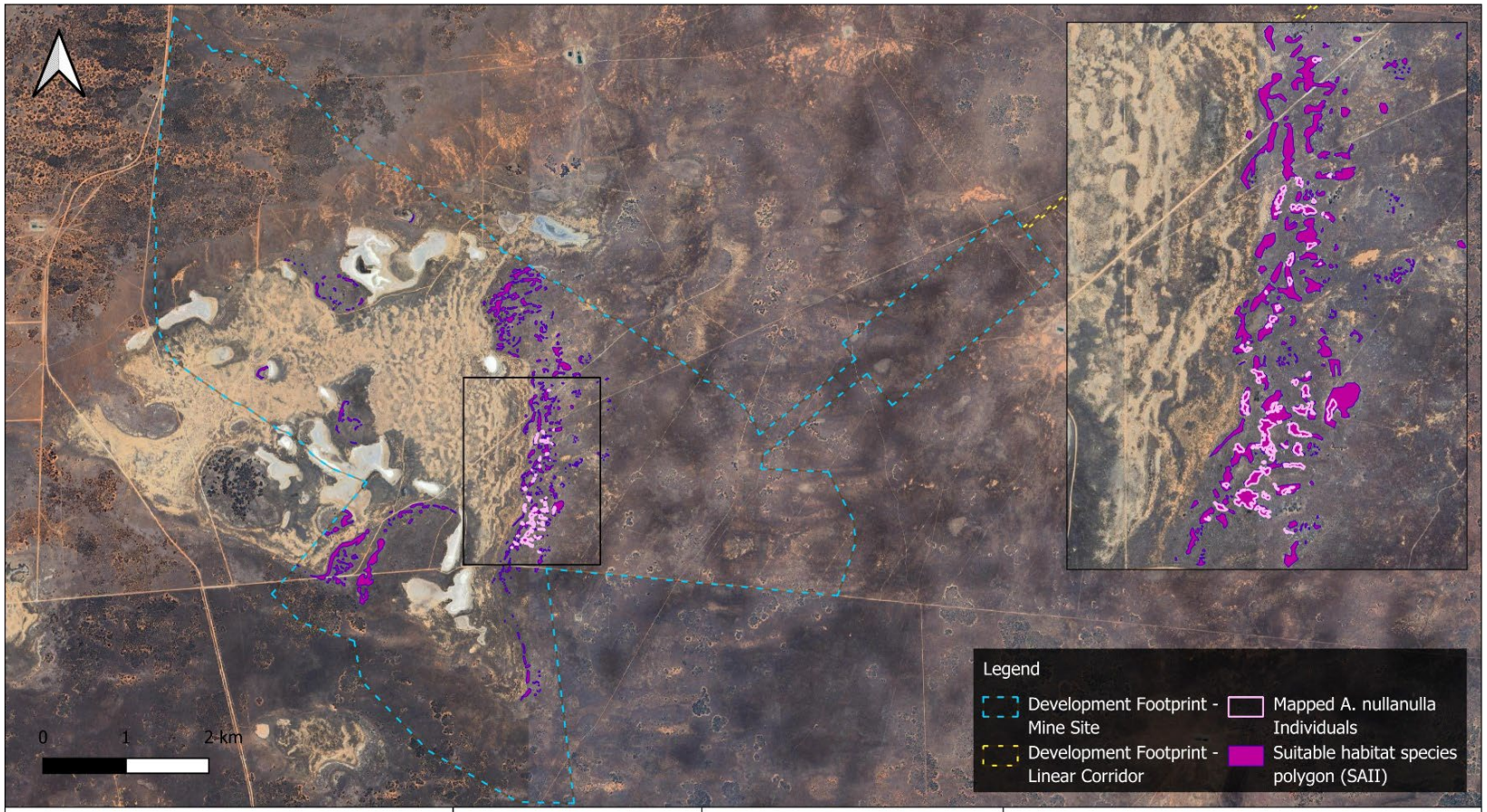
A single Little Eagle (*Hieraaetus morphnoides*) was observed at Warwick Station Homestead on 17 December 2024 outside of the Development Footprints (Figure 70). The sighting was outside the species survey window, which is August-October. The requisite surveys were conducted for the species from 6-11 August 2025, and the species was not detected. The species has been excluded from this report as a species credit species, however it is included in the ecosystem offsetting requirement.

Table 50 provides a list of species credit species subject to targeted survey.

Table 50: Species Credit Species survey results

Common Name	Scientific Name	Survey conducted	Survey timing constraints met?	Habitat components met?	Species detected?	Method
Flora						
Harrow Wattle	Acacia acanthoclada	Oct-Nov	Y	Y	N	Small Area 10 m Parallel field traverses
Purple -wood Wattle	*Acacia carneorum*	Nov	Y	Y	N	Two-phase 100 m grid-based systematic survey approach for large areas
A Saltbush	*Atriplex infrequens*	Nov-Feb	Y	Y	N	Two-phase 100 m grid-based systematic survey approach for large areas
A Spear-grass	*Austrostipa metatoris*	Nov	Y	Y	N	Small Area 10 m Parallel field traverses
Nulla spear-grass	*Austrostipa nullanulla*	Nov-Dec	Y	Y	Y	Two-phase 100 m grid-based systematic survey approach for large areas, followed by 20m grid search
Mossgiel Daisy	*Brachyscome papillosa*	Nov	Y	Y	N	Two-phase 100 m grid-based systematic survey approach for large areas
A Burr-daisy	*Calotis moorei*	Nov	Y	Y	N	Two-phase 100 m grid-based systematic survey approach for large areas
Bluebush Daisy	*Cratystylis conocephala*	Nov-Feb	Y	Y	N	Two-phase 100 m grid-based systematic survey approach for large areas
Desert Hopbush	*Dodonaea stenozyga*	All year	Y	Y	N	Small Area 10 m Parallel field traverses
Fleshy Minuria	*Kippistia suaedifolia*	Nov-Feb	Y	Y	N	Two-phase 100 m grid-based systematic survey approach for large areas
Pink Velvet Bush	*Lasiopetalum behrii*					Small Area 10 m Parallel field traverses
Winged Peppercress	*Lepidium monoplocoides*	Dec	Y	Y	N	Small Area 10 m Parallel field traverses
Button Immortelle	*Leptorhynchos waitzia*	Nov	Y	Y	N	Small Area 10 m Parallel field traverses
Thyme Rice-Flower	*Pimelea serpyllifolia subsp. serpyllifolia*		Y	Y	N	Small Area 10 m Parallel field traverses
Greenhood Orchid	*Pterostylis cobarensis*		Y	Y	N	Small Area 10 m Parallel field traverses
Bitter Quandong	*Santalum murrayanum*		Y	Y	N	Small Area 10 m Parallel field traverses
Bladder Senna	*Swainsona colutoides*		Y	Y	N	Small Area 10 m Parallel field traverses
Yellow Swainson-pea	*Swainsona pyrophila*		Y	Y	N	Small Area 10 m Parallel field traverses
Silky Swainson-pea	*Swainsona sericea*	Nov	Y	Y	N	Small Area 10 m Parallel field traverses

Fauna						
Crowned Gecko	*Lucaslum stenodactylum*	Dec - Jan	Y	Y	N	Nocturnal spotlight, physical habitat searches, Elliot trapping, pitfall trapping
Painted Burrowing frog	*Neobatrachus-pictus*	All Year	Y	N	N	Acoustic recording after flooding rain. Flooding rain has not occurred.
Pink Cockatoo	*Lophochroa leadbeateri*	Aug – Feb	Y	Y	Y	Diurnal bird survey, HBT watch, Opportunistic
Black-eared Miner	*Manorina melanotis*	Nov – Feb	Y	Y	N	Diurnal bird survey, Opportunistic
Red-lored Whistler	*Pachycephala rufogularis*	Nov – Feb	Y	Y	N	Diurnal bird survey, Opportunistic
South-eastern Hooded Robin	*Melanodryas cucullata*	Nov – Feb	Y	Y	Y	Diurnal bird survey, Opportunistic
Southern Whiteface	*Aphelocephala leucopsis*	Nov – Feb	Y	Y	Y	Diurnal bird survey, Opportunistic
White-fronted Chat	*Epthianura albifrons*	Nov – Feb	Y	Y	Y	Diurnal bird survey, Opportunistic
Black-breasted Buzzard	*Hamirostra melanosternon*	Nov – Feb	Y	Y	N	Diurnal birds of prey survey, Opportunistic
Square-tailed Kite	*Lophoictinia isura*	Nov – Feb	Y	Y	N	Diurnal birds of prey survey, Opportunistic
Little Eagle	*Hieraaetus morphnoides*	August	Y	Y	N	Diurnal birds of prey survey, at hottest time of day.
White-bellied Sea-Eagle	*Haliaeetus leucogaster*	Nov – Feb	Y	Y	N	Diurnal birds of prey survey, Opportunistic
Bush Stone-curlew	*Burhinus grallarius*	Nov – Feb	Y	Y	N	Diurnal birds of prey survey, Nocturnal spotlight, Opportunistic
Australian Bustard	*Ardeotis australis*	Nov – Feb	Y	Y	N	Diurnal birds of prey survey, Opportunistic
Southern Hairy-nosed Wombat	*Lasiorhinus latifrons*	Feb	Y	Y	N	Nocturnal spotlight
Masked Owl	*Tyto novaehollandiae*	Jan	Y	Y	N	Nocturnal call
Desert Mouse	*Pseudomys desertor*	Dec	Y	Y	N	Elliot trapping, pitfall trapping/ Nocturnal spotlight
Southern Myotis	*Myotis macropus*	Jan	Y	Y	N	Acoustic survey



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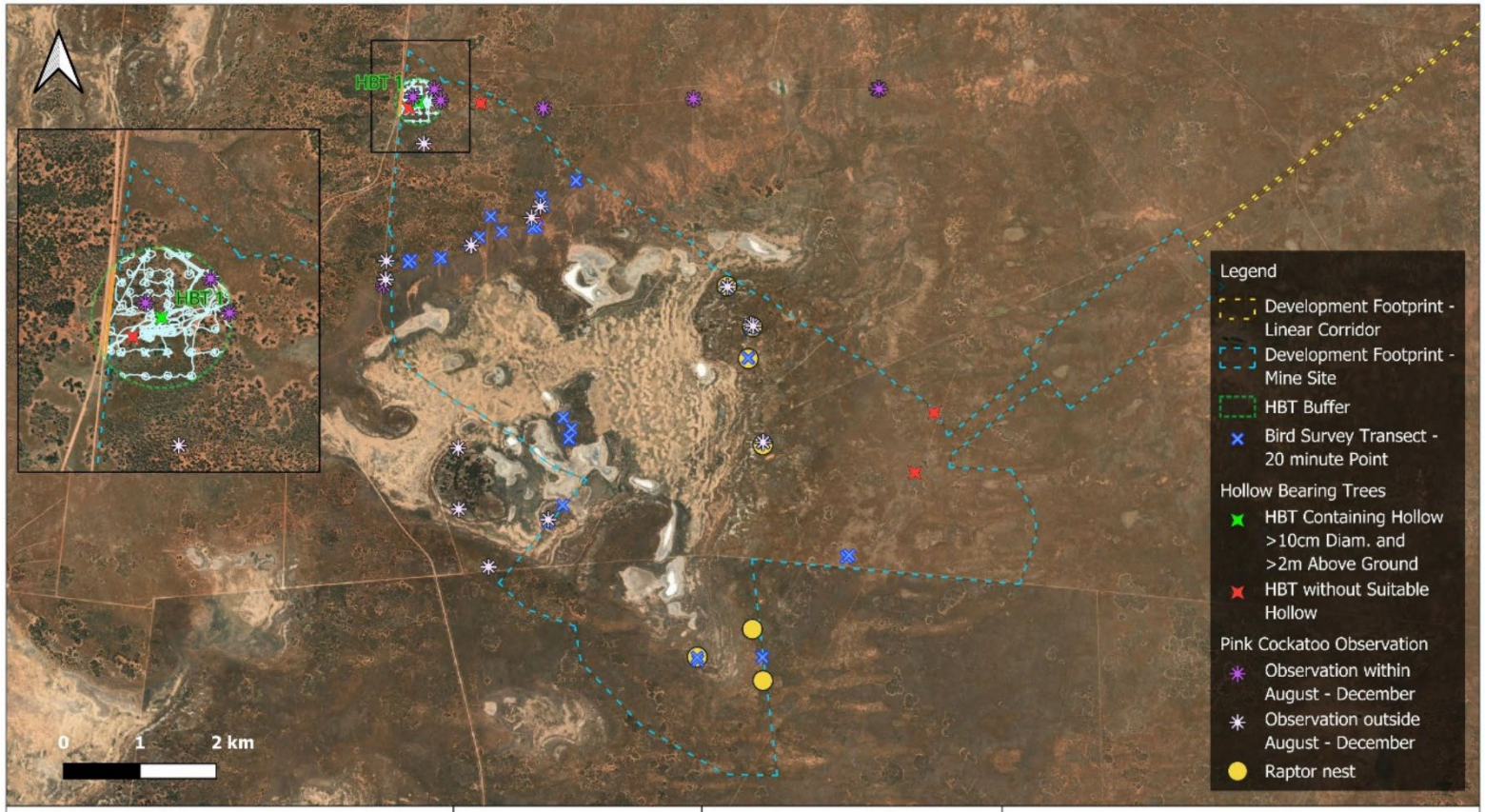
Project Manager: NC	Figure Name: SAII Impacts - All Species Polygons - Development Footporint - Mine site	Biodiversity AUSTRALIA	
Drawn by: NE	Location: Warwick Station		
Date: November 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:60000

Figure 70: Locations of Threatened flora species observed during Bio Aus threatened flora survey

Photograph 18: Occurrences of *Austrostipa nullanulla* on an exposed gypsum rise



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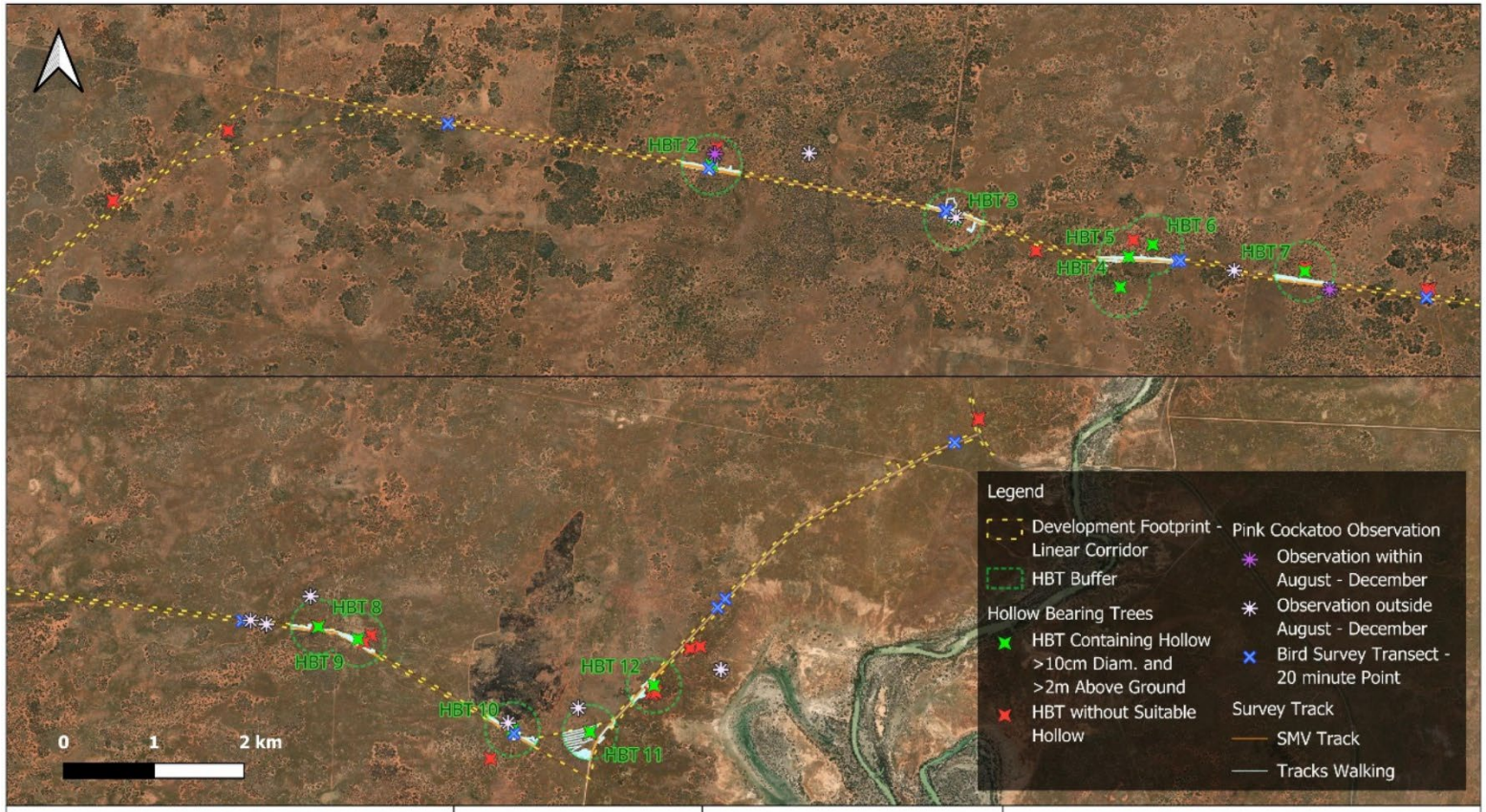
	Drawn by: NE	Location: Warwick Station		
	Date: February 2026	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:65000

Figure 71: Survey Effort for Pink Cockatoo within the Development Footprint Mine Site area (1 x HBT)



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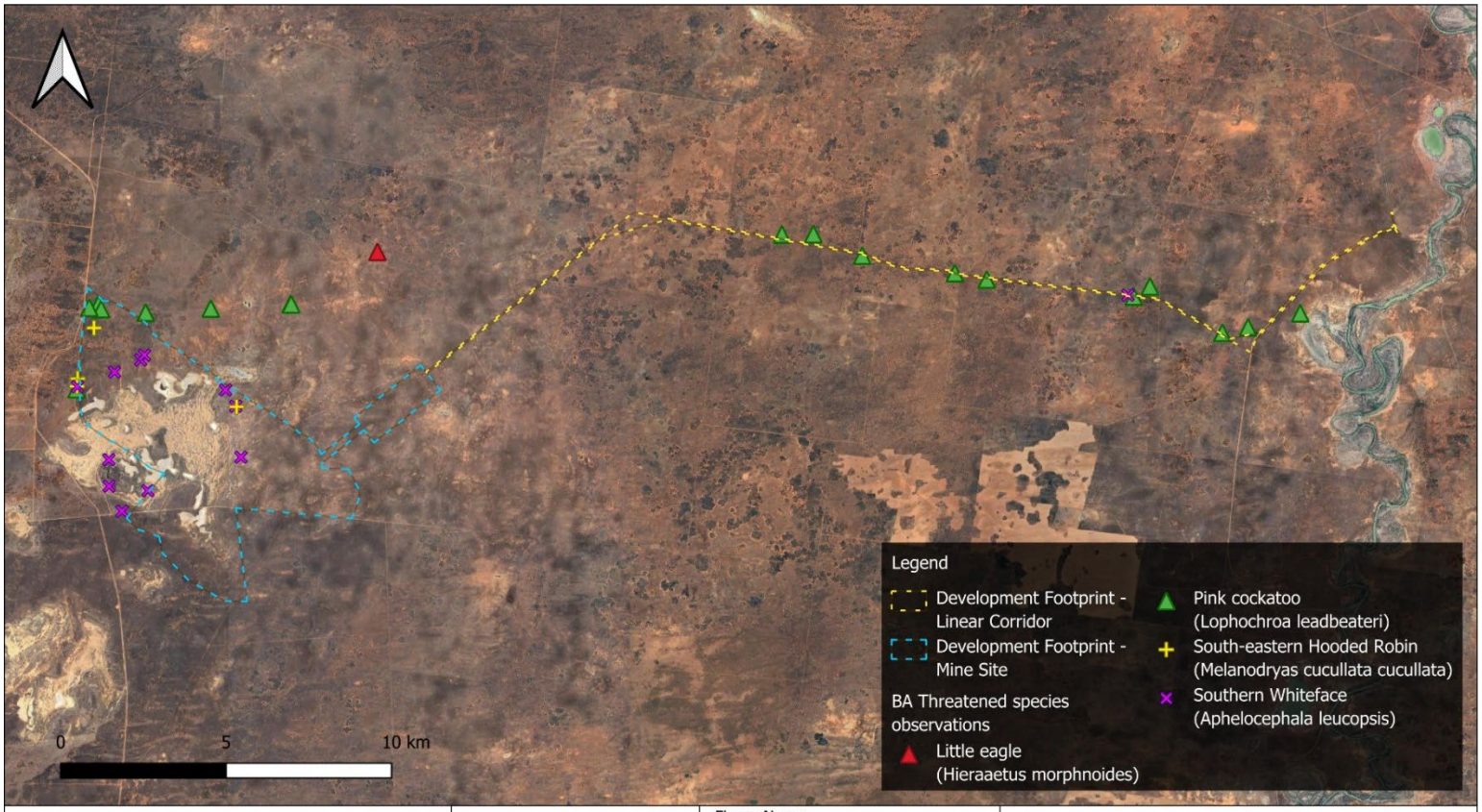
	Drawn by: NE	Location: Warwick Station		
	Date: February 2026	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference:
				Scale: 1:50000

Figure 72: Survey Effort for Pink Cockatoo within the Development Footprint Linear Corridor area (11 x HBTs)

Photograph 19: Group of Pink Cockatoos observed approximately 3.6 km outside the Development Footprint



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	Drawn by: NE	Location: Warwick Station		
	Date: November 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:150000

Figure 73: All Threatened fauna species observed during Bio Aus threatened fauna surveys

STAGE 2 - IMPACT ASSESSMENT

5. Avoidance and Minimisation

Consistent with the mitigation hierarchy established under the NSW *Biodiversity Conservation Act 2016*, The Project has been designed to prioritise the avoidance of biodiversity impacts wherever practicable. Where impacts cannot be fully avoided, measures have been incorporated to minimise disturbance. Offsets will only be considered as a last resort.

5.1 Impact Avoidance

The Project has progressed through the design phases for the past 7 years with numerous biological, environmental and engineering stakeholders contributing to the final design presented within this BDAR. As demonstrated within the Stage 1 BDAR, the proponent and numerous BAM Accredited Assessors have applied significant effort to fully understand the Biodiversity Values of the Subject Land and Assessment Area through a series of fully compliant BAM 2020 surveys. Where no survey guideline existed for a particular species, advice on survey effort and methodology were sought from the BCS, both in person during the preliminary onsite meeting and subsequently via email requests to the BOS Helpdesk. Due to the extensive survey effort, the Biodiversity Values of the Development Footprint are very well understood. Additional information about the Project was also obtained by Biodiversity Australia through the review and consultation process. This has included a vast array of documents, reports, and online material, such as the BAM 2020, Copi EIS, and geotechnical reports, as well as through a series of meetings with relevant stakeholders including R.W. Corkery & Co Pty. Ltd., RZ Resources Limited (The Client), and the Department of Climate Change, Energy, the Environment and Water (DCCEEW). This information has been utilised to:

- Identify Biodiversity Values,
- Take all reasonable measures to Avoid the impacts of The Project's actions on those Biodiversity Values,
- Take all reasonable measures to Minimise the impact of the Project on Biodiversity Values when they could not be fully avoided,
- Provide comprehensive management plans to mitigate the severity of residual impacts whether they be prescribed impacts or otherwise, &
- Apply the BOS to offset any and all residual impacts.

Section 7.1.1, part 2 of the BAM 2020 states '*selecting a final proposal location may be an iterative process. Decisions may need to be revisited after all field surveys have been completed.'* Mineral sand mining, by nature, does not lend itself to having significant opportunities for footprint design modification. Effectively, the areas which contain the desired minerals must be subjected to direct, open cut mining in order to retrieve and process those minerals. Thus, in these areas, there are very limited opportunities to avoid the process of clearing Native Vegetation.

Whilst the size and location of the Development Footprint – Mine Site is dictated by the underlying ore resource; the overall Development Footprint of the Project has undergone multiple design iterations during the 7-year planning phase of the project. There have been 4 major versions of the Development Footprint design, with multiple iterations of each version. The layout of version 1.0 and version 2.0, which culminated in preparation of EIS in 2020 and 2022, were not designed to address biodiversity-related constraints. However, the design iterations between Versions 3.0 and 3.1 were designed to minimise impacts to biodiversity where practicable. An internal review by both R.W. Corkery & Co. and RZ Resources determined that the biodiversity impacts of the version 3.0 buffer zone being approximately 900 m from the limit of the Extraction Area were not reasonable, and the engineering team were instructed to reduce the buffer substantially. In early 2024, version 3.1 was adopted incorporating a

significantly reduced Limit of Disturbance buffer zone, a reduction of approximately 600 m. In late 2024 this Development Footprint design stage was amended to remove Huntingfield and Sunshine Stations from the Project (design version 4.0) for reasons unrelated to biodiversity.

The impacts to biodiversity have been minimised through modifications to the location and extent of the Extraction area where practicable. For example, the version 3.0 design of the Extraction Area included a 900 m wide buffer zone (see Figure 74), while design version 3.1 has been reduced at its widest point to 300 m. The reduction in width of the buffer zone within Warwick and Nulla Stations from 900 m wide to 300 m wide resulted in the proposed disturbance area being reduced from 4,526 ha to 3,798 ha, a reduction of 728 ha. The area where the minimisation measure has reduced disturbance is illustrated in

Figure 75.

Additionally, the Project has been designed in such a manner that the maximum volume of material would be placed in-pit and within areas of disturbance for temporary storage and overburden. These actions have resulted in the minimisation of the requirement to disturb additional land for these activities. Similarly, the Infrastructure Area has been designed in a manner that would result in disturbance of the minimum area of land required for the safe operation of the Project. This would concentrate Project-related activities in one area and prevent unnecessary disturbance of other areas within the Mine Site.

The Development Footprint – Linear Corridor has also undergone several iterations to reduce direct impacts on biodiversity (Figure 76). The Development Footprint – Linear Corridor, including haul roads, overburden pits, stockpiles etc., allow for greater flexibility and design changes for avoidance and/or minimisation of impacts as the location of these features are not entirely restricted by the location of the underlying ore resource.

The Development Footprint - Linear Corridor has undergone several design iterations as shown in Figure 74. The original concept design of the linear corridor included a 120 m wide corridor (444.42 ha), which was reduced through multiple iterations finally to the current 42 m wide corridor (218.43 ha)(Figure 74, Figure 75, Figure 76 and Figure 77). The current Linear Corridor design (42 m width) resulted in a reduction of the impact area by approximately 50%, and avoidance of 226 ha of native vegetation within the Subject Land. Impacts to biodiversity have been further reduced by strategically locating Project infrastructure in areas deemed to be the lowest ecological value. The proposed Development Footprint – Linear Corridor has been aligned to utilise existing roads, infrastructure and historically disturbed or cleared areas (where practicable) to provide the most viable and direct route whilst minimising impacts to Native Vegetation communities, Threatened Ecological Communities, associated fauna habitat, and habitat connectivity. The utilisation of the existing access tracks/roads (29.06 ha) has reduced the impacts of Native Vegetation within the Development Footprint - Linear corridor from 218.42 ha to 190.16 ha.

In addition to reducing the proportion of native vegetation within the current Development Footprint – Linear Corridor by utilising existing roads, infrastructure and infrastructure and historically disturbed or cleared areas, the proposed future impacts have been further reduced by utilising areas that previously held exemptions relating to approved clearing under the *Rural Fires Boundary Clearing Code* and *Clearing for Rural infrastructure and* were therefore at a high risk of disturbance. Spatial Analysis of the Subject Land identified the presence of multiple cadastral property boundaries and instances of rural infrastructure (i.e. access roads/tracks and fence lines) spread throughout the majority of the Subject Land. Under the previous land use of the Subject Land, several areas of Native Vegetation were identified to be of '*high risk to loss'* through potential future clearing in accordance with the *Rural Boundary Clearing* under the *Rural Fires Boundary Clearing Code* and *Clearing for Rural infrastructure* under the Part 3 Schedule 5A of the *Local Land Services Act 2013* (Figure 76). Under the *Rural Fires Boundary Clearing Code,* a landholder is permitted to clear Native Vegetation to a maximum of 25 m from the cadastral property boundary for the purpose of bush fire hazard mitigation. Therefore, a 25 m internal buffer has been imposed upon all cadastral property boundaries, resulting in the identification of 25.16 ha of area identified to be of '*high risk to loss'* within the current Development Footprint - Linear Corridor.

Additionally, the *Local Land Services Act 2013*, *Schedule 5A Part 3 - Clearing of native vegetation for rural infrastructure* states that within the Western Division (which includes the Project), a 40 m maximum authorised distance of clearing for rural infrastructure is permitted, except for small holdings and for temporary fences. As such, a corridor of 40 m (20 m either side of the midline) has been applied for linear structures, such as access roads/tracks and fence lines. This has been applied to reduce the impacts associated within linear infrastructure, resulting in the identification of 67.71 ha of area identified to be of '*high risk to loss'* within the current Development Footprint - Linear Corridor. Spatial analysis illustrated that the areas identified to be of '*high risk to loss,'* overlapped in some areas within the Subject Land resulting in the identification of 69.63 ha (32%) within the current Development Footprint - Linear Corridor of area identified to be of '*high risk to loss'* (Figure 76).

It is noted that the Huntingfield/Sunshine areas, adjacent to the northwest boundary of the current Development Footprint – Mine Site (which was included in the original Mine Site design (Figure 74)) was removed from the current layout. However, it is not an avoidance measure as RZ Resources may apply to mine this land in the future. The area was excluded due to an inability to access these properties, which meant biodiversity impacts could not be fully determined. In contrast, the proposed footprint has been thoroughly surveyed in accordance with the BAM.

One further and major consideration for the minimisation of impacts to the Subject Land relates to changes to current land use and land management. The Subject Land has historically been used for pastoral activities, namely livestock grazing. Heavy grazing by goats and sheep has degraded much of the vegetation within the Subject Land, such that the majority was assessed by Biodiversity Australia as being of high to moderate condition. The Proposed Development will lead to the cessation of grazing activities, due to both the removal of livestock and the control of feral pastoral animals. This will improve the overall ecological health of the Subject Land. By reducing grazing pressures and allowing Native Vegetation to regenerate, habitat quality will gradually increase, supporting a greater abundance and diversity of native flora and fauna. This change in land management is expected to enhance and contribute to the long-term sustainability of biodiversity across the Subject Land. The final land use will largely be a native ecosystem, with investigation into the viability of alternative, sustainable post-mining land uses such as renewable energy generation.

Table 51: Design Iterations of the Current Development Footprint – Mine site

Mine Site	Version 3.1	Version 4.1 (Current)
Area	4,526 ha	3,798 ha*
Proportion of Original Footprint	100%	84%

**Excluding future areas of proposed development*

Table 52: Design Iterations of the Development Footprint - Linear Corridor

Linear Corridor	Original Footprint	1st Iteration	2nd Iteration	Current Footprint
Width	120 m	90 m	60 m	42 m
Area	444.42 ha	352.62 ha	259.62 ha	218.42 ha
Proportion of Original Footprint	100%	79%	58%	49%

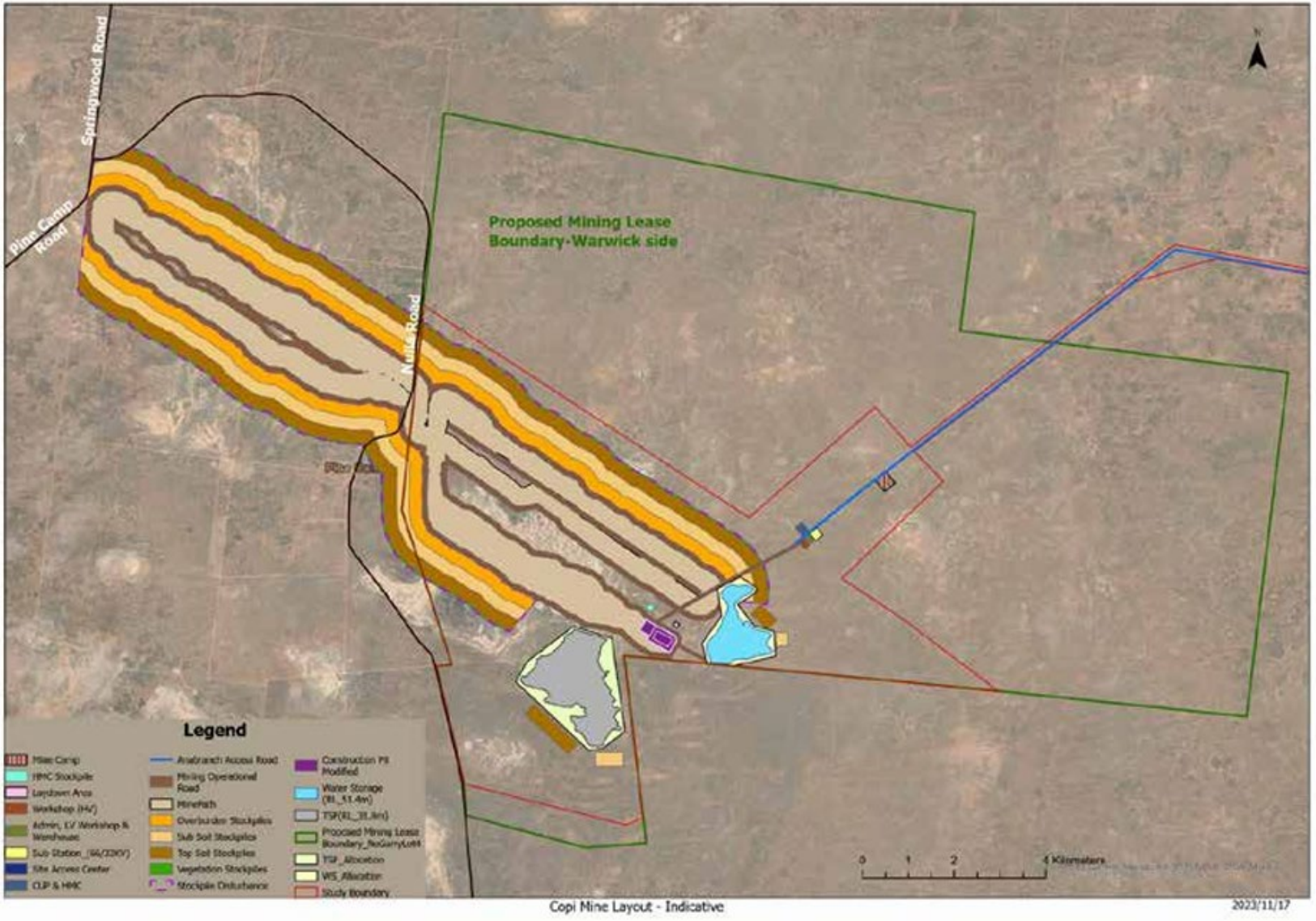
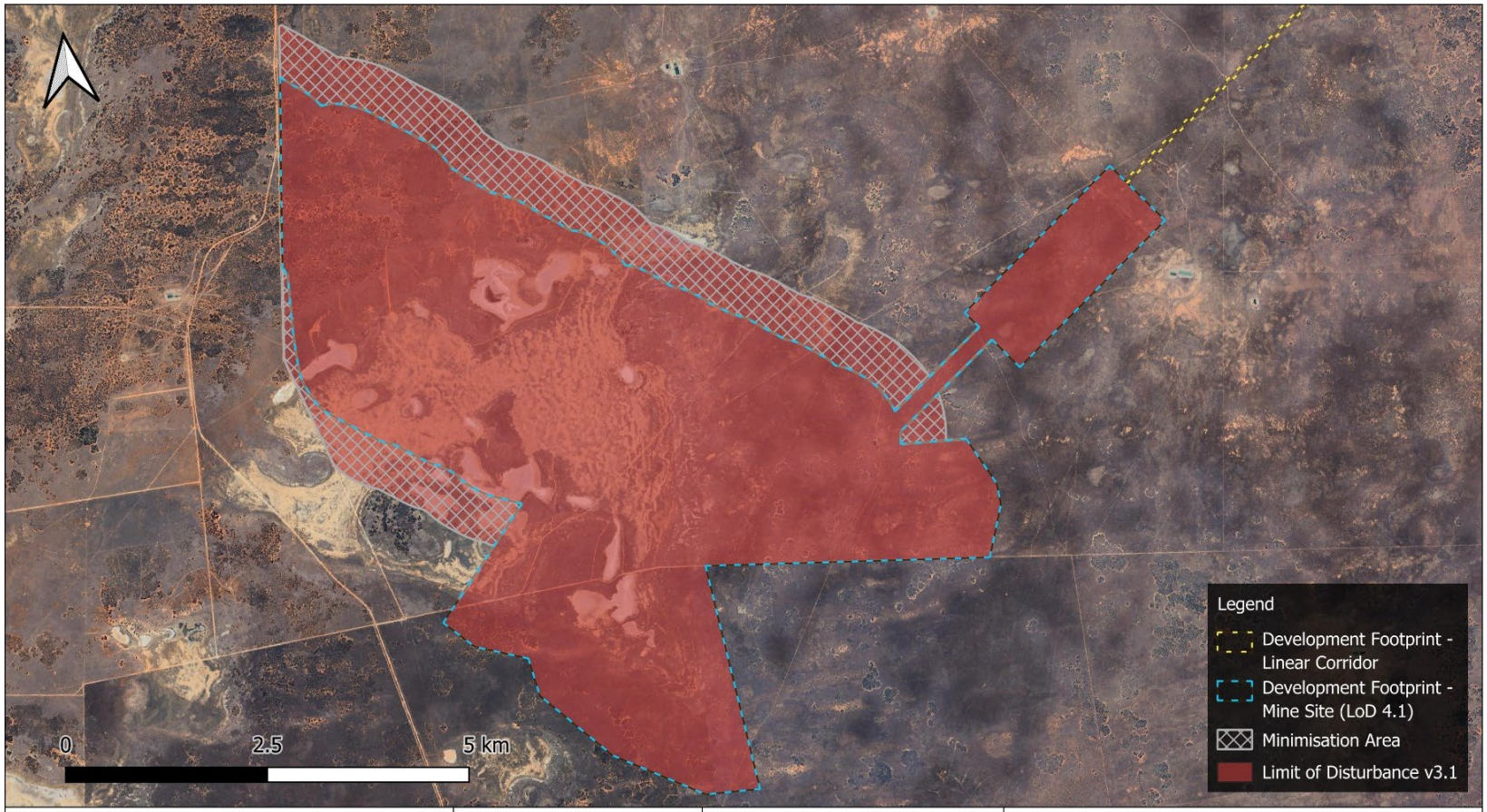


Figure 74: An earlier design (Version 3.0 - November 2023) showing the buffer width to extraction area at 900 m wide (EnviroKey 2024)



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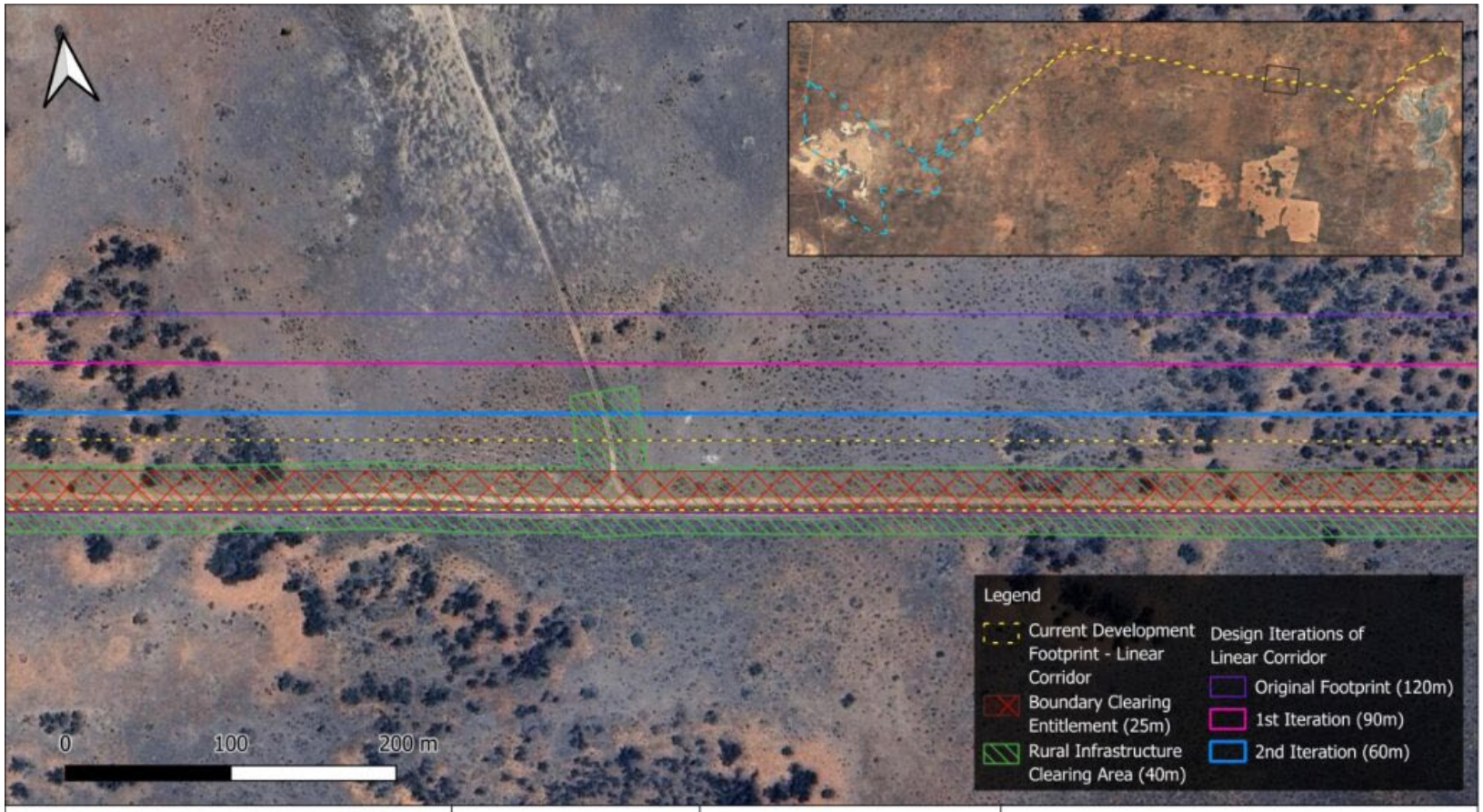
	Drawn by: NE	Location: Warwick Station		
	Date: August 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:61702

Figure 75: Development Footprint – Mine Site minimisation measures



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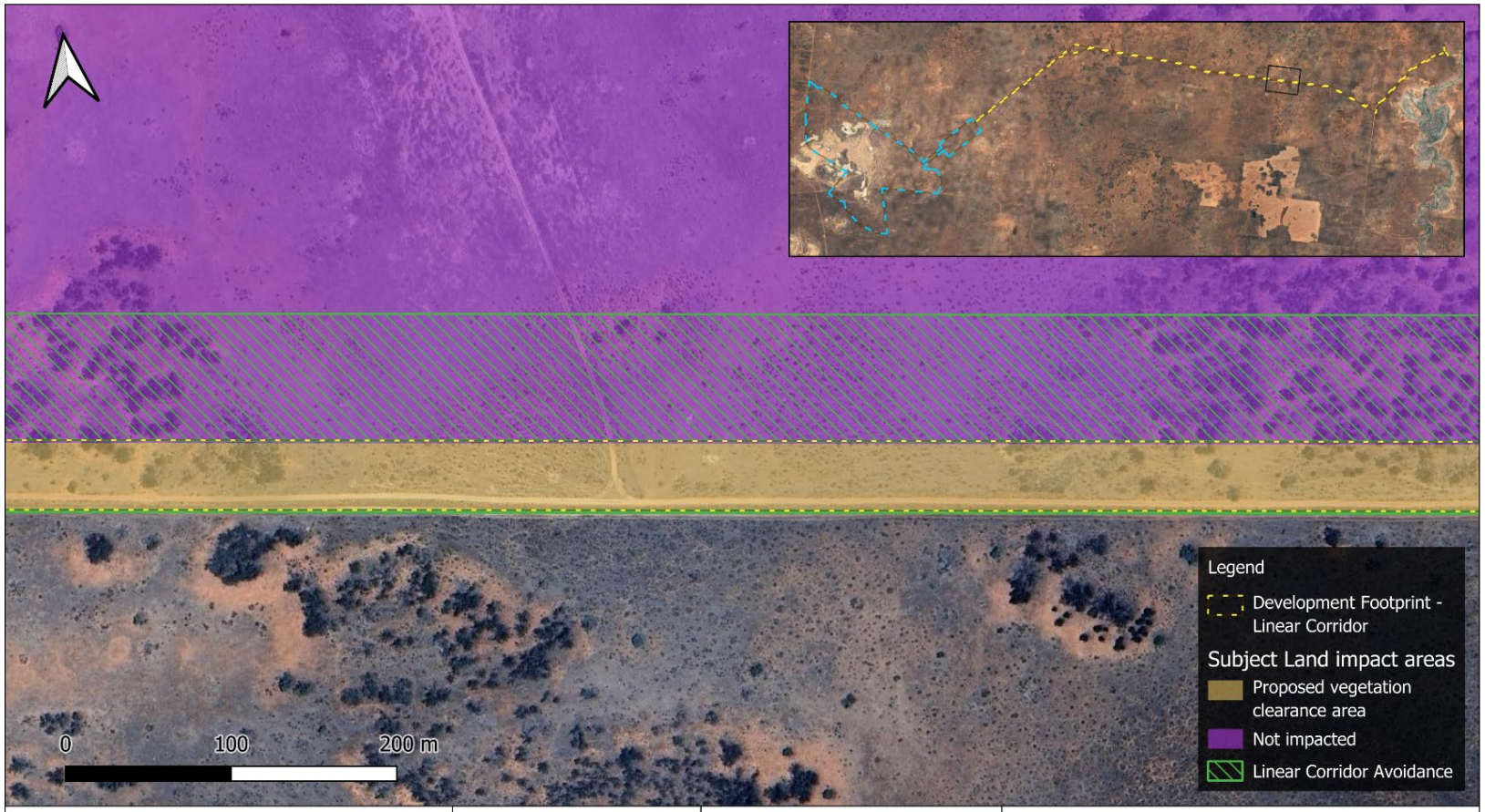
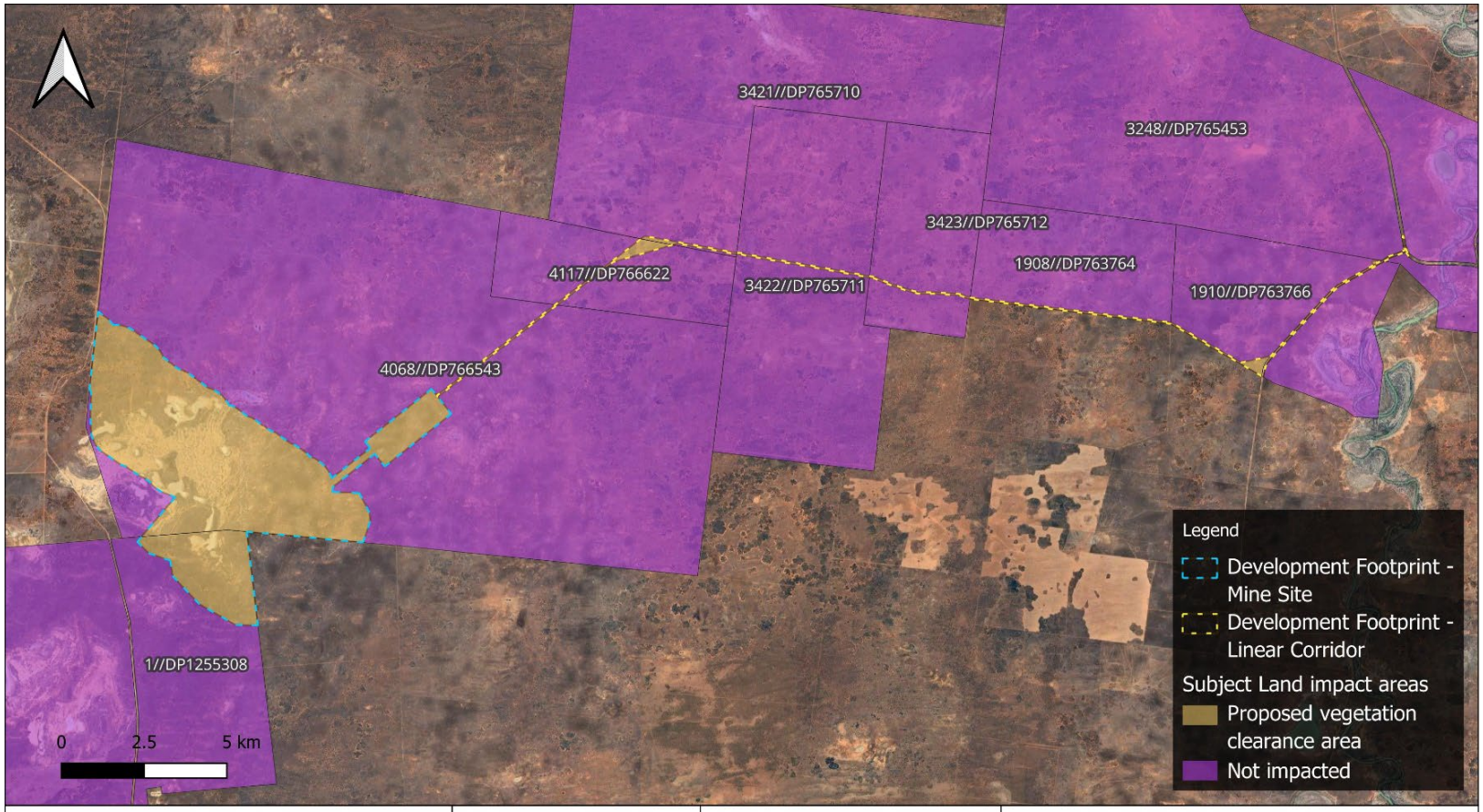
	Drawn by: NE	Location: Warwick Station	
	Date: August 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:3000

Figure 76: Linear Corridor Design Iterations, Rural Boundary Clearing and Rural Infrastructure Clearing



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Linear Corridor Avoidance Measures	Biodiversity AUSTRALIA	
	Drawn by: NE	Location: Warwick Station		
	Date: August 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54 Scale: 1:3000

Figure 77: Linear Corridor Avoidance



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.

Project Manager: NC	Figure Name: Final impacts likely to occur on Subject Land - Development Footprint	Biodiversity AUSTRALIA	
Drawn by: NE	Location: Warwick Station		
Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:150000

Figure 78: Final impacts likely to occur on the Subject Land - Development Footprint

5.2 Direct Impacts

The greatest risk of potential impacts on threatened species and biodiversity values from The Project will occur during the construction and operational phases. Construction activities will span 17 years to support the installation of the standard operational mining infrastructures (Development Footprint – Mine Site) and the 46 km Haul Corridor Road (Development Footprint – Linear Corridor). These activities will be undertaken concurrently with mining operations and involve ground disturbance, vegetation clearing, earthworks and stockpiles, and construction of hydrological and drainage features (e.g. culverts and establishment of temporary construction compounds and laydown areas). The direct impacts associated with these phases are described below.

5.2.1 Vegetation Clearing and Habitat Removal

The Project will result in the removal of 3,883.08 hectares (3,692.92 ha from the Development Footprint - Mine Site and 190.16 ha from the Development Footprint - Linear Corridor) of Native Vegetation. An additional 28.11 ha of roads, tracks and other cleared land within the Development Footprint - Linear Corridor, and 108.30 ha from the Development Footprint - Mine Site, will be cleared due to the proposed works, resulting in a total of 4019.49 ha of land cleared (Figure 78). The Project will also result in the removal of a 3.84 ha scattered patch of *A. nullanulla* from the central section of the Development Footprint – Mine Site. The loss of Native Vegetation will be offset through the BOS as outlined in this BDAR. No BC Act listed EEC will be subject to clearing. No further vegetation loss will be required through the operational phase of The Project.

The vegetation to be affected provides forage, refuge, and nesting habitat for a variety of fauna species, including birds and reptiles. At least nine of the Hollow Bearing Trees identified within the Development Footprint as having potential to provide nesting/denning habitat for hollow-obligate fauna species will be removed from within the Development Footprint – Mine Site and four from the Development Footprint – Linear Corridor. Those within the Development Footprint – Mine Site possess at least eight hollows, of which only one was greater than 10 cm in diameter and >2 m above the ground (suitable breeding habitat for the Pink Cockatoo). Of the 11 HBTs along the haul road with hollows >10 cm and >2 m above the ground, only one is located within the Development footprint. In total there are ten HBTs with suitable breeding hollows for the Pink Cockatoos located outside the Development Footprint.

5.3 Indirect Impacts

Indirect impacts resulting from The Project activities may include habitat modification from subsidence and may include localised dieback of Native Vegetation that provided habitat connectivity, particularly along the Linear Corridor. For example, increasing dust suspension, noise and light, especially during construction works, may impact on breeding, foraging and dispersal behaviours of native species. The following potential indirect impacts may be associated with The Project.

5.3.1 Fragmentation

Habitat fragmentation leads to an overall loss of habitat, reduced patch size and increased habitat isolation (Fahrig, 2003). The size and isolation of a fragment strongly influence ecological processes within each area, particularly population size, community composition, and genetic stability (Jellinek *et al.* 2004). As fragmentation and isolation increase, the threat of species extinction rises locally and regionally (Jellinek *et al.* 2004).

Removing Native Vegetation for The Project will contribute to local habitat loss and fragmentation. This fragmentation can impact fauna dispersal, modify gene flow, and alter the microclimate by reducing

habitat accessibility and increasing edge effects (Battisti 2003; Offerman *et al.* 1995; Saunders *et al.* 2012). Fragmentation and associated landscape changes are major factors in biodiversity decline, ecosystem modification, and altered ecosystem processes. The effects vary based on fragment distance from similar habitats, landscape position, the form of habitat modification (e.g. edge effects), surrounding land uses, species ecology, and how these factors influence the movement of organisms between fragments and larger areas of habitat (Lindenmayer and Fisher 2006, DCCEEW 2025b).

Presently, the Subject Land is partially fragmented by a legacy network of vehicle tracks and fence lines, which create residual barriers to the movement and dispersal of larger fauna, such as macropods. To avoid exacerbating these impacts, the existing tracks have been incorporated into the design of the Development Footprint, minimising the need for new tracks, and efforts have been made to limit increases to track widths. Other fauna groups, including birds, reptiles and small mammals, are less likely to be affected by this fragmentation, as they face fewer barriers to dispersal (e.g. birds can fly between patches, and smaller species typically have limited home ranges and can pass through fences).

The forested areas in the north-western section of the Development Footprint, which provide the greatest biodiversity value, occur on the fringe of a much larger, contiguous forested section beyond the Development Footprint (Figure 78). The PCTs comprising the forest are associated with a variety of volant (e.g. Corben's Long-eared Bat and Pink Cockatoo) and non-volant (e.g. Kultarr and Jewelled Gecko) threatened species. Although the smaller section on the fringe of the forest will be subject to vegetation removal, the larger, contiguous section will remain undisturbed and functional as a connectivity corridor during and after the clearing and construction phases, helping to minimise the impacts of the loss of the smaller section. Volant species inhabiting the section earmarked for removal can readily relocate into the adjacent forest, while non-volant species will have access to connected habitat, allowing gradual dispersal as clearing progresses. Similarly, the remaining areas of vegetation within the Development Footprint, while providing habitat for fewer species, are widespread and connected across the broader landscape (Figure 78), further supporting dispersal opportunities and limiting the impacts of fragmentation. All non-volant ecosystem credit species associated with the PCTs present in the Development Footprint are of such a size that barriers like boundary fencing are unlikely to impede their movements.

5.3.2 Erosion and Sedimentation

Sedimentation and erosion impacts can occur during both the construction and operation phases of The Project. Erosion/sedimentation may occur via erosion of fill material and disturbed soils, scouring of exposed soil, earthen banks and habitats adjacent to the Development Footprint via directed flow (surface water runoff) or where runoff is concentrated.

Erosion can remove the most productive part of the soil profile, the topsoil, resulting in a greatly reduced opportunity for natural regeneration of vegetation communities, unless stockpile. Topsoil resources can be protected by removing topsoil altogether from areas of high disturbance and setting the topsoil aside, in appropriate storage for reuse in rehabilitation programs. Where topsoil is left in situ in disturbed areas, erosion and sediment control measures are required to minimise loss of topsoil. These mitigation measures are summarised in Table 59**.** and will be discussed in more detail in the Soil Erosion and Sediment Control Plan.

Sedimentation and erosion are likely to occur as part of dredge mining operations. However, these impacts must be contained within the dredge ponds, which will not be connected to other waterways. The post-mining rehabilitation period will ensure any areas subjected to erosion and sedimentation throughout the operation of the mine will be rehabilitated to minimise any deleterious impacts to nearby catchments. Nevertheless, comprehensive erosion and sediment plans must be prepared prior to construction and implemented prior to any earthworks.

Standard mechanisms and controls will be required to ensure the prevention of erosion and sedimentation during construction and post-development, and such impacts do not extend beyond the Development Footprint. The development of a Soil Erosion and Sediment Control Plan (SESCP) developed by a Certified Practitioner in Erosion and Sediment Control (CPESC) is recommended. This SESCP must address all statutory environmental factors.

5.3.3 Injury/mortality during clearing

Conflict between site traffic and fauna is likely to occur within the Development Footprint (Linear Corridor and Mine Site). The optimal time for construction and maintenance activities is during daylight hours, as animals within hollows and fallen logs, within dense vegetation and leaf litter, are at risk of being injured or killed during clearing operations in poor light. Fauna may be placed under stress, injured or killed during tree felling via:

- Being nocturnal or in torpor, and unable to escape prior to the tree falling,
- Collapse of the hollow when it impacts the ground,
- Collision with internal walls or via being thrown out when the tree falls, &
- Being present as young e.g. eggs.

This risk increases during breeding seasons (generally spring to late autumn) and in cooler seasons when mammals and reptiles enter torpor.

The Development Footprint contains Hollow Bearing Trees, fallen timber habitat and areas of dense shrub cover, therefore providing a risk of fauna mortality during clearing. The presence of a suitably qualified or experienced person per machine during all clearing activities will mitigate the risk of injury to fauna. Further detail of the mitigation measures proposed to reduce injury or mortality during clearing is provided in Section 5.5.5.

The Project has the potential to cause injury or mortality to threatened fauna as well as other native fauna. Fauna may be injured or killed as a result of the Proposed Development through:

- Strike from moving vehicles/machinery performing construction and operational duties on the Mine Site– key concern for ground-dwelling species, particularly those with low mobility.
- Collision from medium to high-speed vehicles travelling along the Linear Corridor – key concern for some birds and ground dwelling fauna,
- Entrapment during habitat removal – key concern during tree falling for species that use HBT, or hollow logs for roosting and denning, and
- Entrapment in trenches/holes – key concern for ground dwelling species (reptiles and small mammals), particularly those that are active at night and cannot avoid trenches.

The Traffic Management Plan will inform the requirements for temporary fencing to minimise the risk of fauna injury/mortality due to vehicle strike or entrapment during excavations. The Traffic Management Plan will be implemented during the construction and operation phases of The Project to assist in controlling the risks of species collision.

5.3.4 Edge effects

Changes to the edges of vegetation communities has been attributed to a range of detrimental effects on different ecosystems. These changes have been linked to effects such as the alteration of environmental conditions, changes in species abundance and distributions and changes in species interactions (Murcia 1995). However, the likelihood of such changes corresponds to the disparity between

the environments of path edges and interiors, and not all habitats are subjected to the same degree of impact (Kremsater & Bunnell, 1999). For instance, in open arid landscapes, the transition between edge and interior environments is more gradual, leading to less pronounced edge effects compared to densely forested areas.

The Project's infrastructure will lead to creation of habitat patches which may be subjected to edge effects. To a lesser extent, the construction of other infrastructure and facilities will create edges adjacent to remnant vegetation patches. The edge effects can include:

- Increased risk of weed incursion from disturbed areas.
- increased exposure of fauna to predation due to increased visibility.
- microclimatic changes associated with increased sunlight.
- increased weed proliferation.

Weeds are already prevalent within the Subject Land. However, there is a risk that disturbance to Native Vegetation, changes to microhabitat and mobilisation of earthmoving equipment/materials may introduce or exacerbate weeds within the Development Footprint.

Ground dwelling fauna are most at risk from increased predation around the edges of Native Vegetation (remnant habitat) as fauna are more visible and accessible.

The Subject Land occurs within a remote, harsh arid landscape dominated by open habitats and is not susceptible to substantial edge effects, however, most vegetation within the Development Footprint has previously been degraded due to long-term grazing. Given these conditions, and the minimisation measures outlined in Section 5.3.1 (Fragmentation), edge effects following the Proposed Development are not expected to significantly worsen or become pronounced through delineation and disturbance. Notwithstanding, the network of vehicle tracks around and through the Subject Land provides vectors for weed invasion and the dumping of rubbish, though the low frequency at which these tracks are used limits disturbance risks. Additionally, these risks are not expected to heighten significantly during the construction and operational phases of the development due to planned inductions, signage and the provision of onsite waste disposal facilities. See also Sections 5.3.1 (Fragmentation), 5.3.7 (Noise, vibration and anthropogenic disturbance) and 5.3.8 (Light spill).

5.3.5 Weed Invasion

Potential impacts from invasive plant species can be devastating if no management is undertaken to prevent, control, minimise and eradicate the spread of exotic plants. Weeds can have a substantial impact on native flora and fauna by altering the balance of natural ecosystems and outcompeting native flora when it comes to necessary sunlight, shade, nutrients and space (DCCEEW 2025d). This can result in long-term effects unless appropriate mitigation and management measures are implemented.

The Subject Land is currently subject to low moderate levels of weeds. A total of 260 plant species were observed during the Field Survey, of these 49 are exotic species (Table 53). However, weed species listed under the *Australia Weeds Strategy 2017-2027* or weeds of national significance were not observed during the Field Survey.

An increase in vehicle and foot traffic associated with the construction and operational phases of The Project may increase the spread of weeds in the Subject Land.

The Western Downs Regional Council Biosecurity Plan defines and outlines strategies, objectives and outcomes necessary for a planned and coordinated approach to weed management across the region.

DPE (2020) provides hygiene protocols for weeds and includes keeping vehicles, machinery, and people dry surfaces, and removing all soil, plant material and other debris from clothing, footwear, tools and equipment (DPE 2020). The following standard recommendations will be taken into account during the pre-construction phase of The Project:

- Vehicles and equipment must be adequately cleaned and free of weeds, dirt and other materials that may contain weed seeds before being bought onto the site.
- Weeds must be actively managed during the clearing and construction phase, including those immediately adjacent that may spread into the subject site.
- The site must be routinely inspected for weeds during the construction phase.
- If any weed establishment is detected during inspections, appropriate control measures must be implemented to manage their spread and impact.
- Disturbance of vegetation and soils on the site must be limited to the areas of the proposed work and must not extend into adjacent vegetation.
- All plant used for clearing and construction works is certified as weed-free.
- Appropriate collection and disposal of all weed material removed via clearing.
- Any recent weed invasions within the development area must be removed.
- Ongoing weed control in the development area.

High risk vectors for weed spread such as roads and washdown bays must be regularly monitored for weed invasion, and control measures implemented where necessary to limit the potential for spread and minimise impacts from weeds. Additional mitigation measures are discussed in Section 5.5.5 (Mitigation measure summary). These include the development and implementation of the Biodiversity Management Plan, Construction Environmental Management Plan (CEMP) and associated sub-plans post construction as the Biosecurity Management Plan.

Table 53: List of weeds observed during the field survey

Family Name	Common Name	Scientific Name
Brassicaceae	Flax-leaf Alyssum	*Alyssum linifolium**
Asphodelaceae	Onion Weed	*Asphodelus fistulosus**
Poaceae	Bearded Oats	*Avena barbata**
Brassicaceae	Ward's Weed	*Carrichtera annua**
Asteraceae	Saffron Thistle	*Carthamus lanatus**
Poaceae	Buffel Grass	*Cenchrus ciliaris**
Asteraceae	Maltese Cockspur	*Centaurea melitensis**
Asteraceae	Skeleton Weed	*Chondrilla juncea**
Cucurbitaceae	Camel Melon	*Citrullus amarus**
Cucurbitaceae	Colocynth	*Citrullus colocynthis**
Convolvulaceae	Field Bindweed	*Convolvulus arvensis**
Asteraceae	Flaxleaf Fleabane	*Conyza bonariensis**
Asteraceae	Stinkwort	*Dittrichia graveolens**
Geraniaceae	Common Crowfoot	*Erodium cicutarium**

Family Name	Common Name	Scientific Name
Euphorbiaceae	A Milkweed	*Euphorbia sp*.*
Boraginaceae	Smooth Heliotrope	*Heliotropium curassavicum**
Boraginaceae	Potato Weed	*Heliotropium europaeum**
Caryophyllaceae	Rupturewort	*Herniaria cinerea**
Poaceae	Barley Grass	*Hordeum leporinum**
Poaceae	Barley	*Hordeum vulgare**
Asteraceae	Smooth Catsear	*Hypochaeris glabra**
Asteraceae	Willow-leaved Lettuce	*Lactuca saligna**
Asteraceae	Prickly Lettuce	*Lactuca serriola**
Brassicaceae	Common Peppercress	*Lepidium africanum**
Plumbaginaceae	Winged Sea Lavender	*Limonium lobatum**
Malvaceae	Spiked Malvastrum	*Malvastrum americanum**
Fabaceae (Faboideae)	Cut-leaved Medic	*Medicago laciniata**
Fabaceae (Faboideae)	Woolly Burr Medic	*Medicago minima**
Fabaceae (Faboideae)	Burr Medic	*Medicago polymorpha**
Fabaceae (Faboideae)	Small-leaved Burr Medic	*Medicago praecox**
Fabaceae (Faboideae)	Barrel Medic	*Medicago truncatula**
Aizoaceae	Small Ice Plant	*Mesembryanthemum nodiflorum**
Asteraceae	Stemless Thistle	*Onopordum acaulon**
Poaceae	Grasses, reeds and bamboos	*Poaceae indeterminate**
Aizoaceae	Wiry Noon-flower	*Psilocaulon granulicaule**
Asteraceae	False Sowthistle	*Reichardia tingitana**
Poaceae	Roughtail	*Rostraria pumila**
Lamiaceae	Mintweed	*Salvia reflexa**
Lamiaceae	Vervain	*Salvia verbenaca**
Poaceae	Arabian Grass	*Schismus barbatus**
Caryophyllaceae	-	*Silene spp*.*
Brassicaceae	Smooth Mustard	*Sisymbrium erysimoides**
Brassicaceae	London Rocket	*Sisymbrium irio**
Brassicaceae	Indian Hedge Mustard	*Sisymbrium orientale**
Asteraceae	Common Sowthistle	*Sonchus oleraceus**
Caryophyllaceae	Sandspurry	*Spergularia rubra**
Asteraceae	Dandelion	*Taraxacum officinale**
Zygophyllaceae	Cat-head	*Tribulus terrestris**
Asteraceae	Bathurst Burr	*Xanthium spinosum**

5.3.6 Feral Pest Fauna

The Project has the potential to attract feral fauna. Feral cats and red foxes are already known to occur on the Subject Land and are significant predators of native species (NPWS 2001; Dickman 1996; May and Norton 1996; DCCEEW 2025b). Other feral animals known to occur on the Subject Land include rabbits and goats. These species can negatively impact native fauna and flora through the spread of disease, competition for food and shelter, and the destruction of habitat (DCCEEW 2025c). The impacts of feral animals have been listed as key threatening processes under the BC Act 2016. A Biodiversity Management Plan (BMP) will be implemented during the pre-construction, construction, operation, and rehabilitation phases to assist in the integrated control of these species. This BMP will include lethal control and monitoring measures.

5.3.7 Noise, vibration and anthropogenic disturbances

The clearing and construction phase of The Project is likely to result in increased levels of noise and vibration within and immediately surrounding the Development Footprint. A report from Muller Acoustic Consulting Pty Ltd (MAC, 2025) predicts noise emissions to range from > 60 dB near noise sources (e.g. mining operations, processing plant) to 35 dB up to 1.5 km from sources (Assessment Area). These levels may not be limited to daylight hours as mining, processing and transport operations can occur 24 hours per day. Further, it is expected that noise and vibration levels will remain at a relatively constant level for the life of The Project.

The increase in noise and vibration could impact local fauna, particularly birds, through adverse changes to behaviour, population densities, community structure and breeding success (Barber *et al.* 2009). These responses can result from the frequent disturbance to daily activities by evoking anti-predatory responses and by blocking call signals between individuals (Barber *et al.* 2009).

Impacts on fauna and disturbance from noise during construction and operation will generally cause fauna to move away from noise sources as these may anticipated as a threat. The BMP must include mitigation strategies as part of vegetation clearing protocols, including sequential/stage clearing requirements, to minimise the impact on fauna. Where vibration levels are predicted to outpace the screening criteria, a more detailed assessment of the structure and vibration monitoring must be undertaken to ensure vibration levels remain below standard limits for that structure.

While the exact tolerance thresholds of the various species present on site are unknown, a review of research on the effects of noise on wildlife reports that adverse responses by birds (e.g. decline in species diversity, call rates and call durations) begin at around 40 dB, while those of mammals (e.g. changes in proportion of time spent feeding), reptiles, and amphibians (e.g. reduction in chorus duration) begin above 60 dB (Shannon *et al.* 2016). Thus, it can be inferred that birds might avoid spending any considerable length of time within the immediate vicinity of noise sources within the Development Footprint and that they will likely be unaffected beyond 1.5 km of noise sources. Mammals, reptiles, and amphibians may only be disturbed near noise sources. Monitoring is recommended throughout the lifespan of The Project to ensure noise levels do not exceed those predicted and that no long-term adverse changes to species diversity and abundance occur, particularly for avifauna. A Biodiversity Management Plan (see Section 5.5.2) will be developed and will commence with flora and fauna monitoring to establish a baseline, which, along with the findings of this BDAR, will provide be used to monitor the influence of noise and other potential impacts on flora and fauna communities.

5.3.8 Light Spill

The introduction of additional artificial light has the potential to effect fauna within and adjacent to the Development Footprint. Studies have shown both an increase in orientation and disorientation as a result

of additional illumination to an area. This can have the potential to alter normal foraging, communication and reproductive behaviours, as well as competition and predation dynamics within and among species (Longcore and Rich, 2004; Chepesiuk, 2009). For example, some species may experience heightened predation pressure due to the increased hunting success of predators that benefit from illumination, while others may refrain from foraging due to the decreased ability to detect natural light cycle changes (Fardell & Dickman, 2023).

Light spill is expected to occur from the Mine Site infrastructure area, extraction areas, and vehicles. Despite this, the buffer zones surrounding the extraction areas and positioning of the Development Footprint in an area of limited habitat value must ensure that light spill remains largely within the bounds of the Development Footprint and impacts on wildlife species will be minimal. Nevertheless, artificial lighting is recommended to be kept to a minimum and strategically placed so as not to disturb fauna in adjacent habitats. Measurements of light disturbance must be ongoing and incorporated into an adaptive environmental monitoring program, whereby intervention will occur if triggers are exceeded.

To ensure anthropogenic impacts are minimised, it is recommended that artificial lighting be kept to a minimum and be of a localised and low luminosity, with light directed to the ground and not onto retained trees/adjacent vegetation. Sufficient artificial lighting will likely be required for security reasons and in the event any evening works are required. Security lighting is preferred to be sensor-based to reduce energy consumption and contribute to Climate Change. The applicant will need to consider the requirements of the *Australian Standard 4282:2023* and the *National Light Pollution Guidelines for Wildlife.* The effects of light spill on wildlife will be monitored through the Biodiversity Management Plan.

5.3.9 Movement obstruction

Temporary and permanent fences will be installed around the Development Footprint to exclude people, vehicles, and animals for the construction and operational mine site.

Fencing will also be used to exclude feral animals (e.g. goats, sheep) during the rehabilitation period in strategically areas. Depending on the type of fencing to be installed within remnant areas, these fences may obstruct the movement of threatened fauna across the Development Footprint. Some obstruction is already occurring on the Subject Land, particularly along sections of the Linear Corridor due to the presence of property boundary fences. Any obstruction related to the Proposed Development will be limited to the Mine Site Development Footprint.

Threatened fauna may also potentially be injured by collision with wire fences, particularly barbed wire. Kangaroos and emus were observed colliding established property boundary fences along the Proposed Linear Corridor, and others were observed deceased after having become stuck, highlighting the potential for impacts to wildlife. Mitigation measures to eliminate this risk have been outlined in Section 5.5.5 (Mitigation Measure Summary).

5.3.10 Increased dust levels

Dust impacts generated during the construction phase of The Project may negatively affect Native Vegetation. Deposition of airborne dust, sand and soil may have potential impacts on vegetation if excessive levels are sustained over extended periods. When dust settles on plant foliage, it can reduce the amount of light penetration on the leaf surface, block and damage stomata and slow gas exchange and water loss. A diminished ability to photosynthesise may result in reduced growth rates of vegetation, flora vigour, and overall community health (Thompson *et al.* 1984).

Localised dust effects are likely to arise during the following activities:

- Vegetation clearing, earthworks associated with the construction of surface facilities such as the construction villages and access roads and vehicle movements. Dust from these activities will occur over a relatively short duration, typically several months where dust plumes may affect Native Vegetation adjacent to these areas.
- The access and internal roads proposed for The Project will be unsealed, and there will be an increase in dust during the clearing, construction, and operational phases of The Project. An Air Quality Management Plan will be prepared following approval of the proposed Mine Site to address impacts associated with increased dust levels.
- Dust from stockpiles.

The Linear Corridor will provide primary access to the construction site and villages; therefore adjacent vegetation will suffer from continuous exposure to dust impacts. Some additional localised dust deposition across the Development Footprint – Mine Site may occur immediately adjacent to access roads. Vegetation situated in proximity to construction and operational activities may become coated with dust. However, this will be short term and unlikely to cause any significant damage or permanent impacts.

The potential effects of dust deposition on vegetation are determined by the following factors:

- The characteristics of leaf surfaces, such as roughness, influencing the rate of dust deposition on vegetation.
- concentration and size of dust particles in the ambient air and its associated deposition rates
- local meteorological conditions and the degree of penetration of dust into vegetation.

Proposed mitigation measures will include using water trucks to wet road surfaces and reduce dust kick-up, as well as developing a monitoring program to track the extent and effects of depositional dust on sensitive plant communities over time, ensuring timely intervention in the event of adverse changes being detected. An Air Quality Management Plan will be developed before construction which will consider potential dust related impacts. These will be detailed in the Biodiversity Management Plan (see Section 5.5.2).

5.3.11 Increased risk of starvation

The vegetation proposed for removal is surrounded by vast areas of intact Native Vegetation. The areas of intact vegetation that are beyond the Development Footprint will ensure that food resources will not decrease to a level that will pose a risk of starvation to fauna.

5.3.12 Critical loss of shade or shelter

Some tree loss will be required for the development. This is unlikely to lead to a critical loss of shade or shelter due to the vastness of adjoining habitats.

5.3.13 Increased Soil Salinity

An increase in soil salinity can be detrimental to native species with surfaced salts becoming toxic to a large majority of native flora. Increases in soil salinity have been linked to large-scale land clearing and are usually associated with the clearing of vegetation (Australian Bureau of Statistics 2013). The Project requires the removal of 3883.08 ha of vegetation and the construction of dredge ponds, which will be filled with extracted groundwater. The groundwater on the Subject Land has been found to have an extremely high salt concentration (61 g/L or 10,167 mS/m), such that it exceeds the salt tolerance

thresholds of all plant communities present on the Development Footprint (Greenloaning Biostudies, 2022). Accordingly, it can be concluded that the plant communities are not accessing or utilising water from the groundwater table, and that the removal of vegetation will not cause the groundwater table to rise and bring salts closer to the surface. However, the establishment of the dredge ponds will likely disperse the hypersaline groundwater over areas beyond those currently subjected to salt deposition through groundwater evaporation, and this could greatly increase soil salinity within affected areas of the Development Footprint.

Full Preliminary Observations of Groundwater Dependent Ecosystems – Greenloaning Biostudies report is located in Appendix A-10.

5.3.14 Rubbish Dumping

The Subject Land is currently subject to minor levels of rubbish dumping, primarily due to the actions of the current landowners. It is possible that the risk of rubbish dumping will heighten due to increased human presence because of the proposed development. However, suitable waste disposal facilities will be provided as part of the development, and waste will be routinely transported off site to waste disposal facilities in nearby townships. It is recommended that rubbish dumping is monitored throughout the lifespan of The Project, and that a Waste Management Plan outlining exactly how waste will be dealt with is developed. These will be outlined in the Biodiversity Management Plan (see Section 5.5.2).

5.3.15 Wood Collection

Woody debris provides habitat for wildlife, substrates for fungal and plant germination and growth, and contributes to soil processes (Smith *et al.* 2012). Its removal can, therefore, have adverse ecological impacts. All materials required for the development will be sourced externally and the Subject Land is far from populated areas and is not considered to attract wood collection. Nevertheless, the establishment of onsite mining camps could create a new avenue for potential wood collection, for activities such as campfires. It is essential that environmental inductions developed for the Proposed Development highlight the importance of leaving woody debris in situ and undisturbed to avoid environmental degradation.

5.3.16 Bush rock removal and disturbance

Bush rocks are essential habitat features for biodiversity as they provide refuge for reptiles (O'Sullivan *et al.* 2024). The removal of bush rock can have serious implications for the persistence of rock-dependent reptile species. The Subject Land is not considered to attract bush rock collection, but the risk of collection could grow with the increased human activity associated with the Proposed Development. Similarly to wood collection, the importance of leaving bush rock undisturbed must be highlighted in pre-work environmental inductions. Additionally, the rehabilitation phase must ensure bush rock is restored on the rehabilitated landscape (to be addressed in the CEMP).

5.3.17 Increased risk of fire

The proposed development will not increase the risk of fire in the area.

5.4 Prescribed Impacts

5.4.1 Karst, Caves, Crevices, Cliffs, Rocks and Other Geological Features of Significance

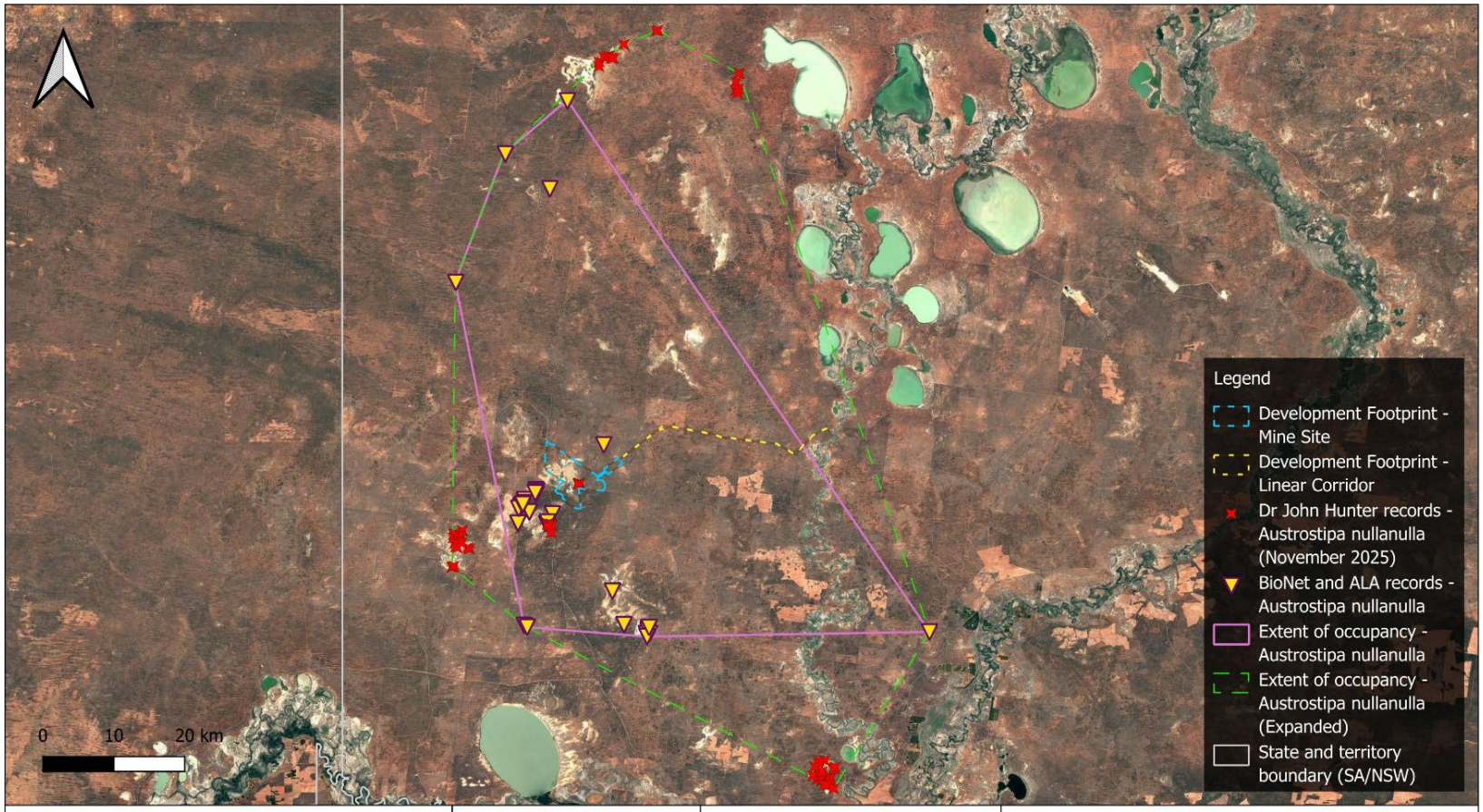
The Subject Land contains significant geological features in the form of gypsum soils associated with lunette rises. These soils and rises are essential habitat features for the endangered (BC Act 2016) Nulla Spear Grass (*Austrostipa nullanulla*), a gypsum obligate species which qualifies as a Serious and Irreversible Impact (SAII) entity (see Section 5.6). The former and current extent of occupancy for *Austrostipa nullanulla* is shown in Figure 79. The Project will require the removal of 3.84 ha of land occupied by *A. nullanulla* from PCT 253 within the Development Footprint – Mine Site. Additionally, 135.88 ha of potential habitat in the form of gypsum soils consistent with PCT 253 will be removed from the Development Footprint – Mine Site. Neither individuals nor potential habitat for *A. nullanulla* were recorded within the Development Footprint – Linear Corridor.

The removal of realised and potential *A. nullanulla* habitat will be offset with species and ecosystem credits (657 credits for *A. nullanulla* and 1,469 credits for PCT 253). As this species has an extremely limited distribution, particularly within NSW, it is very unlikely that species offset credits will be available for this grass. In lieu of species offset credits for *A. nullanulla*, offsets may need to be made towards another flora species of similar conservation status. At present, *A. nullanulla* is not listed as a species qualifying for Conservation Actions, despite being listed as Endangered in NSW and recognised as a SAII.

Additionally, endeavours will be made to restore the disturbed soils and rises once the soils are processed and works on sectors have ceased. This will take the form of placing gypsum-rich soils on the eastern margins of salt pans, mimicking the current habitat and conditions in areas occupied by *A. nullanulla.* Soil disturbance and rehabilitation will occur progressively, minimising the scale of areas disturbed at any one time. There are also plans for a research project to collect *A. nullanulla* seeds from the Development Footprint prior to clearing and experiment with propagating specimens within restored and rehabilitated gypseous soils (see Section 5.6.3). The species is identified on BioNet as having a 'high sensitivity to gain' and thus is likely to be responsive to restoration efforts. If successful re-establishment of the species is achieved within the restoration areas, it will aid soil stabilisation in the rehabilitated areas and assist its conservation on the Subject Land and across its broader distribution. The re-establishment of other, less specialised flora species will also assist in soil stabilisation as well as the improvement of biodiversity.

The methodology used to calculate the species polygon for *A. nullanulla* within the Development Footprint will also be used to calculate the offset species polygon for *A. nullanulla* in designated Biodiversity Stewardship offset areas.

To fulfill offset requirements under BC Act Section 6.4, a quote for *Austrostipa nullanulla* credits in the South Olary Plains subregion (associated with the Copi Mineral Sands Project / Warwick Station – Nulla Road, Pine Camp) has been obtained from the Biodiversity Conservation Trust (BCT) under PES00632. This provides the estimated credit price for potential payment into the Biodiversity Conservation Fund (BCF) if land-based offsets prove unachievable.



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Extent of Occupancy Austrostipa nullanulla NSW	Biodiversity AUSTRALIA
	Drawn by: NE	Location: Warwick Station	
	Date: November 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:700000

Figure 79: Preliminary investigations to Land based Offset for Austrostipa nullanulla

5.4.2 Human-made Structure and Non-native Vegetation

The Subject Land does not contain human-made structures or non-native vegetation that provides meaningful habitat to threatened species.

5.4.3 Habitat Connectivity

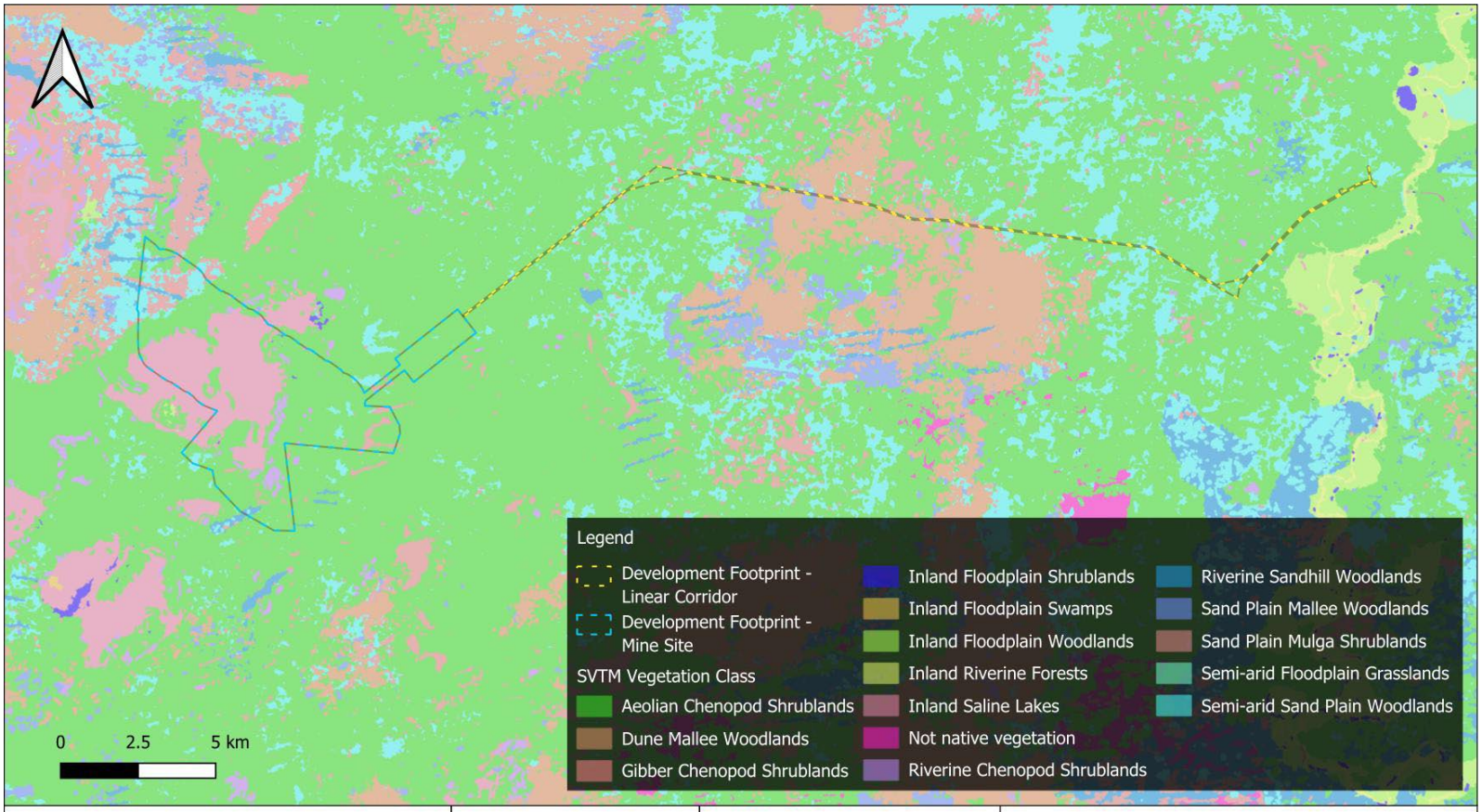
The Project will result in the removal of 3,883.08 hectares ha from the Mine Site Footprint and 190.16 ha from the Linear Corridor Footprint of Native Vegetation. This removal of vegetation will impact the connectivity of habitats that facilitate the movements of fauna whose ranges encompass the Subject Land. Further, the Development Footprint will be surrounded by fencing, potentially disrupting species' behaviour, dispersal abilities, and gene flow (Fischer & Lindenmayer, 2007).

However, these impacts are expected to affect only non-threatened fauna, such as macropods, whose large body sizes and home ranges preclude movement through fenced areas and necessitate uninterrupted access to connected habitat. The macropod species observed on the Subject Land, including the Western Grey Kangaroo, Common Wallaroo, and Red Kangaroo, have wide distributions due to their broad habitat tolerances. This ecological flexibility means these species are not restricted by the connectivity of particular PCTs and can adapt to a variety of vegetation types across the landscape. Consequently, while fencing and vegetation removal may temporarily alter their movement patterns, these macropod species are expected to persist by utilising habitats and resources within the environment surrounding the Development Footprint. Therefore, the anticipated impacts on connectivity are unlikely to result in any significant long-term effects on their populations.

Species with potential to occur on the Subject Land that have more specialised habitat requirements, such as the spinifex-obligate Mallee Slender Blue-tongue Lizard, are also expected to experience limited impacts associated with the loss of habitat connectivity and disruption to movement. This is due to two factors:

- As shown in Figure 80, vast areas of intact vegetation beyond the Development Footprint will remain undisturbed, including a large, contiguous forested area to the north-west of the Subject Land. In all cases, the PCTs present within the Development Footprint extend uninterrupted beyond the Project boundary, meaning that displaced species will have ample connected habitat for movement and dispersal outside the affected area.
- The threatened species with potential to occur within the Subject Land, such as those listed in Table 58 have body sizes or dispersal modes, including the ability to fly, that allow them to bypass barriers (as discussed in Section 5.3.1 Fragmentation).

One threatened flora species, *Austrostipa nullanulla*, may be impacted by the loss of habitat connectivity resulting from The Project. The Project requires the removal of 3.84 ha of area occupied by *A. nullanulla* within the Development Footprint – Mine Site, as well as 135.88 ha of potential habitat. This potential habitat, which is located on an exposed gypseous rise to the east of a salt pan, extends north and south from the known mapped occurrence of *A. nullanulla.* The removal of these exposed gypseous rises could potentially reduce habitat connectivity for *A. nullanulla*, as they provide soils conducive to the species' colonisation.



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.

Project Manager: NC	Figure Name: Regional Scale Habitat Connectivity - Development Footprint	Biodiversity AUSTRALIA	
Drawn by: NE	Location: Warwick Station		
Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:160000

Figure 80: Regional scale habitat connectivity - Development Footprint

This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Indicative mining schedule - Development Footprint - Mine Site	Biodiversity AUSTRALIA
	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:70000

Figure 81: Indicative mining schedule - Development Footprint - Mine Site

5.4.4 Water Bodies, Water Quality and Hydrological Processes

The Development Footprint – Mine Site contains salt pans (Figure 82) mapped as wetlands under the NSW Wetlands Layer. However, these salt pans areas are ephemeral – they do not support any permanent wetland ecosystems and only occasionally collect rainwater and surface water runoff. Furthermore, they are highly saline due to groundwater evaporation, as their elevation in some areas is close to the groundwater table, which sits between 24 and 26 m AHD (Australian Height Datum) across the Development Footprint (GEO-ENG, 2024). The salinity of the groundwater in the uppermost aquifer, which is accessible to plants and hosts the orebody to be mined by the proposed development, is 61 g/L or 10,167 mS/m (Greenloaning Biostudies, 2022(Appendix A-10) ; GEO-ENG, 2024. This is almost twice the salinity of sea water and greatly exceeds the tolerance thresholds of all flora species present within the PCTs considered to be potentially groundwater dependent (PCTs 64, 157, 221, 253) by high ecological value aquatic ecosystem (HEVAE) framework mapping (Greenloaning Biostudies, 2022; RWC, 2024). For example, the most salt-tolerant plant species present on the Subject Land, Samphire (*Tecticornia pergranulata* subsp. *pergranulata*), which dominates PCT 64, has an upper salinity tolerance threshold 6,500 mS/m (DPI & RD, 2023). Since the salinity of the groundwater surpasses this range, even this extremely salt-tolerant plant is highly unlikely to rely on groundwater. This is supported by the absence of this and other plant communities from low-lying areas below 26 m AHD (the elevation of the groundwater table). Consequently, two separate groundwater assessments independently concluded that the likelihood of the plant communities within the Development Footprint qualifying as GDE's is remote (Greenloaning Biostudies, 2022; GEO-ENG, 2024). Any reliance on groundwater is likely to be limited to small perched and ephemeral groundwater aquifers associated with rainfall recharge.

Localised changes to groundwater levels are expected to occur as a result of the boring and extraction required to fill the dredge ponds necessary for The Project. Namely, a 1 – 6 m drawdown in groundwater levels is expected to occur in the first year of operations in the eastern side of the Development Footprint (RWC, 2024). This drawdown is predicted to span a total area of 1,153.38 ha, with 271.76 ha permeating beyond the boundary of the Development Footprint (Figure 83). However, it must be noted that the depth of the drawdown is predicted to decrease in a radial manner with increasing distance from the centre of the affected area, so the areas beyond the Development Footprint will experience less drawdown. The depth of the drawdown will stabilise at 1 m from the 5th year of operations for the remaining operational lifespan of The Project. It will increase to 2,382 ha in size by the 10th year, then gradually shrink and return to pre-development depths upon the conclusion of mining operations. Another, much smaller drawdown of only 163.30 ha and with a depth of 1 – 2 m is expected to occur in the north-western part of the Development Footprint from the 5th year of operation until the 10th year, after which point it will have returned to normal levels (Figure 83). It must be again reiterated that regardless of the information presented above, it is clear that the PCTs within the Development Footprint are not GDE's, and the expected impacts of these groundwater changes are nil.

In addition to the drawdown in groundwater levels, the construction and operation of the Mine Site will result in the permanent removal of large sections of the salt pans located within the Development Footprint – Mine Site (Figure 82). As stated previously, these areas do not currently support any vegetation communities. However, they may be of some value to wildlife. For example, the salt pans may provide some foraging and roosting value to avifauna species, such as the threatened White-fronted Chat (*Epthianura albifrons*), both when dry and when inundated during significant rainfall events. In particular, salt pans may offer areas of enhanced predator detection for roosting, and abundant macroinvertebrate resources for foraging (Sacco *et al.* 2021). Whilst it is expected that impacts associated with the removal of these salt pans will be minimal due to there being a number of other salt pans in the vicinity of the Subject Land that will remain undisturbed, it is essential to ensure the remaining sections outside the Development Footprint retain their ecological function.

The salt pans act as sinks for surface water runoff, allowing flow to be captured by fringing vegetation and increasing soil moisture content. This moisture is essential for sustaining the macroinvertebrate

communities that the White-fronted Chat and other threatened bird species (see Table 54 and Table 58) depend on. It also creates the conditions necessary for the germination of seeds deposited by the vegetation communities present along the salt pans' periphery (e.g. PCT 64) (Ferguson, 1997). Thus, ensuring the continued ability of the remaining salt pans to capture and hold water during rainfall inundation events is critical for the maintenance of biodiversity. The Project acknowledges the importance of maintaining the function of the residual sections of the salt pans beyond the Development Footprint and will implement measures to manage surface water and vegetation within these areas to support ongoing ecosystem health. Specifically:

- The mining pits will be installed at a lower elevation than the residual salt pans they bisect. To prevent uncontrolled seepage from the salt pans into the pits, which could drain the salt pans of captured water, the embankments separating the pits from the salt pans will be constructed as water-retaining structures.
- Flow bunds will be installed to direct clean surface flow into areas where it can pool and infiltrate, and to prevent it from entering disturbed areas. Similarly, bunds will be installed to prevent sediment-laden runoff from entering the surrounding environment (See Figure 84).
- Adaptive measures to monitor and manage vegetation health in the residual salt pan sections are described in Table 57 and will be further detailed in The Project's Development Consent Management Plan, consistent with regulatory requirements.

Table 54: Threatened species associated with PCT 64 Samphire - Water Weed - Sea-Heath shrubland saline wetland of depressions of the arid and semi-arid (warm) zones

PCT	Common Name	Species Name	Type	BC Act	EPBC Act	Profile ID	Atlas Code
64	Australian Bustard	*Ardeotis australis*	Birds	Endangered	-	10063	FA0176
64	Sanderling	*Calidris alba*	Birds	Vulnerable	-	10127	FA0166
64	Little Pied Bat	*Chalinolobus picatus*	Bats	Vulnerable	-	10159	FA1352
64	Grey Falcon	*Falco hypoleucos*	Birds	Vulnerable	Vulnerable	10330	FA0236
	Button Immortelle	*Leptorhynchos waitzia*	Herbs & Forbs	Endangered	-	10467	FL1559
64	Southern Myotis	*Myotis macropus*	Bats	Vulnerable	-	10549	FA1357
64	Little Eagle	*Hieraaetus morphnoides*	Birds	Vulnerable	-	20131	FA0225
64	Spotted Harrier	*Circus assimilis*	Birds	Vulnerable	-	20134	FA0218
64	Rufous Fieldwren	*Calamanthus campestris*	Birds	Vulnerable	-	20138	FA9950
64	White-fronted Chat	*Epthianura albifrons*	Birds	Vulnerable	-	20143	FA0448
64	Dusky Woodswallow	*Artamus cyanopterus cyanopterus*	Birds	Vulnerable	-	20303	FA8519

The nature of the mineral sands mining Project limits opportunities to avoid impacts in areas where deposits occur (i.e. the salt pans). The unique characteristics of the inhospitable groundwater, the localised nature of the disturbance areas, the occurrence of similar undisturbed areas beyond the Development Footprint ensure that impacts, and the monitoring and mitigation measures introduced to ensure the ecosystem function of the residual salt pans ensure that impacts to biodiversity are minimised. A Water Management Plan (WMP) describing groundwater monitoring and management measures, such as groundwater quality testing and an adaptive review of modelling scenarios, must be prepared for The Project prior to the commencement of operations (GEO-ENG, 2024). An Accredited Person must form part of this Water Management Plan to properly address any potential impacts to biodiversity.

One meter high flow bunds are proposed to be constructed at three locations around the perimeter of the Mine Site Development Footprint Figure 84. These flow bunds will be constructed as a precautionary

measure to protect the mine site and surrounding vegetation from potential inundation following storm events. Under storm modelling provided in the R.W. Corkery & Co. Geospatial analysis and Modelling expert report, (RWC 2026) (Appendix A-6) pooling or inundation will not be experienced outside the Development Footprint at either of the two bunds located to the west, however the shorter bund located to the east will experience pooling and inundation in an area extending north from the exterior of the bund, as shown in Figure 84.

Inundation may occur over approximately 44 ha of PCT 154 Pearl Bluebush low open shrubland. The potential impacts associated with inundation of vegetation (PCT 154), are uncertain as rainfall events are unpredictable within the region. Complete avoidance of these impacts is unable to be achieved due to the detailed design of the development and the nature and uncertainty of potential impacts; thus minimisation is essential. Mitigation measures will include monitoring of Vegetation Integrity Plots established within the potential inundation zones and offset through the requirement of credits where monitoring indicates a significant reduction in Vegetation integrity.

A total of 42 BAM VI plots were conducted within the ground-truthed PCT 154 vegetation zones within the Mine Site Development Footprint between November 2024 and November 2025. The Vegetation integrity (VI) scores from all 42 plots can be used to determine an adaptive management action trigger value, by first calculating the average VI score from the multiple BAM plots within each vegetation zone, then determining the annual rate of decline for each VZ within BOAMS. Finally, the trigger value for the retirement of additional credits, can be calculated by doubling the annual rate of decline (ARD).

In accordance with the BAM 2020 s4.3.4, to determine the ARD of PCT 154 outside the Development Footprint, four VI plots are proposed to be located within the 44 ha VZ Mod 154 inundation zone, which is forecast to be impacted by pooling stormwater following the construction of flow bunds. Plot data from these 4 plots will provide an average VI score for the VZ and subsequent annual rate of decline and adaptive management action trigger value. Table 55 provides the VI scores, annual rate of decline, trigger value, sample size and VI plot identifiers for PCT 154 within the Mine Site Development Footprint.

The credit obligation generated by impacts to 44 ha of moderate condition PCT 154 within in the modelled inundation zone is 553 ecosystem credits. Table 55, illustrates the current vegetation integrity of PCT 154 within the Mine Site Development Footprint along with the number of plots, plot numbers used to calculate the Vegetation Integrity Score of the VZ, annual rate of decline and the proposed annual rate of decline trigger for the retirement of credits. The ecosystem credits offset liability generated by inundation of 44 ha of PCT 154 will be documented in the Biodiversity Management Plans part of monitoring and will be retired if required.

Table 55: PCT 154 Moderate vegetation zone values

VZ	VI	ARD VI without Management	Triger Value	Number of Plots	Plot Numbers
Moderate	34.2	-1.5	-3	42	42 - 75 & 78 - 85

In addition to PCT 154, another PCT which is not shown by modelling to be at risk of impacts but occurs within low lying sensitive areas is PCT 64. This community occurs within salt lakes, salt pans and on lake and pan margins, both within the Mine Site Development Footprint, and outside footprint on nearby adjacent land. A total of 14 BAM VI plots were conducted within the ground-truthed PCT 64 vegetation zones within the Mine Site Development Footprint between November 2024 and November 2025. A total of 7 plots were conducted within the mine site area and 7 on adjacent land outside the footprint. The Vegetation integrity (VI) scores from 14 plots can be used to determine the adaptive management action trigger value, as outlined above for PCT 154.

No areas of PCT 64 Samphire - Water Weed - Sea-Heath shrubland saline wetland outside of the Development Footprint are predicted to be impacted by the storm modelling. However, as a precautionary measure, baseline Vegetation Integrity values have been recorded from 14 BAM plots located within (the mine site and adjacent land) PCT 64 vegetation zones (VZ). An additional 5 VI plots are proposed to be positioned within PCT 64 outside the flow bunds. Four in PCT 64 along the southern flow bund and one in PCT 64 located north of the northernmost flow bund. These additional external VI plots will be located 50 m from the flow bund structures. From the collected data, the annual rate of decline (ARD) has been calculated for each VZ. Biodiversity Australia have set adaptive management trigger values for each of these VZs at twice the ARD. This means that if VI scores from BAM plots located outside the development, within impact buffer areas in land adjacent (containing PCT 64 VZs) drop below original VI baseline values by more than twice the ARD, it will trigger the adaptive management actions listed in Table 57.

Each PCT 64 VZ present within the Mine Site Development Footprint, along with the corresponding VI scores, annual rate of decline, trigger value, sample size and VI plot identifiers, are displayed in Table 56.

Table 56: PCT 64 vegetation zone values

ZV	VI	ARD VI without Management	Triger Value	Plots	Plot Numbers
Mod-high	49.9	-1.8	-3.6	7	23, 24, 25, 26, 27, 28, 29
Mod	19.9	-0.9	-1.8	4	29, 30, 40, 41
Mod-Low	26.8	-1.5	-3	5	18, 19, 20, 36, 39
High	81.8	-1.1	-2.2	1	10

Credit obligations for PCT 64 have not been generated as the potential impact area for the community was not indicated in the modelling. If monitoring of the additional external VI Plots indicate the VI of PCT 64 outside the Development Footprint falls below 75% of the baseline VIS credit obligations should be calculated as part of the adaptive management plan if the VIS continues to decline despite the implementation of mitigation measures outlined in Table 57.

Geospatial analysis and Modelling experts at R.W. Corkery & Co. used a 2D flood (hydraulic) model in HEC-RAS to estimate where water would flow, where it would pond, and inundation depth during a modelled large storm event. Analysts then compared the “no mine / no bund” case against the “with mine / with bund” case, to determine the effect of the flow bund under the same modelled storm event.

Key outputs of this modelling are: the predicted peak flood depth maps for each scenario and the flood level difference mapping that highlights areas where inundation depths go up or down due to the bund and mine scenario.

The storm modelling used is based on a 2D HEC-RAS hydraulic simulation for a 1% AEP, 72-hour modelled storm. Interpretation was achieved by comparing: (1) peak flood depth mapping for the “no mine” scenario versus the “with mine” scenario (with the flow bund shown), and (2) a flood level difference map that indicates where depths increase or decrease between scenarios. Overall, the mapping shows broadly similar flood patterns between the scenarios at the site scale, with the most noticeable changes concentrated around the flow bund alignment and nearby low-lying areas. Shown in Figure 84.

Key inputs/assumptions of the modelling were:

- Terrain: 5 m-resolution elevation/topography to capture low points, drainage lines and subtle depressions where water can pond.
- Modelled storm: 1% AEP, 72-hour event (consistent across scenarios so the comparison is like-for-like).
- Rainfall pattern and scaling: modelled rainfall distribution through time adopted from the hydrology setup (hyetographs), with standard aerial adjustment for catchment scale.
- Losses: infiltration/loss parameters applied consistently to represent initial wetting and ongoing losses during the event.
- Surface conditions: simplified/consistent roughness representation so differences in results are driven mainly by terrain and the bund inclusion.
- Scenario change: the main structural difference between scenarios is the inclusion of the flow bund in the "with mine" case, enabling an isolated comparison of its effect on water levels and flow redistribution.

This modelling is best treated as a **comparative scenario assessment**, not a detailed final design of a full surface water management system. The purpose is to show where the bunds alter flow paths and local ponding, and whether those changes extend beyond the immediate area. The difference mapping indicates that changes are generally localised rather than widespread across the broader domain.

State type vegetation mapping in the inundation and potential inundation areas has been refined via desktop vegetation mapping assessments and extensive ground-truthing of PCTs within the Mine Site Development Footprint.

The modelling inundation overlays (no-mine vs with-mine) shows that inundation is largely occurring to the north in the mapped shrubland communities. Based on the current mapping overlay, interaction with PCT 64 appears limited on the mapping provided, however PCT 154 appears to be at greatest risk of inundation impacts across an area of 44 ha, extending north of the mines site Development Footprint. This area receives rainwater via a series of drainage lines which direct the water from west, north and east of the smaller flow bund.

Although the comparative scenario assessment provided by the storm modelling does not indicate that PCT 64 is at risk of inundation; due to the sensitivity of the community and its association with salt pans and salt lakes, monitoring measures are proposed to detect impacts, trigger mitigation actions and prevent damage to the community and ecosystem present in those three areas where flow bunds are located.

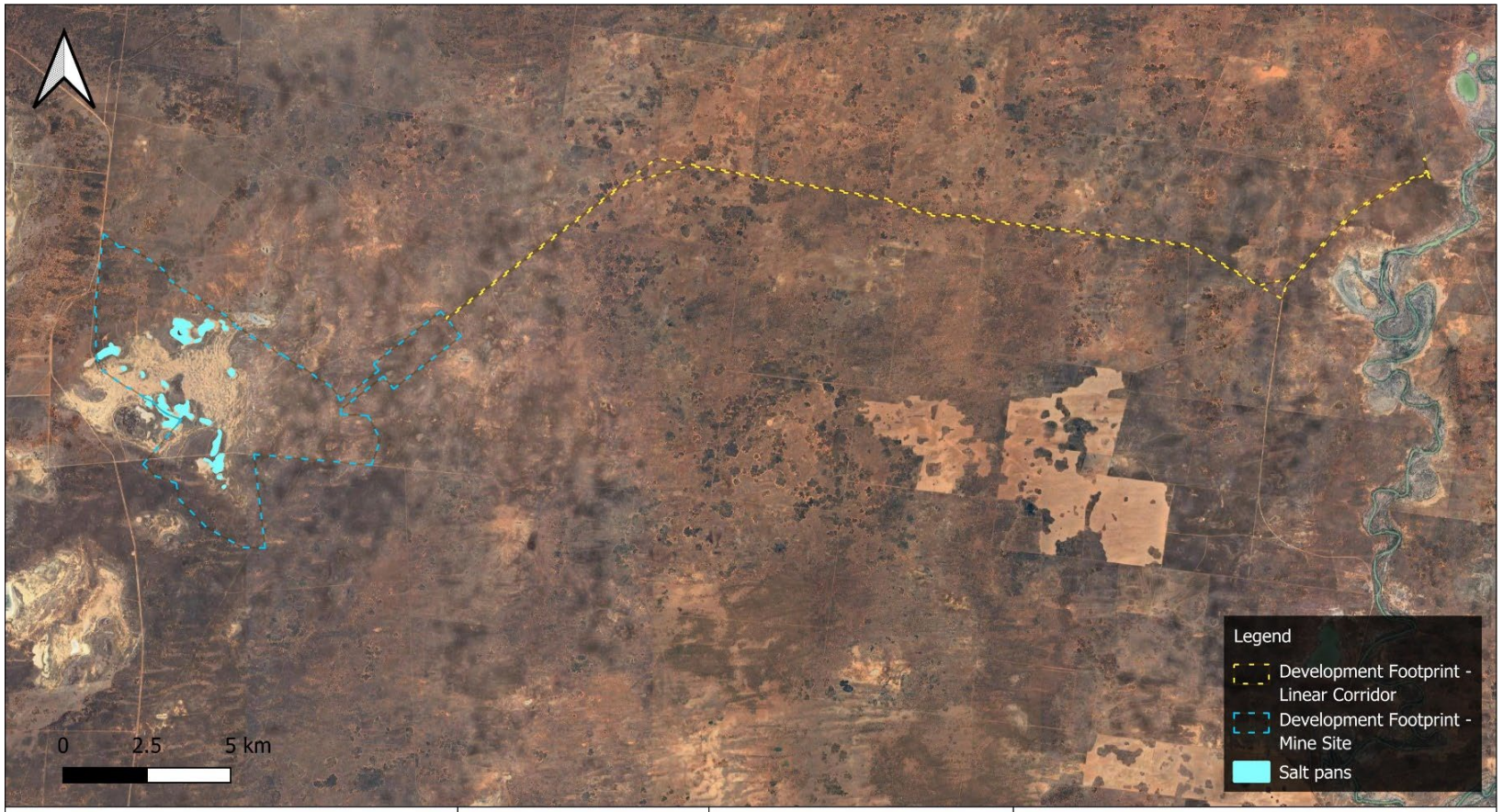
Table 57: Indirect and prescribed impacts Salt lakes – Adaptive management measures to manage residual impacts

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
1. Vegetation integrity	PCT 64 VI assessments undertaken during "average" benchmark conditions PCT 64 VI assessments undertaken during "dry" benchmark conditions (yet to be conducted) PCT 154 VI assessments undertaken during "average" benchmark conditions PCT 154 VI assessments undertaken during "dry" benchmark conditions (yet to be conducted)	Seasonal rainfall will determine benchmarks against which VI scores will be compared	Annual VI monitoring throughout PCT 64 and 154 See Figure 85 and Figure 86	If VI scores fall below the baseline for 2 consecutive years. Annual rate of decline (ARD) for PCT 154 is identified to be twice baseline ARD Recorded VI of PCT 64 falls below 75% of baseline VI Extended periods of inundation Extended periods of no rain Fire damage	Engage hydrologist to investigate whether surface flow availability and bund effectiveness is adequate. Increase monitoring frequency to every 3 months to monitor VI trends. Retirement of Credits identified in Section x for PCT 154 Calculate credit requirements for PCT 64 residual impacts if VI continues to decline despite adaptive management actions Increased frequency of VI monitoring in response to extended periods of inundation.	VI score trends	Results of investigations into the causes of VI declines will be used to inform ongoing management
2. Soil monitoring	Soil sampling is required to be undertaken prior to impacts occurring within the Development Footprint in order to establish a baseline.	Soil monitoring must be undertaken following high rainfall events	Quarterly monitoring and reporting of Soil sampling throughout PCT 64.and 154 See Figure 85 and Figure 86	Greater than 20% change in soil salinity.	Engage Geologist and hydrologist to investigate remediation actions. Increase monitoring to monthly to determine trends in soil quality Application of soil ameliorants Prepare a report outlining the	Soil salinity trends	Results of investigations into the causes of change to Soil salinity will inform ongoing management

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
					investigation into the changes		
3. Salt Lake Invertebrate utilisation	Establish a baseline through diurnal invertebrate surveys undertaken at all salt lakes during spring prior to development	Climate, migratory patterns and environmental conditions	Annual monitoring of salt lake utilisation by invertebrates conducted within spring. See Figure 85 and Figure 86	Reduction in observed invertebrate fauna occupation of unimpacted	If a reduction in the utilisation of Salt Lake by invertebrate species is observed, monitoring should be conducted over multiple periods during Spring.	Trend in Invertebrate utilisation of Salt lakes	Results of utilisation of salt lakes will inform ongoing management and if further biodiversity credits are required to be retired.
4. Monitoring of ground water drawdown	Outlined within the Copi Mineral Sands Project Groundwater Impact Assessment	Effects of seasonal rainfall must be considered.	Monitoring methods are to follow those outline in the Copi Mineral Sands Project Groundwater Impact Assessment. Monitoring will occur at increased frequency during actions that are likely to cause groundwater drawdown. See Figure 85 and Figure 86.	Expected timeline of water drawdown exceeded beyond identified limits. These limits will be defined in the updated Groundwater modelling. To be guided by updated water drawdown modelling. i.e. Groundwater drawdown exceeds modelled depths.	Increased monitoring of water retaining embankments. Prepare a report outlining the investigation into the changes Repairs undertaken in water retention embankments Increased number of water retention embankments Review of Groundwater Model	Groundwater depths and duration of drawdown.	Results of investigations will outline ongoing management actions and determine if further mitigation measures are required to be implemented
5. Salt lake water quality	Establish baseline through water sampling of Salt Lakes prior to impacts where achievable.	Seasonal rainfall	Flow bunds are required to be monitored following heavy rainfall Flow bunds are to be inspected weekly for damages Water Quality testing See Figure 85 and Figure 86.	Monitoring of Salt Lake water quality identifies greater than 20% change in parameters Damaged Flow bunds	Reduce volume of groundwater extracted. Source water from elsewhere. Increased monitoring of Flow Bunds. Repairs undertaken to Flow Bunds	Water quality – organic and inorganic compounds, sedimentation etc.	Results of investigations will outline ongoing management actions and determine if further mitigation measures are required to be implemented

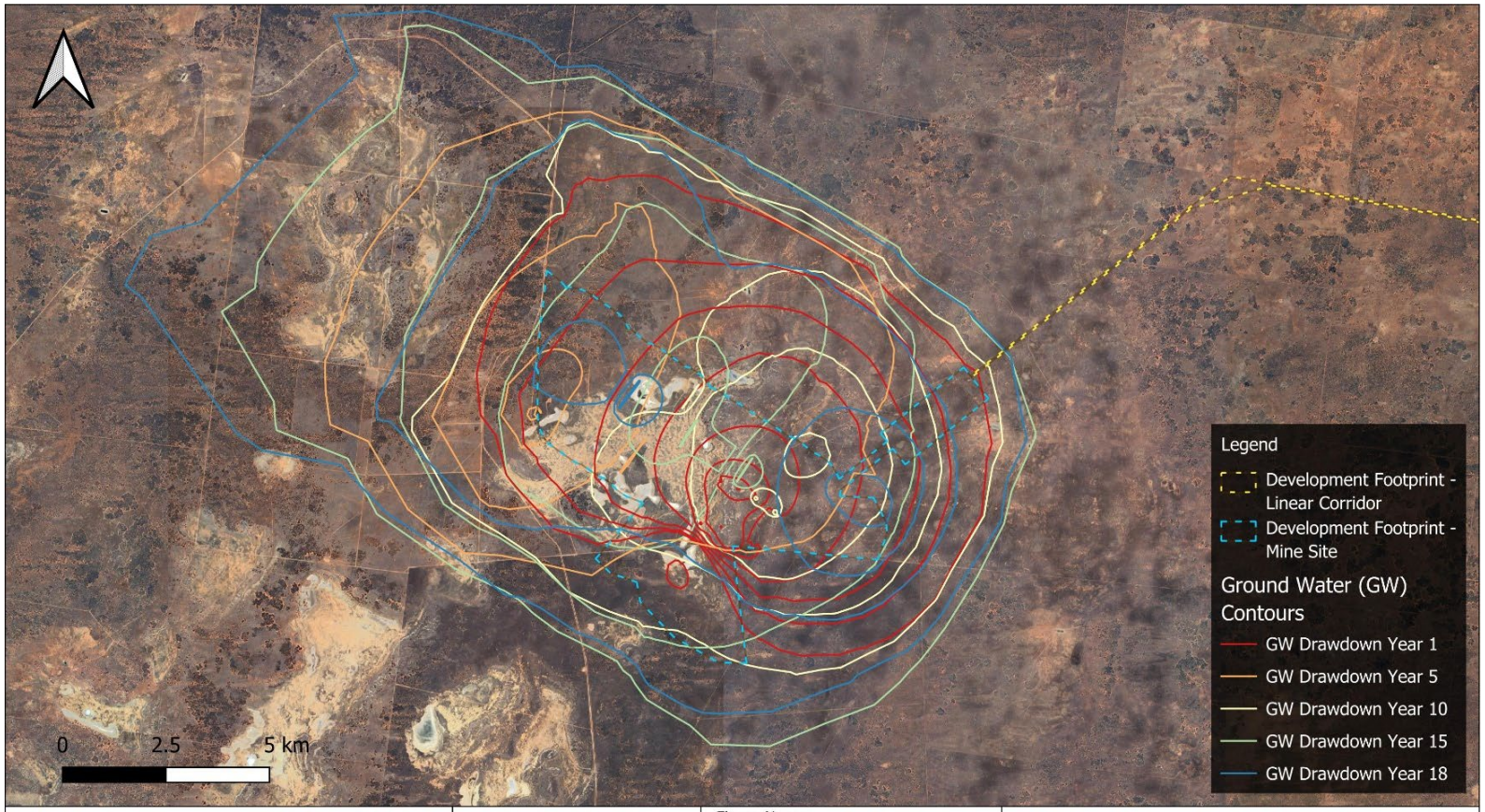
Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
					Increased size of Flow bunds Repairs are to be undertaken within no more than 14 days of identification		
6. Mine water Use	Establish baseline once development begins	High rainfall events will likely increase volumes. Drought conditions will likely increase evaporation rates and reduce pond levels	Monthly Monitoring and reporting of: Bore Pumping Volumes Water return volumes Evaporation rates Pond water levels Dredge and sand pumping volumes See Figure 85 and Figure 86.	Monitoring of Mine water usage as outlined in the Copi mineral Sands Project – Groundwater Impact Assessment, reports a greater than 20% increase in projected usage	Replace monitoring infrastructure Increased water monitoring Prepare a report outlining the investigation into the changes	Volume of water consumed.	To be guided by Groundwater impact Assessment (i.e. Greater than 150% change in Mine water usage)
7. Groundwater quality	Outlined within the Copi Mineral Sands Project Groundwater Impact Assessment	High rainfall and drought events will likely influence groundwater quality. Groundwater drawdown is likely to influence groundwater quality.	Quarterly monitoring and reporting of bore water quality. See Figure 85 and Figure 86	To be guided by Groundwater impact Assessment (i.e. Greater than 50% change in groundwater parameters)	Increased monitoring of groundwater quality Investigation of groundwater changes Repair of groundwater and waste water	Groundwater quality trends	Results of investigations will outline ongoing management actions and determine if further mitigation measures are required to be implemented
8. Flow, watercourse function and flooding	Outlined within the Copi Mineral Sands Project Amended Surface Water Assessment	High rainfall and groundwater drawdown is likely to influence flow, watercourse function and flooding	Flow bunds are required to be monitored following heavy rainfall Flow bunds are to be inspected weekly for damages	Damages to flow bunds Increased frequency of rainfall events Identification of additional inundation areas	Increased monitoring of Flow Bunds. Repairs undertaken to Flow Bunds Increased size of Flow bunds Engage hydrologist to investigate whether	Rainfall data, evaporation, groundwater depths and duration of drawdown, VI score trends	Results of investigations will outline ongoing management actions and determine if further mitigation measures are required to be implemented

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
			Repairs are to be undertaken within no more than 14 days of identification See Figure 85 and Figure 86		surface flow availability and bund effectiveness is adequate. Increase monitoring frequency to every 3 months to monitor impacts.. VI score trends.		



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Location of salt pans - Development Footprint	Biodiversity AUSTRALIA	
	Drawn by: NE	Location: Warwick Station		
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54 Scale: 1:150000

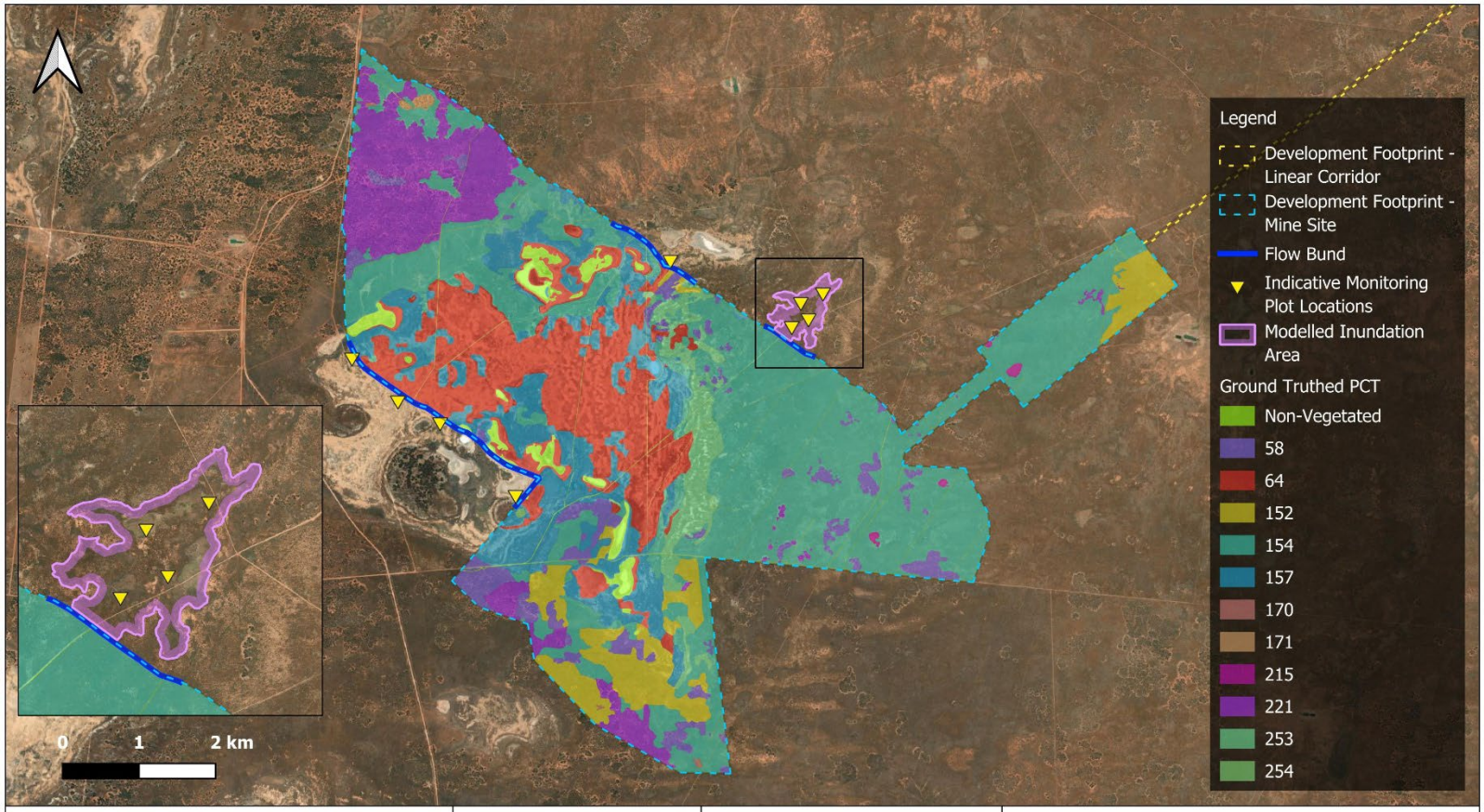
Figure 82: Location of salt pans – Development Footprint



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.

Project Manager: NC	Figure Name: Modelled Predictions of Groundwater Drawdown - Smooth Model - Development Footprint - Mine Site	Biodiversity AUSTRALIA	
Drawn by: NE	Location: Warwick Station		
Date: May 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:120000

Figure 83: Modelled predictions of groundwater drawdown - smooth model - Development Footprint - Mine Site



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.

Project Manager: NC	Figure Name: Modelled Inundation Area - Mine Site	Biodiversity AUSTRALIA	
Drawn by: NE	Location: Warwick Station		
Date: February 2026	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:65000

Figure 84: Flow bunds and indicative inundation areas resulting from a ‘with mine’ storm event scenario

5.4.5 Wind Farm Developments

The proposed development is not a wind farm development.

5.4.6 Vehicle Strike

The Proposed Development will lead to increased vehicle activity on the Subject Land which has the potential to increase the incidence of vehicle collisions with threatened and non-threatened fauna. Studies have shown a significant increase in fauna vehicle strike incidents where road densities and vehicle speeds are high, which can result in the direct mortality of fauna (Clevenger *et al.* 2002; Gurriga *et al.* 2012). Whilst road densities for the Proposed Development will not be high (access to the Mine Site will be via a single site access road), high vehicle speeds may still create increased risk for fauna vehicle strike. At present, the Anabranch Mail Road, which feeds into the proposed site access road, is subject to the default speed limit under all roads other than urban roads of 100 km/hr. However, the narrow travel width of the road precludes 100 km/hr operating speeds, and an operating speed of approximately 80 km/hr is considered more appropriate (Tonkin Consulting, 2024). Although 80 km/hr bears lower risk for fauna vehicle strike than 100 km/hr, the risk is still increased and requires likelihood reduction measures.

The Traffic Assessment report for The Project details adjustments to the Anabranch Mail Road and site access road which are primarily designed to improve the safety of Mine Site workers but might also reduce fauna collision risks. These include upgrading the roads' pavement condition to achieve all-weather accessibility and widening them to allow two-way traffic along their entirety. These adjustments would improve braking performance and increase visibility, respectively, allowing for better fauna detection and a greater likelihood of avoiding collision. Additional measures detailed in the report include using buses to transport workers to and from the Mine Site to reduce the number of vehicles travelling on the Anabranch Mail Road and site access road, establishing a speed limit of 50 km/hr within the Mine Site, and a proposed 40 m wide fenced road reserve along the entirety of the site access road (Tonkin Consulting, 2024). The latter measure would be highly effective at minimising the likelihood of fauna vehicle strikes, particularly with mammal fauna like kangaroos and feral goats. However, it would greatly compromise habitat connectivity for these species.

On top of these measures, and to ensure that they are implemented appropriately, a Traffic Management Plan (TMP) will be an outcome of the Traffic Assessment report. The TMP will include measures such as installing signs to warn drivers of the presence of wildlife and ensuring that speed limits are adhered to, especially during periods of decreased visibility, such as at night or when following another vehicle that may create dust. To further minimise the effects of dust on visibility and fauna strikes, water trucks shall routinely wet road surfaces. Another suggested method to mitigate fauna vehicle strikes is to remove roadkill from roads immediately after strikes occur. Such actions would prevent raptors, such as the threatened Little Eagle and Black Kite, and other scavenging species from being attracted to the roads to reduce the risk of collision. A Biodiversity Management Plan will require that all vehicle fauna strike incidents be recorded. The BMP will outline trigger points that once incurred or exceeded will require further adaptive management actions to be implemented throughout the site. Trigger points for adaptive responses are defined (e.g., >2 strikes/month prompts night curfews), with examples of further measures (e.g., fencing hotspots, vehicle modifications). If macropod strikes reach or exceed the trigger value outlined within the BMP, routine inspections of fencing along roadways must occur and upgrades to height or reductions to mesh aperture will be considered to ensure fauna access to the road reserve is prevented; if reptiles strikes are common, vehicle movements may be further limited during peak reptile activity periods. Additional measures might include further reduced speed limits and increased water truck frequency.

Table 58: Prescribed impacts on Ecosystem credit threatened species

Common Name	Scientific Name	Suitable habitat for ecosystem credit species (Associated PCT)	Prescribed Impact
Birds (Raptors)			
Black Falcon	*Falco subniger*	58,152,154, 157,170, 171, 253	**Karst, Caves, Crevices, Cliffs, Rocks and Other Geological Features of Significance** The Subject Land has very low topography, an absence of cliffs and other geological features that would likely impede the breeding or hunting behaviour of raptors. **Habitat Connectivity** All of the Ecosystem credit threatened raptors associated with the Subject Site are highly mobile and would rely less on habitat connectivity and more on expansive areas of habitat. More importantly, a consistent prey base which is easily accessible with opportunities for nesting across broad areas are likely to maintain individual populations. This ecological flexibility means these raptors are not restricted by the connectivity of particular PCTs and can adapt to a variety of vegetation types across the landscape. **Loss of water bodies and changes to groundwater levels** It is anticipated that changes to salt pans and low lying ephemeral areas is unlikely to have a significant impact on raptors. Given the highly saline nature of the salt lakes and the absence of any permanent wetland systems, systematic changes to behaviour are unlikely. This is also supported by their highly mobile nature across the landscape, depending on 'boom and bust cycles.' Any reliance on groundwater is likely to be limited to small perched and ephemeral groundwater aquifers associated with rainfall recharge. **Wind Farm Development** N/A **Vehicle Strike** Raptors as a group are particularly susceptible to vehicle strike given they may scavenge road-kill on and beside roads. A number of important strategies have been identified to be included in the EMP to reduce the risk of bird strike, including reducing speed during peak bird activity periods, fencing, removing road-kill, such as kangaroos, from road sides and generally reducing overall speed of road trains both across the Mine Site and Haul Road.
Black-breasted Buzzard	*Hamirostra melanosternon*	58,152,154, 157,170, 171, 221, 254	
Little Eagle	*Hieraaetus morphnoides*	All PCTs	
Grey Falcon	*Falco hypoleucos*	All PCTs	
Spotted Harrier	*Circus assimilis*	All PCTs	
Square-tailed Kite	*Lophoictinia isura*	58, 221, 254	
White-bellied Sea-Eagle	*Haliaeetus leucogaster*	58, 157, 170, 171	
Birds (General)			
Blue-winged Parrot	*Neophema chrysostoma*	58, 157,170, 215, 253	**Karst, Caves, Crevices, Cliffs, Rocks and Other Geological Features of Significance** The Subject Land has very low topography, an absence of cliffs and other geological features that would likely impede the breeding or hunting behaviour of birds. Most of the threatened birds associated with this group are not as mobile and would have restricted home ranges. The staged approach of the Mine (Figure 81) should provide some opportunity to move across the landscape, however, there will be a loss of some individuals. Measures to minimise these impacts have been addressed in Sections 5.4 and 5.5. **Habitat Connectivity**
Chestnut Quail-thrush	*Cinclosoma castanotum*	171	
Diamond Firetail	*Stagonopleura guttata*	58, 170	
Dusky Woodswallow	*Artamus cyanopterus cyanopterus*	All PCTs	
Gilbert's Whistler	*Pachycephala inornata*	58, 170, 171	

Common Name	Scientific Name	Suitable habitat for ecosystem credit species (Associated PCT)	Prescribed Impact
Grey-crowned Babbler (eastern subspecies)	*Pomatostomus temporalis temporalis*	58	All of the Ecosystem credit threatened birds associated with the Subject Site are moderately mobile and would have the capacity to move as a result of the Mines activities. They would rely on some connectivity throughout the landscape particularly species which are less mobile such as Rufous Fieldwren and Shy Heathwren. Good quality habitat to provide a regular prey base and opportunities for nesting will be compromised by the Mines activities. For the most part, their ecological flexibility means most of the subject birds are less restricted by the connectivity of particular PCTs and would be able to adapt to a variety of vegetation types across the landscape. Other more specialist species will be detrimentally impacted by the Mine. **Loss of water bodies and changes to groundwater levels** It is anticipated that changes to salt pans and low lying ephemeral areas is unlikely to have a significant impact on generalist birds. Given the highly saline nature of the salt lakes and the absence of any permanent wetland systems, systematic changes in behaviour are unlikely. This is also supported by their highly mobile nature across the landscape, depending on 'boom and bust cycles.' Any reliance on groundwater is likely to be limited to small perched and ephemeral groundwater aquifers associated with rainfall recharge. **Wind Farm Development** N/A **Vehicle Strike** Birds as a group are not particularly susceptible to vehicle strike given they rarely have a reason to visit road-side verges other than rainfall events where water is likely to accumulate in culverts. Strategies have been identified to be included in a TMP to reduce the risk of bird strike, including reducing speed during peak bird activity periods, fencing, removing road-kill, such as kangaroos, from road sides and generally reducing overall speed of road trains both across the Mine Site and Haul Road.
Malleefowl	*Leipoa ocellata*	171, 215	
Painted Honeyeater	*Grantiella picta*	58, 215	
Pied Honeyeater	*Certhionyx variegatus*	58, 152, 154, 170, 171, 221	
Pink Cockatoo	*Cacatua (Lophochroa) leadbeateri*	28, 58, 143, 152, 154, 170, 171, 215, 221, 253, 254	
Purple-crowned Lorikeet	*Glossopsitta porphyrocephala*	170, 171	
Purple-gaped Honeyeater	*Lichenostomus cratitius*	170, 171	
Redthroat	*Pyrrholaemus brunneus*	153, 154	
Rufous Fieldwren	*Calamanthus campestris*	64, 157	
Scarlet-chested Parrot	*Neophema splendida*	170, 171	
Shy Heathwren	*Hylacola cautus*	171	
South-eastern Hooded Robin	*Melanodryas cucullata cucullata*	58, 170, 171, 215, 221, 254	
Southern Scrub-robin	*Drymodes brunneopygia*	171	
Southern Whiteface	*Aphelocephala leucopsis*	58, 152, 154, 157, 170, 171, 215, 253	
Varied Sittella	*Daphoenositta chrysoptera*	58, 170, 171, 221, 254	
White-fronted Chat	*Epthianura albifrons*	64, 152, 154, 157, 253	
Reptiles			
Bardick	*Echiopsis curta*	171	**Karst, Caves, Crevices, Cliffs, Rocks and Other Geological Features of Significance** The Subject Land has very low topography, an absence of cliffs and other geological features that would likely impede the breeding or hunting behaviour of reptiles. Most of the threatened snakes and lizards within this group are not as mobile and would have restricted home ranges. The staged approach of the Mine (Figure 81) should provide some opportunity to move across the landscape,
Interior Blind Snake	*Ramphotyphlops endoterus*	154, 215	
Jewelled Gecko	*Strophurus elderi*	170, 171	

Common Name	Scientific Name	Suitable habitat for ecosystem credit species (Associated PCT)	Prescribed Impact
Ringed Brown Snake	*Pseudonaja modesta*	58, 170, 171, 215	however, there will be a loss of individuals associated with Mining activities. Measures to minimise these impacts have been addressed in Sections 5.4 and 5.5. **Habitat Connectivity** All of the Ecosystem credit threatened reptiles associated with the Subject Site have limited mobility and would have limited capacity to move as a result of the Mines activities. They would rely on connectivity for dispersal and gene flow. Species which have very limited capacity for dispersal include the Mallee Worm-lizard (*Aprasia inaurita*) and Interior Blind Snake (*Ramphotyphlops endoterus*). Good quality habitat is required to provide a regular prey base and opportunities for burrowing and dispersal will be significantly compromised by mining activities. For the most part, their ecological flexibility means most of the subject reptiles are less restricted by the connectivity of particular PCTs and would be able to adapt to a variety of vegetation types across the landscape. Ecological specialist are more likely to be detrimentally impacted in areas impacted by the Mine. **Loss of water bodies and changes to groundwater levels** It is anticipated that changes to salt pans and low lying ephemeral areas is unlikely to have a significant impact on reptiles. Given the highly saline nature of the salt lakes and the absence of any permanent wetland systems, systematic changes in behaviour are unlikely. This is also supported by their highly mobile nature across the landscape, depending on 'boom and bust cycles.' Any reliance on groundwater is likely to be limited to small perched and ephemeral groundwater aquifers associated with rainfall recharge. **Wind Farm Development** N/A **Vehicle Strike** There is an increased risk of vehicle strike from lizards and snakes crossing roadways, particularly during peak activity periods for reptiles coinciding with truck movements along haul roads. If reptiles strikes become frequent, vehicle movements may be further limited during peak reptile activity periods. Additional measures might include further reduced speed limits and increased water truck frequency to improve visibility on roads.
Mallee Slender Blue-tongue Lizard	*Cyclodomorphus melanops elongatus*	215	
Mallee Worm-lizard	*Aprasia inaurita*	171, 215	
Marble-faced Delma	*Delma australis*	170, 171	
Wedgesnout Ctenotus	*Ctenotus brooksi*	171, 215	
Western Blue-tongued Lizard	*Tiliqua occipitalis*	154, 170, 171	
Small Mammals			
Bolam's Mouse	*Pseudomys bolami*	58, 170, 171, 221, 254	**Karst, Caves, Crevices, Cliffs, Rocks and Other Geological Features of Significance**

Common Name	Scientific Name	Suitable habitat for ecosystem credit species (Associated PCT)	Prescribed Impact
Sandy Inland Mouse	*Pseudomys hermannsburgensis*	58, 154, 171, 215	Threatened small mammals are predominately dependent on the sand based substrates within the Development Footprint. There are no real geological features which would provide niche habitats for more specialist mammals. **Habitat Connectivity** The Project will result in the removal of 3,883.08 ha from the Mine Site and 190.16 ha from the Linear Corridor of Native Vegetation. This removal of vegetation will impact the connectivity of habitats that facilitate the movements of fauna whose ranges immediately encompass the Subject Land, disrupting species behaviour, dispersal abilities and gene flow. vast areas of intact vegetation beyond the Development Footprint will remain undisturbed, including a large, contiguous forested area to the north-west of the Subject Land. In all cases, the PCTs present within the Development Footprint extend uninterrupted beyond the Project boundary, meaning that displaced small mammals will have ample connected habitat for movement and dispersal outside the affected area. **Loss of water bodies and changes to groundwater levels** Localised changes to groundwater levels are expected to occur as a result of the boring and extraction required to fill the dredge ponds necessary for The Project. Namely, a 1 – 6 m drawdown in groundwater levels is expected to occur in the first year of operations in the eastern side of the Development Footprint. The impact on small mammals is expected to be negligible as it is clear within the Development Footprint that the PCTs are not GDE's, and the expected impacts of these groundwater changes is expected to be negligible. **Wind Farm Development** N/A **Vehicle Strike** There will be localised vehicle strikes of small mammals as a result of increased vehicle activity on the Subject Land. Monitoring of vehicle strike on small mammals will be difficult to monitor given their small size and problems around accurate identification once struck. A Biodiversity Management Plan will also need to incorporate a vehicle fauna strike incidents including small mammals. These matters will be further dealt with in a Traffic Management Plan (TMP) for The Project. Fences are unlikely to provide a meaningful barrier to small rodents unless specifically designed to exclude them.
Southern Ningaui	*Ningaui yvonneae*	170, 171	
Stripe-faced Dunnart	*Sminthopsis macroura*	58, 154, 171, 215, 221	
Western Pygmy Possum	*Cercartetus concinnus*	58, 170, 171, 221, 254	
Kultarr	*Antechinomys laniger*	58, 152, 154, 157, 170, 171, 215, 221	
Microbats			
Corben's Long-eared Bat	*Nyctophilus corbeni*	58, 170, 171, 221	**Karst, Caves, Crevices, Cliffs, Rocks and Other Geological Features of Significance** There are no Karst or Cave features that are likely to harbour microbats associated with the Subject Land and no other areas of geological significance that are likely to be important to microbats. **Habitat Connectivity** Individuals of threatened microbats will be detrimentally impacted by the loss of 3,883.08 ha from the Mine Site and 190.16 ha from the Linear Corridor of Native Vegetation. However, given the staged approach of the Mine (Figure 81), there will be some opportunity for microbats to recover over time. The removal of vegetation will impact the connectivity of habitats that facilitate the movements of microbats whose ranges immediately encompass the Subject Land, disrupting species behaviour, dispersal abilities and gene flow. Vast areas of intact vegetation beyond the Development Footprint
Inland Forest Bat	*Vespadelus baverstocki*	58, 170, 171, 221, 254	
Little Pied Bat	*Chalinolobus picatus*	All PCTs	
Yellow-bellied Sheathtail-bat	*Saccolaimus flaviventris*	58, 170, 171, 215, 221	

Common Name	Scientific Name	Suitable habitat for ecosystem credit species (Associated PCT)	Prescribed Impact
			will remain undisturbed, including a large, contiguous forested area to the north-west of the Subject Land. In all cases, the PCTs present within the Development Footprint extend uninterrupted beyond the Project boundary, meaning that displaced microbats will have ample connected habitat for movement and dispersal outside the affected area. **Loss of water bodies and changes to groundwater levels** The impact on microbats is expected to be negligible as it is clear within the Development Footprint that the PCTs are not GDE's, and the expected impacts of these groundwater changes is expected to be negligible. Most of the threatened microbats are dependent on woodland environments and do not rely on permanent water for critical stages of their lifecycle. **Wind Farm Development** N/A **Vehicle Strike** As all of the threatened microbats are nocturnal it's unlikely that vehicle collisions will occur unless there are vehicle movements during dawn and dusk periods. It will be recommended in the Traffic Management Plan that vehicle movements do not occur at this time.

5.5 Measures to Minimise Impacts

The proposal would be subject to several mitigation measures and environmental controls to reduce the overall impact of the development on biodiversity and ensure potential offsite impacts are minimised. The conclusions of this assessment have assumed that these will be implemented. A summary of the impact mitigation measures employed prior, during and after project actions, including descriptions of the measures, timing and responsibility and associated failure risk weightings are listed in Table 59**.** and illustrated in Figure 85 and Figure 86.

5.5.1 Protection and Rehabilitation of Retained Vegetation

The Subject Land contains areas of Biodiversity Value, namely the forested areas to the north-west of the Development Footprint. These areas comprise good-moderate quality woodland vegetation and abundant habitat features that will be retained. Whilst the quality of vegetation varies across the Subject Land, the areas to be retained contains the highest quality vegetation and is comprised of communities of mature trees, with minimal weed invasion, established ground layer habitat and an abundance of hollow logs and woody debris. The design of The Project avoids these areas of higher quality vegetation. Areas where vegetation has been cleared will be subject to ecological rehabilitation. The details of this rehabilitation will be detailed within a Rehabilitation Plan.

5.5.2 Biodiversity Management Plan

A Biodiversity Management Plan (BMP) will be developed following approval of the Proposed Development and Environmental Impact Statement (EIS) outlining the findings of the extensive Environmental Impact Assessment for The Project. The BMP will commence with flora and fauna monitoring to establish a baseline. This baseline, and the findings of this BDAR, will serve as a benchmark for future surveys, enabling comparisons and measurement of potential impacts over time. The document will then outline an adaptive management plan designed to identify, address, and mitigate adverse ecological impacts associated with the proposed action.

A number of adaptive management plans will be prepared to address specific biodiversity impacts and outline mitigation measures to be implemented during all phases of The Project including:

- Biosecurity (Weed and Pest) Management Plan (all phases).
- Rehabilitation Plan (construction and operation phases).
- Soil Erosion & Sediment Control Plan (pre-construction and construction phases).
- Air quality Management Plan (construction and operation phases).
- Topsoil Management Plan (construction and operation phases).
- Vegetation Management Plan (all phases).
- Traffic Management Plan.
- Waste Management Plan.
- *Austrostipa nullanulla* Adaptive Management Plan.

An overall Construction Environmental Management Plan (CEMP) will also be prepared to mitigate and manage impacts such as noise and light pollution. This plan will describe:

- Risk Assessment.
- Objective.
- Environmental Management Activities and Mitigation Measures.
- Action and timing.
- The monitoring program, which may include:
    - Roles and responsibilities (clearly stating who is responsible for each activity),
    - Performance indicators against achievements and outcomes that are to be measured in an accurate and reliable methodology. (e.g. BAM 2024/2025 baseline survey),
    - Monitoring requirements (timing and frequency of monitoring to detect changes in the performance indicators, to determine outcome achievement, and inform adaptive management,
    - Trigger values for corrective actions, &
    - Auditing and review mechanisms.

Monitoring of retained vegetation areas will be undertaken throughout the life of The Project. Remnant vegetation will be monitored for foliar discolouration, partial, or complete defoliation, increased pathogenic diseases, tree death and dust deposition as indicators of vegetation impacts. In areas where natural regrowth is not sufficient to replace dead trees, replanting will be undertaken.

The BMP will also monitor potential impact sources to ensure they are mitigated or remain within acceptable levels and define trigger points that will determine when and how interventions are required. For example, if depositional dust is found to be impacting plant health along the Linear Corridor, requests may be made to reduce speed limits and increase the frequency of water trucks to dampen the road surface and minimise dust. Potential impact sources that will be monitored include:

- Weed invasion.
- Noise levels.
- Light disturbance.
- Feral animals.
- Dust levels and Sediment Control.
- Rubbish dumping, wood collection and bush rock removal.

Additionally, the BMP will describe protocols and procedures to minimise injury and mortality to wildlife throughout the Proposed Development's construction and operational phases, including:

- Environmental inductions.
- Pre-clearing surveys.
- Clearing supervision.
- Hollow Bearing Tree removal protocol.
- Documenting instances of fauna injury or mortality.

5.5.2.1 General Clearing Measures

The following measures are recommended to manage clearing:

- Site induction is to specify that no clearing is to occur beyond the marked area. All vehicles are only to be parked in designated areas.
- Outline vegetation clearing protocols, including sequential/stage clearing requirements.
- Clearing and earthworks are to avoid damage to root zones of retained trees.
- No materials or fill are to be placed under retained trees or within adjacent vegetation.
- Weeds are not to be mulched with native vegetation and must be taken to a licenced landfill facility.

5.5.2.2 Pre-clearing Survey and Clearing Supervision

The clearing extent is to be inspected for fauna by a suitably qualified or experienced person immediately prior to commencement of any vegetation removal involving machinery and/or tree-felling. This is to occur each morning if clearing spans over multiple days/weeks. Pre-clearing checks would include searches of habitat (e.g. lifting and destructive searches of logs) and searches for bird nests. Any detected fauna is to be relocated off-site to nearby suitable areas (preferably within their natural home range) prior to clearing.

During the pre-inspection, any habitat features detected (e.g. hollows, logs, nests) are to be clearly marked with flagging tape to allow easy identification during clearing.

- A suitably qualified or experienced person must be present on site to supervise all clearing works to retrieve any fauna detected during works and undertake appropriate action (e.g. humanely euthanise severely injured animals and/or relocate uninjured animals). The fauna spotter must also be present during de-watering of any temporary water bodies on the site to rescue and relocate any potential stranded aquatic fauna species.
- A report detailing the results of the clearing monitoring is to be provided to the consent authority within 14 days of works completion.

5.5.2.3 Hollow-bearing Tree Removal Protocol

Hollow-bearing trees are to be felled in a manner that will minimise the risk of injury/mortality of denning/roosting fauna within the limitation of Work Health and Safety (WHS) Guidelines. This is suggested to be achieved by the following general procedure:

- The hollow-bearing trees are to be gently bumped several times prior to removal to encourage any fauna present to vacate.
- Trees are to be felled in a manner that minimises injury to fauna. This includes gently pushing or ‘soft felling’ with an excavator or gradual cut down by an arborist.
- A suitably qualified or experienced person is to be present during felling and sectioning of the hollow-bearing tree (at the proponent’s cost) in case of animal injury. Hollows are to be inspected for fauna once the tree is deposited. All uninjured animals are to be released in the retained habitat on site.
- If the hollow is determined to be occupied and fauna do not require assistance (e.g. roosting bats), the entrance is to be blocked, and the log placed in a shaded and protected area on the edge of the site. The obstacle is to be removed just prior to dusk to allow passive escape of the fauna within. The log may then be removed if required.

Upon completion of this exercise, a brief written report (with photos) detailing the above is to be submitted to Council within 14 days of the removal of the hollow-bearing trees.

5.5.3 Mitigation Measure Summary

Table 59. below outlines mitigation measures for the project. TARP (Trigger Action Response Plan) Table 57 located in section 5.4.4, and Table 60 through Table 66 below, provide examples of adaptive management measures which must be used where applicable throughout each of the management plans outlined in section 5.5.2 above.

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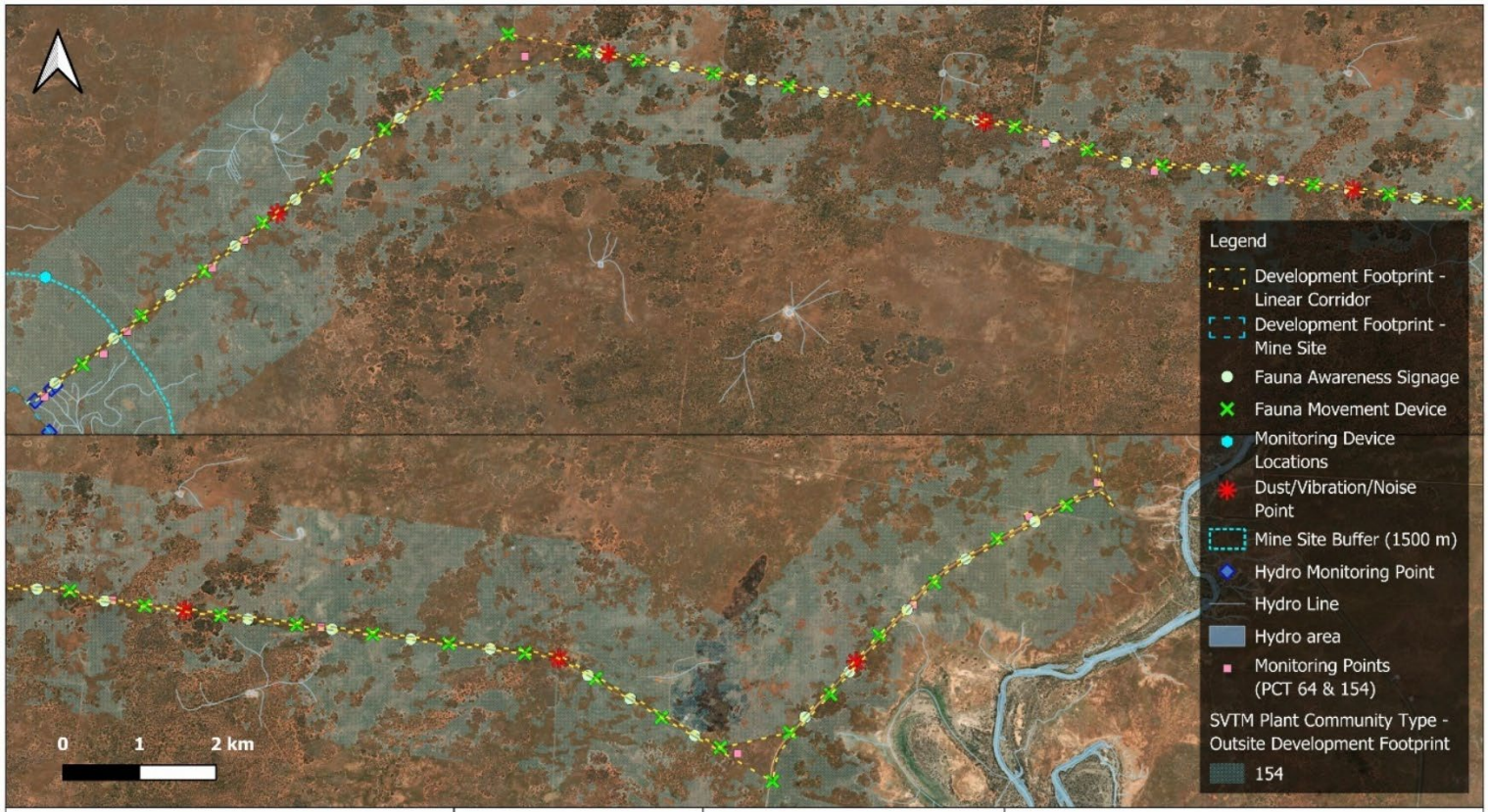
Project Manager: NC	Figure Name: General Site Mitigation Measures - Mine Site	Biodiversity AUSTRALIA	
Drawn by: NE	Location: Warwick Station		
Date: February 2026	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:80000

Figure 85: Adaptive Management Plan mitigation measures in the Development Footprint Mine Site Area



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.

Project Manager: NC	Figure Name: General Site Mitigation Measures - Linear Corridor	Biodiversity AUSTRALIA	
Drawn by: NE	Location: Warwick Station		
Date: February 2026	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference:
			Scale: 1:65000

Figure 86: Adaptive Management Plan mitigation measures in the Development Footprint linear Corridor Area

Table 59: Mitigation measures summary for The Project

Impact	Number	Mitigation Measures	Timing	Responsible Party	Risk of Failure
Project Planning	P-1	The preparation and planning of or implementation of the below management plans must be completed prior to construction works commencing. • Operational Environment Management Plan • Construction Environment Management Plan • Biodiversity Management Plan • Vegetation Management Plan • Rehabilitation Management Plan • Research Plan • Rehabilitation Research Plan • Revegetation Research Plan • Translocation Plan • *Austrostipa nullanulla* management Plan • Biosecurity Management Plan • Soil Erosion and Sediment Control Plan • Air Quality Management Plan • Topsoil Management Plan • Stormwater and Runoff Management Plan • Traffic Management Plan • Waste Management Plan The above plans are required to outline the following: • Responsible Parties for each management action • Responsible parties for auditing and compliance • Environmental objectives and outcomes • Spatial mapping • Performance criteria/ milestones • Completion Criteria • Evidence based risk assessment • Monitoring and auditing requirements • Compliance Reporting requirements • Contingency/Adaptive management measures	Pre construction (Plans updated as required)	Construction Manager, Health, Safety and Environment (HSE) Manager	Low

Impact	Number	Mitigation Measures	Timing	Responsible Party	Risk of Failure
		The above plans will be prepared by suitably qualified personnel and reviewed by RW Corkery and RZ Resources Limited prior to implementation.			
	P-2	The Biodiversity Management Plan must be prepared identifying the Flora and Fauna mitigation measures for each phase of The Project. The BMP will include strategies to limit and reduce potential impacts on vegetation and habitat. Primary objectives of the plan will blueprint: • Roles and responsibilities of personnel and auditing plan. • Details of relevant flora and fauna (especially threatened species) to be protected during all phases of The Project, including: • Extent and conditions of the habitats within the Development Footprint. • Species, habitat and breeding places/season. • Protocols to limit fauna injury and mortality, including management risks associated with open excavations, increased traffic and responses and reporting for roadkill and adverse incidents. • Protocols to ensure The Project does not provoke threats to fauna habitat, including exotic species (weeds/pests), road incidents and bushfires. • Display plans of areas to be cleared in stages and areas to be protected, including fauna movement corridors, habitat features, ' no go zones' and rehabilitation areas. • Pre-clearing protocols, including pre-clearing inspections, establishment of exclusion zones and ground identification of specific habitat features to be inspected and possibly retained. • Framework vegetation clearing protocols, including species-specific clearing requirements for *Austrostipa nullanulla* (Nulla spear-grass), fauna relocation management procedures and any specified seasonal limit on clearing activities. • Display plans of the area to be impacted within the Development Footprint and adjoining areas outlining the location of key constraints including Native Vegetation, flora and fauna habitat, nests and breeding places. • Demands for temporary and permanent fencing to minimise the risk of fauna injury/mortality due to vehicle strike or entrapment during excavations. • Unpredictable threatened species find procedures, including outlining the process of stopping works, engaging a qualified ecologist to confirm	Pre construction (Plans updated as required)	Construction Manager, Health, Safety and Environment (HSE) Manager	Low

Impact	Number	Mitigation Measures	Timing	Responsible Party	Risk of Failure
		the presence, contacting government regulators, securing any approvals required and restarting work. • Revegetation and Rehabilitation requirements for disturbed areas, no longer required for active use or construction, particularly within Native Vegetation, threatened species habitat, watercourses and drainage features. • Inclusion of various related sub plans • Vegetation Management Plan • Rehabilitation Management Plan • Fauna Management Plan • *Austrostipa nullanulla* Adaptive Management Plan • Stormwater and runoff Management Plan • Soil Erosion and Sediment Control Plan • Biosecurity Management Plan • Traffic Management Plan • Waste Management Plan • Air Quality Management Plan • Research Plan • Rehabilitation Research Plan • Revegetation Research Plan • Translocation Plan			
	P-3	A Vegetation Management Plan (VMP) is to be prepared, implemented and audited as part of the OEMP, CEMP and BMP. The constitutional objectives of the plan will display: • Roles and responsibilities of personnel implementing and auditing the plan. • Requirements for clearing vegetation around saline plains and drainage features. • Display maps and plans of the areas to be cleared and areas to be protected, 'No go Zones,' and proposed rehabilitation areas. • Outline pre-clearing protocols including establishment of exclusion zones and on-ground inspection of vegetation to be retained. • Outline vegetation clearing protocols, including sequential/stage clearing requirements • Protocols to reclaim and relocate woody debris, tree hollows and boulders/rocks.	Pre construction (Plans updated as required)	Construction Manager, Health, Safety and Environment (HSE) Manager	Low

Impact	Number	Mitigation Measures	Timing	Responsible Party	Risk of Failure
		• Design and construction solutions are to be explored to minimise impacts to vegetation proposed for retention during construction following AS4970-2009 – Protection of trees on development sites and AS43-73-2007-Pruning of amenity trees. • Locate infrastructure and construction amenities and areas (Access, laydown areas, site offices, parking, fencing, stockpiles and storage) within cleared or disturbed areas, outside of the exclusion zones or vegetation to be retained. • Inclusion of various related subplans • Rehabilitation Management Plan • *Austrostipa nullanulla* Adaptive Management Plan • Stormwater and runoff Management Plan • Soil Erosion and Sediment Control Plan • Biosecurity Management Plan • Waste Management Plan • Research Plan • Rehabilitation Research Plan • Revegetation Research Plan			
	P-4	An *Austrostipa nullanulla* Adaptive Management Plan will be developed to manage and mitigate impacts to known individuals of *A. nullanulla* within the subject Land. Preliminary mitigation measures are listed in section 5.6.9.	Pre construction (Plans updated as required)	Construction Manager, Health, Safety and Environment (HSE) Manager	Low
	P-5	Prepare, implement and audit an Erosion and Sedimentation Control Plan (ESCP) and Stormwater and runoff management plan following the International Erosion Control Association Australasia (IECA). *'Best Practice Erosion and Sediment Control Document'* (IECA, 2008) as part of the CEMP and outlining measures for the prevention of erosion and sedimentation during construction. The ESCP must include: • Suitable measures for erosion prevention including treatment of all bare exposed ground with the adequate crusting agent during extended construction works as soon as practicable upon construction completion. • Planning to minimise risk and manage sedimentation. • Chemical Spill Procedures to manage potential contaminants during construction.	Pre construction (Plans updated as required)	Construction Manager, Health, Safety and Environment (HSE) Manager	Low

Impact	Number	Mitigation Measures	Timing	Responsible Party	Risk of Failure
		Refuelling, chemical storage and maintenance activities are undertaken in designated areas away from environmentally sensitive areas. Containment areas will be designed and managed following relevant regulatory requirements and standards. Include groundwater quality monitoring and management measures. See Figure 85 and Figure 86.			
	P-6	Prepare, implement and audit a Traffic Management Plan for the movement of vehicles within the Subject Land. This Plan must identify mitigation measures and adaptive management actions to mitigate the impacts of increased traffic within the Subject Land. Mitigation measures must include but are not limited to: • Speed Restrictions • Fauna movement devices • Fauna awareness signage • Identification of Fauna hotspots • Speed control devices Vehicle movement exclusions/reductions (reduction of vehicle speed and numbers during dusk and dawn)	Pre construction (Plans updated as required)	Construction Manager, Health, Safety and Environment (HSE) Manager	Low
	P-7	Prepare, implement and audit a Biosecurity management plan (BSMP) as part of BMP, OEMP & CEMP The BSMP must identify site specific mitigation measures to reduce the impacts of weeds, pests and pathogens on native vegetation within the Subject Land. Management measures must include but are not limited to: • Preclearance Weed Census • Targeted annual Weed Species Census • Methods for prevention of introduction and/or spread of weeds, pests and pathogens. • Weeds, pests and pathogens monitoring, management measures and control. • Targeted Monthly Weed surveys in high traffic areas, washdown areas, around water sources and pathways, disturbance roadsides, storage and stockpiles. Locations of surveys to be confirmed after an initial sitewide survey which identifies key areas of concern and included these in the BSMP and VMP. • All plant and machinery present on site and entering the site is certified as weed free • All plant, vehicles, equipment, PPE and clothing must be adequately cleaned and free of weeds, dirt and other materials that may contain weed seeds or pathogens prior to entering and exiting the subject Land. • Appropriate collection and disposal of all weed material to a licensed facility	Pre construction (Plans updated as required)	Construction Manager, Health, Safety and Environment (HSE) Manager	Low

Impact	Number	Mitigation Measures	Timing	Responsible Party	Risk of Failure
		• Ongoing weed management throughout all stages of the development including the operational phase and rehabilitation. • New weed invasions are controlled within 2 weeks of identification • Exclusion fencing installed to mitigate the spread of weeds into adjacent retained vegetation • Monthly Monitoring of adjacent vegetation for weed infestations			
	P-8	Prepare, implement and audit a Waste management plan as part of BMP, OEMP & CEMP The WMP must identify site specific mitigation measures to reduce the impacts of waste generated from increased anthropogenic impacts within the region. Mitigation measures must include but are not limited to; • Identification of waste disposal facilities • Monitoring program • Adaptive management measures Waste management protocols i.e. monthly waste inspection, monthly waste collection etc.	Pre construction (Plans updated as required)	Construction Manager, Health, Safety and Environment (HSE) Manager	Low
General	G-1	All site personnel to attend environmental training as part of the work site induction prior to entering the work site. All personnel will be instructed on their obligations for vegetation clearing protocols, maximum speed limits and biosecurity procedures.	Pre-construction, construction and operation.	Construction Manager, Health, Safety and Environment (HSE) Manager	Low
	G-2	Preparation, implementation, review and planning of management and mitigations actions outlined within the plans identified in Section 5.5.	Pre-construction, construction and operation.	Construction Manager, Health, Safety and Environment (HSE) Manager	Low
Vegetation Clearing, habitat loss and fragmentation	V-1	Minimise the clearing footprint wherever feasible including avoiding/minimising clearing to mapped and ground-truthed Biodiversity Values (Figure 87), threatened species and communities, saline plains, groundwater, watercourses and drainage features and Native Vegetation.	Pre-construction	Project Design Team, Construction Manager, HSE Manager, Qualified Ecologist	Medium
	V-2	Safeguard vegetation clearing boundaries and 'No go Zones' for areas that may support HBT, threatened species breeding, foraging and shelter habitat, active microhabitat features and within proximity of watercourses and saline plains are established with appropriate signage and visible and physical markings. High visibility tape, barricade webbing or similar must be applied. If fencing or flagging	Pre-construction & Construction		Low

Impact	Number	Mitigation Measures	Timing	Responsible Party	Risk of Failure
		is in poor condition, it must be replaced as practical to reduce the potential of accidental disturbance or clearing.			
	V-3	Temporary construction areas will be rehabilitated as soon as possible after the completion of construction and operation works to reconnect fragmented habitats. This will be reflected where appropriate in the VMP and RMP.	Construction	HSE Manager	Medium
	V-4	A qualified fauna spotter catcher must be engaged prior and during any vegetation clearing to ensure that legislative obligations related to protect native fauna are met. The responsibilities of the fauna spotter catcher will ensure that: • Hollows to be inspected prior to clearing using inspecting cameras, work platforms, or other suitable methods. • Clearing only occurs once a spotter/catcher gives sign off that vegetation has been inspected and is clear of native fauna present within the area. • Clearing commence within areas with least connectivity and directs fauna towards retained areas, towards Native Vegetation surrounding the Development Footprint. • Clearing in sequence to ensure adequate time for fauna to find refugia towards retained areas.	Pre-construction & Construction	Construction Manager, HSE Manager, Fauna Spotter Catcher	Low
	V-5	During Vegetation Clearing: • Qualified fauna spotter catcher to be present at all times. • Undertake stage clearing sequences to minimise the amount of clearing in one time • Stockpile cleared vegetation within clearing limits and retained topsoil and vegetation for on-site rehabilitation. • Hollow Bearing Trees to be slow felled to minimise the chances of fauna injury or death and must be inspected by a qualified fauna spotter catcher to confirm no injured wildlife is present.	Construction		Low
	V-6	If works extend outside of the approved impact area, a record is to be created in the incident management provisions, and an investigation will be undertaken as to why works extend outside the approved area.		Construction Manager, HSE Manager	Medium
	V-7	Exclusion fencing along the Linear Corridor Development footprint will include installation of one-way fauna movement devices allowing fauna within the Development Footprint to move out of the Development Footprint. These devices will be installed at 1 km intervals on alternating sides of exclusion fencing along the linear corridor Development Footprint.	Pre-construction, Construction	Construction Manager, HSE Manager	Medium
	N-1	The BMP OEMP and CEMP are required to include measures to monitor and mitigate the air quality, noise and vibration risks associated with the proposed	Pre-construction		Medium

Impact	Number	Mitigation Measures	Timing	Responsible Party	Risk of Failure
		activity in accordance with the *Construction Noise and Vibration Strategy* (Transport for NSW, 2019), Construction Noise Guideline (DECC, 2009), especially in areas with proximity of EECs or threatened species habitat. The BMP and CEMP would include a noise and vibration management plan to provide the framework for managing and mitigating potential construction noise and vibration impacts. Specific and active construction noise and vibration impact statements would detail standard and additional mitigation measures to be implemented based on predicted noise levels.		Construction Manager, HSE Manager	
Noise, light and vibration	N-2	Restrictions of operational and construction work hours to daylight periods. Where night works are required, lights must be directed to minimise light spills into adjacent habitats and to reduce noise and vibration impacts on nocturnal fauna species.	Pre-construction, construction and operation.		
	N-3	Wildlife-friendly lighting must be considered, designed and installed where suitable. For example, light impacts are to be minimised through the use of sensor lighting for low traffic areas and/ or directional lighting for high traffic areas.			
	N-4	Construction vehicles must comply with maintenance schedules and operational restrictions designed to limit noise and light spill impacts during construction and operation phases.			
	N-5	Where vibration levels are predicted to outpace the screening criteria, a more detailed assessment of the structure and vibration monitoring must be undertaken to ensure vibration levels remain below appropriate limits for that structure. See Figure 85 and Figure 86			
	N-6	Monitoring stations for Noise and vibration are required to be installed within 1.5km of the mine site Development Footprint to monitor impacts on fauna and vegetation. See Figure 85 and Figure 86			
	N-7	Important fauna habitat within 1.5km of the mine site Development Footprint should be identified prior to construction works. Monitoring of these locations should be undertaken prior to, and during/following activities that result in and increase in noise and vibration i.e. blasting and vegetation clearing. See Figure 85 and Figure 86			
Increased dust	D-1	The BMP, CEMP and OEMP are required to include monitoring of air quality and dust creation. Monitoring must include stationary monitoring devices placed strategically within and outside the Development Footprint to monitor dust levels. See Figure 85 and Figure 86	Pre-construction, construction and operation.	Construction Manager, HSE Manager.	High

Impact	Number	Mitigation Measures	Timing	Responsible Party	Risk of Failure
	D-2	Dust suppression devices must be utilised throughout the Development Footprint. These will include but are not limited to; water carts, impermeable membrane covers and sprinkler systems.			
	D-3	Dust suspension monitoring to be carried out within proximity of EECs, internal unsealed access roads and other disturbed areas. Whenever possible engage watering polymer application to limit generation of dust.			
	D-4	All temporary stockpiles are to be covered, stabilised and/or moistened as required to minimise dust generation.			
	D-5	Dust inspections are to be undertaken daily to ensure construction activities are not generating excessive dust near sensitive receivers specified in the CEMP.			
Erosion and Sedimentation, hydrology and Environmental spills	E-1	All drainage and hydrological features to comply with accepted development requirements for operational work. These standards will be clearly outlined in the CEMP.	Pre-construction, construction.	Construction Manager, HSE Manager.	Low
	E-2	Monitoring soil and groundwater salinity. The most salt tolerant species *Tecticornia pergranulata* subsp. *pergranulata*, which is an indicator species for PCT 64, is not likely to be able to utilise groundwater with such extreme salinity levels of 61 g/l (10,167 mS/m). Groundwater within the Assessment Area is likewise too saline to support other, less salinity tolerant plant community types, such as Groundwater Dependent Ecosystems (GDEs).			Low
	E-3	Monitoring of Vegetation Integrity Plots within PCT 154 and PCT 64 outside of the Development Footprint to identify impacts of hydrological changes within the region. See Figure 85 and Figure 86	Pre-construction, construction, operation and rehabilitation	Site Environmental officer,	Low
Fauna Injury and Mortality	F-1	Prepare, implement and audit a Traffic Management Plan that outlines the current and expected flow of vehicle (and pedestrian) movements and identifies potential collision points for terrestrial fauna along the Development Footprint – Linear Corridor.	Pre-construction, construction.	Construction Manager.	Low
	F-2	Speed limits on arterial roads and on/off ramps with appropriate signage. It is recommended vehicles maintain a designated speed limit of 80 km/hr or lower along arterial roads and on/off ramps within the Proposed Development Footprint.	Construction and operation.	Construction Manager.	High
	F-3	Vehicle operations to be limited during dawn and dusk periods to avoid fauna collision with nocturnal animals while visibility is impaired. Where operations must be conducted, vehicle speeds are to be reduced by at least 50% to increase response time to potential fauna collisions.			Medium

Impact	Number	Mitigation Measures	Timing	Responsible Party	Risk of Failure
	F-4	Vehicle access exclusion fencing to be established around cleared areas in locations of known threatened fauna habitat, or activity to prevent wildlife from returning to work areas.			Medium
	F-5	Install fauna awareness signage in locations along access tracks where native fauna are likely to cross. See Figure 85 and Figure 86			Low
	F-7	Rehabilitation of temporary construction areas is to be undertaken sequentially and as soon as practicable after clearing. If areas cannot be rehabilitated, temporary fencing is to be erected to avoid fauna injury/mortality.	Pre-construction, Constructions, Operation, Rehabilitation	Construction Manager, HSE Manager.	Medium
	F-8	Install temporary fencing around deep trenches where fauna has the potential to be entrapped.	Pre-construction, construction.	Construction Manager, HSE Manager	Low
	F-9	It is recommended that the boundary of the Development Footprint is fenced to exclude fauna from the within Development Footprint. It is also recommended that Fauna exclusion fencing must: • be of a suitable height to exclude all local fauna • be dug into the ground to prevent burrowing fauna from entering the Development Footprint • contain minimal barbed wire • not include 90^{O} corners to reduce injury to fauna • gaps, entry and exit points in exclusion fencing should include “wings” to guide fauna away from the entrance and fauna deterrent sirens to reduce the potential movement of fauna into the Development Footprint • include the installation of one-way fauna movement devices allowing fauna within the linear corridor Development Footprint to move out of the Development Footprint. These devices must be installed on alternating sides at 1 km intervals along exclusion fencing for the linear corridor Development Footprint.	Installation (Pre-construction and Construction) Maintenance and monitoring (Construction, Operation and Rehabilitation)	Construction Manager, HSE Manager, Site Enviro	Low
Introduction and spread of weeds, pests and pathogens	W-1	Prepare implement and audit a Biosecurity Management Plan. All reasonable and practical measures must be considered to minimise the risks and threats associated with weeds, pests and pathogens. Mitigation measures may include but are not limited to: • Designated washdown facilities • Designated Boot scrub stations	Pre-construction, construction.	Construction Manager, HSE Manager	Medium

Impact	Number	Mitigation Measures	Timing	Responsible Party	Risk of Failure
		• Weed and seed certification of machinery, equipment and vehicles entering the Subject Land • All vehicles, machinery and equipment are to be free of all weed seed, debris and soil prior to entering and exiting the Subject Land • Designated parking areas for vehicles and machinery • Installation of cattlegrids to reduce the spread of soil, mud and debris from vehicles entering and exiting the Subject Land • Ongoing Weed and Pest management within the Subject Land and Development Footprint. • Annual weed census monitoring • Monthly weed census monitoring of infested areas, dispersal pathways and disturbed areas. • Installation of exclusion fencing along the boundary of the Development Footprint to prevent works from entering and impacting adjacent retained vegetation. • Treatment of new weed infestations within 2 weeks of identification and prior to seeding • Appropriate collection, storage and disposal of weed materials to a licensed facility.			
	W-2	Commence a pre-clearance weed census and reporting displaying the requirements for treatment and management actions, which are to be implemented and reported in accordance with the OEMP, CEMP, BSMP, BMP and VMP.	Pre-construction, construction.		
	W-3	Install and maintain appropriately designed exclusion fencing around the Development Footprint to prevent access by herbivores (kangaroos, goats, rabbits) and other feral grazers, protecting vegetation from browsing and grazing impacts.	Pre-construction, construction	Construction Manager, HSE Manager	Medium
	W-4	Establish additional protective fencing around areas of suitable habitat for *Austrostipa nullanulla* and all rehabilitated sections within the Development Footprint to safeguard regenerating vegetation from herbivore disturbance.			
	W-5	Removal of Goats from the Development footprint and Subject Land in accordance with the methodologies outlined within the Biosecurity Management Plan (BSMP) (i.e. Trapping and ground shooting).			
Anthropogenic impacts	A-1	Mitigation measures and monitoring rubbish dumping is to be promoted, implemented and audited as part of the Biodiversity Management Plan.	Pre-construction.		Low

Impact	Number	Mitigation Measures	Timing	Responsible Party	Risk of Failure
	A-2	Suitable waste disposal facilities will be provided as part of the development implementation and audit of the Waste Management Plan, associated with CEMP and OEMP where information related to when and how waste must be stored and routinely transported off-site to waste disposal facilities within the LGA.	Pre-construction, construction.	Construction Manager, HSE Manager	
	A-3	Rocks, fallen timber and logs must remain on site and the wood collection for fire camps must not be permitted.	Construction, operation.	Construction Manager, HSE Manager	Medium

Table 60: Vegetation Clearing, habitat loss and fragmentation

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
1. Pre-Clearance, Clearance and habitat loss	• Records of potential suitable habitat features such as Hollow Bearing Trees (HBT), stick nests, rocky outcrops, decorticating bark etc. • Pre-clearance survey throughout entire Subject Land to identify, record/flag habitat features and identify threatened	• Local seasonal and climate, migratory patterns and environmental conditions may influence presence and movement of fauna within the site.	• Methodical Inspection & recording of all habitat features prior to clearing is crucial to prevention of habitat loss, fauna injuries and fatalities. • Habitat features physically marked with flagging tape, and GPS co-ordinates were noted to record the locations of habitat features.	• Identify and record potential suitable habitat and/or instances of fauna presence. • Habitat features identified must be recorded, marked and factored into relocation plan.	• Preclearance inspection habitat and Fauna records to guide clearance activities. • Suitable qualified/experienced professional spotter/catcher present to monitor and manage fauna interactions during the clearing activities. • Removal of habitat features and relocation to a designated holding area for later placement into suitable adjacent/nearby bushland or conservation area.	• Location of potential suitable habitat recorded. • New location of relocated potential suitable habitat determined and recorded	• All potential suitable habitat identified, recorded and relocated in to suitable adjacent/nearby bushland or conservation area.

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
	fauna and flora present • Report containing results of preclearance survey to be prepared and used to guide clearance activities.				• Where impact levels have been exceeded initiate investigation. • Prepare short report outlining the investigation into the impacts.		
2. Fragmentation	• Mapped retained remnant native vegetation patches which provide potential suitable habitat.	• Local seasonal and climate, migratory patterns and environmental conditions may influence presence and movement of fauna within the site.	• Biannually analysis of mapped retained remnant native vegetation patches	• Any reduction in mapped retained remnant native vegetation patch area.	• Inclusion of fragmentation avoidance and reduction in VMP. • Planned revegetation in areas considered to reduce fragmentation.	• Mapping, analysis and on-ground inspections included in annual/biannual monitoring plan.	• Success of prior revegetation to guide application of management to areas considered for defragmentation.

Table 61: Noise, light and vibration

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
1. Noise, Light and Vibration	• Noise, light and vibration data has been collected by RZ	• Seasonal weather patterns will impact each of	• A data gathering project has been in effect	• Trigger values for light spill, vibration and noise will be in	• Wherever a trigger value has been exceeded for noise, light or	• Use of baseline data to compare pre-approval	• Regular monitoring of noise, light, vibration data to

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
	Resources at multiple monitoring stations located across the Subject Land since July 2024 • This data will continue to be built upon. • See Figure 85 and Figure 86	the metrics recorded and monitored. • Wind speed and direction, cloud cover, rainfall intensity and duration. • See Figure 85 and Figure 86	since RZ installed monitoring stations across the Subject Land in July 2024. • Daily reports containing hourly values are received. • See Figure 85 and Figure 86	line with mine site specific regulations and industry standards.	vibration, the project manager will initiate investigation/report and management actions outlined in the appropriate adaptive management plan. • Actions include review of shift activities roster, inclusion of proposed reductions in site prestart meetings. • Prepare a short report outlining the investigation into the changes	values with post-approval activities and known periods where triggers are reached.	ensure mine activity does not exceed triggers. • Consistent notifications where noise, light, vibration trigger events occur, so operators are aware and can modify activities in line with noise, light, vibration regulations.

Table 62: Increased dust

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
1. Dust pollution	• Dust data collected by RZ Resources since July 2024	• Seasonal weather patterns will impact the dust metric	• A data gathering project has been in effect since RZ installed monitoring	• Trigger values for dust generation will be in line with mine site specific regulations and	• Wherever a trigger value has been exceeded for dust, the project manager will initiate investigation/report	• Use of baseline data to compare pre-approval values with post-approval activities and	• Regular monitoring of dust data to ensure mine activity does not exceed triggers.

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
	• This data will continue to be built upon • See Figure 85 and Figure 86	recorded and monitored. • Wind speed and direction, rainfall intensity and duration.	stations across the Subject Land in July 2024. • Daily reports containing hourly values are received. • See Figure 85 and Figure 86	industry standards.	and management actions outlined in the appropriate adaptive management plan. • Actions include dust suppression tanker watering, review of shift activities roster, inclusion of proposed reductions in site prestart meetings. • Prepare a short report outlining the investigation into the changes	known periods where triggers are reached.	• Consistent notifications where dust value trigger events occur, so operators are aware and can modify activities in line with dust regulations.

Table 63: Erosion and Sedimentation, hydrology and Environmental spills

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
1. Erosion & Sedimentation	• Relevant PCT VI plot assessments undertaken during 'average' and/or 'dry' benchmark conditions for	• Seasonal rainfall will determine benchmarks against which VI plot scores will be compared	• Annual VI plot monitoring throughout relevant PCTs where risk of erosion is elevated.	• If VI plot scores fall below the baseline for 2 consecutive years. • Greater than 20% change in sedimentation	• Engage Geologist and hydrologist to investigate remediation actions. • Increase monitoring to	• VI plot ground cover and leaf litter cover score trends • Sedimentation trends	• Results of investigations into the causes of relevant VI plot value declines and sedimentation changes will be used to inform

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
	ground cover, leaf litter and exposed/bare earth	• Soil erosion and sedimentation monitoring must be undertaken following high rainfall events • See Figure 85 and Figure 86	• Erosion control Performance Criteria will be detailed within a Rehabilitation Management Plan. Continued failure to achieve erosion Key Performance Indicators in the same area may require additional alternative control measures detailed within the Adaptive Management Biodiversity Strategy BMP • See Figure 85 and Figure 86	baseline levels after rainfall. • Sheet erosion – Minor: Shallow soil deposits downslope, Moderate: Partial exposure of roots; moderate soil deposits downslope, Severe: Loss of surface horizon; subsoil exposure; root exposure; substantial soil deposits downslope. • Rill/Gully Erosion – Minor: <15 Rills and <0.3m deep, Moderate: 15-30 rills and <0.3m deep, Severe: >30 rills and / or any >0.3m deep. • Annual rate of decline (ARD) for PCT 154 is identified to be twice baseline ARD • Recorded VI of PCT 64 falls below 75% of baseline VI	monthly to determine trends in sedimentation • Application of measures such as sediment fencing, direct seeding, hydro mulching, placing tree logs and brush matting across cleared areas. • Erosion infilling is to be undertaken by the placement of gravel and or clean sand via manual application. • Prepare a report outlining the investigation into the changes		ongoing management
2. Hydrology and	• Establish hydrology baseline	• Effects of seasonal	• Monitoring methods are to follow those	• Any hydrological or environmental spill occurring	• Initiate emergency response	• Water and soil quality – organic and	• Results of investigations will outline

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
Environmental spills	through water sampling of Salt Lakes prior to impacts where achievable. • Outlined within the Copi Mineral Sands Project Groundwater Impact Assessment • Establish Vegetation Integrity Plots within PCT 64 and 154 outside of the Development Footprint	rainfall must be considered.	outline in the Copi Mineral Sands Project Groundwater Impact Assessment. • Monitoring will occur at increased frequency during actions that pose a risk of spills. • Biannual Vegetation Integrity Plots	within the Subject Land. • Extended periods of Inundation of PCT 64 and 154 outside of the Development Footprint. • Annual rate of decline (ARD) for PCT 154 is identified to be twice baseline ARD • Recorded VI of PCT 64 falls below 75% of baseline VI	including identify source and nature of hazard, PPE and site-wide protection protocols, set up a perimeter, stop/contain spill at source, • Minimise impacts, properly dispose of hazard source and cleanup contaminant – decontaminate and rehabilitate if required • If the situation escalates, external emergency responders may be required and seek medical attention if required. • Investigate incidents and increased soil and water monitoring at high risk areas • Prepare a report outlining the investigation into the changes • Collection of pooled water within PCT64	inorganic compounds, sedimentation etc. • Groundwater quality trends	ongoing management actions and determine if further mitigation measures are required to be implemented

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
					and 154 to be utilised within the Development footprint for dust suppression. • Increase monitoring frequency to every 3 months to monitor VI trends. • Retirement of Credits identified in BDAR Section 5.4.4 for PCT 154 • Calculate credit requirements for PCT 64 residual impacts if VI continues to decline despite adaptive management actions		

Table 64: Fauna Injury and Mortality

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
1. Fauna welfare	• Data from the traffic management plan outlines	• Local seasonal and climate, migratory patterns and environmental	• Remote cameras will record traffic activity levels	• Excessive fauna strikes • Excessive disruption of	• Reporting occurrences of vehicle strike within Subject Land and	• Records of vehicle strike, roadkill for all fauna, including	• Results of investigations analysed and applied to traffic

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
	the current and expected flow of vehicle (and pedestrian) movements and identifies potential collision points for terrestrial fauna along the Development Footprint – Linear Corridor. • See Figure 85 and Figure 86	conditions may influence presence and movement of fauna within the site.	and reported daily. • All stages of the project. • Mandatory reporting for vehicle strikes	fauna movements	investigation of incidents. • Reduce traffic movements and speed limits on the Development Footprint - Linear Corridor to 40 km/h during dawn and dusk periods, where animal activity is likely to occur. • Speed limits on arterial roads and on/off ramps with appropriate signage. Vehicles must maintain a designated speed limit of 80 km/hr or lower along arterial roads and on/off ramps within the Proposed Development Footprint. • Vehicle access exclusion fencing to be established around cleared areas in locations of known threatened fauna habitat, or activity to prevent wildlife from returning to work areas.	native and exotic mammals, reptiles, birds, and amphibians.	management plan.

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
					• Install fauna awareness signage in locations along access tracks where native terrestrial fauna is likely to cross and where higher density of HBTs and occurrences of Pink Cockatoos have been recorded. See Figure 85 and Figure 86 • Installation of high visibility Variable Message Signs to alert vehicles of recent fauna interactions. • Rehabilitation of temporary construction areas is to be undertaken sequentially and as soon as practicable after clearing. If they cannot be rehabilitation, temporary fencing is to be erected to avoid fauna injury/mortality.		

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
					• Install temporary fencing around deep trenches where fauna has the potential to become trapped. • Installation of additional one way fauna movement devices		

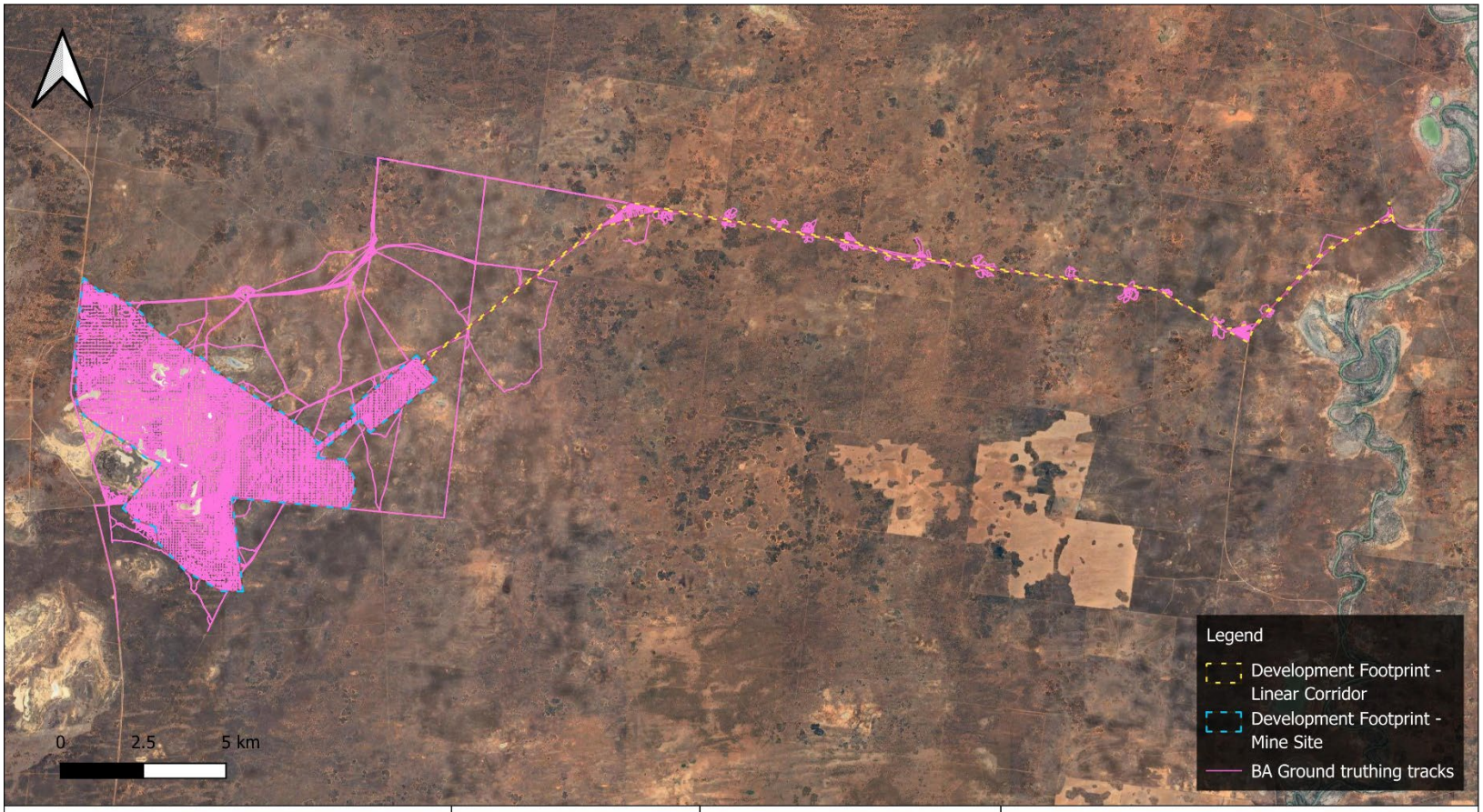
Table 65: Introduction and spread of weeds, pests and pathogens

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
1. Weeds and pathogens	• Various PCT VI plot assessments undertaken during average and dry benchmark conditions, within appropriate high risk areas. • Levels of die-off, dieback, weed infestations, and plant disease/pathogen impacts.	• Seasonal rainfall will determine benchmarks against which VI scores will be compared • Seasonal rainfall and temperature	• Annual VI monitoring throughout PCTs within appropriate high risk areas. • Plant disease/pathogen inspection. • Annual Targeted Weed census • Monthly targeted Weed monitoring of high traffic areas, washdown	• If a significant increase (>20%) in weed cover or weed species richness occurs. • If VI plot scores fall below the baseline for 2 consecutive years. • Instances of plant disease/pathogen impacts. • The Biosecurity Management	• Preparation of a Weed eradication plan and/or a Weed Management Plan. • Vehicle washdown/disinfectant stations at site entry points. • Soil erosion and sediment control measures • Ongoing Weed management	• VI score trend report data • Plant disease / pathogen, die-off, dieback, impacts report data. • Initial weed	• Results of investigations will outline ongoing management actions and determine if further mitigation measures are required to be implemented • Results of the weed census will identify

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
	• Targeted Baseline Weed Census • See Figure 85 and Figure 86		areas, roadsides, water sources, dispersal pathway. Locations of surveys to be confirmed after an initial sitewide survey which identifies key areas of concern and included these in the VMP. • See Figure 85 and Figure 86	plan will include key trigger points for the control of identified weed species present within the Subject Land • New infestations of weed species • Presence of weed reproductive material	throughout the project lifecycle • Treatment of new infestation within 2 weeks of identification • Weed reproductive material is to be manually collect and disposed of appropriately.	species consensus	key triggers and management actions required to be undertaken to effectively control weed species within the Development Footprint.
2. Pest management	• Pest population surveys to be conducted to estimate population numbers	• Seasonal rainfall • Seasonal resources	• Annual PIR camera monitoring • Annual Ground shooting reports • Annual Trapping reports • Annual VI monitoring • Annual Fauna surveys • See Figure 85 and Figure 86	• No reduction or an increase in estimated pest population • No reduction in number of animals captured or shot. • If VI plot scores fall below the baseline for 2 consecutive years. • Evidence of herbivory in exclusion areas	• Increase frequency of pest management actions • Exclusion fence inspection • Maintenance/Repair of exclusion fence	• Estimation of Pest population • Number of pests captured • Number of pests shot	• Results of conducted monitoring will determine the success of pest management. • Results will indicate if further intervention is required

Table 66: Anthropogenic impacts

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
1.Human caused impacts	• Establish a baseline through site condition inspection/assessments undertaken at all relevant areas of the Subject Land prior to commencing development. • Data from the site-wide fencing, signage and remote camera condition, function and maintenance report.	• Monitoring of the Subject Land identifies greater than 20% change in parameters	• Quarterly monitoring and reporting of site condition / rubbish levels, fence and camera function.	• Occurrences of rubbish detected • Fences, signage and cameras are not functioning	• Occurrences of rubbish within and around the Subject Land are detected; monitoring is increased and a report prepared. • Rubbish collection and removal implemented. • Fences, signage and cameras inspected and repaired where needed.	• Data from the Quarterly report assessing fencing, signage and remote camera condition and function	• Results of investigations and quarterly report will outline ongoing management actions and determine if further mitigation measures are required to be implemented



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Ground truthing transects - Development Footprint	Biodiversity AUSTRALIA	
	Drawn by: NE	Location: Warwick Station		
	Date: November 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54 Scale: 1:150000

Figure 87: Ground-truthing transects - Development Footprint Impact Summary

5.6 Assessment of Serious and Irreversible Impacts (SAII)

5.6.1 Identification of SAII Entities

Section 6.5 of the BC Act requires developments to consider SAII on threatened species and ecological communities which meet one or more of the following criteria:

- Principle 1 - Evidence of rapid rate of decline (clause 6.7(2)(a) BC Regulation);
- Principle 2 - Evidence of small population size (clause 6.7(2)(b) BC Regulation);
- Principle 3 - Evidence of limited geographic distribution (clause 6.7(2)(c) BC Regulation); and/or,
- Principle 4 - Evidence that the entity is unlikely to respond to management (clause 6.7(2)(d) BC Regulation).

Section 9.1 of the BAM requires additional impact assessments for entities at risk of SAII.

One SAII entity was recorded on the Subject Land; *Austrostipa nullanulla* (Nulla grass, a spear grass). It has been stated, that *A. nullanulla* meets SAII criteria under one (1) of the four (4) principles, Principle 3, and is thus identified as an entity at risk of an SAII. Application of Principle 3 is required where there are impacts on the habitat of a species or ecological community that is currently observed, estimated, inferred or reasonably suspected to have a very limited geographic distribution.

The SAII Principle 3 generally applies to entities that are listed as Critically Endangered under the BC Act, where the reason for being listed as Critically Endangered is the entity's very restricted geographic distribution. This is reflective of *A. nullanulla*, which is listed as an Endangered species under the BC Act. Species listed as Critically Endangered under the BC Act are considered to have very limited geographic distribution and are generally known to:

- Have an area of occupancy (sensu IUCN 2017) of ≤10 km^2,
- Have an extent of occurrence (sensu IUCN 2017) of ≤100 km^2,
- Have at least two of the following three conditions:
    - Are severely fragmented or only known from one location,
    - Continuing decline, &
    - Extreme fluctuations.
- Inhabit less than or equal to three locations in New South Wales (SAII 2019).

During Biodiversity Australia's surveys *A. nullanulla* and suitable habitat was found to occupy an area of 59.58 ha within the Development Footprint – Mine Site (Figure 1, BDAR Figure 83).

The species polygon is in accordance with Section 5.2.5 of the BAM and focuses on statutory obligations without extending beyond the method's scope. The polygon covers the full extent of suitable habitat, defined by the TBDC habitat constraint of "gypsum derived soils associated with salt lakes," regardless of plant presence detection during surveys.

Suitable habitat was identified and mapped through a combination of field-verified potential habitat surveys (conducted in November 2025), satellite imagery (e.g., from sources like Google and NSW Spatial Services), and high-resolution aerial imagery. For the associated PCT 253 (Gypseous shrubland on rises in the semi-arid and arid plains), the polygon now encompasses the full extent of suitable exposed

gypseous soils. For non-associated PCTs (152 and 154), suitable habitat was clarified and mapped by delineating mappable microhabitats (gypsum-rich soils near salt lakes) based on soil profiles, topographic data, and vegetation indicators observed during surveys. No additional non-associated PCTs were identified as suitable.

Austrostipa nullanulla mapped suitable habitat Species Polygon, credit requirements, and a description of mapped individuals are detailed in BDAR Section 5.8 - Species Credits.

Serious and Irreversible Impacts Principle 3 – Very Limited geographic range.

SAII Principle 3 for *A. nullanulla* states it is known from three (3) or less locations and/or an Area of Occupancy less than 10 km^2, or Extent of Occurrence less than 100 km^2. Species with a very limited geographic range are regarded to be at risk of Serious and Irreversible Impacts in accordance with the principle set out at Clause 6.7(2)(c) of the Biodiversity Conservation Regulation 2017. TBDC displays 'Known from <3 locations and/or an AOO <10km^2 or EOO <100 km^2'.

Species that have a very limited geographic range (distribution) are generally known to:

1) have an area of occupancy of ≤10 km^2; and/or

2) have an extent of occurrence of ≤100 km^2; and/or

3) have at least two of the following three conditions:

    a) are severely fragmented or only known from one location;

    b) continuing decline;

    c) extreme fluctuations; and/or

4) inhabit less than or equal to three locations in NSW. A 'location' means a geographically or ecologically distinct area where a single threatening event could rapidly affect all individuals of a species. Where a species is affected by more than one threatening event, location should be defined by considering the most serious plausible threat.

Biodiversity Australia Associate Professor - Dr John Hunter of the University of New England, along with RZ Resources Environmental & Rehabilitation Officer Phil Grant, undertook targeted research investigations into *A. nullanulla* within the Development Footprint and the surrounding area from 13th -20th November 2025. During their field surveys the pair conducted 108 5x5 metre plots and found presence of *A. nullanulla* in all targeted locations at varying densities from sparce to very dense. Dr hunter found that the species is clearly restricted to Gypsum areas, however presence varies depending on the condition of the surface (crusty or powdery) and also on the level of windblown sand deposited, although the perceived effect of this factor varied from site to site. The species occurred on all gypsum deposits regardless of landscape position, and was found in many locations originally thought unlikely, including deposits in the middle of lakebeds, as opposed to the typical predicted areas of dunes and flat terrain on top of rises. In some of the targeted areas the species was recorded in large numbers, with plots containing over 400 tussocks per 5m^2 plot). It is estimated that the total population size in NSW is approximately 30 million individuals. This estimate covers all the areas surveyed, mapped and represented in Dr Hunter's *A. nullanulla* report shapefile. Comprehensive mapping and records of the species is currently being prepared for submission to NSW BioNet, as well as a short communication article featuring methods and results. Dr Hunter has concluded from his field investigations that the habitat and population extent of *Austrostipa nullanulla* is much larger than previously considered.

Further assessment in relation to SAII criteria has been undertaken below.

5.6.2 Background Information

Austrostipa nullanulla is a small, perennial spear grass that grows in tussocks to 0.5 m tall. It is a gypsum-obligate species that is strongly associated with lunettes and rises comprised of gypseous soils. These features are typically found on the margins of relict and salt lakes in arid and semi-arid environments (OEH, 2023). *A. nullanulla* typically flowers in the wet season from December to January but can flower at other times in the year in response to significant rainfall. However, it does not necessarily flower every year. Seed dispersal is facilitated by wind, rain, and flood events (OEH, 2023).

The known distribution of *A. nullanulla* extends horizontally 1,000 km east-west from northwest Victoria to the interior of South Australia, encompassing far southwest NSW and south-east South Australia (Figure 3). The vertical distribution stretches 600 km north-south from the Queensland border to Adelaide (SA Draft Recovery Plan 2012). Prior to Dr Hunter's survey, the total number of mature *A. nullanulla* individuals known to currently occur in Australia is estimated to be 210,000, comprising approximately 200,000 plants in NSW, 10,000 in South Australia, and an additional 1,500 in conservation areas (Towan Plains Flora and Fauna Reserve) within Victoria (TSSC, 2010). The species is listed as Endangered in NSW under the BC Act, Endangered in Victoria (Flora and Fauna Guarantee Act 1988) and as Vulnerable in South Australia (National Parks and Wildlife Act 1972). The species was delisted from the Vulnerable category under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act), effective from 19 August 2010 (Comm Listing Advice 2010).

Besides being confined to a soil type with a naturally restricted distribution, the primary threats to *A. nullanulla* are grazing and habitat degradation (OEH, 2023). The plant is palatable to native (e.g. kangaroos) and invasive herbivores (e.g. rabbits), as well as feral and domestic livestock (e.g. sheep and goats). The significant grazing pressure imparted by these species can lead to reductions in density and abundance of *A. nullanulla* and complicate the identification of new populations (heavily grazed tussocks lack diagnostic features). Measures to limit the impacts of grazing include exclusion fencing, the removal of artificial water points, and feral and native herbivore control (OEH 2014; OEH, 2019). Habitat degradation can occur through numerous disturbances such as the construction of rabbit warrens (rabbits preferentially construct warrens in soft gypseous soils), habitat loss (e.g. mining and agriculture), and off-road vehicles (OEH, 2023). These impacts can also be mitigated with exclusion fences, as well as the protection of both potential and realised habitat.

The NSW population of *A. nullanulla* is under management at two (2) stronghold locations: Nulla Station 18 km north-west of Lake Victoria in the state's far southwest; and Nanya Station 100 km due north of Lake Victoria. The Subject Land is positioned between these two (2) management sites, 40 km north of Lake Victoria. Prior to Dr Hunter's surveys, the most recent estimates for the numbers of individuals contained within the two (2) management sites are > 30,000 and 10,000, respectively (OEH, 2019). The source of the contrast between the sum of these figures (> 40,000) and the total estimated to occur in NSW (~ 200,000) appears to be the variability in reported estimates for the number of individuals at Nulla Station. For example, early estimates in 2002 reported a species total figure of 200,000 plants, with 110,000 fenced as part of a Nulla station grazing-protection effort. (DECC NSW, 2002). However, the more recent *Saving our Species* annual report cards suggest a species total figure in excess of 40,000 (OEH, 2019) with 10,000 at Nanya Station and >30,000 at Nulla Station. The recent and more conservative, estimate is likely to be of higher accuracy due to the concerted conservation effort in recent years. Notwithstanding this, it is worth noting that between-year estimates of population change, which suggest stability, have only been qualitatively deduced from comparisons of photographs, and that populations, though not quantified or monitored, occur beyond the two (2) management sites (e.g. on the Subject Land).

Dr Hunter's 2025 survey findings provide solid evidence to support neighbouring landholders reports of the existence of several populations of *A. nullanulla* received in early 2025 (located to the north of Warwick Station). This suggests the occurrence of *A. nullanulla* within the Development Footprint is one of several previously unrecorded populations that currently occur within NSW. It is suggested, the entire NSW EOO stretches from Nunya station 50 km to the north, southeast through Warwick Station and includes populations recorded 20 km to the south of the Development Footprint, south of Nulla Station (Figure 2, BDAR Figure 84). Future surveys to further confirm the presence and extent of *A. nullanulla* will be conducted in the region surrounding the Development Footprint as part of the planned Federation University Masters and PhD student research project, which will be funded by RZ Resources Limited. Findings from the research will add to records and understanding of the species in NSW.

The joint species population, Area of Occupancy and Extent of Occurrence mapping survey conducted in November 2025 by RZ Resources and Biodiversity Australia's Dr John Hunter of *A. nullanulla* in the area surrounding the project Development Footprint estimates an area of 675 ha of potential habitat and a population estimate of approximately 30 million. The study consisted of 108 plots (5 m x 5m) conducted in areas of suitable *A. nullanulla* habitat. See below for extracts of the survey methods and results from Dr Hunter's Survey of Austrostipa nullanulla (Hunter 2025). Full Expert Report located in Appendix A-11.

5.6.3 *A. nullanulla* 2025 Survey Methodology

A survey of known and potential sites containing *Austrostipa nullanulla* was conducted over five days from 14 to 18 November 2025. On each day, a different property was assessed, spanning the likely distribution of the species based on known records and visual assessment of habitat from remote imagery. The first two days were spent at locations within Warwick Station and Nulla Station (including the exclusion plot) where the species had been positively identified These initial surveys were focussed on becoming familiar with the clear identification features of fruiting, non-reproductive and seedling features of the grass.

At each location, a selection of areas appearing to be dominated by gypsum were visited. Randomly placed 5 x 5 m plots were established to assess the number of individuals present. Plots were also randomly placed in areas where it appeared no *Austrostipa nullanulla* were growing at the site. All plots were marked out by the placement of a 20 m length of cordage around four corner pegs, ensuring a consistent 25m^2 was surveyed. All plots were surveyed by the same two (2) staff (JTH & PG) with one staff searching for 'mature' individuals and the other staff searching for newly sprouted seedlings. Random plot placement was intended to avoid bias when assessing population size.

The population estimate for *A. nullanulla* (restricted to the far south-west corner of NSW) was calculated via an extrapolation process. Plot locations were randomly positioned, thus encompassing areas where the species occurs in varied densities, and also where the species is absent. Tussock densities within plots ranged from one per 5 x 5 m plot to 400+ per plot. Samples contributing to the estimated NSW population size were collected from all known mapped locations, across the known distribution of the species. The calculated species count and area covered by all 5 x 5 m plots was then extrapolated onto the mapped Species Polygon area which covers 675 ha of suitable habitat for the species.

Landscape and site-scale population estimates were calculated by considering a range of factors including historic records and notes, on-ground observations at all five (5) survey locations, geomorphology, local knowledge, satellite and aerial imagery and data from recent surveys at Warwick Station for the Copi Mineral Sands Project. At sites where *A. nullanulla* forms extensive stands (e.g., Nulla Station exclosures – areas where both domestic and native animals have been excluded) plots were established across population gradients to refine density estimates and spatial patterns. Stand boundaries and patch extents were mapped using high-accuracy GPS and high-resolution imagery. This data underpins population size estimates for each of the sites and the extrapolation across suitable habitat, contributing to regional and range-wide species abundance estimates.

Mapping of habitat was conducted by visual interpretation of exposed gypsum deposits with reference to locations visited on foot and sampled via plots using ESRI World Imagery (WGS84 - Vantor, Earthstar

Geographics, and the GIS User Community) within ArcGIS pro. Caveats to mapping include both over and under-mapping polygons depending on the nature of the gypsum deposits and the level of surface.

5.6.4 *A. nullanulla* 2025 Survey Results

A total of 108 plots were placed across five properties (Naya Station, Nulla Station, Warwick Station, Bells Grove, and Oakbank) with 11,646 individual tussocks counted. The highest number of individuals within a 5 x 5 m plot was 490 tussocks and 17 plots were found to have no tussocks. The mapping area amounted to an estimated 675 ha Area of Occupancy within NSW, and an Extent of Occurrence of about 120 km north south and 50 km east west (approximate EOO polygon of 2,863 km^2). Based on the plot counts and mapping, it is estimated that the population within NSW could be in the order of 30 million individuals.

Habitat

Austrostipa nullanulla was mostly found on exposed gypsaceous soils most commonly associated with dunes/lunettes of lake beds. However, gilgai-like exposed gypsum within lake beds were also found to have this species present. In a broader context, the habitat was found associated with a number of vegetation types including Mallee (Eucalyptus dominated), Saltbush (Maireana and Tecticornia), Belah (Casuarina pauper), Rosewood (Alectryon oleifolius) and low open shrublands (Roepera and Frankenia). However, more generally these broader vegetation types occur most commonly only as adjacent communities, with *Austrostipa nullanulla* occurring separately as monospecific stands of low sparse grassland. These areas generally had a hard surface with a diverse cryptogamic crust layer. Although described from copi – flour gypsum, *Austrostipa nullanulla* was rarely found on the powdery/flour gypsum which sometimes occurred at the base of lunettes. The in-tact copi is considered to provide suitable habitat for the species, however the loose powdery (like talcum powder) form of copi appears to provide poor unsuitable habitat, and more data is required to confirm or disprove this hypothesis.

Grazing

The only location during the entire survey that had substantial patches of mature and fruiting material was within the exclosures at Nulla Station. In all other visited locations, *Austrostipa nullanulla* was grazed very heavily with only a few individuals escaping grazing, allowing them to grow to full or near full height or were found to be reproductive even when a few centimetres tall.

Additional Threats

Austrostipa nullanulla in most instances was restricted to pure gypsum surfaces and any addition of other soil types over this surface restricted its occurrence. This was not universal and, in some instances, even a depth of silt and sand likely greater than the rooting depth still had tussocks of the species. Based on these observations it is likely that increased deposition of silts and sands over exposed gypsum will reduce the potential suitable habitat for this species.

Due to the harsh conditions of growing on pure gypsum soils, it is likely that weed invasion is generally not a major threat across most of the species' distribution. However, in a few locations *Asphodelus fistulosus* (Onionweed) and *Nicotiana glauca* (Tree Tobacco) were found to be competing well on gypsum and likely reducing tussock occurrence and population sizes.

Rabbits are already listed as a threatening process as they prefer the soft gypsum soils for their burrows. However, more extensive damage was seen to be caused by mechanical ripping of dens. Much larger areas than affected by dens was damaged by this eradication method.

The breaking of gypsum hard surfaces and destroying of cryptogamic crusts by trampling and vehicle traffic can reduce population numbers where this is extensive.

5.6.5 *A. nullanulla* 2025 Survey Discussion

The results presented here indicate that *Austrostipa nullanulla* is highly likely to be a gypsophyte (gypsum specialist). Thus, it is likely that the species has a number of life history and physiological characteristics that enable it to survive within these stressful habitats. Further work should investigate if the species shows similar characteristics as found in other gypsophytes, including accumulation of sulphur, calcium, magnesium, and oxalate crystals and if this may affect palatability to grazers. During the survey, *Austrostipa nullanulla* individuals commonly exhibited green shoots where other Austrostipa species did not, indicating that it may, like other gypsophytes, access crystallised water, enabling it to persist through dry periods. As with other gypsophytes, experiments conducted by Phil Grant showed that *Austrostipa nullanulla* was able to grow on a variety of soil types (Cera *et al.* 2021) other than gypsum. This may indicate that there is not a fundamental edaphic reason the species is restricted to exposed gypsum, and lack of competition on these specialist soils may be a major reason for why this species is highly restricted.

While a number of vegetation community types have been described that include *Austrostipa nullanulla,* it was our observation that in most instances this species grows as monospecific stands adjacent to, or as patches within these types, rather than an integrated part/subcomponent. As with other examples globally, these gypsum lunettes/dunes and outcroppings were associated with a significant and diverse cryptogamic crust that may be a key component in helping *Austrostipa nullanulla* persist on these soils (Escudero *et al.* 2015).

Current population estimates indicate that around 200,000 tussocks are known. However, this estimate is largely based on the population at Nulla Station of which 110,000 is thought to be within the exclusion plots alone. However, more recently collections of the species has occurred beyond Nulla Station within NSW. Based on our survey and plot counts it is likely that the species population size in NSW alone (not including SA or Victoria populations) is an order of magnitude larger and may be up to approximately 30 million individuals, spanning an EOO area 6,000 km^2 in size (120 km north-south and 50 km east-west), with an AOO (potential habitat) estimated as 6.75 km^2 (675 ha) located within the NSW EOO. This is likely to affect the current conservation status as Endangered within the *Biodiversity Conservation Act 2016*.

Listed threats to the species include rabbit warrens, mining, agricultural cultivation, natural restriction to a specific habitat, increased watering points, and grazing (native and non-native animals). As the species was still found to exist in heavily grazed areas, grazing alone is unlikely to directly cause widespread extinction. However, grazing would substantially reduce the amount of seed being produced, particularly in poor/dry seasons. The combination of grazing and drought over a 3 year period would pose a threat to this species. Only in seasons where rainfall is well above average might there be enough biomass growth to allow for more substantial reproductive output. This could be an issue if the seed bank only lasts three to five years. A prolonged drought lasting at least three to five years in combination with heavy grazing pressure could cause a substantial reduction in the species' ability to persist. Other threats noted during the investigation include windblown soil deposition (overgrazed landscapes) covering exposed gypsum, weed invasion specifically by *Asphodelus fistulosus* and *Nicotiana glauca*, warren ripping, and physical trampling and vehicle tracks.

5.6.6 Assessment of *A. nullanulla* 2025 survey results against SAII Principle 3 Criteria

1. Area of Occupancy (AOO)(Ha)

Area of suitable habitat currently occupied by a species within its 'Extent of Occurrence.' This area is measured by species presence in 2 km x 2 km grids. A species will generally not occur throughout the entire area of its Extent of Occurrence due to unsuitable or unoccupied habitats. For migratory species, AOO is either the breeding area or over-wintering area, whichever is smaller. Where a range or minimum estimate (shown as '>') is displayed, use the lowest value. Where a maximum estimate (shown as '<') is displayed, data is of low confidence. If no other information source(s) is available use the value but ensure low confidence is reported in the BDAR or BCAR. Where evidence demonstrates that the data is inaccurate, provide source and data to DPIE (via BAM support mailbox). These should also be included in the BDAR or BCAR. AOO <10k m^2.

The Survey of *Austrostipa nullanulla* (Hunter 2025) estimates the AOO of *A. nullanulla* within NSW is currently 6.7 km^2 (675 ha). This is smaller than the criteria metric of 10km^2. On a broader national scale, across NSW, Victoria and South Australia, the AOO is estimated at over 10 km^2.

2. Extent of Occurrence (EOO)(ha)

The spatial spread of a species to determine the degree to which risks from threatening factors could impact an entire population. It is not intended to be an estimate of the amount of occupied or potential habitat. The EEO is the area contained within the smallest polygon that can be drawn to encompass all known, inferred or projected areas of the population (but excludes records classified as vagrant) and does not exclude any areas, discontinuities, disjunctions regardless of whether the species can occur in these areas or not. Where a range or minimum estimate (shown as '>') is displayed, use the lowest value. Where a maximum estimate (shown as '<') is displayed, data is of low confidence. If no other information source(s) is available use the value but ensure low confidence is reported in the BDAR or BCAR. Where evidence demonstrates that the data is inaccurate, provide source and data to DPIE (via BAM support mailbox). These should also be included in the BDAR or BCAR. EOO <100 km^2.

The Survey of *Austrostipa nullanulla* (Hunter 2025) estimates the EOO of *A. nullanulla* as a 3,000 km triangular area shown in BDAR Figure 84 (Addendum Figure 2). The overall area extends 120 km north-south and 50 km east-west to cover a square-shaped area 6,000km^2 in size. This area is larger than the criteria metric of 100 km^2. On a broader national scale, across NSW, Victoria and South Australia, the EOO is estimated at over 60,000 km^2.

3. Number of Threat-defined locations

The number of geographically or ecologically distinct areas that a single threatening event could rapidly affect the whole population present. The size of the location depends on the area covered by the threatening event, and where a species is affected by more than one threatening event, location should be defined by considering the most serious plausible threat.

The Survey of *Austrostipa nullanulla* (Hunter 2025) estimates five (5) large disjunct locations in NSW alone, with a more refined estimate of 15-30 smaller disjunct locations across the range. This finding does not align with the criteria conditions of 'are severely fragmented or only known from one location:

(b) continuing decline;
(c) extreme fluctuations.

On a national scale, it is estimated that 35 disjunct populations occur at separate locations across NSW, Victoria and South Australia.

4. Extreme fluctuations in number

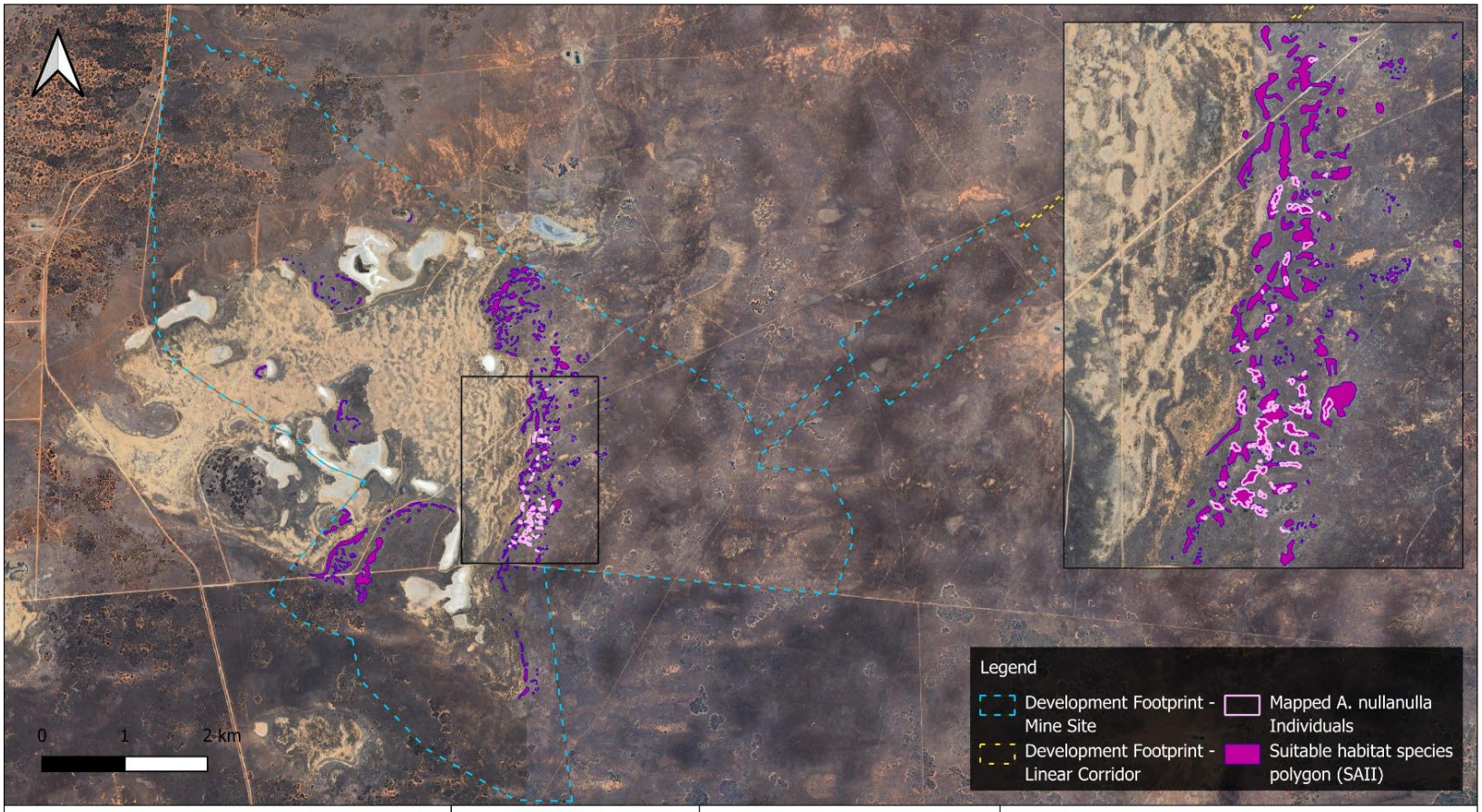
Where population size or distribution area varies widely, rapidly and frequently, and typically with a variation greater than one order of magnitude (i.e., a tenfold increase or decrease). Populations that undergo extreme fluctuations are likely to have highly variable growth rates and are therefore exposed to higher extinction risks.

The Survey of *Austrostipa nullanulla* (Hunter 2025) found that between 5-30 disjunct populations of varying sizes occur at locations spread over a 6,000 km^2 area in NSW alone. Although not enough is known about this species, there is no data to suggest extreme fluctuations in numbers, and populations are thought to be stable. On a broader national scale, it is estimated that the 35 disjunct locations occur across an area of 60,000 km within NSW, Victoria and South Australia.

In addition, *A. nullanulla* in known to occur in at least two (2) locations in South Australia on the Eyre Peninsula (including Lake Gillies Conservation Reserve) and has also been recorded in the north of the state, particularly on the margins of the many lakes across the state. The species is also known from at least three (3) locations in Victoria including Towan Plains Flora and Fauna Reserve, Murray-Sunset National Park and on the Raak Plain.

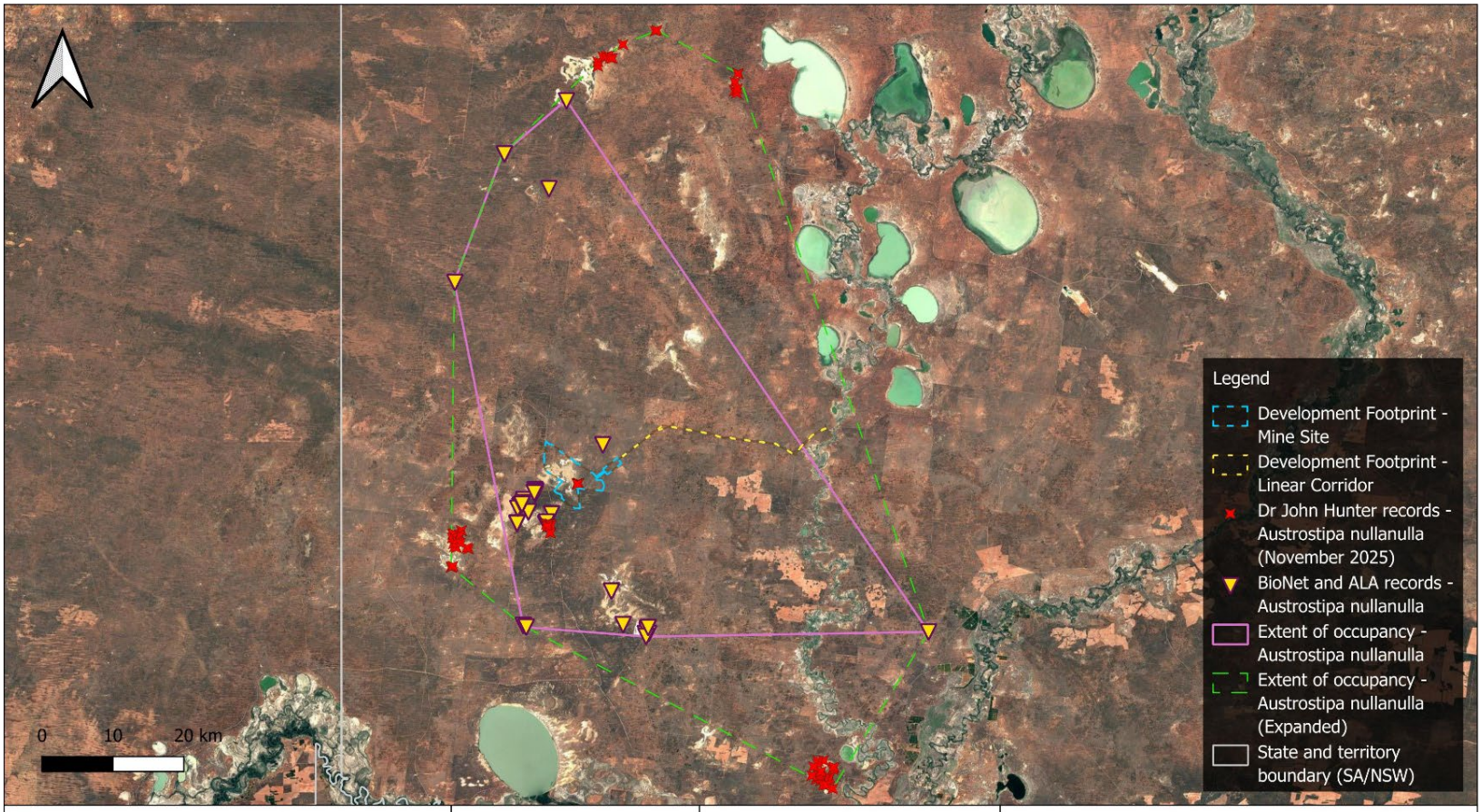
Figure 83 of the BDAR (Addendum Figure 1) Shows the mapped extent of *A. nullanulla* within the Development Footprint. Figure 84 (Addendum Figure 2) shows the expanded EOO within NSW. Both figures were created with data collected as part of the fieldwork for Dr John Hunter's Survey of *Austrostipa nullanulla* report (Hunter 2025).

It is recognised that this species requires further effort to fully determine its EOO in NSW.



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: SAII Impacts - All Species Polygons - Development Footporint - Mine site	Biodiversity AUSTRALIA
	Drawn by: NE	Location: Warwick Station	
	Date: November 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:60000

Figure 88: SAII Impacts for *Austrostipa nullanulla*



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Extent of Occupancy Austrostipa nullanulla NSW	Biodiversity AUSTRALIA
	Drawn by: NE	Location: Warwick Station	
	Date: November 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:700000

Figure 89: Extent of Occupancy *Austrostipa nullanulla* NSW

Figure 90: Federal distribution of *A. nullanulla*, across numerous locations in NSW, Victoria and SA (source: Atlas of Living Australia, 2026).

5.6.7 Evaluation of Serious and Irreversible Impact

Austrostipa nullanulla is assessed under the criteria for Principle 3: *evidence of limited geographic range.* In NSW, *A. nullanulla* is reportedly known only from two (2) locations: Nulla Station and Nanya Station (OEH, 2019; DCCEEW, 2023). These stations are 85 km apart, with the Subject Land positioned directly between. Data from the Atlas of Living Australia (ALA, retrieved from www.ala.org.au) shows a concentration of records near the salt pans 10 km south-west of the Subject Land, suggesting that the Subject Land is part of a third location. This corresponds with the TBDC justification for the inclusion of SAII entities under Principle 3, which requires that an entity is known from three (3) or fewer locations (retrieved from BioNet Atlas). Further included in the justification are criteria that an entity has an AOO less than 10 km^2 and/or an EOO of less than 100 km^2. As AOO and EOO data are not currently available on BioNet Atlas, Bio. Aust. created an EOO polygon for the NSW population of *A. nullanulla* using records from ALA, the EnviroKey BDAR, and this BDAR. The EOO encompassing all these records (i.e. NSW EOO) was calculated to be 272,693 ha or 2,726.93 km^2 (exceeding the SAII criteria of < 100km^2). Insufficient data are available to calculate the AOO of *A. nullanulla.*

Nevertheless, *A. nullanulla* qualifies as an SAII entity due to the few locations in NSW with records of the species.

The NSW BioNet states *A. nullanulla* has a 'Very High Sensitivity to Loss' associated with clearing due to its limited geographic distribution and a 'Very High' level of biodiversity concern. The NSW BioNet also states that *A. nullanulla* has a 'High Sensitivity to Gain' because of its ability to respond positively to management and colonise improved habitat. The threats faced by *A. nullanulla*, such as grazing and habitat degradation, can be readily controlled through exclusion fencing and habitat protection. Management actions such as these have a high likelihood of success in restoring and maintaining habitat suitability for *A. nullanulla* at biodiversity stewardship sites, provided the species' other habitat requirements (e.g. gypseous soils) are met.

There is uncertainty regarding the capacity of *A. nullanulla* to recolonise rehabilitated areas following mining operations. This is due to limited understanding of the factors that influence the species' distribution, such as soil, aspect, and competition. RZ Resources Limited, with support from Federation University and Biodiversity Australia, intend to propose and fund a PhD/Honours program to undertake a study on the rehabilitation of *A. nullanulla.* The proposed research will incorporate methods used in pre-existing conservation sites at Nulla and Nunya Stations, as well as rehabilitation trials undertaken by RZ Resources Limited geologist Phil Grant, to test whether *A. nullanulla* can be re-established during postmining rehabilitation efforts. The study will also monitor the species' abundance, extent and condition on the Subject Land to determine population trends and devise long-term management strategies that could be implemented in conservation plans for the species elsewhere throughout its range.

As part of the Biodiversity Management Plan for the proposed development, an *Austrostipa nullanulla* Adaptive Management Plan will be developed in conjunction with future research into the habitat, ecology and extent of *A. nullanulla* within the region. The ANAMP (Section 5.6.9) and associated research, will be developed to investigate responses of *A. nullanulla* to proposed mitigation, rehabilitation, revegetation and management measures to mitigate the proposed impacts to *A. nullanulla.*

To ensure the viability of rehabilitation efforts, a preliminary research phase will be undertaken prior to the commencement of mining activities. This will focus on:

- Collecting *A. nullanulla* seeds from the Subject Land,
- Conducting controlled propagation trials within designated restoration areas (gypseous soils), &
- Identifying optimal cultivation techniques to enhance post-mining revegetation success.

If successful and established, measures to prevent any subsequent impacts to the rehabilitated tussocks would include the establishment of exclusion fencing, feral pest control, and monitoring.

5.6.8 Additional Assessment criteria for impacts under the BAM 2020

Impact to *A. nullanulla* requires assessment under BAM 2020 - Section 9.12 Additional impact assessment provisions for threatened species at risk of an SAII:

> *Subsection 4. In relation to the impacts from the proposal on the species at risk of an SAII, the assessor must include data and information on:*
>
> *b. impact on geographic range (Principles 1 and 3) presented by:*
>
> *i. the area of the species' geographic range to be impacted by the proposal in hectares, and a percentage of the total AOO, or EOO within NSW.*
>
> The proposed development will directly impact 59.58 ha of confirmed habitat for *Austrostipa nullanulla* within the Development Footprint. This area represents 8.83% of the mapped AOO within NSW (675 ha) and 0.02% of the mapped EOO (~286,300 ha).
>
> The proposed impacted habitat occurs contiguous with a substantially larger retained area supporting the same subpopulation. Approximately 91.97% of the mapped AOO associated with this subpopulation will be retained outside the Development Footprint and will not be directly impacted. The proposed impact does not result in the contraction of the species broader EOO and does not isolate the remaining population from adjacent habitat. Retained habitat is of comparable vegetation structure and condition and remains connected to surrounding occurrences within the regional landscape.
>
> *ii. the impact on the subpopulation as either: all individuals will be impacted (subpopulation eliminated); OR impact will affect some individuals and habitat; OR impact will affect some habitat, but no individuals of the species will be directly impacted.*
>
> The proposed development will result in the removal of individuals and habitat but will not eliminate the subpopulation. Based on the proportion of occupied habitat within the Development Footprint, it is estimated that up to 8.83% of the AOO will be reduced. Retained habitat occurs with and directly adjacent to the impact area ensuring continued ecological function and reducing the risk of functional isolation.
>
> *iii. to determine if the persisting subpopulation that is fragmented will remain viable, estimate (based on published and unpublished sources such as scientific publications, technical reports, databases or documented field observations) the habitat area required to support the remaining population, and habitat available within dispersal distance, and distance over which genetic exchange can occur (e.g. seed dispersal) and pollination distance for the species.*
>
> Fragmentation is unlikely to occur as the retained areas remain connected within the local landscape and within dispersal distance in areas adjacent to the proposed Development Footprint and within the broader AOO and EOO. *A. nullanulla* is wind pollinated, facilitating pollen movement across open landscapes and over distances to maintain gene flow between adjacent patches. Seed dispersal occurs primarily thought

attachment of awned caryopses and faunal movement. Given the contiguity of retained habitat and proximity of nearby populations, opportunities for genetic exchange are expected to persist.

Dr Hunter's research (Hunter 2025) demonstrated that *A. nullanulla* persist across a broad range of soils and vegetation conditions than previously documented, including areas previously thought to be uninhabitable for *A. nullanulla.* This indicates ecological resilience and adaptive capacity within the regional landscape. Existing populations in the region demonstrate persistence across variable environmental conditions. There is no evidence of recruitment failure or population collapse in retained areas. The retained habitat and connectivity are considered sufficient to support ongoing population viability in the short and long term subject to implementation of the proposed management measures.

Dr Hunter's report is potentially the most in-depth body of research conducted within NSW for the species. The PhD and Honours programs which are planned with Federation University will further contribute published literature for the species, including studies of dispersal distance, genetic exchange and pollination for the species.

iv. to determine changes in threats affecting remaining subpopulations and habitat if the proposed impact proceeds, estimate changes in environmental factors including changes to fire regimes (frequency, severity); hydrology, pollutants; species interactions (increased competition and effects on pollinators or dispersal); fragmentation, increased edge effects, likelihood of disturbance; and disease, pathogens and parasites. Where these factors have been considered elsewhere in relation to the target species, the assessor may refer to the relevant sections of the BDAR or BCAR.

A monitoring program is proposed for the retained population of *A. nullanulla.* This monitoring program is planned to work concurrently with the Federation University research program and will be guided by strategic *A. nullanulla* Adaptive Management Plans (ANAMP), a Biodiversity Management Plan including Vegetation management and Fauna Management Plans. Potential increase in weed invasion, grazing pressure, or edge effects will be managed through targeted monitoring and control measures under the ANAMP. Vehicle and machinery hygiene protocols will be implemented to mitigate the risk of introducing soil-borne pathogens.

5.6.9 *Austrostipa nullanulla* Mitigation Measures

The proposed development intends to remove approximately 59.58 ha of suitable habitat for *Austrostipa nullanulla* throughout the Development Footprint. To satisfy the biodiversity related approval conditions, support compliance with applicable State and Commonwealth legislation, including the NSW *Biodiversity Conservation Act 2016*, Biodiversity Assessment Method 2020 (BAM), and, where relevant, the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) an *Austrostipa nullanulla* Adaptive Management Plan (ANAMP) will be developed to manage impacts to *A. nullanulla* during the various stages of the proposed development.

The ANAMP will be developed in conjunction with future research into the habitat, ecology and extent of *A. nullanulla* within the region. Future research will be funded by RZ Resources Limited and undertaken by the Federation University Masters and PhD student research programs. The ANAMP will incorporate findings from this research through annual reviews, and interim reviews at key research milestones, to ensure relevant conducted research is incorporated into the ANAMP, ensuring best practice

methodologies are utilised to manage and mitigate impacts to *A. nullanulla* within the Development Footprint.

The ANAMP will be developed to incorporate specific mitigation measures for each stage of the proposed development, including findings from the proposed research opportunities. The management actions identified in the ANAMP will include actions in line with the Priorities Action Statement (PAS) for *A. nullanulla*, research project findings and State and Federal Guidelines where applicable. Table 67: ANAMP Mitigation Measures located below 1 provides an overview of projected mitigation measures to be implemented prior to further research being undertaken. See also Table 68: *Austrostipa nullanulla* Adaptive Management Responses for the species specific *A.nullanulla* TARP.

The Subject Land is positioned between two known strongholds for this species within NSW, Nulla Station 18 km north-west of Lake Victoria in the state's far southwest; and Nanya Station 100 km due north of Lake Victoria. Surveys conducted in 2025 by Dr John Hunter and Phil Grant of the surrounding region, revealed that *A. nullanulla* was not only present within Nulla and Nanya Stations, but was also present at Warwick Station, Huntingfield, Bells Grove and Oakwood. Translocation of *A. nullanulla* present within the Development Footprint will be undertaken as a research opportunity to preserve existing populations within the region where avoidance cannot be undertaken. Individuals of *A. nullanulla* within the Development Footprint will be translocated to the aforementioned existing populations in the surrounding region.

Translocation can be undertaken through four main methodologies, Whole Plant Translocation (whole plant/soil core or whole turves), Seed Translocation (direct seeding), Seed Bank Translocation (scalping and whole turves) and Translocation of Nursery-Grown Plants (tubestock planting). Final methodology selection will be informed by research outcomes and pilot trials. Based on the ecology and requirements of *A. nullanulla* it is likely that direct seeding into areas of suitable habitat with existing *A. nullanulla*, translocation of whole turves (Figure 91 and Figure 92) and scalping with direct seeding of *A. nullanulla* would provide the highest rate of success for the rehabilitation and revegetation of *A. nullanulla*. Success criteria, monitoring intervals and corrective actions will be defined in the ANAMP and will include measurable performance indicators such as survival rates, recruitment, and establishment success over the monitoring period.

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Table 67: ANAMP Mitigation Measures

Mitigation Measures	Timing	Responsible Party	Priority	Risk of Failure
Pest Management Herbivores comprising both of pest and native species are present throughout the Development Footprint. Exclusion fencing is to be installed surrounding the known extent of the *A. nullanulla* to manage the impacts of herbivory to *A. nullanulla*. Ongoing monitoring should be completed annually to determine the effectiveness of control. Monthly inspections of exclusion fencing and exclusion areas for pest impacts should be undertaken to ensure exclusion fencing is maintained in good condition.	Initial and ongoing monitoring (Preconstruction, Construction, Operation and Rehabilitation)	Qualified pest management contractor, Construction Manager	High	Low
Research Building on the research conducted by Dr John Hunter and Phil Grant in 2025, further research projects to determine the extent of *A. nullanulla* within the region are proposed to be undertaken. In conjunction with this research and improving upon unpublished research conducted by Phil Grant, the development of a Restoration Research Plan, Translocation Research Plan or Revegetation Research Plan should be undertaken to investigate the species-specific and site-specific revegetation/rehabilitation methodologies and requirements. Research plans should include management actions i.e. pest management, watering, soil preparation etc. to ensure the scientific rigor of undertaken research is maintained throughout the life of the projects.	Initial and ongoing (Preconstruction and ongoing as required)	Project Team, Universities	High	Medium
Population Dynamics Ongoing monitoring of the current extent of *A. nullanulla* within the Development Footprint as shown in Figure 88: SAII Impacts for *Austrostipa nullanulla* and its surrounds to determine population dynamics. Where monitoring indicates that the population/area of extent within the Development Footprint additional exclusion fencing will be required to be installed throughout the Development Footprint.	Annually (Sep-Dec 4 weeks following a significant rainfall event)	Project Team, Site enviro, Universities	High	Low
Seed Harvesting Manual seed collection and storage of viable material is required to be undertaken to provide a viable seed bank for research and future rehabilitation and remediation of impacted areas. Machinery should not be utilised to harvest seed from *A. nullanulla* to reduce potential impacts to established *A. nullanulla.*	Annually (Dec-Jan) (Preconstruction and ongoing as required)	Project Team, Universities, Site Enviro	High	Med
ANAMP Review	Annually	Project Team, Universities, Site Enviro	Med	Low

Mitigation Measures	Timing	Responsible Party	Priority	Risk of Failure
The ANAMP is required to undergo an annual review to incorporate findings from conducted research, updated project planning requirements and timings.				
Translocation site selection *A. nullanulla* is known to persist at several location in NSW, including two locations within the Wentworth region; Nanya Station and Nulla Station, with additional local nearby populations identified in Dr John Hunters 2025 *A. nullanulla* research report (Hunter 2025). The required approval to undertake translocation of *A. nullanulla* to Nanya and Nulla stations has not yet been requested. RZ resources has recently purchased local properties containing *A. nullanulla* tussocks and habitat in the region and adjacent to the proposed mine site, increasing and securing translocation site options. See Figure 91 and Figure 92	Prior to translocation and construction with *A. nullanulla* species polygon (Preconstruction)	Project Team, Universities	Med	Low
Establishment and Management of Translocation sites Utilising the research undertaken in 2025 and further research to determine the extent of *A. nullanulla* within the region. Site selection will be determined by the ability to create semi-controlled natural environment where suitable habitat exists, and the management of pests, weeds and availability of water can be controlled.	Prior to translocation and construction with *A. nullanulla* species polygon (Preconstruction)	Project Team, Universities, Site Enviro	High	Low
Translocation Prior to the commencement of construction works within the identified *A. nullanulla* species polygon (Figure 88: SAII Impacts for *Austrostipa nullanulla*), translocation of the existing and newly germinated individuals of *A. nullanulla* should be translocated utilising a suitable method outlined in the NSW Translocation Operation Policy (NSW DPHIE 2019) and the Guidelines for the Translocation of Threatened Plants in Australia. (Australian Network for Plant Conservation 2018). Translocation should be undertaken during the growth period of *A. nullanulla* and immediately prior to forecasted rain to reduce watering requirements. See Figure 91 and Figure 92	Prior to construction of areas containing *A. nullanulla* Sep-Dec (Prior to rainfall) (Preconstruction)	Project Team, Universities, Site Enviro	High	Med
Translocation monitoring Monitoring of translocated individuals of *A. nullanulla* is required to be undertaken on a regular basis to monitor responses to initial removal, placement and longevity of translocation. Monitoring should be undertaken weekly for the first 8 weeks following translocation, then monthly for 6 months, then annually.	Weekly (8 weeks following translocations) Monthly (8 months following translocation) Annually (10 months following translocation) (Construction and operation)	Project Team, Universities, Site Enviro	High	Low

Mitigation Measures	Timing	Responsible Party	Priority	Risk of Failure
Preservation of the natural seed bank The excavation and stockpiling of soils often leads to the degradation of soil structure and composition. *A. nullanulla* relies on specific windblown gypsum to provide suitable soil conditions for germination and growth. To preserve the natural seed bank and site-specific soil conditions (i.e. Gypseous soils), excavation of soils across the Development Footprint particularly within the *A. nullanulla* species polygon soil scalping is recommended. Soil scalping is a method of soil preservation utilised in revegetation where elevated nutrients (i.e. Nitrogen and Phosphorus) and high weed seed levels pose a threat to the success of revegetation. Soil Scalping is utilised in this situation to remove the top 100-150 mm (max 200 mm) preserving the natural seed bank and A-horizon nutrients for research into the revegetation and rehabilitation of *A. nullanulla* potential habitat. It is recommended that scalping be undertaken from 0-100 mm and 100-200 mm to further preserve the soil structure and avoid mixing of soil layers. Stockpiles of soils should be placed on and covered by a non-permeable material to reduce the potential of erosion and leaching of valuable nutrients. Where these soils are to be utilised for revegetation, remediation or research, soils should be placed in the reverse order of extraction to ensure maximum retention of nutrient levels and soil structure. Soil hygiene, disease and pathogen control measures are required to be considered when translocating soils off site.	Prior to construction of areas containing *A. nullanulla* (Preconstruction and construction)	Project Team, Universities, Site Enviro, Machinery Operators	High	Low

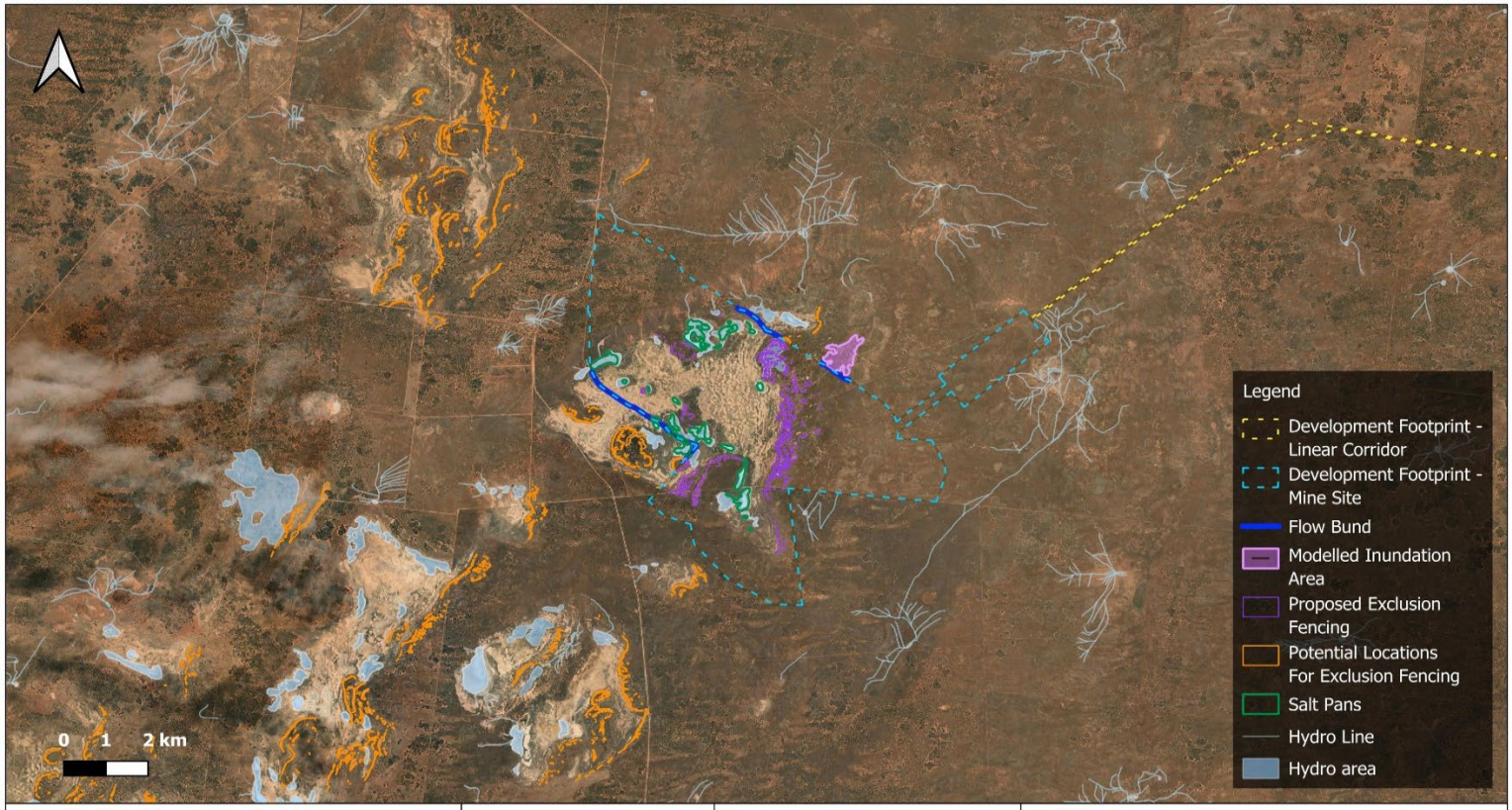
Table 68: *Austrostipa nullanulla* Adaptive Management Responses

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
Pest management	• To be collected via surveys.	Seasonal rainfall Seasonal pest population dynamics • Seasonal changes in resources	PIR camera survey Trapping Ground shooting Exclusion fence monitoring Exclusion fence installation • Monitoring for pest impacts within exclusion area.	Impacts from herbivorous pest species observed within exclusion areas Damaged exclusion fencing Identification of movement of pest species into the exclusion area. Identification of pest impacts within proposed translocation sites • Lack of intact and good condition exclusion fencing at translocation sites	Increased control measures Exclusion fence inspection Exclusion fence repair • Installation of Exclusion fences at translocation sites (See Figure 91 and Figure 92)	Pest population monitoring results Pest population control results • Exclusion fence monitoring	• Results of pest management will inform the appropriate control measures required for future control of pests.
Population dynamics	• Baseline survey conducted as part of BDAR to map species polygon of *A. nullanulla*	• Seasonal rainfall	• Targeted threatened flora surveys (Grasses)	• Increase in area of extent	• Installation of additional exclusion fencing around new individuals	Targeted survey results • GIS spatial mapping of individuals	• Results of ongoing monitoring will indicate the requirement for further exclusion and mitigation measures to be implemented
Soil testing	• To be collected within the *A. nullanulla* species polygon prior to excavation and	• Seasonal rainfall	• Soil testing	• Occurrence of soil pathogens/diseases within soils proposed for scalping.	• Translocation to be undertaken on Subject Land or within close	Soil test results of soils to be scraped • Soil test result of proposed	• Soil testing will determine the presence of soil pathogens and diseases. If scalped soils

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
	construction works commencing within the species polygon.				proximity to the Subject Land	translocation sites	contain pathogens or diseases that are not present at offsite translocation areas, offsite translocation should not be conducted.
Whole Plant Translocation	• Total number of plants translocated	Seasonal rainfall • Plant health	• Total count	High proportion of translocation failure • Below average rainfall	Research Plan to determine corrective measures Further seed collection from known populations Soil testing • Increased watering schedule	• Ongoing monitoring of cover and abundance	• Research will determine the effectiveness of various whole plant translocation methodologies (i.e. various tubestock sizes, whole plant core vs. whole turves)
Direct seeding	• Baseline data of existing cover and abundance of all species within direct seeding areas is required to monitor the establishment and germination of *A. nullanulla*	Seasonal rainfall and temperature Seed viability • Soil nutrients	• Total cover and abundance counts of *A. nullanulla*	No germination of *A. nullanulla* from direct seeding Below average rainfall • Unsuccessful seed harvesting	Viability and germination testing of harvested seed Increased watering schedule Soil testing Additional seed harvesting from known populations	Ongoing monitoring of cover and abundance. • Successful seed harvesting.	• Research will determine the effectiveness of various direct seeding methodologies and management techniques.

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
					• Watering of established populations of *A. nullanulla*		
Seed Bank Translocation	• Baseline data is not required as translocated soils will not contain established *A. nullanulla*. translocated soils will be void of vegetation until watering/rainfall spurs germination	Seasonal Rainfall and temperature Operator skills Machinery capabilities	• Total cover and abundance of all regenerating species	No germination of *A. nullanulla* or other species • Below average rainfall	Viability and germination testing of seed bank in controlled environment (i.e.. greenhouse) Soil testing Increased watering schedule • Additional direct seeding of *A. nullanulla*	• Ongoing monitoring of cover and abundance of all germination	• Research will determine the effectiveness of seedbank translocation for *A. nullanulla*

Figure 91: *Austrostipa nullanulla* translocation mitigation management measure locations within the Development Footprint Mine site area and destination sites in the surrounding properties



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: A.nullanulla Mitigation Measures - Mine Site	Biodiversity AUSTRALIA	
	Drawn by: NE	Location: Warwick Station		
	Date: February 2026	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:120000

Figure 92: *Austrostipa nullanulla* Adaptive Management Plan showing mitigation management measures within the Development Footprint Mine Site area and the broader region

5.7 Ecosystem Credits

The credit requirement details for Vegetation Zones impacted by the development are included in the Table 69 - Mine Site and Table 70 Linear Corridor below.

5.8 Species Credits

Credit requirement for the species credits species that will be impacted by the development are shown in Table 71 Mine Site. The Linear Corridor does not contain credit requirements for species credit species.

Table 69: Ecosystem credits for plant communities types (PCT), ecological communities & threatened species habitat – Mine Site

Zone	Vegetation zone name	TEC name	Current VI score	Change in VI	Area (ha)	Sensitivity to loss (Justification)	Species sensitivity to gain class	Biodiversity risk weighting	Ecosystem credits
58 Black Oak - Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion									
1	MS-VZ#1-58_Mod	Not a TEC	53.8	53.8	189.82	PCT Cleared - 50%	High	1.8	4,470
								Subtotal	**4,470**
64 Samphire - Water Weed - Sea-Heath shrubland saline wetland of depressions of the arid and semi-arid (warm) zones									
2	MS-VZ#2-64_Mod	Not a TEC	49.9	49.9	641.45	PCT Cleared - 0%	High	1.50	12,011
								Subtotal	**12,011**
152 Lunette chenopod shrubland mainly of the Murray Darling Depression Bioregion									
3	MS-VZ#3-152_Mod	Not a TEC	49.8	49.8	249.82	PCT Cleared - 27%	High	1.50	4,666
								Subtotal	**4,666**
154 Pearl Bluebush low open shrubland of the arid and semi-arid plains									
4	MS-VZ#4-154_Mod	Not a TEC	34.2	34.2	1564.73	PCT Cleared - 43%	High	1.50	20,053
								Subtotal	**20,053**
157 Bladder Saltbush shrubland on alluvial plains in the semi-arid (warm) zone including Riverina Bioregion									
5	MS-VZ#5-157_Mod	Not a TEC	70	70	492.12	PCT Cleared - 60%	High	1.8	16,592
6	MS-VZ#6-157_High	Not a TEC	77.1	77.1	3.58	PCT Cleared - 60%	High	1.75	110
								Subtotal	**16,702**
170 Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones									
7	MS-VZ#7-170_Mod	Not a TEC	26.1	26.1	1.98	PCT Cleared - 41%	High	1.50	19
								Subtotal	**19**
171 Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion									
8	MS-VZ#8-171_Mod	Not a TEC	63	63	5.57	PCT Cleared - 19%	High	1.50	132
								Subtotal	**132**
215 Woollybutt Grass open grassland on red earths of the inland plains									
9	MS-VZ#9-215_Mod	Not a TEC	20.1	20.1	5.07	PCT Cleared - 20%	High	1.50	38
10	MS-VZ#10-215_High	Not a TEC	31.6	31.6	0.82	PCT Cleared - 20%	High	1.50	10

Zone	Vegetation zone name	TEC name	Current VI score	Change in VI	Area (ha)	Sensitivity to loss (Justification)	Species sensitivity to gain class	Biodiversity risk weighting	Ecosystem credits
								Subtotal	**48**
221 Black Oak - Pearl Bluebush open woodland of the sandplains of the semi-arid warm and arid climate zones									
11	MS-VZ#11-221_Mod	Not a TEC	57.3	57.3	391.85	PCT Cleared - 30%	High	1.50	8,423
12	MS-VZ#12-221_High	Not a TEC	62	62	3.12	PCT Cleared - 30%	High	1.50	72
								Subtotal	**8,495**
253 Gypseous shrubland on rises in the semi-arid and arid plains									
13	MS-VZ#13-253_Mod	Not a TEC	54.3	54.3	140.14	PCT Cleared - 30%	High	1.50	2,852
								Subtotal	**2,852**
254 Black Oak - Bladder Saltbush on light clays in the arid zone									
14	MS-VZ#14-254_Mod	Not a TEC	60.5	60.5	1.16	PCT Cleared - 10%	High	1.50	26
								Subtotal	**26**
								Total	**69,474**

Table 70: Ecosystem credits for plant communities types (PCT), ecological communities & threatened species habitat – Linear Corridor

Zone	Vegetation zone name	TEC name	Current VI score	Change in VI	Area (ha)	Sensitivity to loss (Justification)	Species sensitivity to gain class	Biodiversity risk weighting	Ecosystem credits
28 White Cypress Pine open woodland of sand plains, prior streams and dunes mainly of the semi-arid (warm) climate zone									
1	LC-VZ#1-28_Mod	Sandhill Pine Woodland in the Riverina, Murray-Darling Depression and NSW South Western Slopes bioregions	54.6	54.6	0.77	Biodiversity Conservation Act listing status	High	2.00	21
								Subtotal	**21**
58 Black Oak - Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion									
2	LC-VZ#2-58_Mod	Not a TEC	53.8	53.8	48.82	PCT Cleared - 50%	High	1.8	1,150
								Subtotal	**1,150**
143 Narrow-leaved Hopbush - Scrub Turpentine - Senna shrubland on semi-arid and arid sandplains and dunes.									
3	LC-VZ#3-143_Mod	Not a TEC	80.2	80.2	17.2	PCT Cleared - 30%	High	1.50	517

Zone	Vegetation zone name	TEC name	Current VI score	Change in VI	Area (ha)	Sensitivity to loss (Justification)	Species sensitivity to gain class	Biodiversity risk weighting	Ecosystem credits
								Subtotal	**517**
154 Pearl Bluebush low open shrubland of the arid and semi-arid plains									
4	LC-VZ#4-154_Mod	Not a TEC	34.2	34.2	102.09	PCT Cleared - 43%	High	1.50	1,308
								Subtotal	**1,308**
170 Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones									
5	LC-VZ#5-170_Mod	Not a TEC	26.1	26.1	13.6	PCT Cleared - 41%	High	1.50	133
								Subtotal	**133**
171 Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion									
6	LC-VZ#6-171_Mod	Not a TEC	63	63	6.56	PCT Cleared - 19%	High	1.50	155
								Subtotal	**155**
								Total	**3,284**

The full Biodiversity Credit Report is provided in Appendix A-4.

Table 71: Species credits for threatened species – Mine Site

Vegetation zone name	Habitat condition (VI)	Change in habitat condition	Area (ha)	Sensitivity to loss (Justification)	Sensitivity to gain (Justification)	BC Act Listing status	EPBC Act listing status	Potential SAII	Species credits
Austrostipa nullanulla / A spear-grass (Flora)									
58_Mod	53.8	53.8	3.3	Geographic Distribution	Ability to colonise improved habitat	Endangered	Not Listed	True	133
64_Mod	49.9	49.9	0.95	Geographic Distribution	Ability to colonise improved habitat	Endangered	Not Listed	True	36
152_Mod	49.8	49.8	2.8	Geographic Distribution	Ability to colonise improved habitat	Endangered	Not Listed	True	104
154_Mod	34.2	34.2	6.9	Geographic Distribution	Ability to colonise improved habitat	Endangered	Not Listed	True	177
157_Mod	77.1	77.1	14	Geographic Distribution	Ability to colonise improved habitat	Endangered	Not Listed	True	810
253_Low	54.3	54.3	30.8	Geographic Distribution	Ability to colonise improved habitat	Endangered	Not Listed	True	1255
254_Mod	60.5	60.5	0.83	Geographic Distribution	Ability to colonise improved habitat	Endangered	Not Listed	True	38
								Subtotal	**2553**

*The Burrowing Frog (*Neobatrachus Pictus*) is currently excluded as per the justification provided within the expert report (Ecological Horizons 2025) (Appendix A-7) however this species is subject to further assessment. A compliant survey would require appropriate flooding conditions, which to date have not eventuated. Song Meter acoustic recorders have been deployed since May 2025 in preparation for suitable rainfall to occur within the Development Footprint.

Little Eagle (*Hieraaetus morphnoides*)

A Little Eagle was recorded on 17 December 2024 (Photograph 17) by ecologists during the day at a homestead located 3.5 km north of the Mine Site Development Footprint, and just 6 km north of a number of suitably large sized raptor nests within mapped PCTs associated with the threatened bird (as per the NSW TBDC) inside the Mine Site Development Footprint. Subsequently, to help guide survey design, a potential species polygon was created, in accordance with the BAM guidelines, which included each of the eight (8) large raptor nest trees and the surrounding vegetation which includes a 200 m buffer. The potential species polygon covered an area of 163.23 ha across all 8 associated PCTs 58, 64, 152, 157, 154, 170, 221 and 253. However, the Little Eagle has been excluded after surveys conducted from 6-11 August 2025 failed to detect the species over 6 days of surveys, with 2 replicates conducted in each transect location. The Little Eagle survey effort is shown in Figure 59 - Figure 61.

The Little Eagle is a dual credit species – both ecosystem and species credit species, but not a listed SAII.

Nulla Nulla Grass *(Austrostipa nullanulla*) – is a species credit species

Nulla Nulla Grass is known to occur on the edges, crests, slopes and spurs of salt lakes, particularly where there is exposed Gypsum or the existing soils are derived from Gypsum often called 'flour gypsum' (OEH 2023, TSSC 2010, Pobke, 2007). Within NSW, this species is primarily restricted to gypseous lunettes and Copi rises, while at Nulla Station it grows on the margins of relict lakes (OEH 2023).

Gypsum derived soils are present throughout the Development Footprint as depicted in Photograph 18. These areas were surveyed by a Principal Botanist and other suitably qualified personnel to determine the presence of *A. nullanulla.* This survey accurately mapped the extent of the occurrence on foot with handheld GPS devices using parallel field traverses in accordance with the Surveying threatened plants and their habitats - NSW survey guide for the BAM.

Several patches of *A. nullanulla* were located on the fringing rises and banks of the old lake beds within the Mine Site Development Footprint (Photograph 18). These patches demonstrated the species reliance on gypsum which was illustrated by the reduction of *A. nullanulla* and the increase in other competitive species where the gypseous soils reduced. These gypseous soils provided a natural buffer between the identified specimens of *A. nullanulla* and surrounding vegetation. As per the expert advice of Dr Hunter, the mapping of habitat was conducted by visual interpretation of exposed gypsum in reference to locations visited on foot and sampled via plots using ESRI World Imagery (WGS84 - Vantor, Earthstar Geographics, and the GIS User Community) within ArcGIS pro. Caveats to mapping include both over and under-mapping polygons depending on the nature of the gypsum deposits and the level of surface exposure.

The resulting polygons determined a combined area of the patches totalling 59.58 ha, which included seven (7) mapped PCTs: 58, 64, 152, 154, 157, 253 and 254. The mapped patches were located on gypseous rises in the centre of the Mine Site Development Footprint as show in Figure 93.

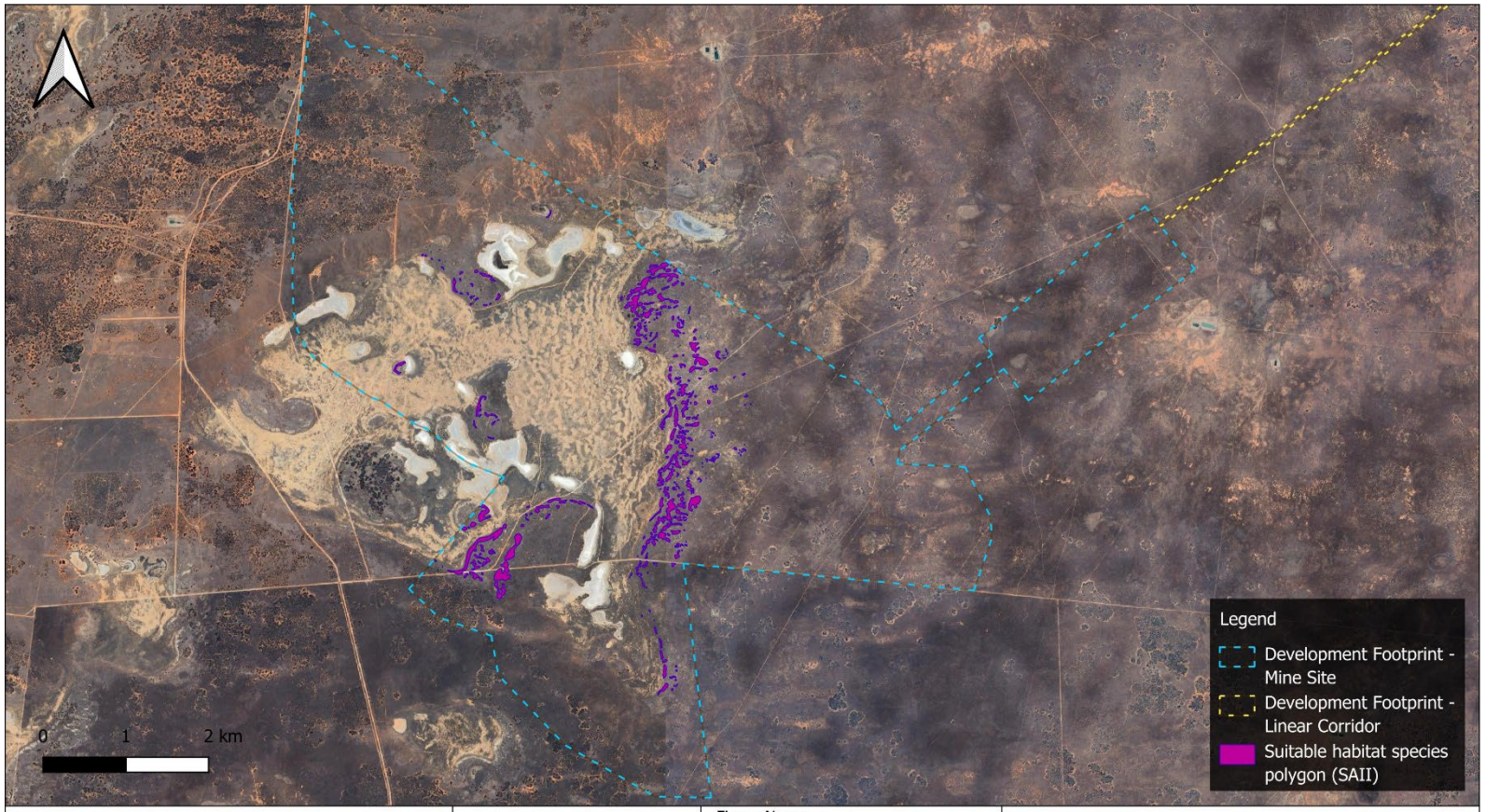
Painted Burrowing Frog (*Neobatrachus pictus*)

The Painted Burrowing Frog is known to occur within South Australia, Western Victoria and at two locations within NSW. Distribution within NSW is likely to be underestimated based on the limited access to suitable habitat following required rain events (OEH 2025). This species has the potential to occur within open grassland, mallee, woodland farmland and cleared areas found in flooded areas after sufficient rain events.

Habitat surveys were conducted for Painted Burrowing Frog in May 2025, by suitably qualified ecologists to determine areas within the Development Footprints in which this species may occur (Figure 66 through

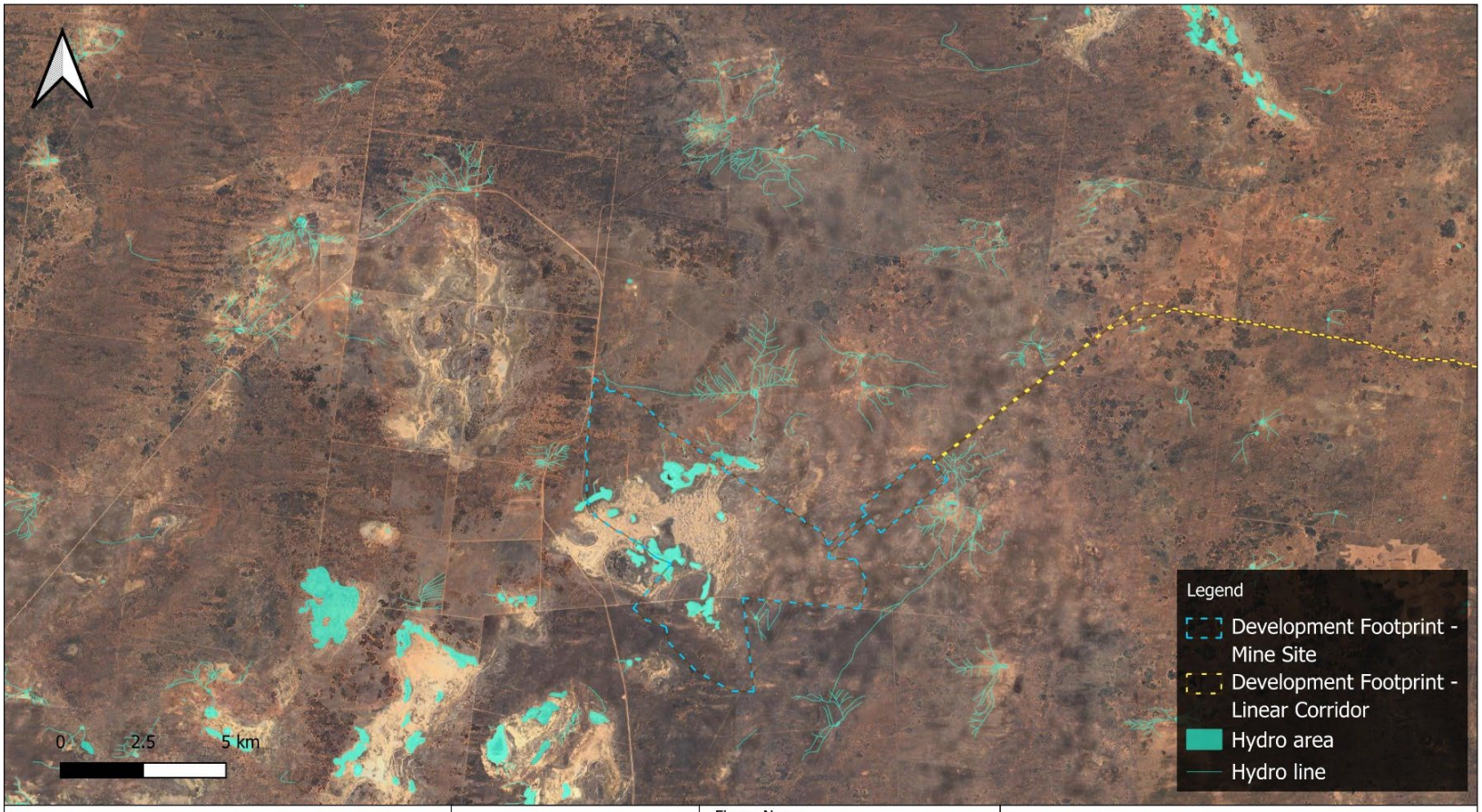
Figure 68). Following the provision of a preliminary assessment report (GHD 2025) and suitable breeding habitat mapping an expert report was sought from Dr John Read In accordance with Box 3 of the Biodiversity Assessment Method (DPIE 2020), to address the potential occurrence of *Neobatrachus pictus* within the Development Footprints. The Expert report provided by Dr John Read (SF23/131995) (A-6), identified that the Development Footprint is highly unlikely to provide important habitat for *Neobatrachus pictus.* The species is unlikely to occur within the Development Footprint due to the scarcity of nearby records, presence of extensive tracts of unsuitable habitat and presence of predatory animals. As such, the Painted Burrowing Frog has been excluded as a species credit species within the BAM-C. Painted Burrowing Frog (*Neobatrachus pictus*) is a species credit species but is not listed as a SAII.

Areas requiring offsets and no offsetting are shown in Figure 95, Figure 96, Figure 97 and Figure 98. The full credit report is provided in Appendix A-4 and the full Expert Report in Appendix A-7.



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Species Polygon - Austrostipa nullanulla - Development Footporint - Mine site	Biodiversity AUSTRALIA
	Drawn by: NE	Location: Warwick Station	
	Date: November 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:60000

Figure 93: Species polygon – *Austrostipa nullanulla* - Development Footprint - Mine Site.

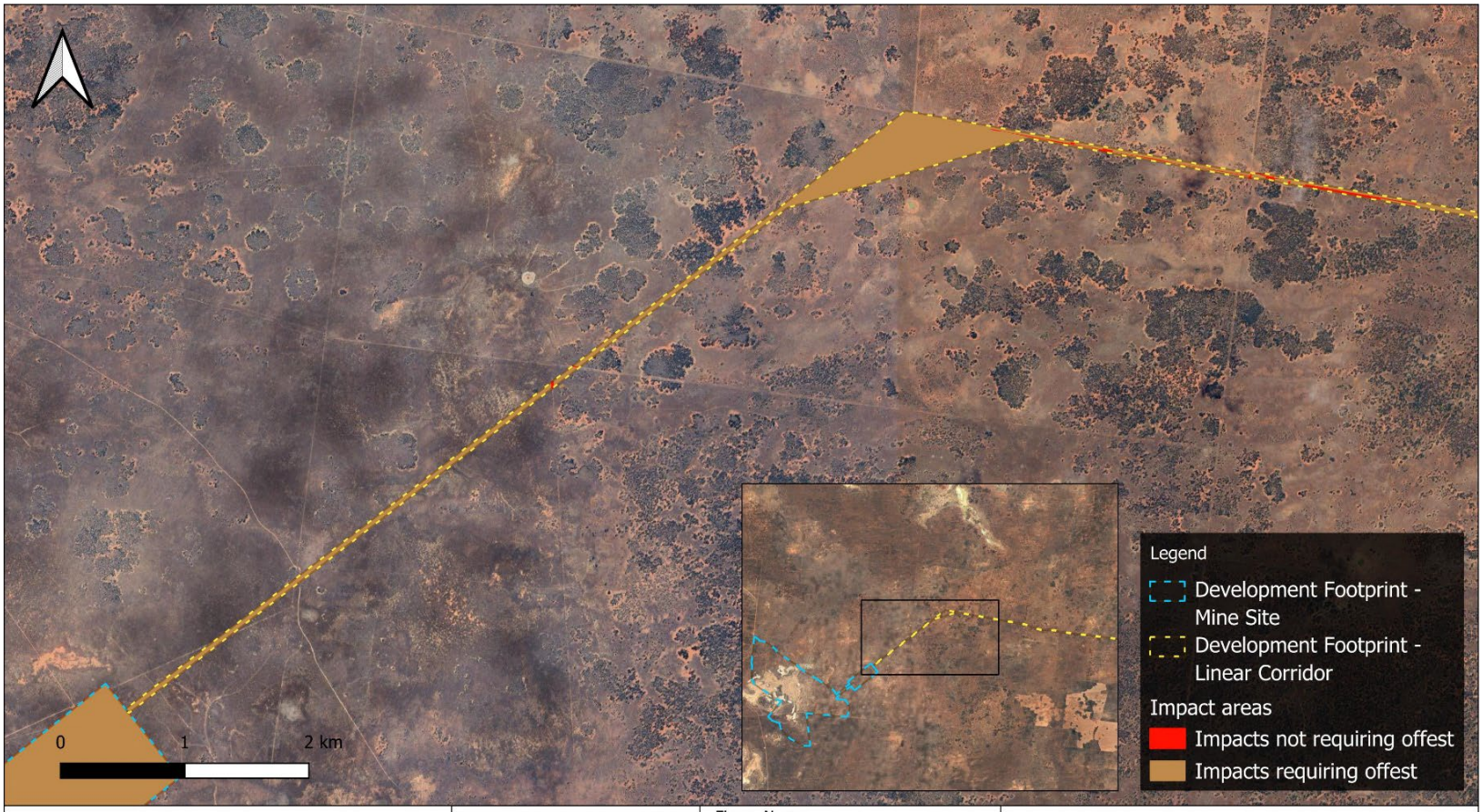


This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Surface water catchments including Western (excluded) and Eastern Salt Pans	Biodiversity AUSTRALIA	
	Drawn by: NE	Location: Warwick Station		
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:150000

Figure 94: Surface water catchments including Western (excluded) and Eastern Salt Pans

This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Areas requiring offset, areas not requiring offset - Development Footprint - Mine Site	Biodiversity AUSTRALIA	
	Drawn by: NE	Location: Warwick Station		
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:65000

Figure 95: Areas requiring offset, areas not requiring offset - Development Footprint - Mine Site



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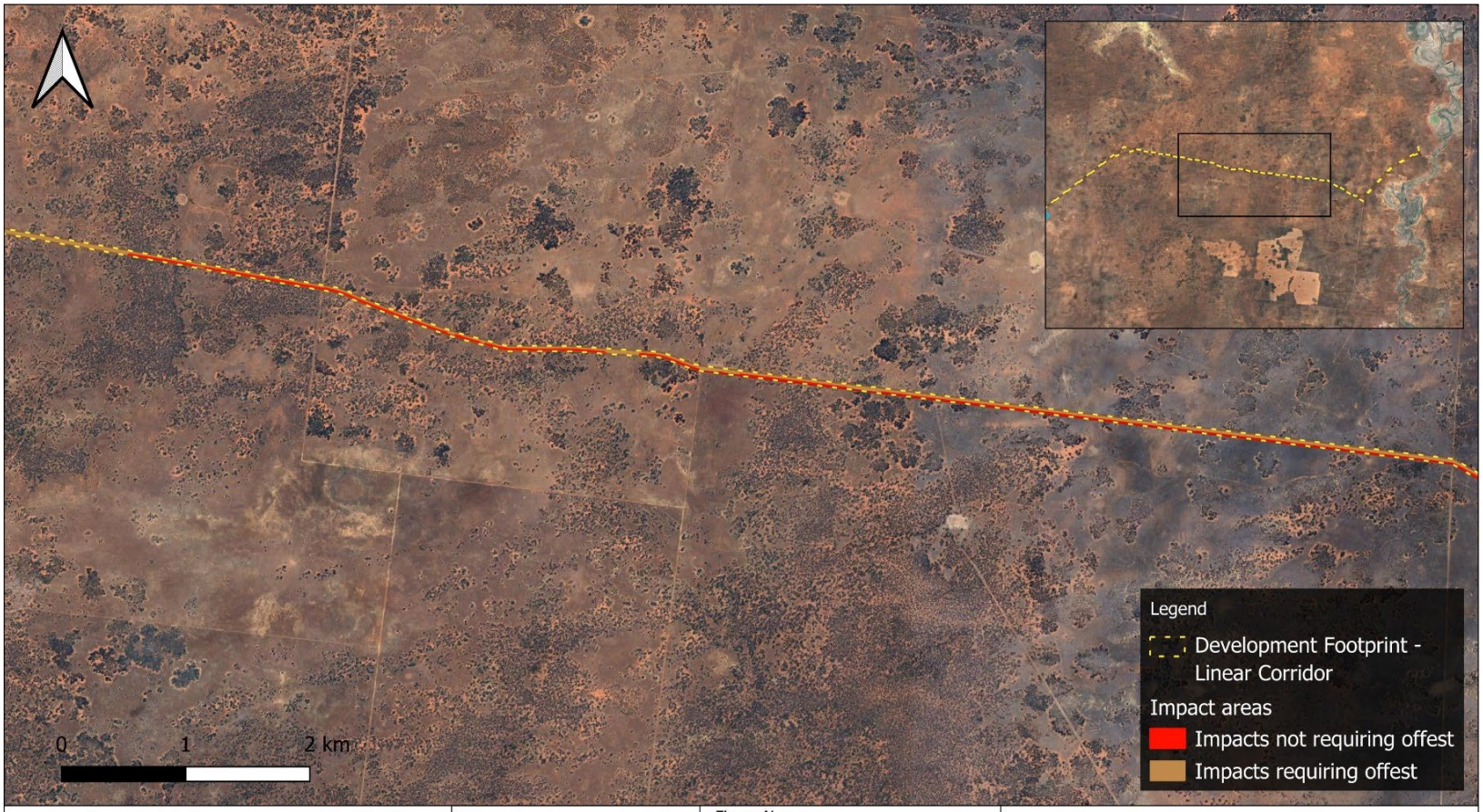
Project Manager: NC	Figure Name: Areas requiring offset, areas not requiring offset - Development Footprint - Linear Corridor 1/3	Biodiversity AUSTRALIA	
Drawn by: NE	Location: Warwick Station		
Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:40000

Figure 96: Areas requiring offset, areas not requiring offset - Development Footprint – Linear Corridor 1 / 3



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Areas requiring offset, areas not requiring offset - Development Footprint - Linear Corridor 2/3	Biodiversity AUSTRALIA
	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:40000

Figure 97: Areas requiring offset, areas not requiring offset - Development Footprint – Linear Corridor 2 / 3

This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.

Project Manager: NC	Figure Name: Areas requiring offset, areas not requiring offset - Development Footprint - Linear Corridor 3/3	Biodiversity AUSTRALIA	
Drawn by: NE	Location: Warwick Station		
Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:40000

Figure 98: Areas requiring offset, areas not requiring offset - Development Footprint – Linear Corridor 3 / 3

6. Conclusion

Biodiversity Australia (Bio Aus) was requested to prepare a Biodiversity Development Assessment Report (BDAR) for the proposed Copi Mineral Sands Project (The Project). This is for an open-cut mineral sands mine for the extraction and processing of heavy mineral ore to produce a heavy mineral concentrate for R.W Corkery & Co Pty. Ltd (RWC) on behalf of RZ Resources Limited (the "Applicant"). The proposed mine and its associated infrastructure would be located within an area referred to as the "Mine Site," located about 75 kilometres northwest of Wentworth, New South Wales.

The Project is classified as a State Significant Development (SSD) under Clause 5(1)(a) of Schedule 1 of the State Environmental Planning Policy (Planning Systems) 2021 because The Project is for the purpose of 'mineral sands mining'. The Development Application will therefore require assessment under Division 4.7 of Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). In accordance with Section 4.5(a), the consent authority for The Project will be the Minister for Planning or their delegate.

This BDAR was prepared as a requirement of the Planning Secretary's Environmental Assessment Requirements (SEARs) (SSD-41294067). The Project also triggered the Biodiversity Offset Scheme (BOS) Entry Threshold as it would exceed the area clearing threshold and impact on areas mapped as sensitive on the Biodiversity Values Mapping issued by the NSW State Government.

An Environmental Impact Statement (EIS) accompanied by a BDAR undertaken by EnviroKey Pty Ltd, was submitted to the then Department of Climate Change, Energy, the Environment and Water (DCCEEW) in May 2024. Since the public exhibition of this BDAR, the applicant has amended The Project to reduce the Development Footprint. Additionally, in response to feedback received from the Biodiversity, Conservation and Science Division (BCS), the Applicant engaged Bio Aus to undertake a revised BDAR for The Project. As a result, this report presents an updated assessment inclusive of The Project amendments, and matters raised by the BCS.

In accordance with the Biodiversity Assessment Method 2020 (BAM 2020), a parent case (00052608) was established in the New South Wales Biodiversity Offsets and Agreement Management System (BOAMS). The parent case was then split into two related child cases in the Biodiversity Assessment Methodology Credit Calculator (BAM-C). The Development Footprint – Mine Site and associated infrastructure areas were assigned to a Site-based development (related case 00052609) and the Development Footprint – Linear Corridor and access road were assigned to a Linear development (related case 00055120).

A separate Commonwealth EPBC Act referral has been undertaken and is currently under review. The proponent has not sought assessment under the bilateral agreement.

This BDAR was twice previously submitted and has undergone two rounds of requests for further information (RFI-96105708). Initially 13 issues were raised by the Conservation Programs, Heritage and Regulation Group. All issues raised by CPHR were addressed and the responses incorporated into the revised BDAR Rev 5.0. Subsequently, after resubmission, five issues were raised by Conservation Planning and Assessment (CPA). Biodiversity Australia's responses to the five issues raised by CPA have now been addressed within this BDAR and can also be found in the CPA RFI response letter located in Appendix A-1.

Field surveys within the Assessment Area have been ongoing since December 2014. To ensure data remains within the 5-year lifespan required by the BAM 2020, only field survey data, including Vegetation Integrity Plots, from June 2020 onwards, were used for the BDAR.

Thirteen Plant Community Types (PCTs) are present within the Development Footprint/s in which all project-related disturbance within the Mine Site and Linear Corridor would occur. These include:

- PCT 28: White Cypress Pine open woodland of sand plains, prior streams and dunes mainly of the semi-arid (warm) climate zone,
- PCT 58: Black Oak – Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion,
- PCT 64: Samphire – Water Weed – Sea Heath shrubland saline wetland of depressions of the arid and semi-arid (warm zones),
- PCT 143: Narrow-leafed Hopbush – Scrub Turpentine – Senna shrubland on semi-arid and arid sandplains and dunes,
- PCT 152: Lunette chenopod shrubland mainly of the Murray Darling Depression Bioregion,
- PCT 154: Pearl Bluebush low open shrubland of the arid and semi-arid plains,
- PCT 157: Bladder Saltbush shrubland on alluvial plains in the semi-arid (warm) zone including Riverina Bioregion,
- PCT 170: Chenopod sandplain mallee woodland/shrubland,
- PCT 171: Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion,
- PCT 215: Woollybutt Grass open grassland on red earths of the inland plains,
- PCT 221: Black Oak – Pearl Bluebush open woodland of the sandplains of the semi-arid warm and arid climate zones,
- PCT 253: Gypseous shrubland on rises in the semi-arid and arid plains, &
- PCT 254: Black Oak - Bladder Saltbush on light clays in the arid zone.

Field surveys conducted by EnviroKey since June 2020 and by Bio Aus since November 2024 have identified the following ecosystem credit species within the Development Footprint/s:

- Southern Whiteface (Aphelocephala leucopsis),
- Dusky Woodswallow (Artamus cyanopterus),
- Pied Honeyeater (Certhionyx variegatus),
- Little Pied Bat (Chalinolobus picatus),
- Chestnut Quail-thrush (Cinclosoma castanotum),
- Varied Sittella (Daphoenositta chrysoptera),
- Marble-faced Delma (Delma australis),
- White-fronted Chat (Epthianura albifrons),
- Little Eagle (Hieraaetus morphnoides) (foraging only),
- Pink Cockatoo* (Lophochroa leadbeateri) (foraging only),
- South-Eastern-Hooded Robin (Melanodryas cucullata),
- Bolam's Mouse (Pseudomys bolami),
- Ringed Brown Snake (Pseudonaja modesta),
- Redthroat (Pyrrholaemus brunneus),

- Jewelled Gecko (Strophurus elderi), &
- Inland Forest Bat (Vespadelus baverstocki).

The following Species Credit Species were confirmed as occurring within the Development Footprint/s:

- Nulla Nulla Grass (Austrostipa nullanulla) (Mine Site area only). This species is also a Serious and Irreversible Impact (SAII) entity.

Targeted surveys were conducted in accordance with BAM 2020 during the appropriate survey period, using approved survey methods for each of the candidate species. No evidence was found to confirm the presence of these candidate species. The species include:

Flora

- Harrow Wattle (Acacia acanthoclada)
- Purple-wood Wattle (Acacia carneorum),
- Atriplex infrequens,
- Austrostipa metatoris,
- Mossgiel Daisy (Brachyscome papillosa),
- Burr-daisy (Calotis moorei),
- Bladder Senna **(**Colutea arborescens),
- Bluebush Daisy (Cratystylis conocephala),
- Desert Hopbush (Dodonaea stenozyga),
- Fleshy Minuria (Kippistia suaedifolia),
- Pink Velvet Bush (Lasiopetalum behrii),
- Winged Peppercress (Lepidium monoplocoides),
- Button Immortelle (Leptorhynchos waitzia),
- Thyme Rice Flower (Pimelea serpyllifolia subsp. serpyllifolia),
- Cobar Greenhood Orchid (Pterostylis cobarensis),
- Bitter Quandong (Santalum murrayanum),
- Silky Swainson-pea (Swainsona sericea), &
- Yellow Swainson-pea (Swainsona pyrophila).

Fauna

- Bush Stone-curlew (*Burhinus grallarius*),
- Crowned Gecko (*Lucasium stenodactylum*),
- Desert Mouse (*Pseudomys desertor*),
- Southern Myotis (*Myotis macropus*),
- Pink Cockatoo* (*Lophochroa leadbeateri*),

- Red-lored Whistler (*Pachycephala rufogularis*),
- Striated Grass Wren (Murray Mallee) (*Amytornis striatus howei*),
- Southern Hairy-nosed Wombat (*Lasiorhinus latifronsl*),
- Square-tailed Kite (*Lophoictinia isura*),
- Australian Bustard (*Ardeotis australis*),
- White-bellied Sea-Eagle (*Haliaeetus leucogaster*),
- Black-eared Miner (*Manorina melanotis*),
- Black-breasted Buzzard (*Hamirostra melanosternon*),
- Little Eagle (*Hieraaetus morphnoides)***,
- Masked Owl (*Tyto novaehollandiae*), &
- Painted Burrowing Frog (*Neobatrachus Pictus*)***.

*The Pink Cockatoo is a dual credit species; ecosystem credits for foraging habitat, and species credit species for breeding habitat. Targeted surveys were undertaken in accordance with the survey guidelines during the breeding season targeting suitable hollow bearing trees. It was recorded in and around the Development Footprint - Mine Site and Development Footprint - Linear Corridor during targeted and opportunistic surveys within the breeding season August to December. However, no evidence of breeding (activity or active breeding habitat) was observed or recorded in either area.

** The Little Eagle is also a dual credit species; ecosystem credits for foraging habitat, and species credit species for breeding habitat. The species was recorded outside of the Development Footprint – Mine Site and Development Footprint Linear Corridor, however no individuals were observed or recorded within either area. A BAM compliant survey consisting of 20 minute raptor survey points along transects through suitable elevated wooded habitat and at Large Raptor nests were conducted on two consecutive days during the species survey window in August 2025, however no evidence of breeding was found.

*** The Painted Burrowing Frog is a species credit species. It has been recorded within the region of the Development Footprint – Mine Sites and Development Footprint – Linear Corridor. Very limited suitable breeding habitat occurs within the Development Footprints. Habitat surveys were undertaken in May 2025, to assess the quality and extent of the potential aquatic habitat. Surveys for the Painted Burrowing Frog require a minimum of 50 millimetres of rain within a 24 hr period, no such event has occurred during the assessment period. In accordance with Box 3 of the BAM (DPIE 2020), an expert report was provided. The expert report concluded that there is a low likelihood of occurrence for the frog due to factors including widespread saline wetlands which are unsuitable for *N. pictus,* making the Copi Mineral Sands site highly unlikely to be of significance for *N. pictus* (Ecological Horizons, 2025).

Painted Burrowing Frogs are primarily threatened by habitat loss and fragmentation caused by over-grazing and the decline of suitable wetland habitats, key threats which are present within the Development Footprint (DCCEEW, 2024).

Key threatening processes to the species such as fragmentation by land clearing, loss of habitat through over-grazing by sheep and goats, and the loss of suitable wetland habitats (DCCEEW, 2024).are found within the Development Footprint Mine site and therefore it is unlikely that N. pictus

is present.. This is supported by the conclusions from the GHD literature (GHD 2025), data review and site report.

The Painted Burrowing Frog was determined to be unlikely to occur within the Development Footprints due to the scarcity of nearby records, presence of extensive tracts of unsuitable habitat and presence of predatory animals. As such the Painted Burrowing Frog has been excluded as a species credit species from the assessment.

Targeted surveys for the Desert mouse were conducted in accordance with BAM 2020 and the species survey guidelines. However, due to this species being difficult to detect, an expert report was acquired, in addition to the field survey effort, to ensure a comprehensive assessment of presence. As such, based on the expert report, the Desert mouse has been excluded as a species credit species from the assessment.

Five Plant Community Types had potential links with three Endangered Ecological Communities (EEC) located within the Development Footprint/s. These included:

- Vegetation identified as PCT 28, which is consistent with the EEC Sandhill Pine Woodland in the Riverina, Murray-Darling Depression and NSW South Western slopes bioregions that is listed as Endangered under the *Biodiversity Conservation Act 2016* (BC Act),
- Vegetation identified as PCT 58, 143, 154, 170 were potentially linked with the EEC - *Acacia loderi* shrublands which is listed as Endangered under the BC Act, and
- Vegetation identified as PCT 28, 58, 170 was potentially linked with the EEC *Acacia melvillei* Shrubland in the Riverina and Murray-Darling Depression bioregions is listed as Endangered under the BC Act.

Following a review of the Final Determinations for each of the three relevant EECs, it was determined that only one community, PCT 28 White Cypress Pine open woodland of sand plains, prior streams and dunes mainly of the semi-arid (warm) climate zone, met the relevant criteria to be considered EEC (*Sandhill Pine Woodland in the Riverina, Murray-Darling Depression and NSW South Western slopes bioregions*) as defined by the New South Wales Scientific Committee – Final Determinations.

The Development Footprint – Mine Site would result in direct impacts to 3,692.92 hectares (ha), which comprises Native Vegetation that is consistent with all identified PCTs. The Development Footprint – Linear Corridor, would result in direct impacts to 190.16 ha of Native Vegetation.

The design of The Project has evolved in an iterative manner over a six-year period from 2018 to 2025. This has involved consideration of the findings of the technical and environmental studies undertaken, feedback from the local and wider community, and responses from the BCS and other New South Wales agencies. Strategies used to avoid and minimise impacts to biodiversity include the redesign of the Mine Site and a reduction in the Linear Corridor width from an initial 120 metres to 90 metres to 60 meters, and more recently 42 metres.

An area (Huntingfield/Sunshine) adjacent to the northwest boundary of the current Development Footprint – Mine Site (which was included in the original Mine Site design) was removed from the current mine layout, however it is not an avoidance measure (RZ Resources may apply to mine this land in the future). The area was excluded due to the inability to accessing the property, which meant biodiversity impacts could not be fully determined. The current design avoids uncertain impacts.

Some infrastructure components will be located within the Development Footprint, but outside of the mine path for the life of The Project. However, the mine path will be progressively backfilled with tailings and overburden. Additionally, the Temporary Tailings Storage Facility (TTSF) will be used to backfill the mine path void following the cessation of mining operations.

This BDAR includes a range of measures designed to mitigate and manage impacts on Biodiversity Values commensurate to the level of impact proposed by The Project. These include staging of vegetation clearing, avoidance of retained areas of vegetation, pre-clearing surveys of Spinifex Grass and Hollow Bearing Trees, Nest Trees and specific requirements around *Austrostipa nullanulla.*

Based on the BOAMS, and a related case in the BAM-C, Section 1. Tables E1 (Table 69) and E2 (Table 70) identify the Ecosystem Credits related to the impacts of The Project. Table E3 (Table 71) identifies the Species Credits, no species credits are required for the Linear Corridor.

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8. Appendices

A-1 CPA RFI-96105708 - Response Letter

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23rd February 2026

Mandana Mazaheri: Team Leader - Resource Assessments
Energy, Resources and Industry Assessments
Department of Planning, Housing and Infrastructure – NSW Planning Group

Response to Request for Information: RFI-96105708

Copi Mineral Sands Project: SSD-41294067

Dear Mandana,

This letter addresses correspondence from Kerryn Richards, Director, Conservation Planning and Assessment (CPA), dated 6th February 2026, providing the Request for Information from the NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW) – Conservation Programs, Heritage and Regulation Group (CPHR).

All five (5) items outlined in CPA's comments, have been addressed by providing additional information and clarifications related to the Biodiversity Development Assessment Report (BDAR). Biodiversity Australia plans to submit a revised BDAR incorporating the necessary amendments, including responses to the raised queries.

Our approach remains focused on fulfilling the proponents' statutory obligations under the *Biodiversity Conservation Act 2016*, the *Biodiversity Conservation Regulation 2017* and the Biodiversity Assessment Method 2020 while ensuring practical and proportionate solutions.

We trust that the details provided herein will support CPA's review and demonstrate our adherence to the required standards. Should any further clarification be needed, please do not hesitate to contact the undersigned at 0410 522 399 or via email at karl.robertson@biodiversityaust.com.au.

Yours faithfully,

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CPA Issue No.	4.1
CPA Issue	Commitments to mitigate potential SAII to ***Austrostipa nullanulla*** must be documented in an **Adaptive Management Plan** and implemented in all stages of the development.
CPA Comments	The updated SAII advice (Biodiversity Australia, January 2026) includes the additional assessment requirements for impacts to *Austrostipa nullanulla* against Section 9.1.2 of the BAM. Some assessment criteria (s9.1.2 4(b) (i-iv) have not been directly addressed, but relevant information is inferred from the text, and this has been used to prepare the advice in Attachment B. Clear and auditable actions are needed to ensure statements in the amended BDAR can be effectively implemented. For example, threats to *Austrostipa nullanulla* and its habitat from feral herbivores are identified and statements are made about ongoing feral herbivore control (s4.4.2.1, 5.1 and 5.6.2) but there is no discussion of goat control in Table 54 'Mitigation measures' and no provision for pest management during mine operation. Similarly, s5.6.3 of the amended BDAR commits to preventing impacts to "rehabilitated tussocks" if successful and established through exclusion fencing, feral pest control and monitoring. There is no indication that threats to retained individuals and habitat on or around the mine site will be similarly managed, and no information has been provided on locations where this would occur or timing and frequency of monitoring. Cumulative effects of this project, when considered with ongoing and unmanaged threats within and outside the subject land, are likely to contribute to ongoing declines of *Austrostipa nullanulla*. CPA recommends that specific targeted mitigation actions be developed to minimise and mitigate potential SAII impacts to *Austrostipa nullanulla*. A targeted Adaptive Management Plan for *Austrostipa nullanulla* should be prepared as part of the Biodiversity Management Plan and Rehabilitation Plan for the project. Section 5.6.3 proposes to fund research to improve rehabilitation/revegetation outcomes via a PhD/Honours project with Federation University, including a study to determine population trends. Outcomes of this research may be used to inform the Adaptive Management Plan for *Austrostipa nullanulla* and long-term adaptive management strategies.
CPA Recommendation	• Include the revised addendum SAII assessment in the final BDAR. • Prepare and implement a targeted Adaptive Management Plan for *Austrostipa nullanulla*.
CPA Recommended Condition of approval	A condition of approval should be prepared that includes preparation and implementation of an Adaptive Management Plan for *Austrostipa nullanulla* as part of the Biodiversity Management Plan and Rehabilitation Plan for the construction and operation of the project.
Biodiversity Australia Response	Addressing *BAM 2020 - Section 9.12 Additional impact assessment provisions for threatened species at risk of an SAII* *Subsection 4. In relation to the impacts from the proposal on the species at risk of an SAII, the assessor must include data and information on:*

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b. impact on geographic range (Principles 1 and 3) presented by:

i. the area of the species' geographic range to be impacted by the proposal in hectares, and a percentage of the total AOO, or EOO within NSW.

The proposed development will directly impact 59.59 ha of confirmed habitat for *Austrostipa nullanulla* within the Development Footprint. This area represents 8.83% of the mapped AOO within NSW (675 ha) and 0.02% of the mapped EOO (~286,300 ha).

The proposed impacted habitat occurs contiguous with a substantially larger retained area supporting the same subpopulation. Approximately 91.97% of the mapped AOO associated with this subpopulation will be retained outside the Development Footprint and will not be directly impacted. The proposed impact does not result in the contraction of the species broader EOO and does not isolate the remaining population from adjacent habitat. Retained habitat is of comparable vegetation structure and condition and remains connected to surrounding occurrences within the regional landscape.

ii. the impact on the subpopulation as either: all individuals will be impacted (subpopulation eliminated); OR impact will affect some individuals and habitat; OR impact will affect some habitat, but no individuals of the species will be directly impacted.

The proposed development will result in the removal of individuals and habitat but will not eliminate the subpopulation. Based on the proportion of occupied habitat within the Development Footprint, it is estimated that up to 8.83% of the AOO will be reduced. Retained habitat occurs with and directly adjacent to the impact area ensuring continued ecological function and reducing the risk of functional isolation.

iii. to determine if the persisting subpopulation that is fragmented will remain viable, estimate (based on published and unpublished sources such as scientific publications, technical reports, databases or documented field observations) the habitat area required to support the remaining population, and habitat available within dispersal distance, and distance over which genetic exchange can occur (e.g. seed dispersal) and pollination distance for the species.

Fragmentation is unlikely to occur as the retained areas remain connected within the local landscape and within dispersal distance in areas adjacent to the proposed Development Footprint and within the broader AOO and EOO. *A. nullanulla* is wind pollinated, facilitating pollen movement across open landscapes and over distances to maintain gene flow between adjacent patches. Seed dispersal occurs primarily thought attachment of awned caryopses and faunal movement. Given the contiguity of retained habitat and proximity of nearby populations, opportunities for genetic exchange are expected to persist.

Dr Hunter's research (Hunter 2025) demonstrated that *A. nullanulla* persist across a broad range of soils and vegetation conditions than previously documented, including areas previously thought to be uninhabitable for *A. nullanulla*. This indicates ecological resilience and adaptive capacity within the regional landscape. Existing populations in the region demonstrate persistence across variable environmental conditions. There is no evidence of recruitment failure or population collapse in retained areas. The retained habitat and connectivity are considered sufficient to support ongoing population viability in the short and long term subject to implementation of the proposed management measures.

Dr Hunter's report is potentially the most in-depth body of research conducted within NSW for the species. The PhD and Honours programs which are planned with Federation University will further contribute published literature for the species, including studies of dispersal distance, genetic exchange and pollination for the species.

iv. to determine changes in threats affecting remaining subpopulations and habitat if the proposed impact proceeds, estimate changes in environmental factors including changes to fire regimes (frequency, severity); hydrology, pollutants; species interactions (increased competition and effects on pollinators or dispersal); fragmentation, increased edge effects, likelihood of disturbance; and disease, pathogens and parasites. Where these factors have been considered elsewhere in relation to the target species, the assessor may refer to the relevant sections of the BDAR or BCAR.

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	A monitoring program is proposed for the retained population of *A. nullanulla*. This monitoring program is planned to work concurrently with the Federation University research program and will be guided by strategic *A. nullanulla* Adaptive Management Plans (ANAMP), a Biodiversity Management Plan including Vegetation management and Fauna Management Plans. Potential increase in weed invasion, grazing pressure, or edge effects will be managed through targeted monitoring and control measures under the ANAMP. Vehicle and machinery hygiene protocols will be implemented to mitigate the risk of introducing soil-borne pathogens. BDAR Section 5.6.8 *Austrostipa nullanulla* mitigation measures The proposed development intends to remove approximately 59.59 ha of suitable habitat for *A. nullanulla* throughout the Development Footprint. To satisfy the biodiversity related approval conditions, support compliance with applicable State and Commonwealth legislation, including the NSW Biodiversity Conservation Act 2016, Biodiversity Assessment Method 2020 (BAM), and, where relevant, the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) an *A. nullanulla* Adaptive Management Plan (ANAMP) will be developed to manage impacts to *A. nullanulla* during the various stages of the proposed development. The ANAMP will be developed in conjunction with future research into the habitat, ecology and extent of *A. nullanulla* within the region. Future research will be funded by RZ Resources Limited and undertaken by the Federation University Masters and PhD student research programs. The ANAMP will incorporate findings from this research through annual reviews, and interim reviews at key research milestones, to ensure relevant conducted research is incorporated into the ANAMP, ensuring best practice methodologies are utilised to manage and mitigate impacts to *A. nullanulla* within the Development Footprint. The ANAMP will be developed to incorporate specific mitigation measures for each stage of the proposed development, including findings from the proposed research opportunities. The management actions identified in the ANAMP will include actions in line with the Priorities Action Statement (PAS) for *A. nullanulla*, research project findings and State and Federal Guidelines where applicable. Table 1: ANAMP mitigation Measures located in Appendix A-1-1 provides an overview of projected mitigation measures to be implemented prior to further research being undertaken. The Subject Land is positioned between two known strongholds for this species within NSW, Nulla Station 18 km north-west of Lake Victoria in the state's far southwest; and Nanya Station 100 km due north of Lake Victoria. Surveys conducted in 2025 by Dr John Hunter and Phil Grant of the surrounding region, revealed that *A. nullanulla* was not only present within Nulla and Nanya Stations, but was also present at Warwick Station, Huntingfield, Bells Grove and Oakwood (Figure 1). Translocation of *A. nullanulla* present within the Development Footprint will be undertaken as a research opportunity to preserve existing populations within the region where avoidance cannot be undertaken. Individuals of *A. nullanulla* within the Development Footprint will be translocated to the aforementioned existing populations in the surrounding region. Translocation can be undertaken through four main methodologies, Whole Plant Translocation (whole plant/soil core or whole turves), Seed Translocation (direct seeding), Seed Bank Translocation (scalping and whole turves) and Translocation of Nursery-Grown Plants (tubestock planting). Final methodology selection will be informed by research outcomes and pilot trials. Based on the ecology and requirements of *A. nullanulla* it is likely that direct seeding into areas of suitable habitat with existing *A.nullanulla*, translocation of whole turves and scalping with direct seeding of *A. nullanulla* would provide the highest rate of success for the rehabilitation and revegetation of *A. nullanulla*. Success criteria, monitoring intervals and corrective actions will be defined in the ANAMP and will include measurable performance indicators such as survival rates, recruitment, and establishment success over the monitoring period. Suggested amendments to BDAR Table 54 Mitigation Measures Summary for the Project have been addressed and displayed in Table 1: ANAMP Mitigation Measures and Table 2: *Austrostipa nullanulla* Adaptive Management Responses located in Appendix A-1. Also refer to Figure 2 for the indicative ANAMP mitigation measures map.
CPA Issue No.	**12.2**

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CPA Issue	Targeted surveys in the breeding season for **Pink Cockatoo** have not been completed.
CPA Comments	Section 4.2 and Table 40 of the BDAR claims general bird surveys (20 minutes long and not focusing on any specific species) to be targeted surveys for Pink Cockatoo. As a candidate species, the BAM requires that targeted surveys for Pink Cockatoo need to be conducted during the breeding season (September to December) in the Development Footprint where suitable tree hollows were located. Surveys for suitable tree hollows located 57 potential tree hollows, mostly along the access route (BDAR s4.4.2.2, which is a different number to the 40 tree hollows mentioned in Table 4.3.3.4). According to the supplied spatial data, these surveys were conducted in February 2025, outside the breeding season for Pink Cockatoo. The presence/absence diurnal bird surveys have demonstrated that Pink Cockatoos occur on the site and the hollow-bearing tree surveys show that suitable breeding habitat is present. In the absence of targeted breeding surveys at the correct time of year, Pink Cockatoo breeding habitat must be assumed to be present, and polygons created for the species credit component of Pink Cockatoo breeding habitat.
CPA Recommendation	• Conduct targeted surveys for the Pink Cockatoo in the breeding season (September to December) to determine any species polygon requirements. • In the absence of targeted surveys in the breeding season, assume presence for Pink Cockatoo in associated PCT buffer areas where suitable hollow bearing trees occur.
Biodiversity Australia Response	Suitably qualified and experienced Biodiversity Australia ecologists conducted surveys for the Pink Cockatoo within and around the Copi Sands Project Mine Site and Linear Corridor Development Footprints under the instruction and supervision of BAM Accredited Assessors. As the Pink Cockatoo is listed as both an Ecosystem Credit (foraging) and Species Credit Species (breeding habitat) due to its differing foraging and breeding habitat requirements, surveys were conducted to confirm presence and foraging use of the site and identify and assess potential breeding through assessments of hollow bearing trees. As shown in Figure 1: Survey Effort for Pink Cockatoo within the Development Footprint Linear Corridor area (11 x HBTs) and Figure 2: Survey Effort for Pink Cockatoo within the Development Footprint Mine Site area (1 x HBT), provided in Appendix A-1-2, comprehensive surveys for the species were conducted across the entire Development Footprint within the breeding season in August to December 2024 and 2025. The surveys were guided by the threatened species survey guidelines for the Pink Cockatoo, listed within the NSW BioNet Threatened Biodiversity Database Collection (TBDC) and the NSW Biodiversity Assessment Method (BAM) 2020 Section 5.3 and subsections 5.2.1 – 5.2.3. Where specific survey details were not available (e.g. hollow height, survey duration), further information was sourced from published literature, including: • NSW Threatened Biodiversity Survey and assessment guidelines for development and activities Working Draft (DEC 2004), • Handbook of Australian, New Zealand & Antarctic Birds: volume 4 parrots to dollarbird (Higgins 1999), • NSW Field Survey Method Guidelines (DPI 2008), • Conservation Advice for *Lophochroa leadbeateri leadbeateri* (Eastern Major Mitchell's Cockatoo) (DCCEEW 2023),

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- Survey guidelines for Australia's threatened birds - Guidelines for detecting birds listed as threatened under the EPBC (DEWHA 2017), and
- Draft Regional Biodiversity Survey and Assessment Guidelines (NPWS & SMEC 2001).

According to the TBDC, suitable habitat for the species includes living or dead trees with hollows greater than 10 cm in diameter. Higgins (1999) confirms the suitability of tree hollows greater than 10 cm in diameter and adds that those located more than 2 m aboveground are preferentially used for breeding. In addition, Higgins (1999) states that the species commonly nests in very old, mature hollow-bearing trees (HBTs) and occasionally in large, abandoned raptor nests (Higgins, 1999). The TBDC lists signs of breeding as: (a) begging birds of any age or sex; (b) lone individuals of the species identified during the breeding season (August to November); or (c) an occupied nest.

An inconsistency regarding the breeding season of the Pink Cockatoo was noted within the TBDC: the 'Months of Survey Species credit' section within the 'Survey' panel of the 'Ecological Data' tab lists the breeding season as September through to December, while the 'Survey Comments' section references August to November as the breeding season on two separate occasions. For the Pink Cockatoo surveys, Biodiversity Australia followed this recommended survey timing which is also referenced as August to November in other available literature, including the most in-depth species information currently available, the Commonwealth Conservation Advice (DCCEEW 2023) and, accordingly, conducted surveys within this window.

Methods

A variety of survey methods were employed to target the Pink Cockatoo and its breeding habitat. Initially, walking and slow-moving vehicle (SMV) transects were conducted to detect the presence of Pink Cockatoos and to identify Pink Cockatoo breeding habitat. The walking transects were conducted at an average speed of 4.5 km/hr and SMV surveys at an average speed of 20 km/hr. The surveys were conducted across the entire site, though emphasis was placed on areas of suitable habitat for the Pink Cockatoo. Within the Subject Land, suitable habitat is found within Plant Community Types (PCTs) 25, 28, 58, 143, 152, 154, 170, 171, 215, 221, and 253. Nearby water sources were also considered to be important habitat features, as were paddock trees and raptor nests.

All surveys were conducted in weather conducive to detection and identification of this conspicuous species.

Surveys conducted on 11-29 November and 4-14 December in 2024, as well on 7-16 January, 3-14 February, 6-11 August, 27-29 October, and 4-11 November in 2025 focussed on the eleven Plant Community Types (PCT) associated with the Pink Cockatoo (PCTs 28, 58, 143, 152, 154, 170, 171, 215, 221, 253, and 254), covering an area of 2746.57 ha.

Eight suitably qualified and experienced Biodiversity Australia Ecologists undertook targeted Pink Cockatoo surveys within the Copi Mineral Sands Project Area from 11 November to 14 December 2024 and again from 6 August to 12 November 2025. This quantum of field work meets the prescribed survey requirements for the Pink Cockatoo detailed within the TBDC. Locations of surveys are provided within Figure 1 and Figure 2 located in Appendix A-1-2 and is reflected in a figure in the BDAR.

Based on requirements listed in the TBDC and published literature, a minimum survey effort of 26.66 hours (40 minutes of searching per day at each of the 10 point-count locations, repeated over 4 days) was required for the Pink Cockatoo over a period of at least 4 days. Biodiversity Australia conducted a total of 53.53 hours of surveys within areas of suitable habitat within the HBT survey area, over 19 days and observed no evidence of breeding activity. Accordingly, the Pink Cockatoo was included in the Biodiversity Development Assessment Report (BDAR) as an ecosystem credit species due to its presence and evidence of foraging

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activity and behaviour and was excluded as a species credit species due to the absence of active breeding habitat. Therefore, a species polygon was not created for the Pink Cockatoo.

All Pink Cockatoos sighted during walking and SMV surveys conducted from November 2024 to November 2025 were recorded and then followed to observe behaviour and determine the nature of their activity, whether it be fly-over, foraging or breeding. Potential nest trees (i.e. HBTs with hollows of a suitable size and height) and raptor nests observed during these surveys were recorded for subsequent repeat visits during the species' breeding season.

Surveys were conducted in August 2025 at each large raptor nest (likely abandoned Wedge-tailed Eagle nest) over 2 consecutive days, comprising a total of 80 minutes of surveys for each nest. A total of 10.66 survey hours were conducted at the elevated wooded areas where the raptor nests were located.

Following the identification of potential nesting sites and water sources, point count surveys, consisting of 20-minute observation periods within 300 m of these features, were conducted during the August to November breeding season. During the point count surveys, observers scanned the horizon, vegetation, and sky with binoculars, and listened for the species' calls. All detected Pink Cockatoos were recorded, and all HBTs observed were inspected for signs of occupancy or breeding, regardless of size. Particular attention was given to searching the hollows within trees previously identified as potential nesting trees. The point count surveys and HBT searches were conducted over four-day periods, between 25-28 November 2024 in the Mine Site Development Footprint, and between 6-9 August 2025 in the Linear Corridor Development Footprint.

Biodiversity Australia ecologists surveyed a total of 150.62 km during walking transect surveys and 188.32 km during SMV transect surveys, and for a total of 10.66 hours during point count surveys (Table 1: Survey Effort – Pink Cockatoo, A-1-2). This translated to a total of 53.53 hours of targeted surveys over a period of 19 days from August to December in 2024 and 2025. This time does not include the raptor nest searches.

Results

During the habitat searches, a total of 39 HBTs, 8 raptor nests and two dams were located. Of the 39 HBTs, 25 contained hollows larger than 10 cm in diameter. Of these 25, 12 contained suitably large hollows 2 m above ground level (Table 2: Suitable Hollow Bearing Trees located within the Development Footprint, Photograph 1 through Photograph 12, A-1-2). Two of these 12 HBTs are located within the Development Footprint and will be removed as a result of the proposed development. The remaining 10 HBTs are located outside the Development Footprint (but within 300 m) and will not be directly impacted by the development. Three of the 12 HBTs were within 300 m of one another, so were able to be captured within a single point-count location (Table 1, A-1-2). Hence, a total of ten point-count locations were established. The raptor nests were located within the Mine Site Development Footprint, while the dams were located in land adjacent to the Development Footprint.

Sightings of the Pink Cockatoo were recorded both during and outside of the breeding season, and within and outside of the Development Footprint (Figure 1 and Figure 2, A-1-2). Although numerous individuals, pairs, and groups were recorded, no evidence of breeding activity was observed despite persistent tracking and observation of these individuals. None of the Pink Cockatoos were observed using the identified potential nest trees, and none of the identified hollows were observed to have any evidence of nesting or breeding activity during the repeat visits and inspections.

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	The although a sufficient survey effort was conducted at the appropriate time for Pink cockatoos, the targeted survey design, field survey timing and methods included in Copi BDAR Rev 5.0, were not presented in a clear, concise and thorough manner. However, the revised BDAR Rev 6.0 now contains a clear description of the targeted survey design, including field survey timing, methodology and detailed results for Pink Cockatoo surveys. This revised information is supported by field data presented in tables, detailed figures and GIS spatial data.
CPA Issue No.	**14.4**
CHPR Issue	The **prescribed impact assessment** must consider potential triggers and any requirement to **offset residual impacts.**
CPHR Comments	CPA acknowledges the additional assessment of prescribed impacts associated with potential impacts to salt lakes and surrounding native vegetation in s5.4.4 of the BDAR. Further detailed information is required to support the proposed baseline data monitoring for adjoining lakes and the potential triggers that identify a loss in vegetation integrity attributed to direct impacts to salt lakes. This detail is required to ensure effective implementation of adaptive management actions and potential additional offsetting. These should be further detailed in the BMP to the satisfaction of CPA. To ensure any residual impacts from operation are captured, CPA recommends that a calculation of ecosystem credits for the potential loss of native vegetation in PCT 64 surrounding the salt lakes is included in the BDAR. These credits can be calculated independently of the mine site and linear BAM-C cases and the number of credits included in the BDAR and BMP text. If monitoring shows that residual impacts have occurred, they can be offset during operation, i.e. they are not required to be offset prior to construction and may not be required if monitoring shows impacts within expected thresholds. Tables 54 and Table 58 (monitoring) need to focus on mitigation measures that prevent the loss of vegetation and aim to maintain salt lake function. For example, how will the height and location of bunding structures maintain the existing fill levels after rain?
CPHR Recommendation	• Identify monitoring locations in PCT 64 surrounding the salt lakes and collect pre construction baseline data. • Calculate the ecosystem credits associated with potential prescribed impacts to PCT 64 surrounding the salt lakes outside the Development Footprint and include this in the BDAR. • Document ecosystem credits in the BMP as part of monitoring, and if required, retire these additional ecosystem credits if prescribed impacts during operation exceed monitoring triggers.
CPA Recommended Condition of approval	If residual prescribed impacts to salt lakes are identified during construction and operation monitoring, ecosystem credits to offset residual prescribed impacts must be proposed in the BMP and captured in consent conditions in accordance with sections 7.14(4) and 6.1(2)(b) of the BC Act.
Biodiversity Australia Response	One meter high flow bunds are proposed to be constructed at three locations around the perimeter of the Mine Site Development Footprint (Figure 3: Flow bunds and indicative inundation areas resulting from a 'with mine' storm event scenario, A-1-3). These flow bunds will be constructed as a precautionary measure to protect the mine site and surrounding vegetation from potential inundation following storm events. Under storm modelling provided in the R.W. Corkery & Co. Geospatial analysis and Modelling expert report, (RWC 2026) pooling or inundation will not be experienced outside the Development Footprint at either of the two

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bunds located to the west, however the shorter bund located to the east will experience pooling and inundation in an area extending north from the exterior of the bund, as shown in Figure 3, A-1-3.

Inundation may occur over approximately 44 ha of PCT 154 Pearl Bluebush low open shrubland. The potential impacts associated with inundation of vegetation (PCT 154), are uncertain as rainfall events are unpredictable within the region. Complete avoidance of these impacts is unable to be achieved due to the detailed design of the development and the nature and uncertainty of potential impacts; thus minimisation is essential. Mitigation measures will include monitoring of Vegetation Integrity Plots established within the potential inundation zones and offset through the requirement of credits where monitoring indicates a significant reduction in Vegetation integrity.

A total of 42 BAM VI plots were conducted within the ground-truthed PCT 154 vegetation zones within the Mine Site Development Footprint between November 2024 and November 2025. The Vegetation integrity (VI) scores from all 42 plots can be used to determine an adaptive management action trigger value, by first calculating the average VI score from the multiple BAM plots within each vegetation zone, then determining the annual rate of decline for each VZ within BOAMS. Finally, the trigger value for the retirement of additional credits, can be calculated by doubling the annual rate of decline (ARD).

In accordance with the BAM 2020 s4.3.4, to determine the ARD of PCT 154 outside the Development Footprint, four VI plots are proposed to be located within the 44 ha VZ Mod 154 inundation zone, which is forecast to be impacted by pooling stormwater following the construction of flow bunds. Plot data from these 4 plots will provide an average VI score for the VZ and subsequent annual rate of decline and adaptive management action trigger value. Table 3: PCT 154 Moderate vegetation zone values (A-1-3) provides the VI scores, annual rate of decline, trigger value, sample size and VI plot identifiers for PCT 154 within the Mine Site Development Footprint.

The credit obligation generated by impacts to 44 ha of moderate condition PCT 154 within in the modelled inundation zone is 553 ecosystem credits. Table 3: PCT 154 Moderate vegetation zone values, illustrates the current vegetation integrity of PCT 154 within the Mine Site Development Footprint along with the number of plots, plot numbers used to calculate the Vegetation Integrity Score of the VZ, annual rate of decline and the proposed annual rate of decline trigger for the retirement of credits. The ecosystem credits offset liability generated by inundation of 44 ha of PCT 154 will be documented in the Biodiversity Management Plans part of monitoring and will be retired if required.

In addition to PCT 154, another PCT which is not shown by modelling to be at risk of impacts but occurs within low lying sensitive areas is PCT 64. This community occurs within salt lakes, salt pans and on lake and pan margins, both within the Mine Site Development Footprint, and outside footprint on nearby adjacent land. A total of 14 BAM VI plots were conducted within the ground-truthed PCT 64 vegetation zones within the Mine Site Development Footprint between November 2024 and November 2025. A total of 7 plots were conducted within the mine site area and 7 on adjacent land outside the footprint. The Vegetation integrity (VI) scores from 14 plots can be used to determine the adaptive management action trigger value, as outlined above for PCT 154.

No areas of PCT 64 Samphire - Water Weed - Sea-Heath shrubland saline wetland outside of the Development Footprint are predicted to be impacted by the storm modelling. However, as a precautionary measure, baseline Vegetation Integrity values have been recorded from 14 BAM plots located within (the mine site and adjacent land) PCT 64 vegetation zones (VZ). An additional 5 VI plots are proposed to be positioned within PCT 64 outside the flow bunds. Four in PCT 64 along the southern flow bund and one in PCT 64 located north of the northernmost flow bund. These additional external VI plots will be located 50 m from the flow bund structures. From the collected data, the annual rate of decline (ARD) has been calculated for each VZ. Biodiversity Australia have set adaptive management trigger values for each of these VZs at twice the ARD. This means that if VI scores from BAM plots located outside the development, within impact buffer areas in land adjacent (containing PCT 64 VZs) drop below original VI baseline values by more than twice the ARD, it will trigger the adaptive management actions listed in BDAR Figure 52.

Each PCT 64 VZ present within the Mine Site Development Footprint, along with the corresponding VI scores, annual rate of decline, trigger value, sample size and VI plot identifiers, are displayed in Table 4: PCT 64 vegetation zone values.

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Credit obligations for PCT 64 have not been generated as the potential impact area for the community was not indicated in the modelling. If monitoring of the additional external VI Plots indicate the VI of PCT 64 outside the Development Footprint falls below 75% of the baseline VIS credit obligations should be calculated as part of the adaptive management plan if the VIS continues to decline despite the implementation of mitigation measures outlined in BDAR Table 52.

Geospatial analysis and Modelling experts at R.W. Corkery & Co. used a 2D flood (hydraulic) model in HEC-RAS to estimate where water would flow, where it would pond, and inundation depth during a modelled large storm event. Analysts then compared the “no mine / no bund” case against the “with mine / with bund” case, to determine the effect of the flow bund under the same modelled storm event.

Key outputs of this modelling are: the predicted peak flood depth maps for each scenario and the flood level difference mapping that highlights areas where inundation depths go up or down due to the bund and mine scenario.

The storm modelling used is based on a 2D HEC-RAS hydraulic simulation for a 1% AEP, 72-hour modelled storm. Interpretation was achieved by comparing: (1) peak flood depth mapping for the “no mine” scenario versus the “with mine” scenario (with the flow bund shown), and (2) a flood level difference map that indicates where depths increase or decrease between scenarios. Overall, the mapping shows broadly similar flood patterns between the scenarios at the site scale, with the most noticeable changes concentrated around the flow bund alignment and nearby low-lying areas. Shown in Figure 3: Flow bunds and indicative inundation areas resulting from a ‘with mine’ storm event scenario, A-1-3.

Key inputs/assumptions of the modelling were:

- Terrain: 5 m-resolution elevation/topography to capture low points, drainage lines and subtle depressions where water can pond.
- Modelled storm: 1% AEP, 72-hour event (consistent across scenarios so the comparison is like-for-like).
- Rainfall pattern and scaling: modelled rainfall distribution through time adopted from the hydrology setup (hyetographs), with standard aerial adjustment for catchment scale.
- Losses: infiltration/loss parameters applied consistently to represent initial wetting and ongoing losses during the event.
- Surface conditions: simplified/consistent roughness representation so differences in results are driven mainly by terrain and the bund inclusion.
- Scenario change: the main structural difference between scenarios is the inclusion of the flow bund in the “with mine” case, enabling an isolated comparison of its effect on water levels and flow redistribution.

This modelling is best treated as a **comparative scenario assessment**, not a detailed final design of a full surface water management system. The purpose is to show where the bunds alter flow paths and local ponding, and whether those changes extend beyond the immediate area. The difference mapping indicates that changes are generally localised rather than widespread across the broader domain.

State type vegetation mapping in the inundation and potential inundation areas has been refined via desktop vegetation mapping assessments and extensive ground-truthing of PCTs within the Mine Site Development Footprint.

The modelling inundation overlays (no-mine vs with-mine) shows that inundation is largely occurring to the north in the mapped shrubland communities. Based on the current mapping overlay, interaction with PCT 64 appears limited on the mapping provided, however PCT 154 appears to be at greatest risk of inundation impacts across an area of 44 ha, extending north of the mines site Development Footprint. This area receives rainwater via a series of drainage lines which direct the water from west, north and east of the smaller flow bund.

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	Although the comparative scenario assessment provided by the storm modelling does not indicate that PCT 64 is at risk of inundation; due to the sensitivity of the community and its association with salt pans and salt lakes, monitoring measures are proposed to detect impacts, trigger mitigation actions and prevent damage to the community and ecosystem present in those three areas where flow bunds are located.
CPA Issue No.	**RTS New issue 1**
CHPR Issue	**Mitigation measures** must be detailed in the BDAR to **demonstrate impacts will be effectively managed** and to give confidence that the offset liability is adequate.
CPHR Comments	CPA acknowledges that additional detail has been provided for mitigation measures in Table 54. However, it includes general statements without clear commitments and a reliance on post-approval plans to develop details. Specific details are required to ensure commitments are carried through to post-approval plans, are successfully implemented, and can be audited. For example, erosion and sediment controls (page 268) in Table 54 do not specify where controls are required for managing biodiversity impacts. Specific locations where runoff and sedimentation could impact adjoining vegetation must be identified so regular monitoring can detect any failures before impacts occur. This includes where runoff into adjoining salt lakes could disrupt natural flows and filling cycles. Section 5.4.4 (page 246) states that it is critical to ensure the function and ongoing ecosystem health of residual sections of salt pans beyond the Development Footprint, however there are no commitments or relevant measures in Table 54. The fauna injury measure on page 268 states that the Traffic Management Plan will outline collision points for fauna. These locations need to be identified in the BDAR from the survey data. This measure also states that fauna awareness signs should be placed along access tracks where fauna are likely to cross but provides no locations. For example: the highest risk area for Pink Cockatoo vehicle collision is along the access route where potential breeding habitat was located (BDAR 4.3.3.4). Detail needs to be provided on how this risk can be mitigated against and where the mitigation would be focused. Section 5.3.7 identifies that noise and vibration impacts may be up to 1.5 kilometres from the site and occur both day and night. No measures are presented in Table 54 to minimise the disturbance to threatened fauna that may be breeding when clearing or blasting starts. The first noise, light and vibration measure in Table 54 (page 267) should identify any nesting or roosting threatened fauna within 1.5 kilometres that are at risk from noise and vibration impacts when clearing starts, such as the known locations for Pink Cockatoo or stick nests. As identified in the CPA RTS response, mitigation and management actions in BDAR sections 5.2 - 5.4 have not been adequately captured in Table 54. For example:

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	• Table 53 'Prescribed impacts to ecosystem threatened species' (page 259) indicates that threatened microbats recorded on the site may be at risk of vehicle strike during dawn and dusk. The stated mitigation is that the TMP recommends "vehicle movements do not occur at this time," but this measure is not specified in Table 54. • Section 5.3.5 'Weed Invasion' lists actions that "will be taken into account during pre-construction" however these are not included as commitments in Table 54 'Introduction of weeds' (page 269). As stated throughout the BDAR the site is surrounded by intact native vegetation. Machinery, vehicles and materials that are brought in need to be free of weed seeds, soil and propagules. CPA supports the third measure – commencing a pre-clearance weed survey – however the results must trigger control actions before identified infestations can set seed. More detail has been presented for monitoring in Tables 52 and 55 to 61, however the selection of some baseline data and monitoring parameters are unlikely to detect changes within timeframes needed for efficient responses. For example, in Table 60 vegetation integrity assessment is proposed to detect weed invasion. Targeted weed survey in and around disturbance areas (and where runoff increases water availability for introduced species) with reporting that triggers control actions is likely to be more effective.
CPHR Recommendation	• Number each measure or action in Table 54 with a unique identifier for auditing and monitoring. • Revise measures in Table 54 to include specific, feasible actions. Include actions and commitments from BDAR sections 5.2 to 5.4. • Provide locations for fauna vehicle strike mitigation measures, including (but not limited to), detailing how the risk to Pink Cockatoo from vehicle collision can be mitigated, where mitigation measures will be focused, and how monitoring will demonstrate that the measures are working. • Specify actions to manage surface water to maintain ecosystem health in fringing vegetation of retained salt pans (as per Section 5.4.4). • Revise Tables 55 to 61 to provide targeted monitoring to demonstrate success of actions in Table 54.

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Biodiversity Australia Response	Specific mitigation measures with clear commitments have been provided for all areas and stages of The Project within Appendix A-4. All tables and figures provided within this appendix are reflected in the revised BDAR Rev 6.0. The range of mitigation measures to be included in project planning documents and implemented at various strategic stages of The Project are clearly illustrated in Figure 6: Adaptive Management Plan mitigation measures in the Development Footprint Mine Site Area and Figure 7: Adaptive Management Plan mitigation measures in the Development Footprint linear Corridor Area. The revised tables provided are designed to address and manage specific mitigation requirements. Each table shows clear actionable commitments setting a standard which will be carried through into the post-approval mitigation framework. Table 7: Indirect and prescribed impacts Salt lakes – Adaptive management measures to manage residual impacts addresses the salt lake-specific mitigation measures directly. Table 8: Mitigation measures summary for The Project. The following tables have all been updated with specific actionable mitigation measure. Table 9: Vegetation Clearing, habitat loss and fragmentation Table 10: Noise, light and vibration Table 11: Increased Dust Table 12: Erosion and Sedimentation, hydrology and Environmental spills Table 13: Fauna Injury and Mortality Table 14: Introduction and spread of weeds, pests and pathogens Table 15: Anthropogenic impacts These tables are reflected in the revised BDAR Rev 6.0 Tables 52 and 54-61.
CPA Issue No.	**New issue 2**
CPA Issue	A complete BDAR must be provided.
CPA Comments	A Final BDAR has not been provided. While some information has been submitted to CPA as digital files, key information is missing from the appendices in the supplied BDAR (Rev 5.0, December 2025). Transparency would be improved with a list of appendices in the Table of Contents. Appendix headings without content are provided for the following: • Appendix A-3 Biodiversity Credit Report (provided as zip files) • Appendix A-5 Expert Report (provided as zip files) • Appendix A-6 Field datasheets (provided as zip files) • Appendix A-7 Preliminary observations of groundwater dependent ecosystems - Greenloaning Biostudies September 2022.

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CPHR Recommendation	• Provide a list of appendices in the BDAR Table of Contents. • Include content in the BDAR for appendices A-3, A-5, A-6 and A-7.
Biodiversity Australia Response	All appendices are now provided (embedded) within the BDAR (including A-3, A-5, A-6 and A-7) and are also reflected as a list in the Table of Contents as requested.

Appendix A

A-1 CPA Item 4.1 - Commitments to mitigate potential SAII to *Austrostipa nullanulla* in AMP

Table 1: ANAMP Mitigation Measures

Mitigation Measures	Timing	Responsible Party	Priority	Risk of Failure
Pest Management Herbivores comprising both of pest and native species are present throughout the Development Footprint. Exclusion fencing is to be installed surrounding the known extent of the *A.nullanulla* to manage the impacts of herbivory to *A.nullanulla*. Ongoing monitoring should be completed annually to determine the effectiveness of control. Monthly inspections of exclusion fencing and exclusion areas for pest impacts should be undertaken to ensure exclusion fencing is maintained in good condition.	Initial and ongoing monitoring (Preconstruction, Construction, Operation and Rehabilitation)	Qualified pest management contractor, Construction Manager	High	Low
Research Building on the research conducted by Dr John Hunter and Phil Grant in 2025, further research projects to determine the extent of *A.nullanulla* within the region are proposed to be undertaken. In conjunction with this research and improving upon unpublished research conducted by Phil Grant, the development of a Restoration Research Plan, Translocation Research Plan or Revegetation Research Plan should be undertaken to investigate the species-specific and site-specific revegetation/rehabilitation methodologies and requirements. Research plans should include management actions i.e. pest management, watering, soil preparation etc. to ensure the scientific rigor of undertaken research is maintained throughout the life of the projects.	Initial and ongoing (Preconstruction and ongoing as required)	Project Team, Universities	High	Medium
Population Dynamics Ongoing monitoring of the current extent of *A.nullanulla* within the Development Footprint as shown in Figure 83: SAII Impacts for *Austrostipa nullanulla* and its surrounds to determine population dynamics. Where monitoring indicates that the population/area of extent within the Development Footprint additional exclusion fencing will be required to be installed throughout the Development Footprint.	Annually (Sep-Dec 4 weeks following a significant rainfall event)	Project Team, Site enviro, Universities	High	Low
Seed Harvesting Manual seed collection and storage of viable material is required to be undertaken to provide a viable seed bank for research and future rehabilitation and remediation of impacted areas. Machinery should not be utilised to harvest seed from *A.nullanulla* to reduce potential impacts to established *A.nullanulla.*	Annually (Dec-Jan) (Preconstruction and ongoing as required)	Project Team, Universities, Site Enviro	High	Med
ANAMP Review The ANAMP is required to undergo an annual review to incorporate findings from conducted research, updated project planning requirements and timings.	Annually	Project Team, Universities, Site Enviro	Med	Low

Mitigation Measures	Timing	Responsible Party	Priority	Risk of Failure
Translocation site selection *A.nullanulla* is known to persist at several location in NSW, including two locations within the Wentworth region; Nanya Station and Nulla Station, with additional local nearby populations identified in Dr John Hunters 2025 *A.nullanulla* research report (Hunter 2025). The required approval to undertake translocation of *A.nullanulla* to Nanya and Nulla stations has not yet been requested. RZ resources has recently purchased local properties containing *A.nullanulla* tussocks and habitat in the region and adjacent to the proposed mine site, increasing and securing translocation site options.	Prior to translocation and construction with *A.nullanulla* species polygon (Preconstruction)	Project Team, Universities	Med	Low
Establishment and Management of Translocation sites Utilising the research undertaken in 2025 and further research to determine the extent of *A.nullanulla* within the region. Site selection will be determined by the ability to create semi-controlled natural environment where suitable habitat exists, and the management of pests, weeds and availability of water can be controlled.	Prior to translocation and construction with *A.nullanulla* species polygon (Preconstruction)	Project Team, Universities, Site Enviro	High	Low
Translocation Prior to the commencement of construction works within the identified *A.nullanulla* species polygon (Figure 83: SAII Impacts for *Austrostipa nullanulla*), translocation of the existing and newly germinated individuals of *A.nullanulla* should be translocated utilising a suitable method outlined in the NSW Translocation Operation Policy (NSW DPHIE 2019) and the Guidelines for the Translocation of Threatened Plants in Australia. (Australian Network for Plant Conservation 2018). Translocation should be undertaken during the growth period of *A.nullanulla* and immediately prior to forecasted rain to reduce watering requirements.	Prior to construction of areas containing *A.nullanulla* Sep-Dec (Prior to rainfall) (Preconstruction)	Project Team, Universities, Site Enviro	High	Med
Translocation monitoring Monitoring of translocated individuals of *A.nullanulla* is required to be undertaken on a regular basis to monitor responses to initial removal, placement and longevity of translocation. Monitoring should be undertaken weekly for the first 8 weeks following translocation, then monthly for 6 months, then annually.	Weekly (8 weeks following translocations) Monthly (8 months following translocation) Annually (10 months following translocation) (Construction and operation)	Project Team, Universities, Site Enviro	High	Low
Preservation of the natural seed bank The excavation and stockpiling of soils often leads to the degradation of soil structure and composition. *A.nullanulla* relies on specific windblown gypsum to provide suitable soil conditions for germination and growth. To preserve the natural seed bank and site-specific soil conditions (i.e. Gypseous soils), excavation of soils across the Development Footprint particularly within the *A.nullanulla* species polygon soil scalping is recommended.	Prior to construction of areas containing *A.nullanulla* (Preconstruction and construction)	Project Team, Universities, Site Enviro, Machinery Operators	High	Low

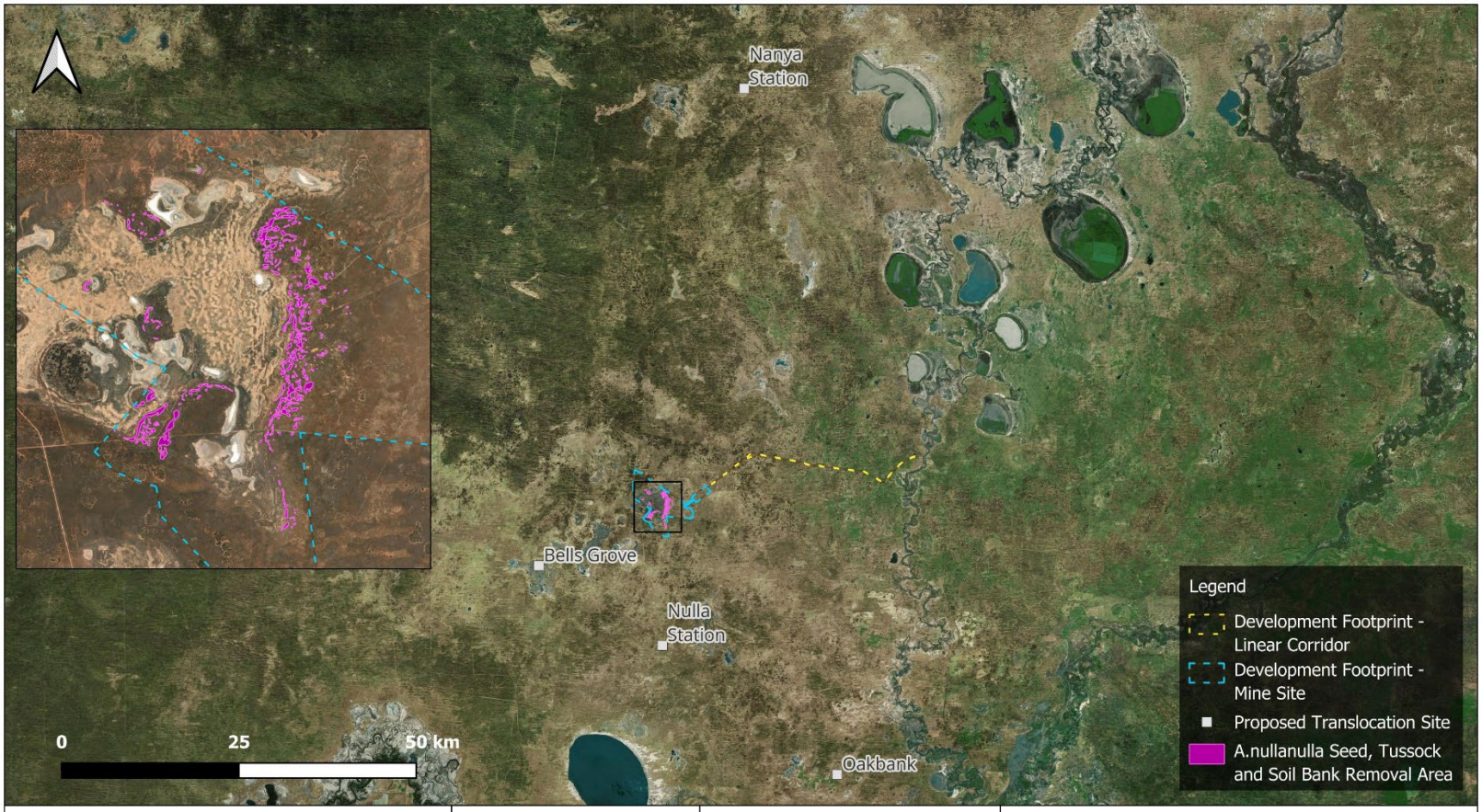
Mitigation Measures	Timing	Responsible Party	Priority	Risk of Failure
Soil scalping is a method of soil preservation utilised in revegetation where elevated nutrients (i.e. Nitrogen and Phosphorus) and high weed seed levels pose a threat to the success of revegetation. Soil Scalping is utilised in this situation to remove the top 100-150 mm (max 200 mm) preserving the natural seed bank and A-horizon nutrients for research into the revegetation and rehabilitation of *A.nullanulla* potential habitat. It is recommended that scalping be undertaken from 0-100 mm and 100-200 mm to further preserve the soil structure and avoid mixing of soil layers. Stockpiles of soils should be placed on and covered by a non-permeable material to reduce the potential of erosion and leaching of valuable nutrients. Where these soils are to be utilised for revegetation, remediation or research, soils should be placed in the reverse order of extraction to ensure maximum retention of nutrient levels and soil structure. Soil hygiene, disease and pathogen control measures are required to be considered when translocating soils off site.				

Table 2: *Austrostipa nullanulla* Adaptive Management Responses

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
Pest management	To be collected via surveys.	Seasonal rainfall Seasonal pest population dynamics Seasonal changes in resources	PIR camera survey Trapping Ground shooting Exclusion fence monitoring Exclusion fence installation Monitoring for pest impacts within exclusion area.	Impacts from herbivorous pest species observed within exclusion areas Damaged exclusion fencing Identification of movement of pest species into the exclusion area. Identification of pest impacts within proposed translocation sites Lack of intact and good condition exclusion fencing at translocation sites	Increased control measures Exclusion fence inspection Exclusion fence repair Installation of Exclusion fences at translocation sites	Pest population monitoring results Pest population control results Exclusion fence monitoring	Results of pest management will inform the appropriate control measures required for future control of pests.
Population dynamics	Baseline survey conducted as part of BDAR to map species polygon of *A.nullanulla*	Seasonal rainfall	Targeted threatened flora surveys (Grasses)	Increase in area of extent	Installation of additional exclusion fencing around new individuals	Targeted survey results GIS spatial mapping of individuals	Results of ongoing monitoring will indicate the requirement for further exclusion and mitigation measures to be implemented
Soil testing	To be collected within the *A.nullanulla* species polygon prior to excavation and construction works commencing within the	Seasonal rainfall	Soil testing	Occurrence of soil pathogens/diseases within soils proposed for scalping.	Translocation to be undertaken on Subject Land or within close proximity to the Subject Land	Soil test results of soils to be scraped Soil test result of proposed translocation sites	Soil testing will determine the presence of soil pathogens and diseases. If scalped soils contain pathogens or diseases that are not present at offsite translocation areas, offsite

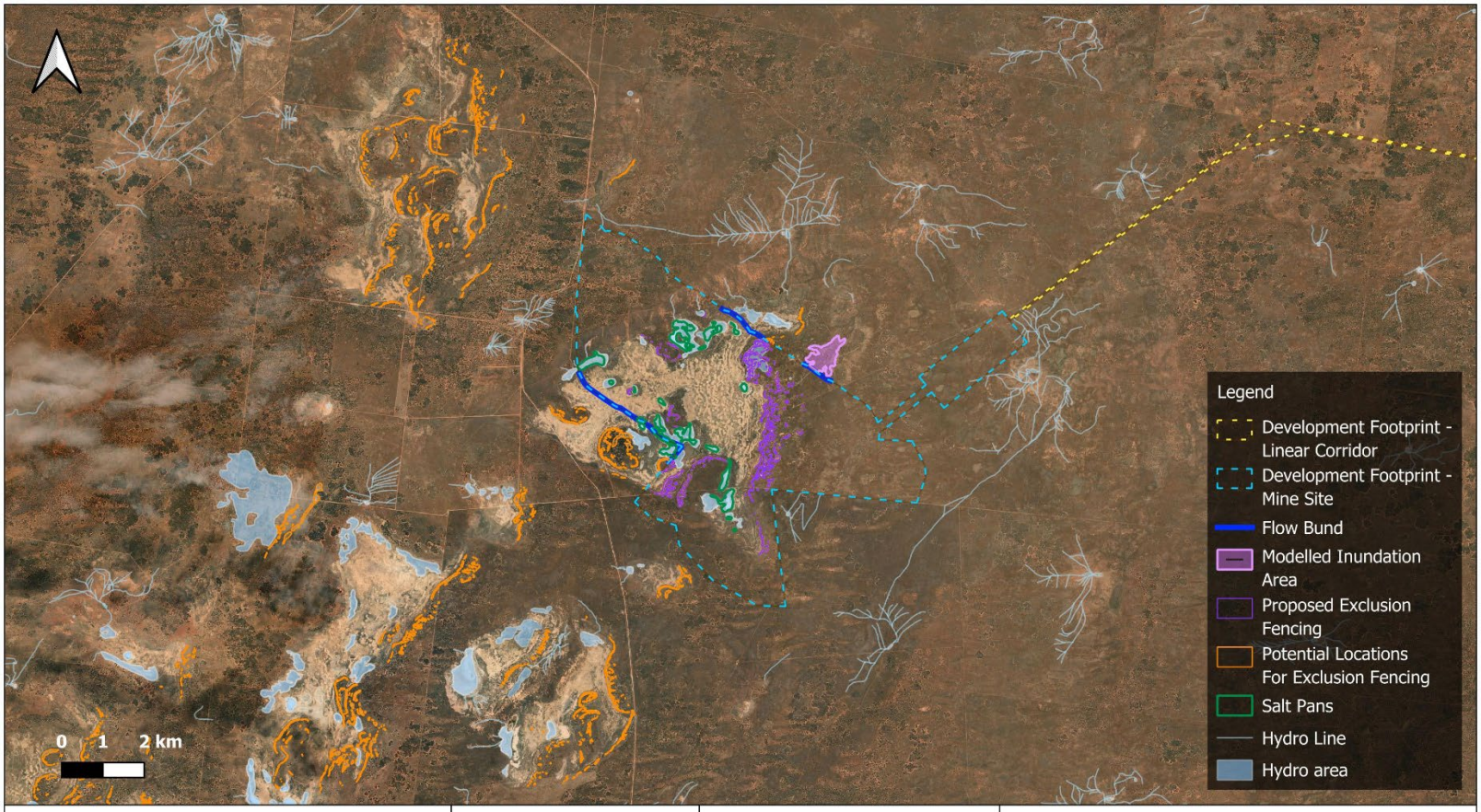
Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
	species polygon.						translocation should not be conducted.
Whole Plant Translocation	Total number of plants translocated	Seasonal rainfall Plant health	Total count	High proportion of translocation failure Below average rainfall	Research Plan to determine corrective measures Further seed collection from known populations Soil testing Increased watering schedule	Ongoing monitoring of cover and abundance	Research will determine the effectiveness of various whole plant translocation methodologies (i.e. various tubestock sizes, whole plant core vs. whole turves)
Direct seeding	Baseline data of existing cover and abundance of all species within direct seeding areas is required to monitor the establishment and germination of *A.nullanulla*	Seasonal rainfall and temperature Seed viability Soil nutrients	Total cover and abundance counts of *A.nullanulla*	No germination of *A.nullanulla* from direct seeding Below average rainfall Unsuccessful seed harvesting	Viability and germination testing of harvested seed Increased watering schedule Soil testing Additional seed harvesting from known populations Watering of established populations of *A.nullanulla*	Ongoing monitoring of cover and abundance. Successful seed harvesting.	Research will determine the effectiveness of various direct seeding methodologies and management techniques.
Seed Bank Translocation	Baseline data is not required as translocated soils will not contain established *A.nullanulla*. translocated soils will be void of vegetation until	Seasonal Rainfall and temperature Operator skills Machinery capabilities	Total cover and abundance of all regenerating species	No germination of *A.nullanulla* or other species Below average rainfall	Viability and germination testing of seed bank in controlled environment (i.e.. greenhouse) Soil testing Increased watering schedule	Ongoing monitoring of cover and abundance of all germination	Research will determine the effectiveness of seedbank translocation for *A.nullanulla*

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
	watering/rainfall spurs germination				Additional direct seeding of *A.nullanulla*		



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Translocation areas shown in Dr Hunter's map in his report	Biodiversity AUSTRALIA	
	Drawn by: NE	Location: Warwick Station		
	Date: February 2026	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:700000

Figure 1: *Austrostipa nullanulla* translocation mitigation management measure locations within the Development Footprint Mine site area and destination sites in the surrounding properties



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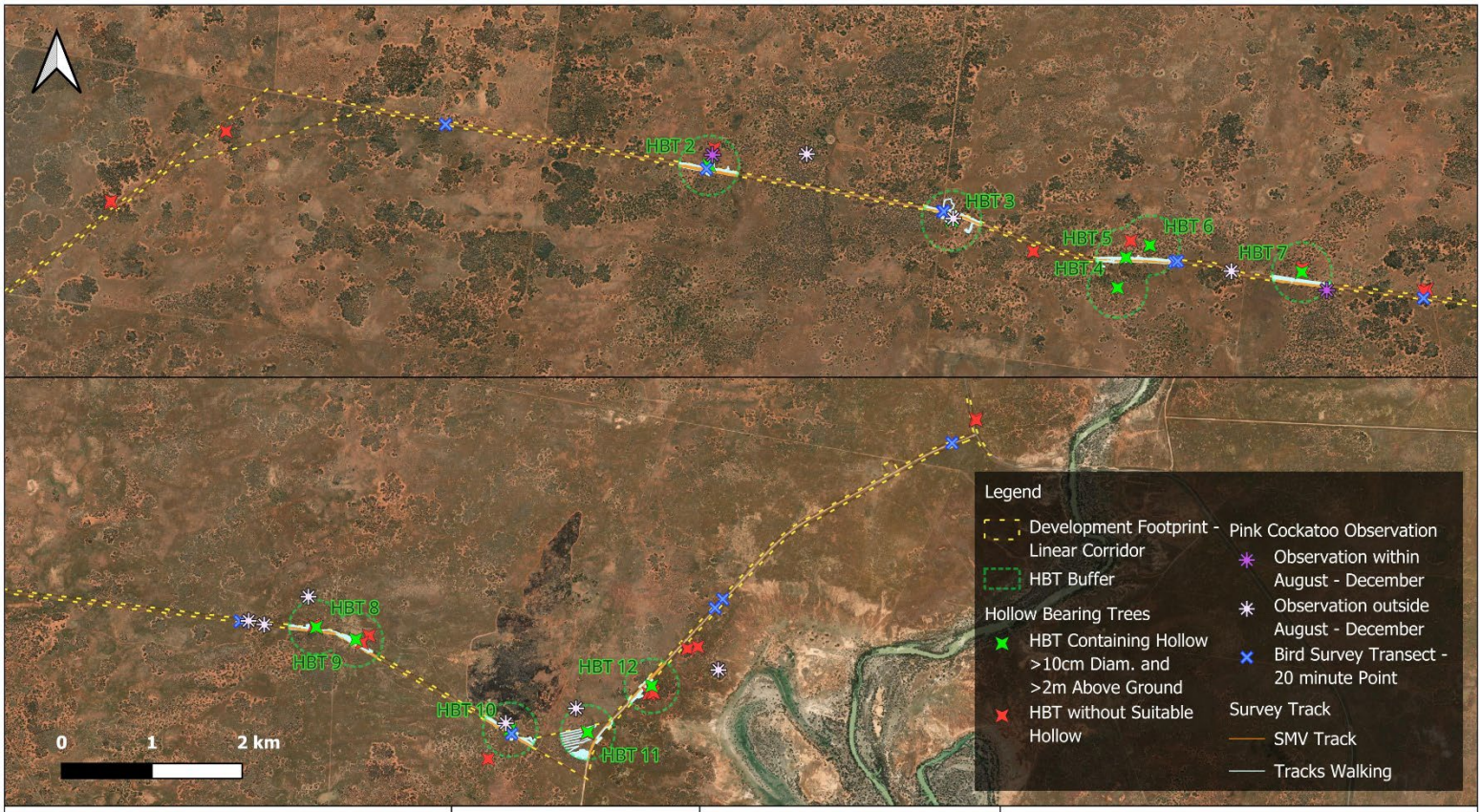
	Drawn by: NE	Location: Warwick Station		
	Date: February 2026	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:120000

Figure 2: *Austrostipa nullanulla* Adaptive Management Plan showing mitigation management measures within the Development Footprint Mine Site area and the broader region

A-2 CPA Issue 12.2 - Targeted surveys in the breeding season for Pink Cockatoo



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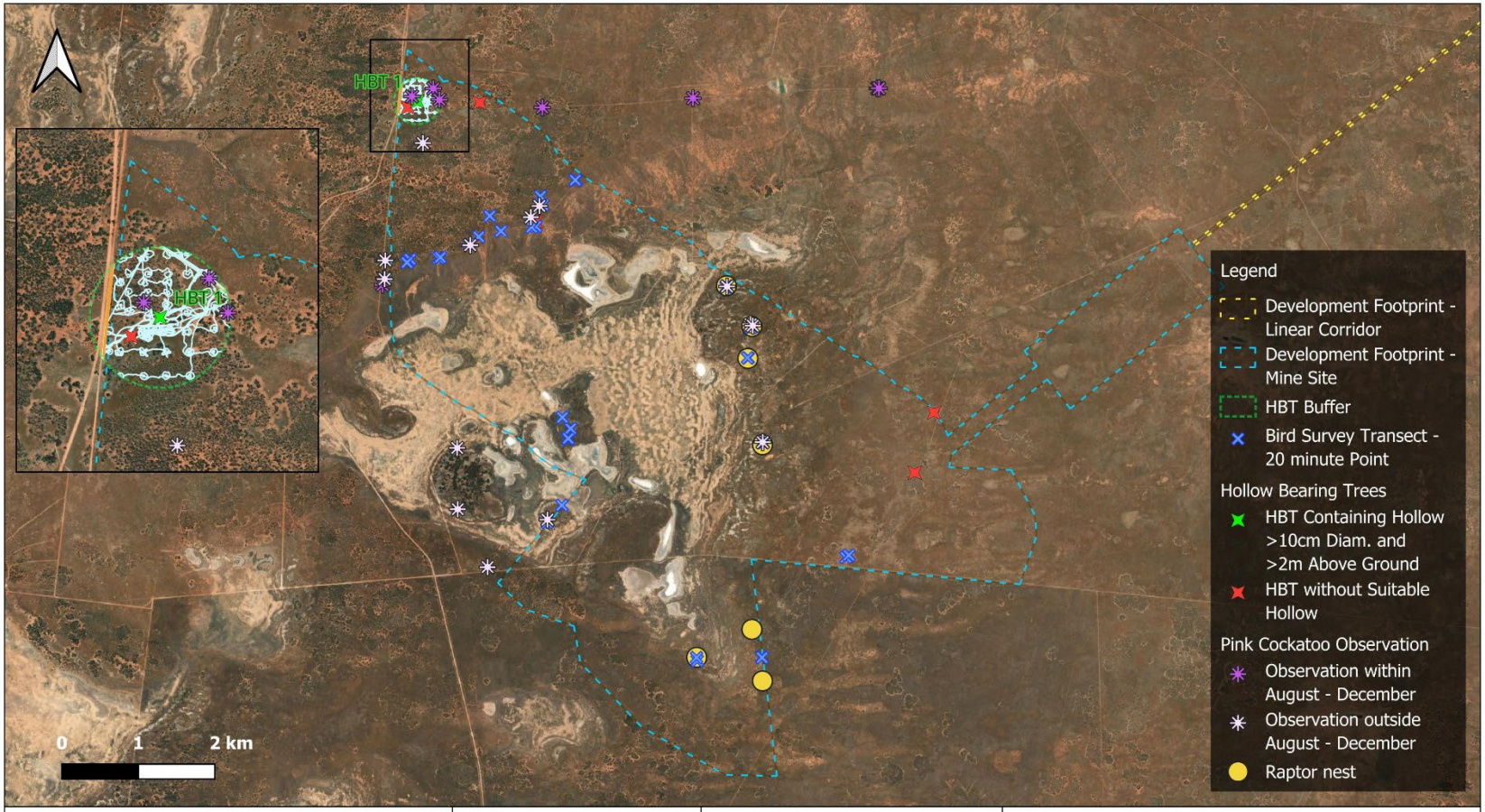
	Drawn by: NE	Location: Warwick Station		
	Date: February 2026	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference:
				Scale: 1:50000

Figure 3: Survey Effort for Pink Cockatoo within the Development Footprint Linear Corridor area (11 x HBTs)



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	Drawn by: NE	Location: Warwick Station		
	Date: February 2026	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:65000

Figure 4: Survey Effort for Pink Cockatoo within the Development Footprint Mine Site area (1 x HBT)

Table 3: Survey Effort – Pink Cockatoo

Search Area	SMV (Km)	SMV (Hr)	Walking (Km)	Walking (hr)	Total SMV & Walk (Km)	Survey Pt (Hrs)	Total Hrs	Survey Days
HBT 1	15.76	0.79	46.62	10.36	62.38		11.15	34
HBT 2	33.79	1.69	12.15	2.70	45.94	2.66	7.05	37
HBT 3	25.72	1.29	11.94	2.65	37.66	2.66	6.60	35
HBT 4, 5, 6	28.44	1.42	26.54	5.90	54.98	2.66	9.98	38
HBT 7	19.38	0.97	12.50	2.78	31.88		3.75	33
HBT 8	14.86	0.74	3.61	0.80	18.48		1.55	27
HBT 9	14.37	0.72	10.38	2.31	24.74		3.02	34
HBT 10	17.24	0.86	13.57	3.02	30.81	2.66	6.54	27
HBT 11	9.05	0.45	9.33	2.07	18.39		2.53	19
HBT 12	9.71	0.49	3.97	0.88	13.69		1.37	19
Total	188.32	9.42	150.62	33.47	338.94	10.64	53.53	303.00

Table 4: Suitable Hollow Bearing Trees located within the Development Footprint

HBT No.	Species	DBH (cm)	Hollows >10 (cm)	Hollow Height (m)	Distance from Development Footprint (m)	Impact Type
1	Eucalyptus	50	3	2	0	Direct Clearance
2	Eucalyptus	32	1	3	21.978188	Indirect Retained
3	Eucalyptus	25	1	2.5	72.470422	Indirect Retained
4	Eucalyptus	35	2	1.65	318.150689	Indirect Retained
5	Eucalyptus	130	3	2.2	0.082916	Indirect Retained
6	Eucalyptus	30	1	3	153.61475	Indirect Retained
7	Eucalyptus	30	1	2.4	99.058104	Indirect Retained
8	Eucalyptus	28	4	2	10.613874	Indirect Retained
9	Eucalyptus	40	1	3	25.602204	Indirect Retained
10	Eucalyptus	30	1	2.5	9.248757	Direct Clearance
11	Casuarina	37	2	4.5	0	Indirect Retained
12	Casuarina	44	1	2.5	38.882866	Indirect Retained

Photograph 1: HBT1

Photograph 2: HBT

Photograph 3: HBT

Photograph 4: HBT 4

Photograph 5: HBT 5

Photograph 6: HBT 6

Photograph 7: HBT 7

Photograph 8: HBT 8

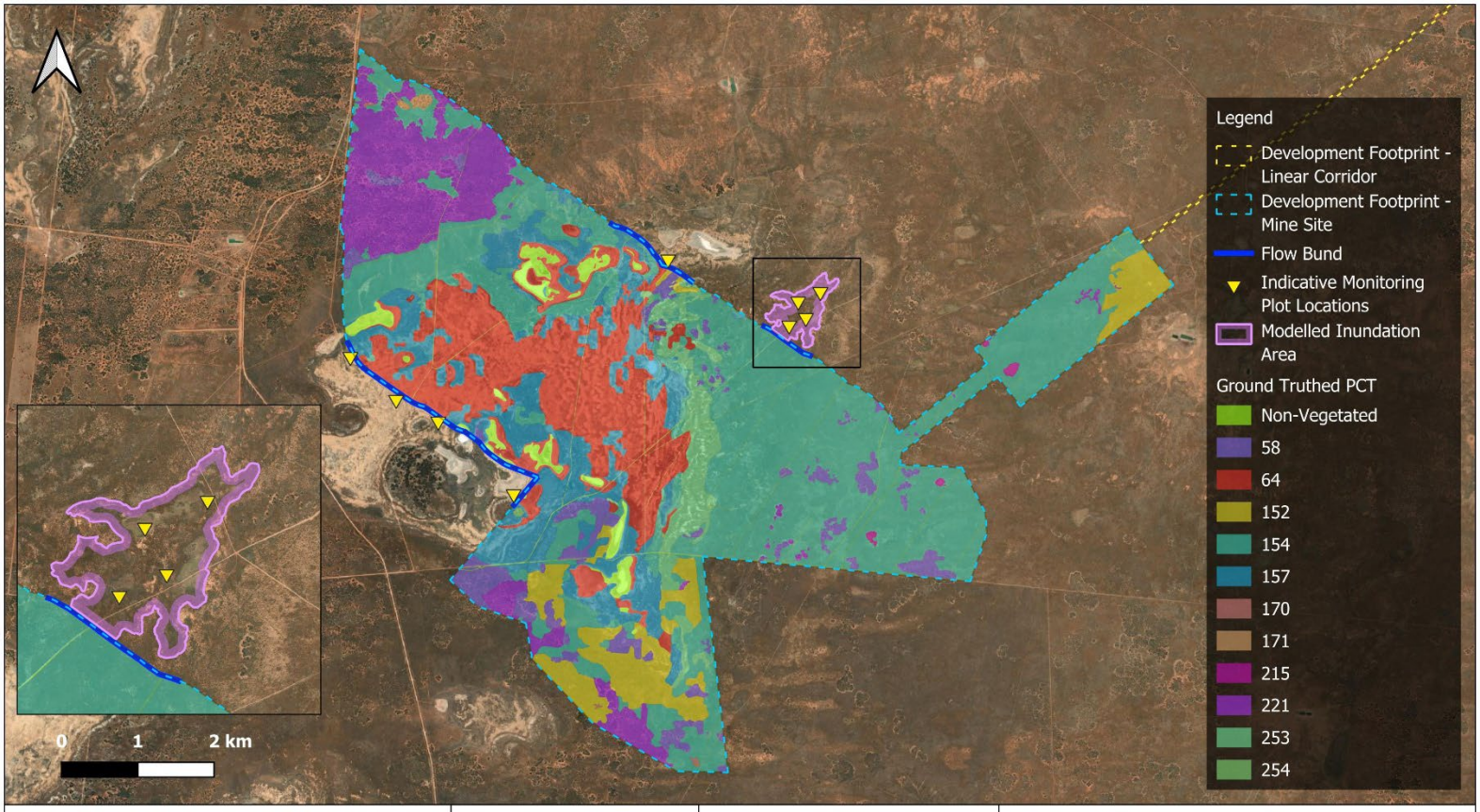
Photograph 9: HBT 9

Photograph 10: HBT 10

Photograph 11: HBT 11

Photograph 12: HBT 12

A-3 CPA Issue 14.4 - Prescribed impact assessment



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	Drawn by: NE	Location: Warwick Station		
	Date: February 2026	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54 Scale: 1:65000

Figure 5: Flow bunds and indicative inundation areas resulting from a 'with mine' storm event scenario

Table 5: PCT 154 Moderate vegetation zone values

VZ	VI	ARD VI without Management	Triger Value	Number of Plots	Plot Numbers
Moderate	34.2	-1.5	-3	42	42 - 75 & 78 - 85

Table 6: PCT 64 vegetation zone values

ZV	VI	ARD VI without Management	Triger Value	Plots	Plot Numbers
Mod-high	49.9	-1.8	-3.6	7	23, 24, 25, 26, 27, 28, 29
Mod	19.9	-0.9	-1.8	4	29, 30, 40, 41
Mod-Low	26.8	-1.5	-3	5	18, 19, 20, 36, 39
High	81.8	-1.1	-2.2	1	10

A-4 CPA RTS New Issue 1 - Mitigation measures

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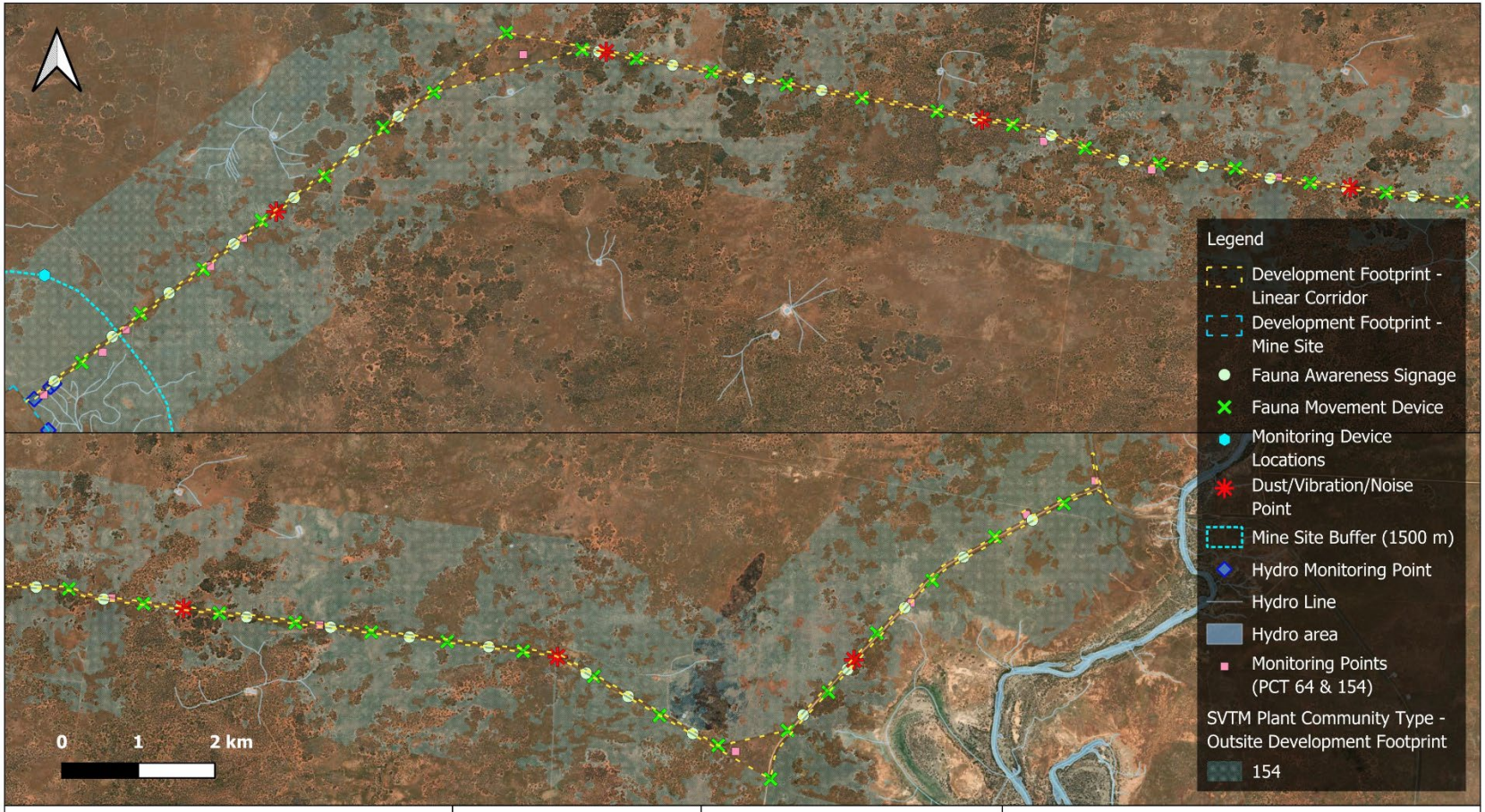
Project Manager: NC	Figure Name: General Site Mitigation Measures - Mine Site	Biodiversity AUSTRALIA	
Drawn by: NE	Location: Warwick Station		
Date: February 2026	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:80000

Figure 6: Adaptive Management Plan mitigation measures in the Development Footprint Mine Site Area



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	Drawn by: NE	Location: Warwick Station		
	Date: February 2026	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference:
				Scale: 1:65000

Figure 7: Adaptive Management Plan mitigation measures in the Development Footprint linear Corridor Area

Table 7: Indirect and prescribed impacts Salt lakes – Adaptive management measures to manage residual impacts

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
Vegetation integrity	• PCT 64 VI assessments undertaken during "average" benchmark conditions • PCT 64 VI assessments undertaken during "dry" benchmark conditions (yet to be conducted) • PCT 154 VI assessments undertaken during "average" benchmark conditions • PCT 154 VI assessments undertaken during "dry" benchmark conditions (yet to be conducted)	• Seasonal rainfall will determine benchmarks against which VI scores will be compared	• Quarterly VI monitoring throughout PCT 64 and 154 See Figure 6 and Figure 7	• If VI scores fall below the baseline for 2 consecutive years. • Annual rate of decline (ARD) for PCT 154 is identified to be twice baseline ARD • Recorded VI of PCT 64 falls below 75% of baseline VI • Extended periods of inundation • Extended periods of no rain • Fire damage	• Engage hydrologist to investigate whether surface flow availability and bund effectiveness is adequate. • Increase monitoring frequency to every 3 months to monitor VI trends. • Retirement of Credits identified in Section 5.4.4 of the BDAR for PCT 154 • Calculate credit requirements for PCT 64 residual impacts if VI continues to decline despite adaptive management actions • Increased frequency of VI monitoring in response to extended periods of inundation.	• VI score trends	• Results of investigations into the causes of VI declines will be used to inform ongoing management
Soil monitoring	• Soil sampling is required to be undertaken prior to impacts occurring within the Development Footprint in order to establish a baseline.	• Soil monitoring must be undertaken following high rainfall events	• Quarterly monitoring and reporting of Soil sampling throughout PCT 64.and 154 See Figure 6 and Figure 7	• Greater than 20% change in soil salinity.	• Engage Geologist and hydrologist to investigate remediation actions. • Increase monitoring to monthly to determine trends in soil quality	• Soil salinity trends	• Results of investigations into the causes of change to Soil salinity will inform ongoing management

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
					• Application of soil ameliorants • Prepare a report outlining the investigation into the changes		
Salt Lake Invertebrate utilisation	• Establish a baseline through diurnal invertebrate surveys undertaken at all salt lakes during spring prior to development	• Climate, migratory patterns and environmental conditions	• Annual monitoring of salt lake utilisation by invertebrates conducted within spring. See Figure 6 and Figure 7	• Reduction in observed invertebrate fauna occupation of unimpacted	• If a reduction in the utilisation of Salt Lake by invertebrate species is observed, monitoring should be conducted over multiple periods during Spring.	• Trend in Invertebrate utilisation of Salt lakes	• Results of utilisation of salt lakes will inform ongoing management and if further biodiversity credits are required to be retired.
Monitoring of ground water drawdown	• Outlined within the Copi Mineral Sands Project Groundwater Impact Assessment	• Effects of seasonal rainfall must be considered.	• Monitoring methods are to follow those outline in the Copi Mineral Sands Project Groundwater Impact Assessment. • Monitoring will occur at increased frequency during actions that are likely to cause groundwater drawdown. See Figure 6 and Figure 7	• Expected timeline of water drawdown exceeded beyond identified limits. These limits will be defined in the updated Groundwater modelling. To be guided by updated water drawdown modelling. i.e. • Groundwater drawdown exceeds modelled depths.	• Increased monitoring of water retaining embankments. • Prepare a report outlining the investigation into the changes • Repairs undertaken in water retention embankments • Increased number of water retention embankments • Review of Groundwater Model	• Groundwater depths and duration of drawdown.	• Results of investigations will outline ongoing management actions and determine if further mitigation measures are required to be implemented
Salt lake water quality	• Establish baseline through water sampling of Salt Lakes prior to	• Seasonal rainfall	• Flow bunds are required to be monitored	• Monitoring of Salt Lake water quality identifies greater	• Reduce volume of groundwater extracted.	• Water quality – organic and inorganic compounds,	• Results of investigations will outline ongoing management

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
	impacts where achievable.		following heavy rainfall • Flow bunds are to be inspected weekly for damages • Water Quality testing See Figure 6 and Figure 7	than 20% change in parameters • Damaged Flow bunds	• Source water from elsewhere. • Increased monitoring of Flow Bunds. • Repairs undertaken to Flow Bunds • Increased size of Flow bunds • Repairs are to be undertaken within no more than 14 days of identification	sedimentation etc.	actions and determine if further mitigation measures are required to be implemented
Mine water Use	• Establish baseline once development begins	• High rainfall events will likely increase volumes. • Drought conditions will likely increase evaporation rates and reduce pond levels	• Monthly Monitoring and reporting of: • Bore Pumping Volumes • Water return volumes • Evaporation rates • Pond water levels • Dredge and sand pumping volumes See Figure 6 and Figure 7	• Monitoring of Mine water usage as outlined in the Copi mineral Sands Project – Groundwater Impact Assessment, reports a greater than 20% increase in projected usage	• Replace monitoring infrastructure • Increased water monitoring • Prepare a report outlining the investigation into the changes •	• Volume of water consumed.	• To be guided by Groundwater impact Assessment (i.e. Greater than 150% change in Mine water usage)
Groundwater quality	• Outlined within the Copi Mineral Sands Project Groundwater Impact Assessment	• High rainfall and drought events will likely influence groundwater quality. • Groundwater drawdown is likely to influence	• Quarterly monitoring and reporting of bore water quality. See Figure 6 and Figure 7	• To be guided by Groundwater impact Assessment (i.e. Greater than 50% change in groundwater parameters)	• Increased monitoring of groundwater quality • Investigation of groundwater changes	• Groundwater quality trends	• Results of investigations will outline ongoing management actions and determine if further mitigation measures are

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
		groundwater quality.			• Repair of groundwater and waste water		required to be implemented
Flow, watercourse function and flooding	• Outlined within the Copi Mineral Sands Project Amended Surface Water Assessment	• High rainfall and groundwater drawdown is likely to influence flow, watercourse function and flooding	• Flow bunds are required to be monitored following heavy rainfall • Flow bunds are to be inspected weekly for damages • Repairs are to be undertaken within no more than 14 days of identification See Figure 6 and Figure 7	• Damages to flow bunds • Increased frequency of rainfall events • Identification of additional inundation areas	• Increased monitoring of Flow Bunds. • Repairs undertaken to Flow Bunds • Increased size of Flow bunds • Engage hydrologist to investigate whether surface flow availability and bund effectiveness is adequate. • Increase monitoring frequency to every 3 months to monitor impacts.. • VI score trends.	• Rainfall data, evaporation, groundwater depths and duration of drawdown, VI score trends	• Results of investigations will outline ongoing management actions and determine if further mitigation measures are required to be implemented

Table 8: Mitigation measures summary for The Project

Impact	Number	Mitigation measures	Timing	Responsible party	Risk of failure
Project Planning	P-1	The preparation and planning of or implementation of the below management plans must be completed prior to construction works commencing. ○ Operational Environment Management Plan ○ Construction Environment Management Plan ○ Biodiversity Management Plan	Pre construction (Plans updated as required)	Construction Manager, Health, Safety and Environment (HSE) Manager	Low

Impact	Number	Mitigation measures	Timing	Responsible party	Risk of failure
		○ Vegetation Management Plan ○ Rehabilitation Management Plan ○ Research Plan ○ Rehabilitation Research Plan ○ Revegetation Research Plan ○ Translocation Plan ○ *Austrostipa nullanulla* management Plan ○ Biosecurity Management Plan ○ Soil Erosion and Sediment Control Plan ○ Air Quality Management Plan ○ Topsoil Management Plan ○ Stormwater and Runoff Management Plan ○ Traffic Management Plan ○ Waste Management Plan The above plans are required to outline the following: ○ Responsible Parties for each management action ○ Responsible parties for auditing and compliance ○ Environmental objectives and outcomes ○ Spatial mapping ○ Performance criteria/ milestones ○ Completion Criteria ○ Evidence based risk assessment ○ Monitoring and auditing requirements ○ Compliance Reporting requirements ○ Contingency/Adaptive management measures The above plans will be prepared by suitably qualified personnel and reviewed by RW Corkery and RZ Resources Limited prior to implementation.			
	P-2	The Biodiversity Management Plan must be prepared identifying the Flora and Fauna mitigation measures	Pre construction	Construction Manager,	Low

Impact	Number	Mitigation measures	Timing	Responsible party	Risk of failure
		for each phase of The Project. The BMP will include strategies to limit and reduce potential impacts on vegetation and habitat. Primary objectives of the plan will blueprint: • Roles and responsibilities of personnel and auditing plan. • Details of relevant flora and fauna (especially threatened species) to be protected during all phases of The Project, including: ○ Extent and conditions of the habitats within the Development Footprint. ○ Species, habitat and breeding places/season. ○ Protocols to limit fauna injury and mortality, including management risks associated with open excavations, increased traffic and responses and reporting for roadkill and adverse incidents. ○ Protocols to ensure The Project does not provoke threats to fauna habitat, including exotic species (weeds/pests), road incidents and bushfires. ○ Display plans of areas to be cleared in stages and areas to be protected, including fauna movement corridors, habitat features, ' no go zones' and rehabilitation areas. ○ Pre-clearing protocols, including pre-clearing inspections, establishment of exclusion zones and ground identification of specific habitat features to be inspected and possibly retained. ○ Framework vegetation clearing protocols, including species-specific clearing requirements for *Austrostipa nullanulla* (Nulla spear-grass), fauna relocation management procedures and any specified seasonal limit on clearing activities.	(Plans updated as required)	Health, Safety and Environment (HSE) Manager	

Impact	Number	Mitigation measures	Timing	Responsible party	Risk of failure
		○ Display plans of the area to be impacted within the Development Footprint and adjoining areas outlining the location of key constraints including Native Vegetation, flora and fauna habitat, nests and breeding places. ○ Demands for temporary and permanent fencing to minimise the risk of fauna injury/mortality due to vehicle strike or entrapment during excavations. ○ Unpredictable threatened species find procedures, including outlining the process of stopping works, engaging a qualified ecologist to confirm the presence, contacting government regulators, securing any approvals required and restarting work. ○ Revegetation and Rehabilitation requirements for disturbed areas, no longer required for active use or construction, particularly within Native Vegetation, threatened species habitat, watercourses and drainage features. • Inclusion of various related sub plans ○ Vegetation Management Plan ○ Rehabilitation Management Plan ○ Fauna Management Plan ○ *Austrostipa nullanulla* Adaptive Management Plan ○ Stormwater and runoff Management Plan ○ Soil Erosion and Sediment Control Plan ○ Biosecurity Management Plan ○ Traffic Management Plan ○ Waste Management Plan ○ Air Quality Management Plan ○ Research Plan			

Impact	Number	Mitigation measures	Timing	Responsible party	Risk of failure
		○ Rehabilitation Research Plan ○ Revegetation Research Plan ○ Translocation Plan			
	P-3	A Vegetation Management Plan (VMP) is to be prepared, implemented and audited as part of the OEMP, CEMP and BMP. The constitutional objectives of the plan will display: • Roles and responsibilities of personnel implementing and auditing the plan. • Requirements for clearing vegetation around saline plains and drainage features. • Display maps and plans of the areas to be cleared and areas to be protected, 'No go Zones,' and proposed rehabilitation areas. • Outline pre-clearing protocols including establishment of exclusion zones and on-ground inspection of vegetation to be retained. • Outline vegetation clearing protocols, including sequential/stage clearing requirements • Protocols to reclaim and relocate woody debris, tree hollows and boulders/rocks. • Design and construction solutions are to be explored to minimise impacts to vegetation proposed for retention during construction following AS4970-2009 - Protection of trees on development sites and AS43-73-2007- Pruning of amenity trees. • Locate infrastructure and construction amenities and areas (Access, laydown areas, site offices, parking, fencing, stockpiles and storage) within cleared or disturbed areas, outside of the exclusion zones or vegetation to be retained. • Inclusion of various related subplans ○ Rehabilitation Management Plan ○ *Austrostipa nullanulla* Adaptive Management Plan	Pre construction (Plans updated as required)	Construction Manager, Health, Safety and Environment (HSE) Manager	Low

Impact	Number	Mitigation measures	Timing	Responsible party	Risk of failure
		○ Stormwater and runoff Management Plan ○ Soil Erosion and Sediment Control Plan ○ Biosecurity Management Plan ○ Waste Management Plan ○ Research Plan ○ Rehabilitation Research Plan ○ Revegetation Research Plan			
	P-4	An *Austrostipa nullanulla* Adaptive Management Plan will be developed to manage and mitigate impacts to known individuals of *A.nullanulla* within the subject Land. Preliminary mitigation measures are listed in section 5.6.8.	Pre construction (Plans updated as required)	Construction Manager, Health, Safety and Environment (HSE) Manager	Low
	P-5	Prepare, implement and audit an Erosion and Sedimentation Control Plan (ESCP) and Stormwater and runoff management plan following the International Erosion Control Association Australasia (IECA). *'Best Practice Erosion and Sediment Control Document'* (IECA, 2008) as part of the CEMP and outlining measures for the prevention of erosion and sedimentation during construction. The ESCP must include: • Suitable measures for erosion prevention including treatment of all bare exposed ground with the adequate crusting agent during extended construction works as soon as practicable upon construction completion. • Planning to minimise risk and manage sedimentation. • Chemical Spill Procedures to manage potential contaminants during construction. Refuelling, chemical storage and maintenance activities are undertaken in designated areas away from environmentally sensitive areas. Containment areas will be designed and managed following relevant regulatory requirements and standards.	Pre construction (Plans updated as required)	Construction Manager, Health, Safety and Environment (HSE) Manager	Low

Impact	Number	Mitigation measures	Timing	Responsible party	Risk of failure
		Include groundwater quality monitoring and management measures. See Figure 6 and Figure 7			
	P-6	Prepare, implement and audit a Traffic Management Plan for the movement of vehicles within the Subject Land. This Plan must identify mitigation measures and adaptive management actions to mitigate the impacts of increased traffic within the Subject Land. Mitigation measures must include but are not limited to; ○ Speed Restrictions ○ Fauna movement devices ○ Fauna awareness signage ○ Identification of Fauna hotspots ○ Speed control devices Vehicle movement exclusions/reductions (reduction of vehicle speed and numbers during dusk and dawn)	Pre construction (Plans updated as required)	Construction Manager, Health, Safety and Environment (HSE) Manager	Low
	P-7	Prepare, implement and audit a Biosecurity management plan (BSMP) as part of BMP, OEMP & CEMP The BSMP must identify site specific mitigation measures to reduce the impacts of weeds, pests and pathogens on native vegetation within the Subject Land. Management measures must include but are not limited to: • Preclearance Weed Census • Targeted annual Weed Species Census • Methods for prevention of introduction and/or spread of weeds, pests and pathogens. • Weeds, pests and pathogens monitoring, management measures and control. • Targeted Monthly Weed surveys in high traffic areas, washdown areas, around water sources and pathways, disturbance roadsides, storage and stockpiles. Locations of surveys to be confirmed after an initial sitewide survey which	Pre construction (Plans updated as required)	Construction Manager, Health, Safety and Environment (HSE) Manager	Low

Impact	Number	Mitigation measures	Timing	Responsible party	Risk of failure
		identifies key areas of concern and included these in the BSMP and VMP. • All plant and machinery present on site and entering the site is certified as weed free • All plant, vehicles, equipment, PPE and clothing must be adequately cleaned and free of weeds, dirt and other materials that may contain weed seeds or pathogens prior to entering and exiting the subject Land. • Appropriate collection and disposal of all weed material to a licensed facility • Ongoing weed management throughout all stages of the development including the operational phase and rehabilitation. • New weed invasions are controlled within 2 weeks of identification • Exclusion fencing installed to mitigate the spread of weeds into adjacent retained vegetation • Monthly Monitoring of adjacent vegetation for weed infestations			
	P-8	Prepare, implement and audit a Waste management plan as part of BMP, OEMP & CEMP The WMP must identify site specific mitigation measures to reduce the impacts of waste generated from increased anthropogenic impacts within the region. Mitigation measures must include but are not limited to; ○ Identification of waste disposal facilities ○ Monitoring program ○ Adaptive management measures Waste management protocols i.e. monthly waste inspection, monthly waste collection etc.	Pre construction (Plans updated as required)	Construction Manager, Health, Safety and Environment (HSE) Manager	Low
General	G-1	All site personnel to attend environmental training as part of the work site induction prior to entering the work site. All personnel will be instructed on their obligations for vegetation clearing protocols, maximum speed limits and biosecurity procedures.	Pre-construction, construction and operation.	Construction Manager, Health, Safety and	Low

Impact	Number	Mitigation measures	Timing	Responsible party	Risk of failure
				Environment (HSE) Manager	
	G-2	Preparation, implementation, review and planning of management and mitigations actions outlined within the plans identified in Section 5.5.	Pre-construction, construction and operation.	Construction Manager, Health, Safety and Environment (HSE) Manager	Low
Vegetation Clearing, habitat loss and fragmentation	V-1	Minimise the clearing footprint wherever feasible including avoiding/minimising clearing to mapped and ground-truthed Biodiversity Values (Figure 82), threatened species and communities, saline plains, groundwater, watercourses and drainage features and Native Vegetation.	Pre-construction	Project Design Team, Construction Manager, HSE Manager, Qualified Ecologist	Medium
	V-2	Safeguard vegetation clearing boundaries and 'No go Zones' for areas that may support HBT, threatened species breeding, foraging and shelter habitat, active microhabitat features and within proximity of watercourses and saline plains are established with appropriate signage and visible and physical markings. High visibility tape, barricade webbing or similar must be applied. If fencing or flagging is in poor condition, it must be replaced as practical to reduce the potential of accidental disturbance or clearing.	Pre-construction & Construction		Low
	V-3	Temporary construction areas will be rehabilitated as soon as possible after the completion of construction and operation works to reconnect fragmented habitats. This will be reflected where appropriate in the VMP and RMP.	Construction	HSE Manager	Medium
	V-4	A qualified fauna spotter catcher must be engaged prior and during any vegetation clearing to ensure that legislative obligations related to protect native fauna are met. The responsibilities of the fauna spotter catcher will ensure that: • Hollows to be inspected prior to clearing using inspecting cameras, work platforms, or other suitable methods.	Pre-construction & Construction	Construction Manager, HSE Manager, Fauna Spotter Catcher	Low

Impact	Number	Mitigation measures	Timing	Responsible party	Risk of failure
		• Clearing only occurs once a spotter/catcher gives sign off that vegetation has been inspected and is clear of native fauna present within the area. • Clearing commence within areas with least connectivity and directs fauna towards retained areas, towards Native Vegetation surrounding the Development Footprint. • Clearing in sequence to ensure adequate time for fauna to find refugia towards retained areas.			
	V-5	During Vegetation Clearing: • Qualified fauna spotter catcher to be present at all times. • Undertake stage clearing sequences to minimise the amount of clearing in one time • Stockpile cleared vegetation within clearing limits and retained topsoil and vegetation for on-site rehabilitation. • Hollow Bearing Trees to be slow felled to minimise the chances of fauna injury or death and must be inspected by a qualified fauna spotter catcher to confirm no injured wildlife is present.	Construction		Low
	V-6	If works extend outside of the approved impact area, a record is to be created in the incident management provisions, and an investigation will be undertaken as to why works extend outside the approved area.		Construction Manager, HSE Manager	Medium
	V-7	Exclusion fencing along the Linear Corridor Development footprint will include installation of one-way fauna movement devices allowing fauna within the development footprint to move out of the development footprint. These devices will be installed at 1 km intervals on alternating sides of exclusion fencing along the linear corridor development footprint.	Pre-construction, Construction	Construction Manager, HSE Manager	Medium
	N-1	The BMP OEMP and CEMP are required to include measures to monitor and mitigate the air quality,	Pre-construction		Medium

Impact	Number	Mitigation measures	Timing	Responsible party	Risk of failure
Noise, light and vibration		noise and vibration risks associated with the proposed activity in accordance with the *Construction Noise and Vibration Strategy* (Transport for NSW, 2019), Construction Noise Guideline (DECC, 2009), especially in areas with proximity of EECs or threatened species habitat. The BMP and CEMP would include a noise and vibration management plan to provide the framework for managing and mitigating potential construction noise and vibration impacts. Specific and active construction noise and vibration impact statements would detail standard and additional mitigation measures to be implemented based on predicted noise levels.		Construction Manager, HSE Manager	
	N-2	Restrictions of operational and construction work hours to daylight periods. Where night works are required, lights must be directed to minimise light spills into adjacent habitats and to reduce noise and vibration impacts on nocturnal fauna species.	Pre-construction, construction and operation.		
	N-3	Wildlife-friendly lighting must be considered, designed and installed where suitable. For example, light impacts are to be minimised through the use of sensor lighting for low traffic areas and/ or directional lighting for high traffic areas.			
	N-4	Construction vehicles must comply with maintenance schedules and operational restrictions designed to limit noise and light spill impacts during construction and operation phases.			
	N-5	Where vibration levels are predicted to outpace the screening criteria, a more detailed assessment of the structure and vibration monitoring must be undertaken to ensure vibration levels remain below appropriate limits for that structure. See Figure 6 and Figure 7			
	N-6	Monitoring stations for Noise and vibration are required to be installed within 1.5km of the mine site development footprint to monitor impacts on fauna and vegetation.			

Impact	Number	Mitigation measures	Timing	Responsible party	Risk of failure
		See Figure 6 and Figure 7			
	N-7	Important fauna habitat within 1.5km of the mine site development footprint should be identified prior to construction works. Monitoring of these locations should be undertaken prior to, and during/following activities that result in and increase in noise and vibration i.e. blasting and vegetation clearing. See Figure 6 and Figure 7			
Increased dust	D-1	The BMP, CEMP and OEMP are required to include monitoring of air quality and dust creation. Monitoring must include stationary monitoring devices placed strategically within and outside the development footprint to monitor dust levels. See Figure 6 and Figure 7	Pre-construction, construction and operation.	Construction Manager, HSE Manager.	High
	D-2	Dust suppression devices must be utilised throughout the development footprint. These will include but are not limited to; water carts, impermeable membrane covers and sprinkler systems.			
	D-3	Dust suspension monitoring to be carried out within proximity of EECs, internal unsealed access roads and other disturbed areas. Whenever possible engage watering polymer application to limit generation of dust.			
	D-4	All temporary stockpiles are to be covered, stabilised and/or moistened as required to minimise dust generation.			
	D-5	Dust inspections are to be undertaken daily to ensure construction activities are not generating excessive dust near sensitive receivers specified in the CEMP.			
Erosion and Sedimentation, hydrology and	E-1	All drainage and hydrological features to comply with accepted development requirements for operational work. These standards will be clearly outlined in the CEMP.	Pre-construction, construction.	Construction Manager, HSE Manager.	Low

Impact	Number	Mitigation measures	Timing	Responsible party	Risk of failure
Environmental spills	E-2	Monitoring soil and groundwater salinity. The most salt tolerant species *Tecticornia pergranulata* subsp. *pergranulata*, which is an indicator species for PCT 64, is not likely to be able to utilise groundwater with such extreme salinity levels of 61 g/l (10,167 mS/m). Groundwater within the Assessment Area is likewise too saline to support other, less salinity tolerant plant community types, such as Groundwater Dependent Ecosystems (GDEs).			Low
	E-3	Monitoring of Vegetation Integrity Plots within PCT 154 and PCT 64 outside of the Development Footprint to identify impacts of hydrological changes within the region. See Figure 6 and Figure 7	Pre-construction, construction, operation and rehabilitation	Site Environmental officer,	Low
Fauna Injury and Mortality	F-1	Prepare, implement and audit a Traffic Management Plan that outlines the current and expected flow of vehicle (and pedestrian) movements and identifies potential collision points for terrestrial fauna along the Development Footprint – Linear Corridor.	Pre-construction, construction.	Construction Manager.	Low
	F-2	Speed limits on arterial roads and on/off ramps with appropriate signage. It is recommended vehicles maintain a designated speed limit of 80 km/hr or lower along arterial roads and on/off ramps within the Proposed Development Footprint.	Construction and operation.	Construction Manager.	High
	F-3	Vehicle operations to be limited during dawn and dusk periods to avoid fauna collision with nocturnal animals while visibility is impaired. Where operations must be conducted, vehicle speeds are to be reduced by at least 50% to increase response time to potential fauna collisions.			Medium
	F-4	Vehicle access exclusion fencing to be established around cleared areas in locations of known threatened fauna habitat, or activity to prevent wildlife from returning to work areas.			Medium
	F-5	Install fauna awareness signage in locations along access tracks where native fauna are likely to cross. See Figure 6 and Figure 7			Low

Impact	Number	Mitigation measures	Timing	Responsible party	Risk of failure
	F-7	Rehabilitation of temporary construction areas is to be undertaken sequentially and as soon as practicable after clearing. If areas cannot be rehabilitated, temporary fencing is to be erected to avoid fauna injury/mortality.	Pre-construction, Constructions, Operation, Rehabilitation	Construction Manager, HSE Manager.	Medium
	F-8	Install temporary fencing around deep trenches where fauna has the potential to be entrapped.	Pre-construction, construction.	Construction Manager, HSE Manager	Low
	F-9	It is recommended that the boundary of the Development Footprint is fenced to exclude fauna from the within Development Footprint. It is also recommended that Fauna exclusion fencing must: • be of a suitable height to exclude all local fauna • be dug into the ground to prevent burrowing fauna from entering the Development Footprint • contain minimal barbed wire • not include 90^{O} corners to reduce injury to fauna • gaps, entry and exit points in exclusion fencing should include "wings" to guide fauna away from the entrance and fauna deterrent sirens to reduce the potential movement of fauna into the Development Footprint • include the installation of one-way fauna movement devices allowing fauna within the linear corridor development footprint to move out of the development footprint. These devices must be installed on alternating sides at 1 km intervals along exclusion fencing for the linear corridor development footprint.	Installation (Pre-construction and Construction) Maintenance and monitoring (Construction, Operation and Rehabilitation)	Construction Manager, HSE Manager, Site Enviro	Low
Introduction and spread of weeds, pests and pathogens	W-1	Prepare implement and audit a Biosecurity Management Plan. All reasonable and practical measures must be considered to minimise the risks and threats associated with weeds, pests and pathogens. Mitigation measures may include but are not limited to; • Designated washdown facilities	Pre-construction, construction.	Construction Manager, HSE Manager	Medium

Impact	Number	Mitigation measures	Timing	Responsible party	Risk of failure
		• Designated Boot scrub stations • Weed and seed certification of machinery, equipment and vehicles entering the subject land • All vehicles, machinery and equipment are to be free of all weed seed, debris and soil prior to entering and exiting the subject land • Designated parking areas for vehicles and machinery • Installation of cattlegrids to reduce the spread of soil, mud and debris from vehicles entering and exiting the subject land • Ongoing Weed and Pest management within the Subject Land and Development Footprint. • Annual weed census monitoring • Monthly weed census monitoring of infested areas, dispersal pathways and disturbed areas. • Installation of exclusion fencing along the boundary of the development footprint to prevent works from entering and impacting adjacent retained vegetation. • Treatment of new weed infestations within 2 weeks of identification and prior to seeding • Appropriate collection, storage and disposal of weed materials to a licensed facility.			
	W-2	Commence a pre-clearance weed census and reporting displaying the requirements for treatment and management actions, which are to be implemented and reported in accordance with the OEMP, CEMP, BSMP, BMP and VMP.	Pre-construction, construction.		
	W-3	Install and maintain appropriately designed exclusion fencing around the Development Footprint to prevent access by herbivores (kangaroos, goats, rabbits) and other feral grazers, protecting vegetation from browsing and grazing impacts.	Pre-construction, construction	Construction Manager, HSE Manager	Medium

Impact	Number	Mitigation measures	Timing	Responsible party	Risk of failure
	W-4	Establish additional protective fencing around areas of suitable habitat for *Austrostipa nullanulla* and all rehabilitated sections within the Development Footprint to safeguard regenerating vegetation from herbivore disturbance.			
	W-5	Removal of Goats from the Development footprint and Subject Land in accordance with the methodologies outlined within the Biosecurity Management Plan (BSMP) (i.e. Trapping and ground shooting).			
Anthropogenic impacts	A-1	Mitigation measures and monitoring rubbish dumping is to be promoted, implemented and audited as part of the Biodiversity Management Plan.	Pre-construction.	Construction Manager, HSE Manager	Low
	A-2	Suitable waste disposal facilities will be provided as part of the development implementation and audit of the Waste Management Plan, associated with CEMP and OEMP where information related to when and how waste must be stored and routinely transported off-site to waste disposal facilities within the LGA.	Pre-construction, construction.		
	A-3	Rocks, fallen timber and logs must remain on site and the wood collection for fire camps must not be permitted.	Construction, operation.	Construction Manager, HSE Manager	Medium

Table 9: Vegetation Clearing, habitat loss and fragmentation

Requirement	1. Baseline data against which monitoring will occur	2. 2. Seasonal changes to resources that are relevant to the impacts being monitored	3. 3. Monitoring methods (Incl. frequency, timing, reporting)	4. 4. Trigger values for adaptive management actions	5. 5. Adaptive management actions proposed to reduce or eliminate impact	6. 6. Information necessary to measure the impact over time	7. 7. How results will be applied to ongoing management to reduce extent of impacts
Pre-Clearance, Clearance and habitat loss	• Records of potential suitable habitat features such as Hollow Bearing Trees (HBT), stick nests,	• Local seasonal and climate, migratory patterns and environmental conditions may	• Methodical Inspection & recording of all habitat features prior to clearing is crucial to	• Identify and record potential suitable habitat and/or instances of fauna presence.	• Preclearance inspection habitat and Fauna records to guide clearance activities.	• Location of potential suitable habitat recorded. • New location of relocated	• All potential suitable habitat identified, recorded and relocated in to suitable

Requirement	1. Baseline data against which monitoring will occur	2. 2. Seasonal changes to resources that are relevant to the impacts being monitored	3. 3. Monitoring methods (Incl. frequency, timing, reporting)	4. 4. Trigger values for adaptive management actions	5. 5. Adaptive management actions proposed to reduce or eliminate impact	6. 6. Information necessary to measure the impact over time	7. 7. How results will be applied to ongoing management to reduce extent of impacts
	rocky outcrops, decorticating bark etc. • Pre-clearance survey throughout entire Subject Land to identify, record/flag habitat features and identify threatened fauna and flora present • Report containing results of preclearance survey to be prepared and used to guide clearance activities.	influence presence and movement of fauna within the site.	prevention of habitat loss, fauna injuries and fatalities. • Habitat features physically marked with flagging tape, and GPS co-ordinates were noted to record the locations of habitat features.	• Habitat features identified must be recorded, marked and factored into relocation plan.	• Suitable qualified/experienced professional spotter/catcher present to monitor and manage fauna interactions during the clearing activities. • Removal of habitat features and relocation to a designated holding area for later placement into suitable adjacent/nearby bushland or conservation area. • Where impact levels have been exceeded initiate investigation. • Prepare short report outlining the investigation into the impacts.	potential suitable habitat determined and recorded	adjacent/nearby bushland or conservation area.
Fragmentation	• Mapped retained remnant native vegetation patches which provide potential suitable habitat.	• Local seasonal and climate, migratory patterns and environmental conditions may influence presence and movement of fauna within the site.	• Biannually analysis of mapped retained remnant native vegetation patches	• Any reduction in mapped retained remnant native vegetation patch area.	• Inclusion of fragmentation avoidance and reduction in VMP. • Planned revegetation in areas considered to reduce fragmentation.	• Mapping, analysis and on-ground inspections included in annual/biannual monitoring plan.	• Success of prior revegetation to guide application of management to areas considered for defragmentation.

Table 10: Noise, light and vibration

Requirement	Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
Noise, Light and Vibration	• Noise, light and vibration data has been collected by RZ Resources at multiple monitoring stations located across the subject land since July 2024 • This data will continue to be built upon. See Figure 6 and Figure 7	• Seasonal weather patterns will impact each of the metrics recorded and monitored. • Wind speed and direction, cloud cover, rainfall intensity and duration. See Figure 6 and Figure 7	• A data gathering project has been in effect since RZ installed monitoring stations across the subject land in :July 2024. • Daily reports containing hourly values are received. See Figure 6 and Figure 7	• Trigger values for light spill, vibration and noise will be in line with mine site specific regulations and industry standards.	• Wherever a trigger value has been exceeded for noise, light or vibration, the project manager will initiate investigation/report and management actions outlined in the appropriate adaptive management plan. • Actions include review of shift activities roster, inclusion of proposed reductions in site prestart meetings. • Prepare a short report outlining the investigation into the changes	• Use of baseline data to compare pre-approval values with post-approval activities and known periods where triggers are reached.	• Regular monitoring of noise, light, vibration data to ensure mine activity does not exceed triggers. • Consistent notifications where noise, light, vibration trigger events occur, so operators are aware and can modify activities in line with noise, light, vibration regulations.

Table 11: Increased Dust

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
Dust pollution	• Dust data collected by RZ Resources since July 2024	• Seasonal weather patterns will impact the dust metric recorded and monitored.	• A data gathering project has been in effect since RZ installed monitoring stations across	• Trigger values for dust generation will be in line with mine site specific regulations and industry standards.	• Wherever a trigger value has been exceeded for dust, the project manager will initiate investigation/report and management	• Use of baseline data to compare pre-approval values with post-approval activities and known periods	• Regular monitoring of dust data to ensure mine activity does not exceed triggers.

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
	• This data will continue to be built upon See Figure 6 and Figure 7	• Wind speed and direction, rainfall intensity and duration.	the subject land in :July 2024. • Daily reports containing hourly values are received. See Figure 6 and Figure 7		actions outlined in the appropriate adaptive management plan. • Actions include dust suppression tanker watering, review of shift activities roster, inclusion of proposed reductions in site prestart meetings. • Prepare a short report outlining the investigation into the changes	where triggers are reached.	• Consistent notifications where dust value trigger events occur, so operators are aware and can modify activities in line with dust regulations.

Table 12: Erosion and Sedimentation, hydrology and Environmental spills

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
Erosion & Sedimentation	• Relevant PCT VI plot assessments undertaken during 'average' and/or 'dry' benchmark conditions for ground cover, leaf litter and exposed/bare earth	• Seasonal rainfall will determine benchmarks against which VI plot scores will be compared • Soil erosion and sedimentation monitoring must be undertaken following high rainfall events See Figure 6 and Figure 7	• Annual VI plot monitoring throughout relevant PCTs where risk of erosion is elevated. • Erosion control Performance Criteria will be detailed within a Rehabilitation Management Plan. Continued failure to achieve	• If VI plot scores fall below the baseline for 2 consecutive years. • Greater than 20% change in sedimentation baseline levels after rainfall. • Sheet erosion – Minor: Shallow soil deposits downslope, Moderate: Partial exposure of roots;	• Engage Geologist and hydrologist to investigate remediation actions. • Increase monitoring to monthly to determine trends in sedimentation • Application of measures such as sediment fencing, direct seeding, hydro mulching, placing tree logs	• VI plot ground cover and leaf litter cover score trends • Sedimentation trends	• Results of investigations into the causes of relevant VI plot value declines and sedimentation changes will be used to inform ongoing management

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
			erosion Key Performance Indicators in the same area may require additional alternative control measures detailed within the Adaptive Management Biodiversity Strategy BMP See Figure 6 and Figure 7	moderate soil deposits downslope, Severe: Loss of surface horizon; subsoil exposure; root exposure; substantial soil deposits downslope. • Rill/Gully Erosion – Minor: <15 Rills and <0.3m deep, Moderate: 15-30 rills and <0.3m deep, Severe: >30 rills and / or any >0.3m deep. • Annual rate of decline (ARD) for PCT 154 is identified to be twice baseline ARD • Recorded VI of PCT 64 falls below 75% of baseline VI	and brush matting across cleared areas. • Erosion infilling is to be undertaken by the placement of gravel and or clean sand via manual application. • Prepare a report outlining the investigation into the changes		
Hydrology and Environmental spills	• Establish hydrology baseline through water sampling of Salt Lakes prior to impacts where achievable. • Outlined within the Copi Mineral Sands Project Groundwater Impact Assessment • Establish Vegetation	• Effects of seasonal rainfall must be considered.	• Monitoring methods are to follow those outline in the Copi Mineral Sands Project Groundwater Impact Assessment. • Monitoring will occur at increased frequency during	• Any hydrological or environmental spill occurring within the subject land. • Extended periods of Inundation of PCT 64 and 154 outside of the development footprint. • Annual rate of decline (ARD) for PCT 154 is identified to be twice baseline ARD	• Initiate emergency response including identify source and nature of hazard, PPE and site-wide protection protocols, set up a perimeter, stop/contain spill at source, • Minimise impacts, properly dispose of hazard source and cleanup contaminant – decontaminate and	• Water and soil quality – organic and inorganic compounds, sedimentation etc. • Groundwater quality trends	• Results of investigations will outline ongoing management actions and determine if further mitigation measures are required to be implemented

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
	Integrity Plots within PCT 64 and 154 outside of the Development Footprint		actions that pose a risk of spills. • Biannual Vegetation Integrity Plots	• Recorded VI of PCT 64 falls below 75% of baseline VI	rehabilitate if required • If the situation escalates, external emergency responders may be required and seek medical attention if required. • Investigate incidents and increased soil and water monitoring at high risk areas • Prepare a report outlining the investigation into the changes • Collection of pooled water within PCT64 and 154 to be utilised within the Development footprint for dust suppression. • Increase monitoring frequency to every 3 months to monitor VI trends. • Retirement of Credits identified in BDAR Section 5.4.4 for PCT 154 • Calculate credit requirements for PCT 64 residual impacts if VI continues to decline despite adaptive		

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
					management actions		

Table 13: Fauna Injury and Mortality

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
Fauna welfare	• Data from the traffic management plan outlines the current and expected flow of vehicle (and pedestrian) movements and identifies potential collision points for terrestrial fauna along the Development Footprint – Linear Corridor. See Figure 6 and Figure 7	• Local seasonal and climate, migratory patterns and environmental conditions may influence presence and movement of fauna within the site.	• Remote cameras will record traffic activity levels and reported daily. • All stages of the project. • Mandatory reporting for vehicle strikes	• Excessive fauna strikes • Excessive disruption of fauna movements	• Reporting occurrences of vehicle strike within subject land and investigation of incidents. • Reduce traffic movements and speed limits on the Development Footprint - Linear Corridor to 40 km/h during dawn and dusk periods, where animal activity is likely to occur. • Speed limits on arterial roads and on/off ramps with appropriate signage. Vehicles must maintain a designated speed limit of 80 km/hr or lower along arterial roads and on/off ramps within the	• Records of vehicle strike, roadkill for all fauna, including native and exotic mammals, reptiles, birds, and amphibians.	• Results of investigations analysed and applied to traffic management plan.

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
					Proposed Development Footprint. • Vehicle access exclusion fencing to be established around cleared areas in locations of known threatened fauna habitat, or activity to prevent wildlife from returning to work areas. • Install fauna awareness signage in locations along access tracks where native terrestrial fauna is likely to cross and where higher density of HBTs and occurrences of Pink Cockatoos have been recorded. See Figure 6 and Figure 7 • Installation of high visibility Variable Message Signs to alert vehicles of recent fauna interactions. • Rehabilitation of temporary construction areas is to be undertaken sequentially and as soon as practicable after clearing. If		

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
					they cannot be rehabilitation, temporary fencing is to be erected to avoid fauna injury/mortality. • Install temporary fencing around deep trenches where fauna has the potential to become trapped. • Installation of additional one way fauna movement devices		

Table 14: Introduction and spread of weeds, pests and pathogens

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
Weeds and pathogens	• Various PCT VI plot assessments undertaken during average and dry benchmark conditions, within appropriate high risk areas. • Levels of die-off, dieback, weed infestations, and plant	• Seasonal rainfall will determine benchmarks against which VI scores will be compared • Seasonal rainfall and temperature	• Annual VI monitoring throughout PCTs within appropriate high risk areas. • Plant disease/pathogen inspection.	• If a significant increase (>20%) in weed cover or weed species richness occurs. • If VI plot scores fall below the baseline for 2 consecutive years.	• Preparation of a Weed eradication plan and/or a Weed Management Plan. • Vehicle washdown/disinfectant stations at site entry points. • Soil erosion and sediment control measures	• VI score trend report data • Plant disease / pathogen, die-off, dieback, impacts report data. • Initial weed species consensus	• Results of investigations will outline ongoing management actions and determine if further mitigation measures are required to be implemented • Results of the weed census will identify key triggers and

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
	disease/pathogen impacts. • Targeted Baseline Weed Census See Figure 6 and Figure 7		• Annual Targeted Weed census • Monthly targeted Weed monitoring of high traffic areas, washdown areas, roadsides, water sources, dispersal pathway. Locations of surveys to be confirmed after an initial sitewide survey which identifies key areas of concern and included these in the VMP. See Figure 6 and Figure 7	• Instances of plant disease/pathogen impacts. • The Biosecurity Management plan will include key trigger points for the control of identified weed species present within the Subject Land • New infestations of weed species • Presence of weed reproductive material	• Ongoing Weed management throughout the project lifecycle • Treatment of new infestation within 2 weeks of identification • Weed reproductive material is to be manually collect and disposed of appropriately.		management actions required to be undertaken to effectively control weed species within the Development Footprint.
Pest management	• Pest population surveys to be conducted to estimate population numbers	• Seasonal rainfall • Seasonal resources	• Annual PIR camera monitoring • Annual Ground shooting reports • Annual Trapping reports • Annual VI monitoring • Annual Fauna surveys	• No reduction or an increase in estimated pest population • No reduction in number of animals captured or shot. • If VI plot scores fall below the baseline for 2 consecutive years. • Evidence of herbivory in exclusion areas	• Increase frequency of pest management actions • Exclusion fence inspection • Maintenance/Repair of exclusion fence	• Estimation of Pest population • Number of pests captured • Number of pests shot	• Results of conducted monitoring will determine the success of pest management. • Results will indicate if further intervention is required

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
			See Figure 6 and Figure 7				

Table 15: Anthropogenic impacts

Requirement	1. Baseline data against which monitoring will occur	2. Seasonal changes to resources that are relevant to the impacts being monitored	3. Monitoring methods (Incl. frequency, timing, reporting)	4. Trigger values for adaptive management actions	5. Adaptive management actions proposed to reduce or eliminate impact	6. Information necessary to measure the impact over time	7. How results will be applied to ongoing management to reduce extent of impacts
Human caused impacts	• Establish a baseline through site condition inspection/assessments undertaken at all relevant areas of the subject land prior to commencing development. • Data from the site-wide fencing, signage and remote camera condition, function and maintenance report.	• Monitoring of the subject land identifies greater than 20% change in parameters	• Quarterly monitoring and reporting of site condition / rubbish levels, fence and camera function.	• Occurrences of rubbish detected • Fences, signage and cameras are not functioning	• Occurrences of rubbish within and around the subject land are detected, monitoring is increased and a report prepared. • Rubbish collection and removal implemented. • Fences, signage and cameras inspected and repaired where needed.	• Data from the Quarterly report assessing fencing, signage and remote camera condition and function	• Results of investigations and quarterly report will outline ongoing management actions and determine if further mitigation measures are required to be implemented

A-5 REFERENCES

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A-2 Site Vegetation List

Table 72: Flora species recorded on the Subject Land

Family Name	Scientific Name	Common Name	Exotic
Malvaceae	*Abutilon otocarpum*	Desert Lantern	
Fabaceae (Mimosoideae)	*Acacia aneura*	Mulga	
Fabaceae (Mimosoideae)	*Acacia colletioides*	Wait-a-while	
Fabaceae (Mimosoideae)	*Acacia rigens*	Needle Wattle	
Fabaceae (Mimosoideae)	*Acacia sclerophylla var. sclerophylla*	Hard-leaved Wattle	
Fabaceae (Mimosoideae)	*Acacia tetragonophylla*	Dead Finish	
Fabaceae (Mimosoideae)	*Acacia victoriae*	Prickly Wattle	
Fabaceae (Mimosoideae)	*Acacia victoriae subsp. victoriae*	Elegant Wattle	
Sapindaceae	*Alectryon oleifolius*	Western Rosewood	
Sapindaceae	*Alectryon oleifolius subsp. canescens*		
Brassicaceae	*Alyssum linifolium*	Flax-leaf Alyssum	*
Brassicaceae	*Arabidella trisecta*	Shrubby Cress	
Poaceae	*Aristida contorta*	Bunched Kerosene Grass	
Poaceae	*Aristida jerichoensis*	Jericho Wiregrass	
Asphodelaceae	*Asphodelus fistulosus*	Onion Weed	*
Asteraceae	*Asteraceae indeterminate*	Daisies	
Araliaceae	*Astrotricha spp.*		
Chenopodiaceae	*Atriplex angulata*	Fan Saltbush	
Chenopodiaceae	*Atriplex holocarpa*	Pop Saltbush	
Chenopodiaceae	*Atriplex limbata*	Spreading Saltbush	
Chenopodiaceae	*Atriplex lindleyi*	Eastern Flat-top Saltbush	
Chenopodiaceae	*Atriplex nummularia*	Old Man Saltbush	
Chenopodiaceae	*Atriplex papillata*	Coral Saltbush	
Chenopodiaceae	*Atriplex semibaccata*	Creeping Saltbush	
Chenopodiaceae	*Atriplex sp.*	A Saltbush	
Chenopodiaceae	*Atriplex spp.*	Saltbush	
Chenopodiaceae	*Atriplex stipitata*	Mallee Saltbush	
Chenopodiaceae	*Atriplex vesicaria*	Bladder Saltbush	
Chenopodiaceae	*Atriplex vesicaria subsp. minor*		
Chenopodiaceae	*Atriplex vesicaria subsp. vesicaria*		
Poaceae	*Austrostipa nitida*		
Poaceae	*Austrostipa nullanulla*	Speargrass	
Poaceae	*Austrostipa scabra*	Speargrass	

Family Name	Scientific Name	Common Name	Exotic
Poaceae	*Austrostipa sp.*		
Poaceae	*Austrostipa variabilis*		
Poaceae	*Avena barbata*	Bearded Oats	*
Nyctaginaceae	*Boerhavia dominii*	Tarvine	
Nyctaginaceae	*Boerhavia spp.*		
Asteraceae	*Brachyscome ciliaris*	Variable Daisy	
Asteracae	*Brachyscome spp.*		
Asteraceae	*Brachyscome triloba*		
Asphodelaceae	*Bulbine semibarbata*	Wild Onion	
Portulacaceae	*Calandrinia eremaea*	Small Purslane	
Cupressaceae	*Callitris glaucophylla*	White Cypress Pine	
Asteraceae	*Calotis hispidula*	Bogan Flea	
Aizoaceae	*Carpobrotus glaucescens*	Pigface	
Brassicaceae	*Carrichtera annua*	Ward's Weed	*
Asteraceae	*Carthamus lanatus*	Saffron Thistle	*
Casuarinaceae	*Casuarina pauper*	Black Oak	
Poaceae	*Cenchrus ciliaris*	Buffel Grass	*
Asteraceae	*Centaurea melitensis*	Maltese Cockspur	*
Pteridaceae	*Cheilanthes lasiophylla*	Woolly Cloak-fern	
Pteridaceae	*Cheilanthes sieberi subsp. sieberi*	Rock Fern	
Chenopodiaceae	*Chenopodium curvispicatum*	White Goosefoot	
Chenopodiaceae	*Chenopodium desertorum subsp. desertorum*	A Goosefoot	
Chenopodiaceae	*Chenopodium melanocarpum*	Black Crumbweed	
Chenopodiaceae	*Chenopodium spp.*	Goosefoot, Crumbweed	
Asteraceae	*Chondrilla juncea*	Skeleton Weed	*
Asteraceae	*Chrysocephalum apiculatum*	Common Everlasting	
Cucurbitaceae	*Citrullus amarus*	Camel Melon	*
Cucurbitaceae	*Citrullus colocynthis*	Colocynth	*
Convoloulaceae	*Convolvulus arvensis*	Field Bindweed	*
Convolvulaceae	*Convolvulus clementii*	Desert Bindweed	
Convolvulaceae	*Convolvulus spp.*		
Asteraceae	*Conyza bonariensis*	Flaxleaf Fleabane	*
Anthericaceae	*Corynotheca licrota*	Club-fruit Lily	
Crassulaceae	*Crassula colorata*	Dense Stonecrop	
Crassulaceae	*Crassula sieberiana*	Australian Stonecrop	

Family Name	Scientific Name	Common Name	Exotic
Poaceae	*Cymbopogon ambiguus*	Lemon Grass	
Apiaceae	*Daucus glochidiatus*	Native Carrot	
Poaceae	*Digitaria brownii*	Cotton Panic Grass	
Aizoaceae	*Disphyma crassifolium subsp. clavellatum*	Pigface	
Chenopodiaceae	*Dissocarpus paradoxus*	Cannonball Burr	
Asteraceae	*Dittrichia graveolens*	Stinkwort	*
Sapindaceae	*Dodonaea viscosa*	Sticky Hop-bush	
Sapindaceae	*Dodonaea viscosa subsp. angustissima*	Narrow-leaf Hop-bush	
Chenopodiaceae	*Einadia nutans*	Climbing Saltbush	
Chenopodiaceae	*Einadia nutans subsp. eremaea*		
Chenopodiaceae	*Einadia nutans subsp. oxycarpa*	Climbing Saltbush	
Chenopodiaceae	*Enchylaena tomentosa*	Ruby Saltbush	
Poaceae	*Enneapogon avenaceus*	Bottle Washers	
Poaceae	*Enneapogon cylindricus*	Jointed Nineawn	
Poaceae	*Enneapogon intermedius*		
Poaceae	*Enneapogon nigricans*	Niggerheads	
Poaceae	*Enneapogon sp.*	Nineawn Grass, Bottlewashers	
Poaceae	*Enteropogon acicularis*	Curly Windmill Grass	
Poaceae	*Eragrostis dielsii*	Mallee Lovegrass	
Poaceae	*Eragrostis lacunaria*	Purple Lovegrass	
Poaceae	*Eragrostis setifolia*	Neverfail	
Poaceae	*Eragrostis spp.*		
Myoporaceae	*Eremophila alternifolia*	Narrow-leaved Fuchsia Bush	
Myoporaceae	*Eremophila sturtii*	Turpentine Bush	
Asteraceae	*Eriochlamys behrii*	Woolly Mantle	
Geraniaceae	*Erodium cicutarium*	Common Crowfoot	*
Geraniaceae	*Erodium crinitum*	Blue Crowfoot	
Myrtaceae	*Eucalyptus dumosa*	White Mallee	
Myrtaceae	*Eucalyptus gracilis*	Snap and Rattle	
Myrtaceae	*Eucalyptus socialis*	Red Mallee	
Euphorbiaceae	*Euphorbia drummondii*	Caustic Weed	
Euphorbiaceae	*Euphorbia sp.*	A Milkweed	*
Euphorbiaceae	*Euphorbia tannensis subsp. eremophila*		
Santalaceae	*Exocarpos aphyllus*	Leafless Ballart	
Frankeniaceae	*Frankenia foliosa*	Frankenia	
Frankeniaceae	*Frankenia serpyllifolia*	Bristly Sea-heath	

Family Name	Scientific Name	Common Name	Exotic
Fabaceae (Faboideae)	*Glycine clandestina*	Twining Glycine	
Asteraceae	*Gnephosis arachnoidea*	Erect Yellow-heads	
Goodeniaceae	*Goodenia fascicularis*	Mallee Goodenia	
Goodeniaceae	*Goodenia pusilliflora*		
Proteaceae	*Grevillea huegelii*	Comb Grevillea	
Caryophyllaceae	*Gypsophila tubulosa*	Annual Chalkwort	
Brassicaceae	*Harmsiodoxa brevipes var. brevipes*		
Asteraceae	*Helichrysum leucopsideum*	Satin Everlasting	
Boraginaceae	*Heliotropium curassavicum*	Smooth Heliotrope	*
Boraginaceae	*Heliotropium europaeum*	Potato Weed	*
Caryophyllaceae	*Herniaria cinerea*		*
Dilleniaceae	*Hibbertia spp.*		
Malvaceae	*Hibiscus brachysiphonius*	Low Hibiscus	
Poaceae	*Hordeum leporinum*	Barley Grass	*
Poaceae	*Hordeum vulgare*	Barley	*
Asteraceae	*Hyalosperma semisterile*		
Asteraceae	*Hypochaeris glabra*	Smooth Catsear	*
Campanulaceae	*Isotoma petraea*	Rock Isotome	
Poaceae	*Lachnagrostis filiformis*		
Asteraceae	*Lactuca saligna*	Willow-leaved Lettuce	*
Asteraceae	*Lactuca serriola*	Prickly Lettuce	*
Asteraceae	*Lemooria burkittii*	Wires-a-wool	
Brassicaceae	*Lepidium africanum*	Common Peppercress	*
Brassicaceae	*Lepidium papillosum*	Warty Peppercress	
Brassicaceae	*Lepidium spp.*		
Plumbaginaceae	*Limonium lobatum*	Winged Sea Lavender	*
Fabaceae (Faboideae)	*Lotus cruentus*	Red-flowered Lotus	
Loranthaceae	*Lysiana exocarpi*		
Loranthaceae	*Lysiana exocarpi subsp. exocarpi*	Mistletoe	
Chenopodiaceae	*Maireana appressa*	Grey Bluebush	
Chenopodiaceae	*Maireana brevifolia*	Small-leaf Bluebush	
Chenopodiaceae	*Maireana ciliata*	Fissure Weed	
Chenopodiaceae	*Maireana georgei*	Slit-wing Bluebush	
Chenopodiaceae	*Maireana microcarpa*	Swamp Bluebush	
Chenopodiaceae	*Maireana pentatropis*	Erect Mallee Bluebush	

Family Name	Scientific Name	Common Name	Exotic
Chenopodiaceae	*Maireana pyramidata*	Black Bluebush	
Chenopodiaceae	*Maireana sclerolaenoides*		
Chenopodiaceae	*Maireana sedifolia*	Pearl Bluebush	
Chenopodiaceae	*Maireana spp.*	Cotton Bush, Bluebush, Fissure-weed	
Chenopodiaceae	*Maireana trichoptera*	Downy Bluebush	
Chenopodiaceae	*Maireana triptera*	Three-wing Bluebush	
Chenopodiaceae	*Maireana turbinata*	Satiny Bluebush	
Chenopodiaceae	*Malacocera tricornis*	Soft Horns	
Malvaceae	*Malvastrum americanum*	Spiked Malvastrum	*
Apocynaceae	*Marsdenia australis*	Doubah	
Fabaceae (Faboideae)	*Medicago laciniata*	Cut-leaved Medic	*
Fabaceae (Faboideae)	*Medicago minima*	Woolly Burr Medic	*
Fabaceae (Faboideae)	*Medicago polymorpha*	Burr Medic	*
Fabaceae (Faboideae)	*Medicago praecox*	Small-leaved Burr Medic	*
Fabaceae (Faboideae)	*Medicago truncatula*	Barrel Medic	*
Myrtaceae	*Melaleuca lanceolata*	Moonah	
Aizoaceae	*Mesembryanthemum crystallinum*	Common Ice Plant	
Aizoaceae	*Mesembryanthemum nodiflorum*	Small Ice Plant	*
Asteraceae	*Minuria cunninghamii*	Bush Minuria	
Myoporaceae	*Myoporum platycarpum*	Sugarwood	
Asteraceae	*Olearia muelleri*	Mueller's Daisy Bush	
Asteraceae	*Olearia pimeleoides*		
Asteraceae	*Onopordum acaulon*	Stemless Thistle	*
Chenopodiaceae	*Osteocarpum acropterum*	Water Weed	
Chenopodiaceae	*Osteocarpum salsuginosum*		
Poaceae	*Panicum effusum*	Hairy Panic	
Poaceae	*Panicum sp.*	Panicum	
Phyllanthaceae	*Phyllanthus spp.*		
Thymelaeaceae	*Pimelea trichostachya*		
Pittosporaceae	*Pittosporum angustifolium*	Butterbush	
Plantaginaceae	*Plantago drummondii*	Dark Sago-weed	
Plantaginaceae	*Plantago turrifera*	Small Sago-weed	
Poaceae	*Poaceae indeterminate*	Grasses, reeds and bamboos	*
Asteraceae	*Podolepis capillaris*	Invisible Plant	

Family Name	Scientific Name	Common Name	Exotic
Portulacaceae	*Portulaca oleracea*	Pigweed	
Lamiaceae	*Prostanthera striatiflora*	Jockey's Cap	
Aizoaceae	*Psilocaulon granulicaule*	Wiry Noon-flower	*
Amaranthaceae	*Ptilotus exaltatus var. exaltatus*	Showy Foxtail	
Amaranthaceae	*Ptilotus obovatus*	Smoke Bush	
Amaranthaceae	*Ptilotus polystachyus*	Longtails	
Asteraceae	*Reichardia tingitana*	False Sowthistle	*
Chenopodiaceae	*Rhagodia parabolica*	A Saltbush	
Chenopodiaceae	*Rhagodia spinescens*	Thorny Saltbush	
Chenopodiaceae	*Rhagodia ulicina*	A Saltbush	
Asteraceae	*Rhodanthe moschata*		
Asteraceae	*Rhodanthe pygmaea*	Pigmy Sunray	
Zygophyllaceae	*Roepera apiculata*	Common Twinleaf	
Zygophyllaceae	*Roepera compressa*	Rabbit-ears Twinleaf	
Zygophyllaceae	*Roepera eremaea*	Climbing Twinleaf	
Zygophyllaceae	*Roepera iodocarpa*	Violet Twinleaf	
Zygophyllaceae	*Roepera ovata*	Dwarf Twinleaf	
Zygophyllaceae	*Roepera similis*		
Zygophyllaceae	*Roepera spp.*		
Poaceae	*Rostraria pumila*	Roughtail	*
Poaceae	*Rytidosperma caespitosum*	Ringed Wallaby Grass	
Poaceae	*Rytidosperma spp.*		
Chenopodiaceae	*Salsola australis*	Buckbush	
Lamiaceae	*Salvia reflexa*	Mintweed	*
Lamiaceae	*Salvia verbenaca*	Vervain	*
Poaceae	*Schismus barbatus*	Arabian Grass	*
Chenopodiaceae	*Sclerolaena bicornis*	Goathead Burr	
Chenopodiaceae	*Sclerolaena brachyptera*	Short-winged Copperburr	
Chenopodiaceae	*Sclerolaena convexula*	Tall Copperburr	
Chenopodiaceae	*Sclerolaena decurrens*	Green Copperburr	
Chenopodiaceae	*Sclerolaena diacantha*	Grey Copperburr	
Chenopodiaceae	*Sclerolaena divaricata*	Tangled Copperburr	
Chenopodiaceae	*Sclerolaena limbata*		
Chenopodiaceae	*Sclerolaena obliquicuspis*	Limestone Copperburr	
Chenopodiaceae	*Sclerolaena parviflora*		

Family Name	Scientific Name	Common Name	Exotic
Chenopodiaceae	*Sclerolaena patenticuspis*	Spear-fruit Copperburr	
Amaranthaceae	*Sclerolaena sp. A*	Sclerolaena	
Chenopodiaceae	*Sclerolaena tricuspis*	Giant Redburr	
Asteraceae	*Senecio glossanthus*	Streaked Poverty Bush	
Asteraceae	*Senecio quadridentatus*	Cotton Fireweed	
Asteraceae	*Senecio spp.*	Groundsel, Fireweed	
Fabaceae (Caesalpinioideae)	*Senna artemisioides <--> zygophylla*		
Fabaceae (Caesalpinioideae)	*Senna artemisioides subsp. Xartemisioides*		
Fabaceae (Caesalpinioideae)	*Senna artemisioides subsp. Xpetiolaris*	Woody Cassia	
Fabaceae (Caesalpinioideae)	*Senna artemisioides subsp. Xzygophylla*		
Malvaceae	*Sida corrugata*	Corrugated Sida	
Malvaceae	*Sida cunninghamii*	Ridge Sida	
Malvaceae	*Sida intricata*		
Malvaceae	*Sida petrophila*		
Malvaceae	*Sida sp.*	A Sida	
Caryophyllaceae	*Silene spp.*		*
Brassicaceae	*Sisymbrium erysimoides*	Smooth Mustard	*
Brassicaceae	*Sisymbrium irio*	London Rocket	*
Brassicaceae	*Sisymbrium orientale*	Indian Hedge Mustard	*
Solanaceae	*Solanum ellipticum*	Velvet Potato Bush	
Solanaceae	*Solanum esuriale*	Quena	
Solanaceae	*Solanum sturtianum*	Thargomindah Nightshade	
Asteraceae	*Sonchus oleraceus*	Common Sowthistle	*
Caryophyllaceae	*Spergularia rubra*	Sandspurry	*
Brassicaceae	*Stenopetalum lineare*	Threadcress	
Asteraceae	*Taraxacum officinale*	Dandelion	*
Chenopodiaceae	*Tecticornia halocnemoides*	Samphire	
Chenopodiaceae	*Tecticornia indica subsp. leiostachya*	Samphire	
Chenopodiaceae	*Tecticornia pergranulata*		
Chenopodiaceae	*Tecticornia pergranulata subsp. pergranulata*		
Chenopodiaceae	*Tecticornia sp.*	Samphire	
Chenopodiaceae	*Tecticornia spp.*	Samphire	
Chenopodiaceae	*Tecticornia tenuis*	Samphire	

Family Name	Scientific Name	Common Name	Exotic
Aizoaceae	*Tetragonia eremaea*		
Aizoaceae	*Tetragonia moorei*		
Aizoaceae	*Tetragonia tetragonioides*	New Zealand Spinach	
Anthericaceae	*Thysanotus baueri*	Fringe-lily	
Convolvulaceae	*Tribulus spp.*	Grassy Bindweed	
Zygophyllaceae	*Tribulus terrestris*	Cat-head	*
Poaceae	*Triodia scariosa*	Porcupine Grass	
Poaceae	*Tripogon loliiformis*	Fiveminute Grass	
Asteraceae	*Vittadinia cervicularis*		
Asteraceae	*Vittadinia cervicularis var. subcervicularis*		
Asteraceae	*Vittadinia cuneata*	Fuzzweed	
Asteraceae	*Vittadinia cuneata var. hirsuta*	Fuzzy New Holland Daisy	
Asteraceae	*Vittadinia eremaea*	Desert New Holland Daisy	
Campanulaceae	*Wahlenbergia spp.*	Bluebell	
Colchicaceae	*Wurmbea spp.*		
Asteraceae	*Xanthium spinosum*	Bathurst Burr	*

A-3 Site Fauna List

Table 73: Fauna species recorded during surveys.

Common Name	Scientific Name
Amphibians	
Spotted Marsh Frog	*Limnodynastes tasmaniensis*
Green Tree Frog	*Litoria caerulea*
Sudells	*Neobatrachus sudelli*
Aves	
Spiny-cheeked Honeyeater	*Acanthagenys rufogularis*
Yellow-rumped Thornbill	*Acanthiza chrysorrhoa*
Yellow Thornbill	*Acanthiza nana*
Chestnut-rumped Thornbill	*Acanthiza uropygialis*
Brown Goshawk	*Accipiter fasciatus*
Australian Owlet-nightjar	*Aegotheles cristatus*
Grey Teal	*Anas gracilis*
Pacific Black Duck	*Anas superciliosa*
Australasian Pipit	*Anthus australis*
Wedge-tailed Eagle	*Aquila audax*
Black-faced Woodswallow	*Artamus cinereus*
White-breasted Woodswallow	*Artamus leucorynchus*
Masked Woodswallow	*Artamus personatus*
Australian Ringneck (Mallee)	*Barnardius zonarius barnardi*
Pink Cockatoo	*Cacatua (Lophochroa) leadbeateri*
White-backed Swallow	*Cheramoeca leucosterna*
Silver Gull	*Chroicocephalus novaehollanidiae*
White-browed Treecreeper	*Climacteris affinis*
Brown Treecreeper	*Climacteris picumnus*
Black-faced Cuckoo-shrike	*Coracina novaehollandiae*
Australian Raven	*Corvus coronoides*
Stubble Quail	*Coturnix pectoralis*
Pied Butcherbird	*Cracticus nigrogularis*
Grey Butcherbird	*Cracticus torquatus*
Varied Sittella	*Daphoenositta chrysoptera*
Mistletoebird	*Dicaeum hirundinaceum*
Emu	*Dromaius novaehollandiae*
Black-shouldered Kite	*Elanus axillaris*
Black-fronted Dotterel	*Elseyornis melanops*
Galah	*Eolophus roseicapilla*

Common Name	Scientific Name
White-fronted Chat	*Epthianura albifrons*
Crimson Chat	*Epthianura tricolor*
Brown Falcon	*Falco berigora*
Nankeen Kestrel	*Falco cenchroides*
Australian Hobby	*Falco longipennis*
Singing Honeyeater	*Gavicalis (Lichenostomus) virescens*
Western Gerygone	*Gerygone fusca*
Magpie-lark	*Grallina cyanoleuca*
Australian Magpie	*Gymnorhina (Cracticus) tibicen*
Whistling Kite	*Haliastur sphenurus*
Little Eagle	*Hieraaetus morphnoides*
Welcome Swallow	*Hirundo neoxena*
Caspian Tern	*Hydroprogne caspia*
Inland Thornbill	*Inland Thornbill*
Yellow-plumed Honeyeater	*Lichenostomus ornatus*
Purple-backed Fairy-wren	*Malurus lamberti*
White-winged Fairy-wren	*Malurus leucopterus*
Splendid Fairy-wren	*Malurus splendens*
Yellow-throated Miner	*Manorina flavigula*
Hooded Robin	*Melanodryas cucullata*
Budgerigar	*Melopsittacus undulatus*
Rainbow Bee-eater	*Merops ornatus*
Jacky Winter	*Microeca fascinans*
Black Kite	*Milvus migrans*
Southern Boobook	*Ninox boobook*
Greater Bluebonnet	*Northiella haematogaster*
Crested Pigeon	*Ocyphaps lophotes*
Crested Bellbird	*Oreoica gutturalis*
Olive-backed Oriole	*Oriolus sagittatus*
Rufous Whistler	*Pachycephala rufiventris*
Striated Pardalote	*Pardalotus striatus*
Tree Martin	*Petrochelidon nigricans*
Red-capped Robin	*Petroica goodenovii*
Common Bronze Wing	*Phaps chalcoptera*
Striped Honeyeater	*Plectorhyncha lanceolata*
Hoary-headed Grebe	*Poliocephalus poliocephalus*
Chestnut-crowned Babbler	*Pomatostomus ruficeps*

Common Name	Scientific Name
White-browed Babbler	*Pomatostomus superciliosus*
Mulga Parrot	*Psephotellus varius*
Chirruping Wedgebill	*Psophodes cristatus*
Redthroat	*Pyrrholaemus brunneus*
Red-necked Avocet	*Recurvirostra novaehollandiae*
Willie Wagtail	*Rhipidura leucophrys*
Weebill	*Smicrornis brevirostris*
Apostlebird	*Struthidea cinerea*
Australasian Grebe	*Tachybaptus novaehollandiae*
Australian Shelduck	*Tadorna tadornoides*
Zebra Finch	*Taenopygia guttata*
Red-backed Kingfisher	*Todiramphus pyrrhopygius*
Sacred Kingfisher	*Todiramphus sanctus*
Masked Lapwing	*Vanellus miles*
Banded Lapwing	*Vanellus tricolor*
Mammalia	
White-striped Freetail Bat	*Austronomus australis*
Goat*	*Capra hircus**
Goulds Wattled Bat	*Chalinolobus gouldii*
Little Pied Bat	*Chalinolobus picatus*
Feral Cat*	*Felis catus**
Western grey Kangaroo	*Macropus fuliginosus*
Common Wallaroo	*Macropus robustus*
Inland Freetail Bat	*Mormopterus species 3*
House Mouse*	*Mus musculus**
Rabbit*	*Oryctolagus cuniculus**
Red Kangaroo	*Osphranter (Macropus) rufus*
Bolam's Mouse	*Pseudomys bolami*
Inland Broad-nosed Bat	*Scotorepens balstoni*
Short-beaked Echidna	*Tachyglossus aculeatus*
Inland Forest Bat	*Vespadelus baverstocki*
Red Fox*	*Vulpes vulpes**
Dunnart (unidentified to species level)	
Reptilia	
Central Netted Dragon	*Centophorus nuchalis*
Inland Snake-eyed Skink	*Cryptoblepharus australis*
Painted Dragon	*Ctenophorus pictus*

Common Name	Scientific Name
Mallee Military Dragon	*Ctenophorus spp. Aff. fordi*
Southern Mallee Ctenotus	*Ctenotus atlas*
No Common Name	*Ctenotus brachyonyx*
Leonhardi's Ctenotus	*Ctenotus leonhardii*
Barred Wedgesnout Ctenotus	*Ctenotus schomburgkii*
Marble-headed Snake-lizard	*Delma australis*
Nobbi Dragon	*Diporiphora nobbi*
Tree Skink	*Egernia striolata*
Narrow-banded Sandswimmer	*Eremiascincus fasciolatus*
Eastern Tree Dtella	*Gehyra versicolor*
Bynoe's Gecko	*Heteronotia binoei*
Eastern Robust Slider	*Lerista punctatovittata*
Burton's Legless Lizard	*Lialis burtonis*
Beaded Gecko	*Lucasium damaeum*
South-eastern Morethia Skink	*Morethia boulengeri*
Central Bearded Dragon	*Pogona vitticeps*
Mulga Snake	*Pseudechis australis*
Straped-snouted Brown Snake	*Pseudonaja aspidorhyncha*
Ringed-brown Snake	*Pseudonaja modesta*
Eastern Brown Snake	*Pseudonaja textilis*
Eastern Hooded Scaly-foot	*Pygopus schraderi*
Jewelled Gecko	*Strophurus elderi*
Shingleback	*Tiliqua rugosa*
Four-poured Earless dragon	*Tympanocryptis sp.*
Eyrean Earless Dragon	*Tympanocryptis tetraporophora*
Sand Goanna	*Varanus gouldii*

Key: Introduced species (*)

A-4 Biodiversity Credit Report

A-4-1 Biodiversity Credit Report Mine Site

BAM Biodiversity Credit Report (Like for like)

Proposal Details

Assessment Id
00052608/BAAS25008/24/00052609

Proposal Name
Copi Mineral Sands Project - Revised Plots

BAM data last updated *
05/08/2025

Assessor Name
John Allan Foster

Assessor Number
BAAS25008

BAM Data version *
Current classification (live - default) (82)

Proponent Names

Report Created
28/11/2025

BAM Case Status
Open

Assessment Revision
10

BOS entry trigger

Assessment Type
Major Projects

Date Finalised
To be finalised

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

Potential Serious and Irreversible Impacts

Name of threatened ecological community	Listing status	Name of Plant Community Type/ID
Nil		

Species
Austrostipa nullanulla / A spear-grass

Additional Information for Approval

PCT Outside Ibra Added

None added

PCTs With Customized Benchmarks

PCT
No Changes

Predicted Threatened Species Not On Site

Name
No Changes

Ecosystem Credit Summary (Number and class of biodiversity credits to be retired)

Name of Plant Community Type/ID	Name of threatened ecological community	Area of impact	HBT Cr	No HBT Cr	Total credits to be retired
58-Black Oak - Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion	Not a TEC	189.8	4470	0	4470
64-Samphire - Water Weed - Sea-Heath shrubland saline wetland of depressions of the arid and semi-arid (warm) zones	Not a TEC	641.4	0	12011	12011
152-Lunette chenopod shrubland mainly of the Murray Darling Depression Bioregion	Not a TEC	249.8	0	4666	4666

154-Pearl Bluebush low open shrubland of the arid and semi-arid plains	Not a TEC	1564.7	20053	0	20053
157-Bladder Saltbush shrubland on alluvial plains in the semi-arid (warm) zone including Riverina Bioregion	Not a TEC	495.7	0	16702	16702
170-Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones	Not a TEC	2.0	19	0	19
171-Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion	Not a TEC	5.6	132	0	132
215-Woollybutt Grass open grassland on red earths of the inland plains	Not a TEC	5.9	0	48	48
221-Black Oak - Pearl Bluebush open woodland of the sandplains of the semi-arid warm and arid climate zones	Not a TEC	395.0	8495	0	8495
253-Gypseous shrubland on rises in the semi-arid and arid plains	Not a TEC	140.1	0	2852	2852
254-Black Oak - Bladder Saltbush on light clays in the arid zone	Not a TEC	1.2	0	26	26

58-Black Oak - Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion	**Like-for-like credit retirement options**					
	Class	Trading group	Zone	HBT	Credits	IBRA region
	Semi-arid Sand Plain Woodlands This includes PCT's: 58, 252	Semi-arid Sand Plain Woodlands >=50% and <70%	58_Mod	Yes	4470	South Olary Plain, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

58-Black Oak - Western Rosewood open woodland on deep sandy loams mainly in

64-Samphire - Water Weed - Sea-Heath shrubland saline wetland of depressions of the arid and semi-arid (warm) zones

Like-for-like credit retirement options

Class	Trading group	Zone	HBT	Credits	IBRA region
Inland Saline Lakes This includes PCT's: 18, 62, 63, 64, 65, 149, 162, 166, 189, 198, 253, 262, 263	Inland Saline Lakes <50%	64_Mod	No	12011	South Olary Plain, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

152-Lunette chenopod shrubland mainly of the Murray Darling Depression Bioregion

Like-for-like credit retirement options

Class	Trading group	Zone	HBT	Credits	IBRA region
Aeolian Chenopod Shrublands This includes PCT's: 151, 152, 153, 154, 222, 225	Aeolian Chenopod Shrublands <50%	152_Mod	No	4666	South Olary Plain, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

154-Pearl Bluebush low open shrubland of the arid and semi-arid plains

Like-for-like credit retirement options

Class	Trading group	Zone	HBT	Credits	IBRA region
Aeolian Chenopod Shrublands This includes PCT's: 151, 152, 153, 154, 222, 225	Aeolian Chenopod Shrublands <50%	154_Mod	Yes	20053	South Olary Plain, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

157-Bladder Saltbush shrubland on alluvial plains in the semi-arid (warm) zone including Riverina Bioregion

Like-for-like credit retirement options

Class	Trading group	Zone	HBT	Credits	IBRA region
Riverine Chenopod Shrublands This includes PCT's: 157, 158, 159, 195, 196, 211, 377	Riverine Chenopod Shrublands >=50% and <70%	157_Mod	No	16592	South Olary Plain, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
Riverine Chenopod Shrublands This includes PCT's: 157, 158, 159, 195, 196, 211, 377	Riverine Chenopod Shrublands >=50% and <70%	157_High	No	110	South Olary Plain, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

157-Bladder Saltbush shrubland on alluvial plains in the semi-arid (warm) zone

170-Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones

Like-for-like credit retirement options

Class	Trading group	Zone	HBT	Credits	IBRA region
Sand Plain Mallee Woodlands This includes PCT's: 142, 170, 173, 174, 190, 193, 355, 474	Sand Plain Mallee Woodlands <50%	170_Mod	Yes	19	South Olary Plain, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

171-Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion

Like-for-like credit retirement options

Class	Trading group	Zone	HBT	Credits	IBRA region
Dune Mallee Woodlands This includes PCT's: 171, 172, 191	Dune Mallee Woodlands <50%	171_Mod	Yes	132	South Olary Plain, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

215-Woollybutt Grass open grassland on red earths of the inland plains

Like-for-like credit retirement options

Class	Trading group	Zone	HBT	Credits	IBRA region
Sand Plain Mulga Shrublands This includes PCT's: 69, 119, 124, 128, 129, 139, 140, 143, 199, 215, 220, 232	Sand Plain Mulga Shrublands <50%	215_Mod	No	38	South Olary Plain, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
Sand Plain Mulga Shrublands This includes PCT's: 69, 119, 124, 128, 129, 139, 140, 143, 199, 215, 220, 232	Sand Plain Mulga Shrublands <50%	215_High	No	10	South Olary Plain, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

221-Black Oak - Pearl Bluebush open woodland of the sandplains of the semi-arid warm and arid climate zones

Like-for-like credit retirement options

Class	Trading group	Zone	HBT	Credits	IBRA region

	Semi-arid Sand Plain Woodlands This includes PCT's: 57, 58, 59, 221, 252	Semi-arid Sand Plain Woodlands <50%	221_Mod	Yes	8423	South Olary Plain, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	Semi-arid Sand Plain Woodlands This includes PCT's: 57, 58, 59, 221, 252	Semi-arid Sand Plain Woodlands <50%	221_High	Yes	72	South Olary Plain, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
253-Gypseous shrubland on rises in the semi-arid and arid plains	**Like-for-like credit retirement options**					
	Class	Trading group	Zone	HBT	Credits	IBRA region
	Inland Saline Lakes This includes PCT's: 18, 62, 63, 64, 65, 149, 162, 166, 189, 198, 253, 262, 263	Inland Saline Lakes <50%	253_Mod	No	2852	South Olary Plain, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

254-Black Oak - Bladder Saltbush on light clays in the arid zone	Like-for-like credit retirement options					
	Class	Trading group	Zone	HBT	Credits	IBRA region
	Riverine Chenopod Shrublands This includes PCT's: 157, 158, 159, 163, 164, 168, 195, 196, 211, 212, 216, 236, 254, 377, 466	Riverine Chenopod Shrublands <50%	254_Mod	No	26	South Olary Plain, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

Species Credit Summary

Species	Vegetation Zone/s	Area / Count	Credits
Austrostipa nullanulla / A spear-grass	**58_Mod, 64_Mod, 152_Mod, 154_Mod, 157_Mod, 253_Mod, 254_Mod**	59.6	2553.00

Credit Retirement Options

Like-for-like credit retirement options

Austrostipa nullanulla / A spear-grass	Spp	IBRA subregion
	Austrostipa nullanulla / A spear-grass	Any in NSW

A-4-2 Biodiversity Credit Report Linear Corridor

BAM Biodiversity Credit Report (Like for like)

Proposal Details

Assessment Id
00052608/BAAS25008/25/00055120

Proposal Name
Copi Sands Linear Corridor - Revised Plots

BAM data last updated *
05/08/2025

Assessor Name
John Allan Foster

Assessor Number
BAAS25008

BAM Data version *
Current classification (live - default) (82)

Proponent Names

Report Created
28/11/2025

BAM Case Status
Open

Assessment Revision
10

BOS entry trigger

Assessment Type
Major Projects

Date Finalised
To be finalised

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

Potential Serious and Irreversible Impacts

Name of threatened ecological community	Listing status	Name of Plant Community Type/ID
Nil		

Species
Nil

Additional Information for Approval

PCT Outside Ibra Added

None added

PCTs With Customized Benchmarks

PCT
No Changes

Predicted Threatened Species Not On Site

Name
No Changes

Ecosystem Credit Summary (Number and class of biodiversity credits to be retired)

BAM Biodiversity Credit Report (Like for like)

Name of Plant Community Type/ID	Name of threatened ecological community	Area of impact	HBT Cr	No HBT Cr	Total credits to be retired
28-White Cypress Pine open woodland of sand plains, prior streams and dunes mainly of the semi-arid (warm) climate zone	Sandhill Pine Woodland in the Riverina, Murray-Darling Depression and NSW South Western Slopes bioregions	0.8	21	0	21
58-Black Oak - Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion	Not a TEC	48.8	1150	0	1150
143-Narrow-leaved Hopbush - Scrub Turpentine - Senna shrubland on semi-arid and arid sandplains and dunes.	Not a TEC	17.2	0	517	517
154-Pearl Bluebush low open shrubland of the arid and semi-arid plains	Not a TEC	102.1	1308	0	1308
170-Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones	Not a TEC	13.6	133	0	133
171-Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion	Not a TEC	6.6	155	0	155

28-White Cypress Pine open woodland of sand plains, prior streams and dunes mainly of the semi-arid (warm) climate zone

Like-for-like credit retirement options

Name of offset trading group	Trading group	Zone	HBT	Credits	IBRA region

	Sandhill Pine Woodland in the Riverina, Murray-Darling Depression and NSW South Western Slopes bioregions This includes PCT's: 19, 21, 28, 48, 75	-	28_Mod	Yes	21	South Olary Plain, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
58-Black Oak - Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion	**Like-for-like credit retirement options**					
	Class	Trading group	Zone	HBT	Credits	IBRA region
	Semi-arid Sand Plain Woodlands This includes PCT's: 58, 252	Semi-arid Sand Plain Woodlands >=50% and <70%	58_Mod	Yes	1150	South Olary Plain, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
143-Narrow-leaved Hopbush - Scrub Turpentine - Senna shrubland on semi-arid and arid sandplains and dunes.	**Like-for-like credit retirement options**					
	Class	Trading group	Zone	HBT	Credits	IBRA region

	Sand Plain Mulga Shrublands This includes PCT's: 69, 119, 124, 128, 129, 139, 140, 143, 199, 215, 220, 232	Sand Plain Mulga Shrublands <50%	143_Mod	No	517	South Olary Plain, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
154-Pearl Bluebush low open shrubland of the arid and semi-arid plains	**Like-for-like credit retirement options**					
	Class	Trading group	Zone	HBT	Credits	IBRA region
	Aeolian Chenopod Shrublands This includes PCT's: 151, 152, 153, 154, 222, 225	Aeolian Chenopod Shrublands <50%	154_Mod	Yes	1308	South Olary Plain, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
170-Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones	**Like-for-like credit retirement options**					
	Class	Trading group	Zone	HBT	Credits	IBRA region

	Sand Plain Mallee Woodlands This includes PCT's: 142, 170, 173, 174, 190, 193, 355, 474	Sand Plain Mallee Woodlands <50%	170_Mod	Yes	133	South Olary Plain, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

171-Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion	**Like-for-like credit retirement options**					
	Class	Trading group	Zone	HBT	Credits	IBRA region
	Dune Mallee Woodlands This includes PCT's: 171, 172, 191	Dune Mallee Woodlands <50%	171_Mod	Yes	155	South Olary Plain, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

Species Credit Summary

No Species Credit Data

Credit Retirement Options

Like-for-like credit retirement options

A-5 Microbat Call Identification Report

A-5-1 Methods

Data received

Balance! Environmental received acoustic data recorded with Anabat Chorus (full-spectrum .WAV sequence files) and Anabat Express (nightly zero crossing analysis .ZCA files) in two survey localities ("Mine Site" and "Linear Corridor") during January-February 2025. Table 74 provides a deployment summary, with detector locations derived by averaging nightly GPS coordinates recorded by each unit.

The brief for this analysis was to determine the presence of *Nyctophilus* spp. calls (as a proxy of potential occurrence *of N. corbeni* and *Myotis macropus* calls in the dataset.

Bat-call analysis

Analyses were performed in several steps with Anabat Insight (Version 2.1.3; Titley Scientific).

1. The Convert ZCA function was used to extract individual zero-crossing (.ZC) sequence files from the Anabat Express ZCA files.

2. The Search function was then used to scan all resulting ZC files and the Anabat Swift WAV files using a filter designed to find bat calls potentially belonging to *Nyctophilus* spp. and *Myotis macropus*. Filter criteria used in the search included:

- Characteristic frequency (Fc) minimum 35 kHz – maximum 45 kHz
- Slope of characteristic section (Sc) minimum 50 octaves per second (OPS)
- Pulse duration (Dur) minimum 2 ms
- Difference between maximum frequency and Fc (Fmax-Fc) minimum 5 kHz
- ZC threshold (relevant only to WAV files) = Auto
- Smoothness level = 5
- Minimum number of pulses per sequence meeting the above criteria = 4

3. Files that passed the above Search process were then reviewed manually to compare spectrogram characteristics and derived metrics with those of reference calls and published call descriptions (e.g., Pennay *et al.* 2004) for the target species.

Reporting standard

The format and content of this report follows Australasian Bat Society standards for the interpretation and reporting of bat call data (Reardon 2003), available on-line at http://www.ausbats.org.au/.

Species nomenclature follows Armstrong *et al.* (2020).

Table 74: Anabat deployment schedule: Copi Mineral Sands Project, January-February 2025.

Area	Detector	First night	Last night	Latitude	Longitude	Total files
Buzzard	ABD2	9/01/2025	12/01/2025	-33.6015	141.3148	707 WAV
	ABD3	9/01/2025	12/01/2025	-33.6021	141.3224	1273 ZC
	ABD4	9/01/2025	12/01/2025	-33.6017	141.3216	3319 ZC
	ABD5	9/01/2025	12/01/2025	-33.6014	141.3236	968 ZC
	ABD6	9/01/2025	12/01/2025	-33.6010	141.3177	1371 ZC
	ABD9	9/01/2025	12/01/2025	-33.6102	141.3117	1365 WAV
Haul Rd	ABD 2	13/01/2025	15/01/2025	-33.5852	141.5660	581 WAV
	ABD 4	13/01/2025	16/01/2025	-33.5835	141.5551	8155 ZC
	ABD 6	13/01/2025	16/01/2025	-33.5822	141.5459	7970 ZC
	ABD 9(1)	5/02/2025	8/02/2025	-33.5894	141.5845	795 WAV
	ABD 9(2)	9/02/2025	12/02/2025	-33.5923	141.6113	1635 WAV
	ABD 11	9/02/2025	12/02/2025	-33.5913	141.6047	548 WAV

A-5-2 Results & Discussion

Following ZCA conversion, the total dataset included 28,687 acoustic sequence files (23,056 ZC files and 5631 WAV files; see Table 74).

The Search filter extracted 1431 files containing calls potentially belonging to the target species; however, most of those calls were from non-target species (e.g., *Chalinolobus gouldii*, *C. picatus*, *Scotorepens balstoni*, *S. greyii*, *Vespadelus baverstocki*, *V. vulturnus*, *Ozimops petersi*).

Ninety-two (92) calls were attributable to *Nyctophilus* species; and those calls were detected at eight of the twelve sample sites (see Table 75). Example spectrograms of calls assigned to *Nyctophilus* species are presented in Figure 99.

Nyctophilus species cannot be reliably differentiated using call characteristics, so detected calls could belong to either or both of *N. geoffroyi* (Lesser Long-eared Bat) or the target species *N. corbeni* (Corben's or South-eastern Long-eared Bat). The only acceptable method to confirm the presence of *N. corbeni* is to undertake a trapping program (see Reardon 2010).

No calls attributable to *Myotis macropus* are present in in this dataset. Furthermore, it is highly improbable that *M. macropus* would be present in the study area since the detectors appear to have been deployed in dry mallee/woodland habitats at significant distance from the riparian zones of either the Great Darling Anabranch or the Murray River. The BatMap application (Australasian Bat Society 2021) indicates that *M. macropus* does not occur along the Anabranch and is only indicated to "possibly" occur on the Murray River between Swan Hill and Renmark.

Table 75: Copi Mineral Sands Project, January-February 2025: presence of *Nyctophilus* species - Number of calls detected per site.

Area	Site	Number of *Nyctophilus* calls
Mine Site	ABD2	2
	ABD3	11
	ABD4	19
	ABD5	0
	ABD6	5
	ABD9	10
Linear Corridor	ABD 2	0
	ABD 4	0
	ABD 6	0
	ABD 9-1	8
	ABD 9-2	34
	ABD 11	3

A-5-3 References

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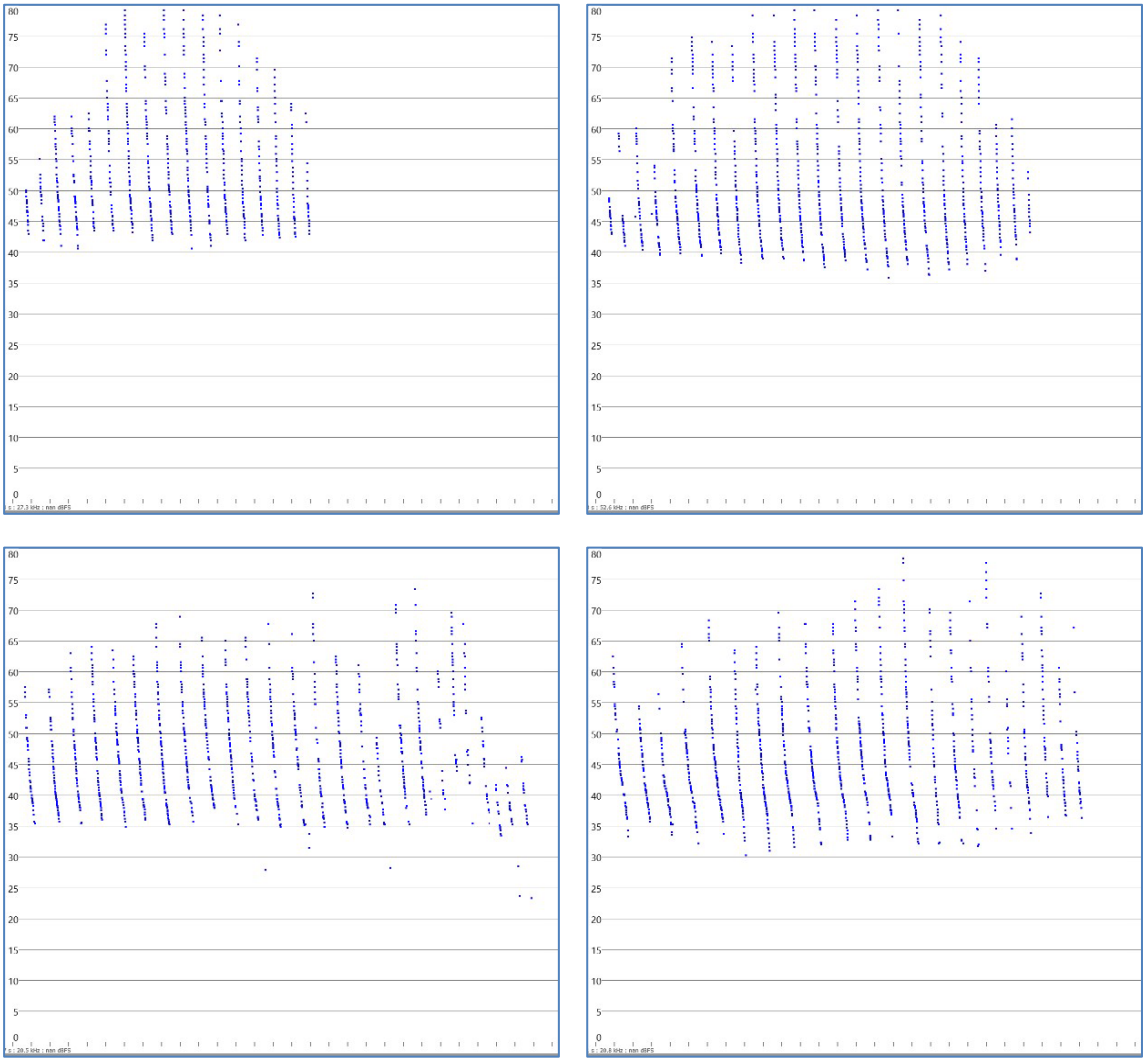

Figure 99: Representative *Nyctophilus sp.* call sequences from the Copi Mineral Sands Project, January-February 2025 survey dataset. x-axis = 10 ms per tick-mark; time between pulses removed ("compressed").

A-6 R.W. Corkery & Co. Geospatial analysis and Modelling Expert Report

Comparative Scenario Assessment - 2D HEC-RAS hydraulic simulation for a 1% AEP, 72-hour modelling storm. RWC (2026).

RWC used a 2D flood (hydraulic) model in HEC-RAS to estimate where water would flow, where it would pond, and how deep it could get during a large design storm. We then compared the "no mine / no bund" case against the "with mine / with bund" case so we could isolate what the flow bund changes under the same storm event. The key outputs we're relying on are the predicted peak flood depth maps for each scenario and the flood level difference mapping that highlights where water levels go up or down due to the bund and mine scenario.

What modelling was used and what did we interpret?
The modelling is based on a 2D HEC-RAS hydraulic simulation for a **1% AEP, 72-hour** design storm. Interpretation was done by comparing: (1) peak flood depth mapping for the "no mine" scenario versus the "with mine" scenario (with the flow bund shown), and (2) a flood level difference map that indicates where depths increase or decrease between scenarios. Overall, the mapping shows broadly similar flood patterns between scenarios at the site scale, with the most noticeable changes concentrated around the flow bund alignment and nearby low-lying areas.

What model inputs were used (high level)?
At a high level, the key inputs/assumptions were:

- **Terrain:** 5m-resolution elevation/topography to capture low points, drainage lines and subtle depressions where water can pond.
- **Design storm: 1% AEP, 72-hour** event (consistent across scenarios so the comparison is like-for-like).
- **Rainfall pattern and scaling:** design rainfall distribution through time adopted from the hydrology setup (hyetographs), with standard areal adjustment for catchment scale.
- **Losses:** infiltration/loss parameters applied consistently to represent initial wetting and ongoing losses during the event.
- **Surface conditions:** simplified/consistent roughness representation so differences in results are driven mainly by terrain and the bund inclusion.
- **Scenario change:** the main structural difference between scenarios is the inclusion of the **flow bund** in the "with mine" case, enabling an isolated comparison of its effect on water levels and flow redistribution.

Other useful details for your discussion with BA
This work is best treated as a **comparative scenario assessment**, not a detailed final design of a full surface water management system. The purpose is to show where the bund alters flow paths and local ponding, and whether those changes extend beyond the immediate area. The difference mapping indicates that changes are generally localised rather than widespread across the broader domain.

The inundation overlays (no-mine vs with-mine) can be used to support the discussion that inundation is largely occurring to the north in the mapped shrubland communities he noted, and that interaction with PCT64 appears limited on the mapping provided. It's still sensible to frame this as "based on the current mapping overlay" and note that northern-side ground-truthing limitations may be considered when interpreting exact PCT boundaries on that side.

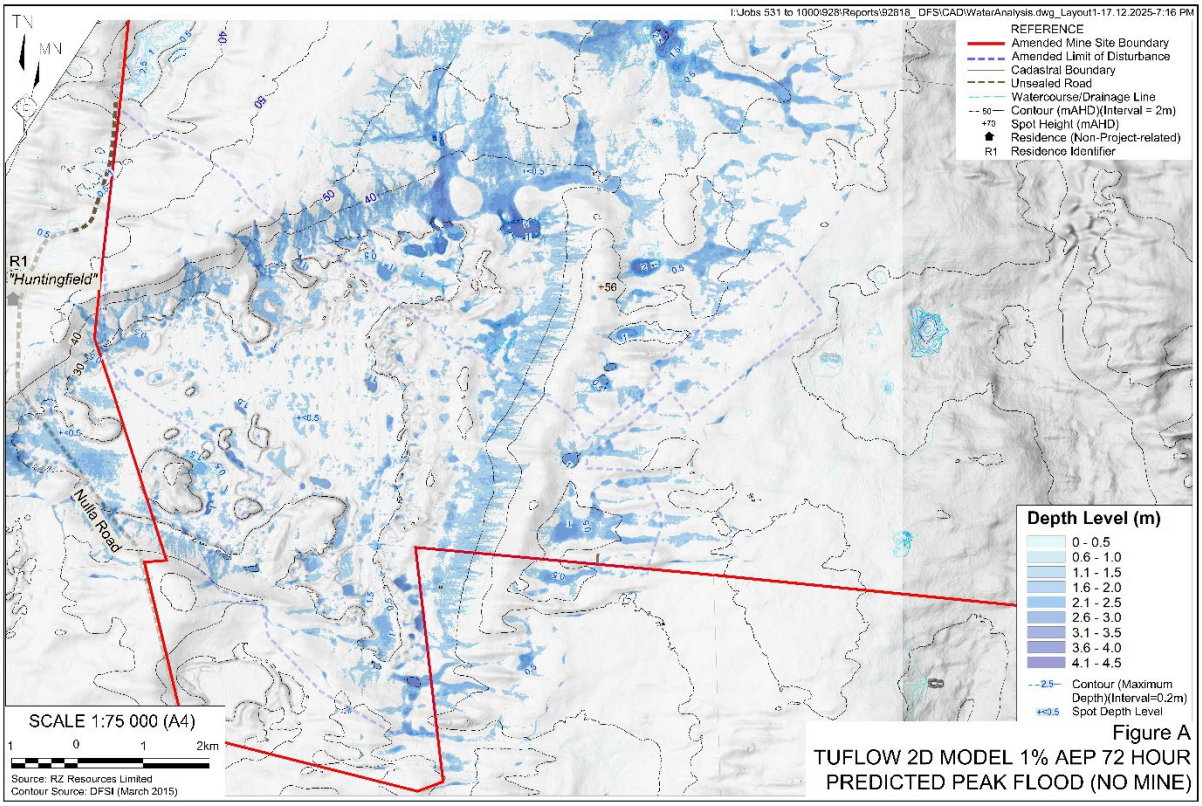

Figure 1: Figure A - Tuflow 2D Model 1_ AEP 72 hour Predicted Peak Flood (No Mine)-V3

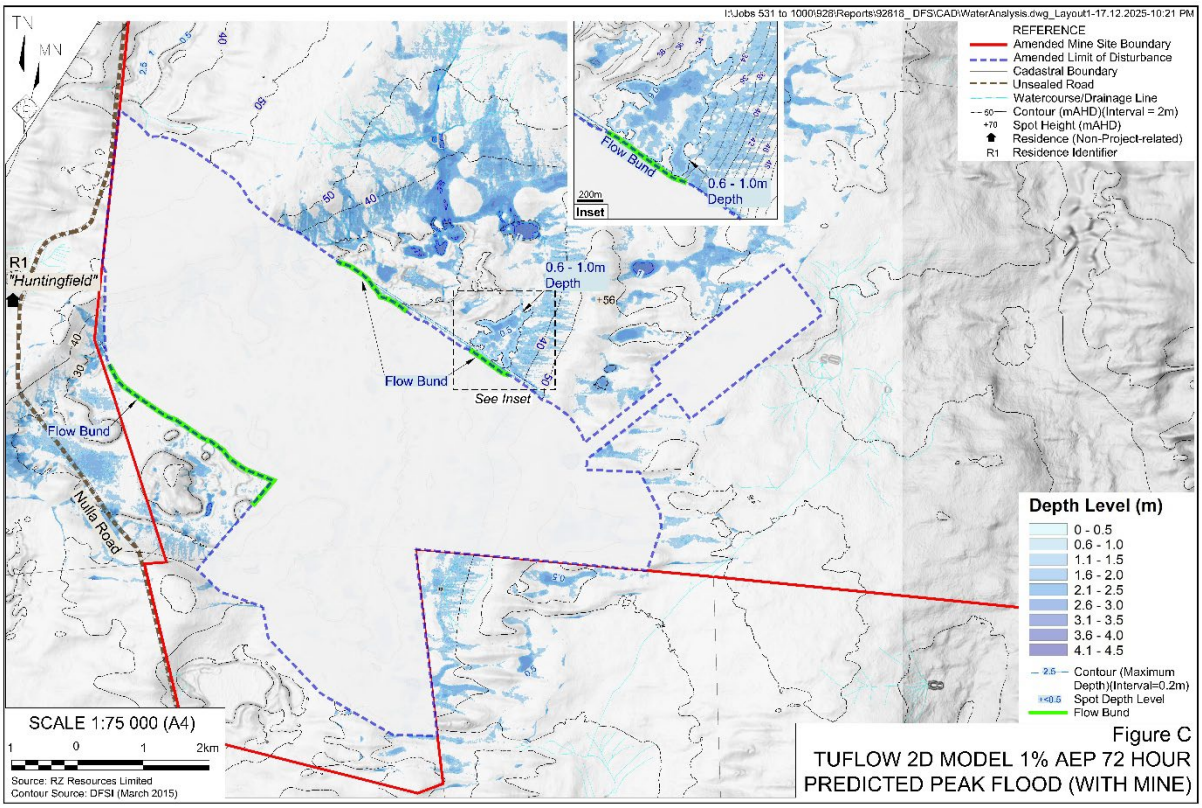

Figure 2: Figure B - Tuflow 2D Model 1_ AEP 72 hour Predicted Peak Flood (With Mine)-V3

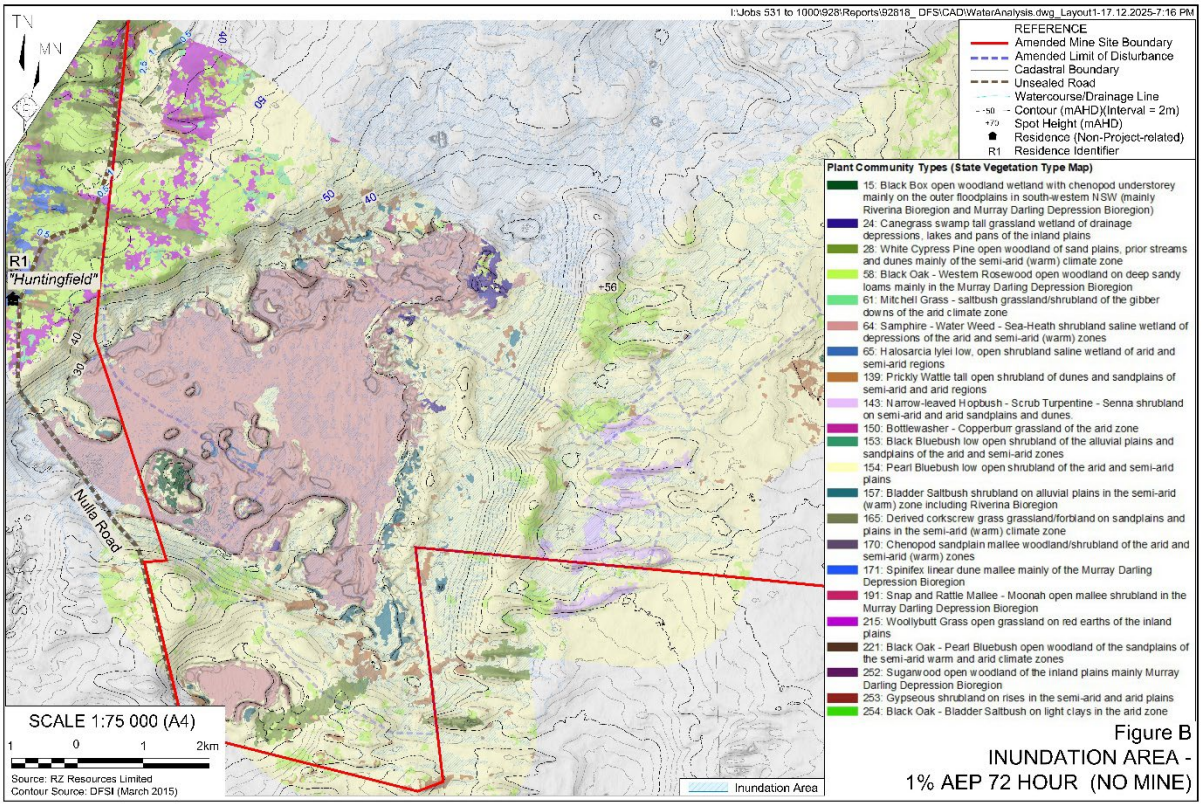

Figure 3: Figure C - Inundation Area 1_ AEP 72 hour Predicted Peak Flood (No Mine)-V3

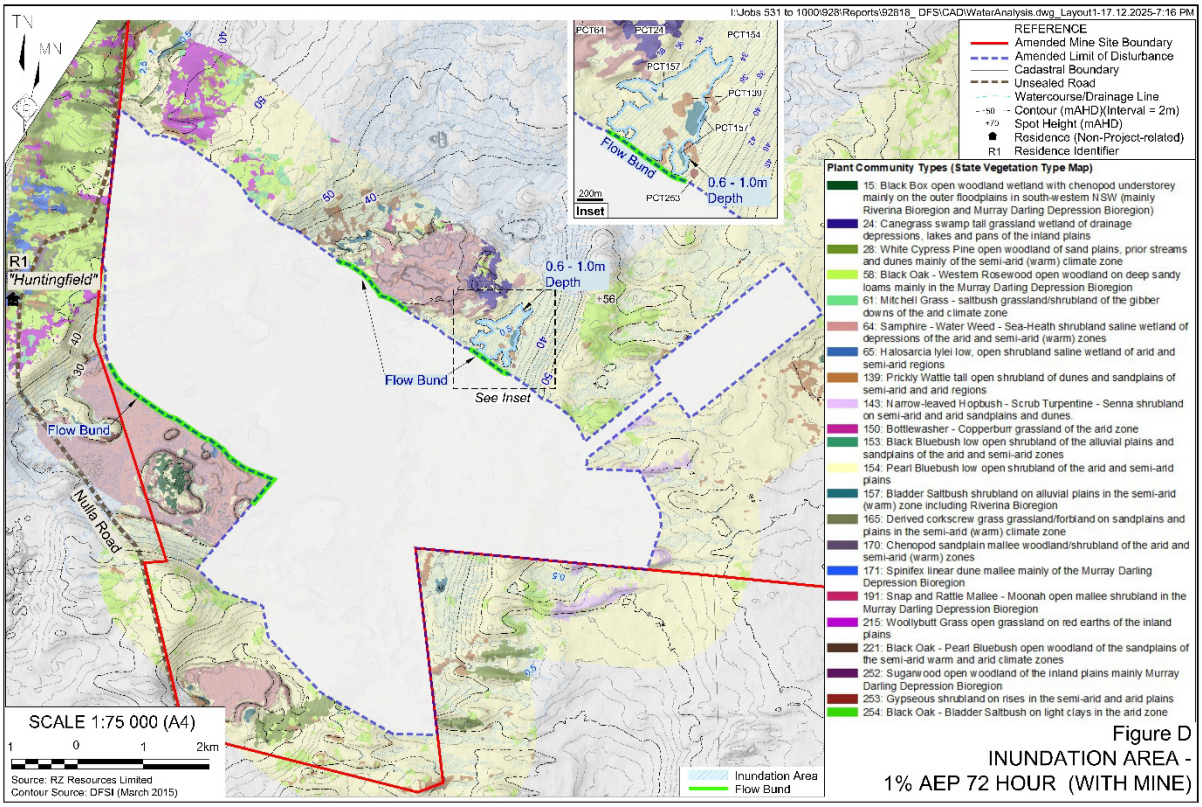

Figure 4: Figure D - Inundation Area 1_ AEP 72 hour Predicted Peak Flood (With Mine)-V3

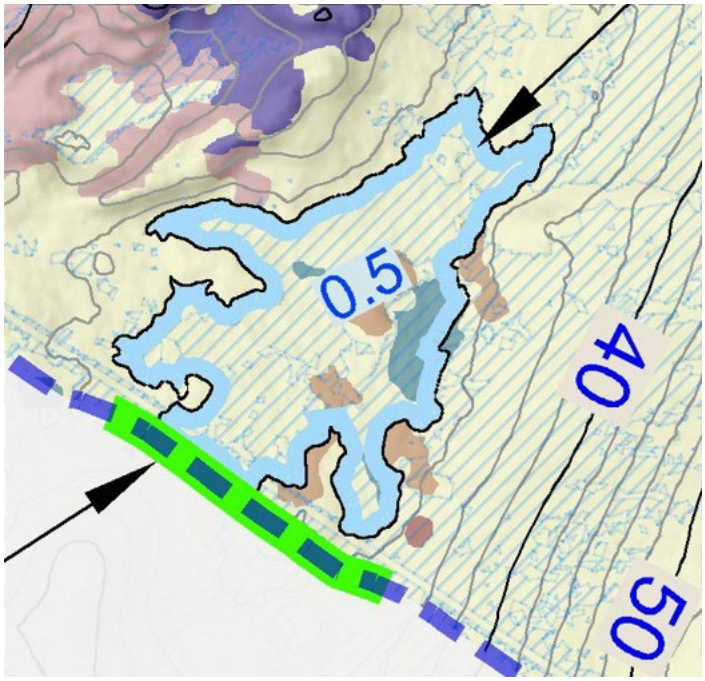

Figure 5: Inundation_Magnified

A-7 Ecological Horizons 2025: Desert Mouse and Painted Burrowing Frog Expert Advice

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Copi Mineral Sands Project: Desert Mouse and Painted Burrowing Frog Expert Advice

Desert Mouse showing distinctive orange eye-ring

Limitations Statement

In preparing this document Ecological Horizons Pty Ltd makes no warranty or guarantee, whether expressed or implied, with respect to the information reported or to the findings, observations or conclusions expressed in this document. Further, such information, findings, observations and conclusions are based solely on observations made and information available to Ecological Horizons Pty Ltd at the time of this study.

Credentials of Expert

Pseudomys desertor

Dr Read was recognised as an authority on *Pseudomys desertor* (SF23/131992) by the Director South West, Biodiversity and Conservation Division, Department of Planning and Environment on 17 November 2023 (Appendix 1).

Dr John Read 'rediscovered' *Pseudomys desertor* in South Australia (Read et al.1999) and has trapped the species at numerous sites in arid and semi arid zone. Dr Read also co-authored the Mammals of Australia section on *P. desertor* (Kerle et al 2008).

Dr Read has had 30 years' experience of mammals surveys in chenopod sandplain and mallee vegetation associations including many of the dominant plant species found in the Scotia Sandplains and Scotia Groundwater Basin vegetation types at the Copi Mineral Sands site on Warwick Station e.g. Black Oak (*Casuarina cristata*), White Cypress Pine (*Callitris glaucophylla*), Mallee (*Eucalyptus* spp), Bladder Saltbush (Atriplex vesicaria), Pearl Bluebush (*Maireana sedifolia*), Narrow-leafed Hopbush (*Dodonaea viscosa*) samphire and spinifex (*Triodia* spp).

In addition Dr Read has had 21 years' experience trapping in each of 3 additional study areas that either support *P. desertor* (APY Lands) or are in mallee Triodia dunefields (Middleback and Immarna) similar to Warwick Station. Dr Read has also trapped the Wild Deserts sites in Sturt National Park for the past 9 years, where the only record of *P. desertor* was recorded in NSW for the past decade

Neobatrachus pictus

Dr Read was recognised as an authority on *Neobatrachus pictus* (SF23/131995) by Director South West, Biodiversity and Conservation Division, Department of Planning and Environment on 17 November 2023 (Appendix 1).

Dr John Read has conducted extensive research into the ecology, diet, habitats and abnormality profiles of closely related *Neobatrachus sudelli* – involving sampling over 5000 frogs (Read 1999, Read and Owens 1999). In addition, Dr Read has conducted frog surveys and research for many frog species (Read and Owens 1999, Read 2000, Read *et al* 2015a) including long term monitoring in similar environments to Warwick Station at the study sites listed above.

Methods

This expert report has been prepared for Biodiversity Australia, to determine whether *Pseudomys desertor* or *Neobatrachus pictus* are likely to occur within the Copi Mineral Sands project area including Warwick Station, NSW. This expert report has been prepared in accordance with the requirements of Box 3 of the Biodiversity Assessment Method ('BAM'; DPIE 2020).

Ecological Horizons arranged for Alex Holmes of GHD to compile regional records (including through use of BioNet database and regional ecological connections) and conduct field inspections of Copi Mineral Sands project area for *Neobatrachus pictus* and suitable habitat for *Pseudomys desertor* (Appendix 2). Ecological Horizons have worked with Alex and trust and value his ecological skills, local knowledge and thoroughness and discussed with Alex optimum times and habitats for surveying both species. GHD visited the site on June 3, 2025 (Appendix 2).

In addition, six SM4 song meters were deployed by Biodiversity Australia on 13 May 2025 at sites considered most likely to support Painted Burrowing Frogs. At the time of report preparation there had not been a significant rain event likely to stimulate *Neobatrachus* calling but the intention is to maintain the recording until >50mm rain is received and then to analyse records for the 48hrs following rain (John Foster pers comm).

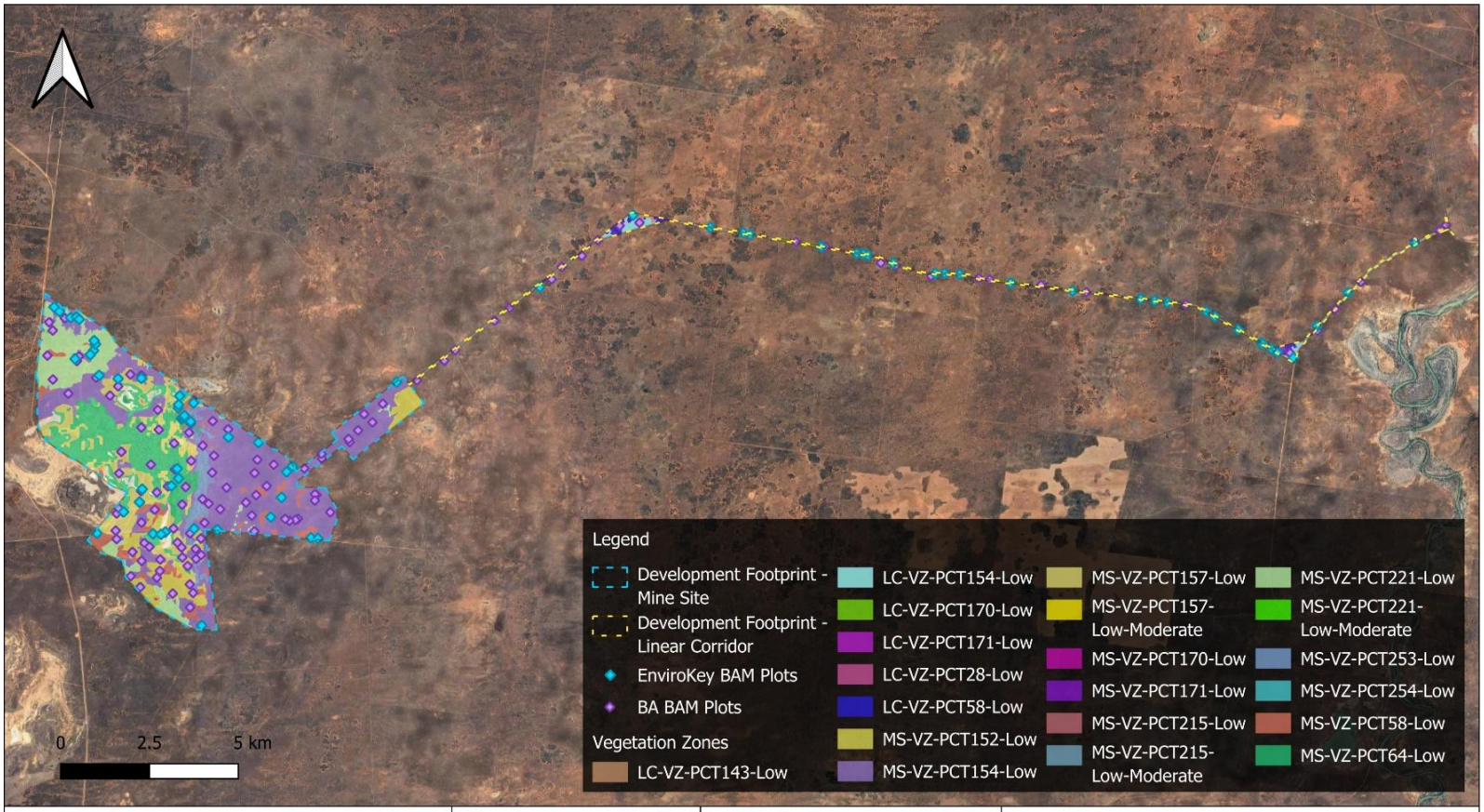
Results

Resident populations of both species are considered to be unlikely to occur in the Copi Mineral Sands Project Area (Figure 1) for several reasons:

1) Despite records for both species from the Tarawi Reserve (Desert Mouse) and Scotia Sanctuary (Painted Burrowing Frog) within 40km of the study area, scarcity of other nearby records suggest that the Project lies on, or just beyond, the periphery of the consistently occupied range of both species.
2) The habitat of the project area is 'heavily grazed' by goats and macropods (GHD 2025), without the extensive tracts of good quality *Triodia* hummockland or natural or artificial sedgeland that typify *P. desertor* habitat. The long unburnt *Triodia* without abundant green foliage required by *P. desertor*, suggest both food and shelter sites are suboptimal in the region.
3) Potentially suitable, yet low likelihood, breeding habitat for Painted Burrowing Frogs was identified at 5 sites. Analyses of song meter data following >50mm rainfall events, and ideally follow-up ground surveys would be required to confirm or rule out their habitation of these sites. However, the extensive tracts of unsuitable saline wetlands and paucity of quality ephemeral swamps or

rockholes makes it unlikely that the Copi Mineral Sands site provides important habitat for Painted Desert Frogs.

4) The abundance of foxes (observed nightly across the shrublands, and also feral cats observed consistently in and around the spinifex/mallee (J. Foster pers. comm.; tracks of both species observed (A Holmes pers. comm.) further reduces the likelihood of permanent Desert Mouse populations in the degraded study site.
5) The brief site appraisal failed to locate either species or likely habitat for either species within the project area (GHD 2025)



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.

Project Manager: NC	Figure Name: Vegetation Zones and Plot locations – Development Footprint	Biodiversity AUSTRALIA	
Drawn by: NE	Location: Warwick Station		
Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:140000

Figure 1 Copi Mineral Sands Development footprint

Discussion

The Desert Mouse, unlike other small rodents is unlikely to be overlooked, even by many members of the public, due to its combination of long fur and especially distinctive orange eye ring. Hence the lack of records from the region are unlikely to be attributed to confusion with other rodents. Similarly, Painted Burrowing Frogs can really only be confused with Trilling Frogs (*N. sudelli*) which have also not been recorded in the region and hence the absence of local Painted Burrowing Frog records is also unlikely to be attributed to misidentification.

Pseudomys desertor is susceptible to predation by feral cats and probably foxes. Because they are a folivore, *P. desertor* are active for longer periods, including before dark and hence potentially more vulnerable to predators, including birds of prey than truly nocturnal rodents. The susceptibility of medium-sized rodents to feral cats (Read *et al*. 2024) means that it is highly unlikely that a population of *P. desertor* could be sustained in the sparsely vegetated Project Area.

Although reliant upon access to breeding ponds, *Neobatrachus pictus* can move considerable distances through incremental nightly movements over cumulative rainfall events over several years. Dispersing animals can therefore be found in suboptimal, even marginal habitat at considerable distances from reliable, or even intermittently suitable, breeding ponds. Continued monitoring of the identified potential breeding sites will be required to confirm or rule out their low likelihood of occurrence, however, the occurrence of widespread saline wetlands which are unsuitable for *N. pictus,* suggests the Copi Mineral Sands site is highly unlikely to be of significance for *N. pictus*.

Conclusions

The expert opinion provided here of resident or important populations of either *P. desertor* and *N. pictus* being unlikely at the Copi Mineral Sands site is supported by the conclusions from the GHD literature, data review and site report.

However, expert opinion also suggests that should the Copi Mineral Sands proposal progress to development, there are still tangible benefits that can be provided to the local biodiversity, including potentially expanding populations of *P. desertor*. Infrastructure projects can make a positive contribution to conservation by addressing, as well as not exacerbating, key threats (e.g. Read 2003). For example, reduction in regional feral cat densities through proactive management can lead to profound improvements in small mammal diversity and abundance, both within (Moseby et al. 2019) and beyond (Pedler et al. 2016) conservation management areas. Other opportunities for positive biodiversity benefits could arise from revegetating with endemic plant species, including rare species, and assisting with regional control of overabundant herbivores, notably feral goats and overabundant kangaroos that have negatively impacted the habitat quality and productivity of the site. Striving to provide positive biodiversity benefits may offset inevitable localised impacts from infrastructure developments.

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Appendix 1 Expert status verification

Department of Planning and Environment

Dr John Read
ecological67@gmail.com

Our ref: SF23/131992
Sender's ref: BE 23 10

17 November 2023

Dear Dr Read

Approval of Name as an expert for Desert Mouse (*Pseudomys desertor*)

Thank you for your application dated 23 September 2023 to the Biodiversity and Conservation Division (BCD) of the Department of Planning and Environment.

BCD has reviewed the information provided in support of this request and is satisfied that you meet the definition of a species expert for Desert Mouse (*Pseudomys desertor*) in accordance with section 5.3 (Box 3) of the Biodiversity Assessment Method.

Please note that this formal recognition of you as an expert only applies to the Mallee Wind Farm project within the Wentworth Local Government Area.

If you require any further information regarding this matter, please contact Andrew Fisher, Senior Team Leader Planning, via rog.southwest@environment.nsw.gov.au or 02 6022 6023.

Yours sincerely

Adam Vey
Director South West
Biodiversity and Conservation Division
Department of Planning and Environment

NSW GOVERNMENT

Department of Planning and Environment

Dr John Read
ecological67@gmail.com

Our ref: SF23/131995
Sender's ref: BE 23 11

17 November 2023

Dear Dr Read

Approval of Dr John Read as an expert for Painted Burrowing Frog (*Neobatrachus pictus*)

Thank you for your application dated 23 September 2023 to the Biodiversity and Conservation Division (BCD) of the Department of Planning and Environment.

BCD has reviewed the information provided in support of this request and is satisfied that you meet the definition of a species expert for Painted Burrowing Frog (*Neobatrachus pictus*) in accordance with section 5.3 (Box 3) of the Biodiversity Assessment Method.

Please note that this formal recognition of you as an expert only applies to the Mallee Wind Farm project within the Wentworth Local Government Area.

If you require any further information regarding this matter, please contact Andrew Fisher, Senior Team Leader Planning, via rog.southwest@environment.nsw.gov.au or 02 6022 6023.

Yours sincerely

Adam Vey
Director South West
Biodiversity and Conservation Division
Department of Planning and Environment

Appendix 2 GHD report

A-8 GHD 2025: Desert Mouse and Painted Burrowing Frog Assessment

Copi Mineral Sands Project Desert Mouse and Painted Burrowing Frog Assessment

Biodiversity Australia Pty Ltd

03 July 2025

→ **The Power of Commitment**

Project name		Copi Mineral Sands Project Desert Mouse and Painted Burrowing Frog Assessment				
Document title		Copi Mineral Sands Project Desert Mouse and Painted Burrowing Frog Assessment |				
Project number		12671808				
File name		12671808_PRP_Copi Mineral Sands Project Desert Mouse and Painted Burrowing Frog Assessment.docx				
Revision	Author	Reviewer		Approved for issue		
		Name	Signature	Name	Signature	Date
0	A Holmes	D Eyles		A Holmes		24/06/25
1	A Holmes	D Eyles		A Holmes		03/07/25

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1. Introduction

1.1 Purpose of this report

GHD Pty Ltd (GHD) has been engaged by Biodiversity Australia Pty Ltd for ecological services to support the assessment of a proposed mineral sands mine on Warwick Station for RZ mining. Biodiversity Australia require local ecological knowledge to assess the likelihood of occurrence of two threatened species listed under the New South Wales Biodiversity Conservation (BC) Act 2016, specifically the Desert Mouse (*Pseudomys desertor*) and Painted Burrowing Frog (*Neobatrachus pictus*) and also require the preparation of a summary report on these species to support a separate expert report to be prepared by Dr John Read from Ecological Horizons.

Further, an objective of the site visit was to review on-site, a recently a prepared polygon of potential Painted Burrowing Frog habitat to assess whether the species has the potential to occur within this mapped area. Our local GHD ecologists have extensive experience with both species, including conducting previous trapping programs for *P. desertor* in central Australia/NSW and nocturnal surveys for *N. pictus* in Victoria and in NSW where this species is poorly known.

1.2 Scope and limitations

This report: has been prepared by GHD for Biodiversity Australia Pty Ltd and may only be used and relied on by Biodiversity Australia Pty Ltd for the purpose agreed between GHD and Biodiversity Australia Pty Ltd as set out in section 1.1 of this report.

GHD otherwise disclaims responsibility to any person other than Biodiversity Australia Pty Ltd arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report (refer section(s) 1.3 of this report). GHD disclaims liability arising from any of the assumptions being incorrect.

Accessibility of documents

If this report is required to be accessible in any other format, this can be provided by GHD upon request and at an additional cost if necessary.

GHD has prepared this report on the basis of information provided by Biodiversity Australia Pty Ltd and others who provided information to GHD (including Government authorities)], which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

1.3 Assumptions

The scope did not include a detailed assessment or targeted surveys for Desert Mouse (*Pseudomys desertor*) and Painted Burrowing Frog (*Neobatrachus pictus*) or any other flora, fauna or aquatic assessments with conclusions in this report based on a brief one-day site visit on the 3rd of June 2025. As a result, in the future, additional species, including the focal species of this report may be detected that were not observed during the site visit.

The BioNet Atlas (BioNet) database can be used to search a defined geographical area to produce species lists of flora and fauna that have been recorded within the searched area. The database lists are only as accurate as the quality and quantity of data that have been recorded and documented from the area.

Location details for many records (typically older records) have a relatively low degree of accuracy (e.g., within 1 km).

These datasets are not exhaustive. In other words, many locations locally and across New South Wales have a low level of documented survey effort for one or more groups of flora and fauna. During field surveys, it is not uncommon to find species at locations for which there are few or no previous nearby database records.

Maps presented in this report displaying site information should not be relied on for the detailed design during the construction process. Data collected and presented in maps is accurate to +/- 5 m.

2. Species Information

2.1 Painted Burrowing Frog (*Neobatrachus pictus*)

2.1.1 Species description

The Painted Burrowing Frog *(Neobatrachus pictus*) is a large frog, ranging from 46 to 58 mm in length. It has grey, light brown or yellow dorsal head and body with dark brown or olive-green patches and a thin, light yellowish vertebral stripe. The underside of the body is smooth and white (NPWS 2000). The eye is particularly prominent and has a vertical pupil and the tympanum (eardrum) is not visible. Fingers are cylindrical and unwebbed, whereas the toes are fully webbed, with a black shovel-shaped lump on the undersurface, used for burrowing (NPWS 2000). The call is a long and musical trill.

Animals can be distinguished from the more widespread Sudell's Frog (*Neobatrachus sudelli*) by the lack of baggy skin around the groin, although this is a subjective morphological feature and not considered a highly reliable means to differentiate the species (A. Holmes pers. obs.). Other distinguishing features from *N. sudelli* is the call length, *N. pictus* has a longer call that approximately doubles that of *N. sudelli* (NPWS 2000). The most reliable way to differentiate the two species apart from call characteristics is via chromosomal analysis.

Plate 1 ***Painted Burrowing Frog from the Chalka Creek, Hattah-Kulkyne National Park, Vic.***

2.1.2 Life cycle

The Painted Burrowing Frog can breed at all times of year however is dependent on heavy rainfall events (approximately >25mm in 24 hours). Breeding usually occurs in shallow ephemeral pools, however, this species has also been observed breeding in dams, around swamps and on roads. Breeding can occur from late summer through to early spring with each breeding period lasting only a few days. After breeding occurs the species burrows beneath the soil surface. Once below the soil surface this species may remain dormant for up to three months (NPWS 2000) and probably up to six years (van Beurden 1979).

2.1.3 Distribution

The species is distributed primarily across southeastern South Australia and western Victoria with records from three locations within western New South Wales. These records are in Balranald (2014), west of Pooncarie (2000) and within Scotia sanctuary (1995) (ALA, 2024a). The species is considered to have no critical habitat within New South Wales, likely due to the paucity of records (NPWS 2000).

Due to the breeding events being reliant on heavy rainfall there may be an underestimation of the distribution or abundance of the species. However, the infrequent *N. pictus* occurrence within NSW is likely to be attributed to several factors including difficulty in species identification, access to suitable breeding habitat during rainfall events and the likelihood that the species is at the edge of its' distribution in western NSW.

2.1.4 Habitat requirements

The habitat for Painted Burrowing Frog ranges widely, they have been observed in grasslands, mallee, farmland and cleared areas. The species is found after heavy rainfall events. During breeding the species utilizes leaf litter, fallen logs and large rocks for shelter (NPWS 2000).

2.2 Desert Mouse (*Pseudomys desertor*)

2.2.1 Species description

The Desert Mouse (*Pseudomys desertor*) is a solitary medium-sized rodent with chestnut brown fur above and a light grey-brown belly. The tail is brown dorsally and lighter around the sides and ventrally and is equal in length or shorter than the head-body length. Species has large eyes with a pale orange eye-ring. Males and females are a similar size (ALA 2024b).

Plate 2 ***Desert Mouse observed during a trapping program in the Tanami Desert, NT.***

2.2.2 Life cycle

The Desert Mouse has a high reproduction rate with females being fertile on a 7–9-day cycle and become reproductively mature at ten weeks old. Gestation lasts 27-28 days and litter sizes average at three pups (ALA 2024b). The species has large population growth following periods of high rainfall that results in increased vegetation density. (NSW EH, 2024)

2.2.3 Distribution

The species is distributed throughout arid areas, including Central Australia, central inland Queensland, southern Kimberely and the Pilbara in Western Australia and far western New South Wales. There have been very few records of the Desert Mouse in New South Wales and therefore it is thought that NSW is at the edge of the species distribution. (ALA 2024b).

Recent studies have shown that areas with Dingo presence, the pressure of feral predation of small mammals has been reduced compared to areas without Dingoes (Christopher E. Gordon, 2015). The majority of the Desert Mouse distribution has Dingoes present however, the NSW part of its range does not. This may mean the species would become at an increased risk to predation of feral cats and foxes. Additionally, overgrazing in NSW suppresses the species ability to spread to suitable habitat as it is reliant on dense vegetation.

2.2.4 Habitat requirements

Desert Mouse is primarily found in sand dune or sand plain habitats with spinifex. They have also been found in spinifex grasslands, open eucalypt, Acacia shrubland, riparian woodlands and samphire. The species is sensitive to overgrazing due to their reliance on habitats featuring dense grass, sedge or dense groundcover. The species is also sensitive to predation, particularly by feral cats and foxes.

Mallee woodland are ecological communities occurring in semi-arid environments dominated by multi-stemmed, low growing eucalypts. They are diverse communities that support a variety of biota that depend on the specific features of the ecosystem to persist. This includes remnant populations of other rare and threatened species such as the Malleefowl (*Leipoa ocellata*), Gilberts Whistler (*Pachycephala inornata)* and Southern Scrub-robin (*Drymodes brunneopygia).*

Often mallee woodland and mallee dune habitats occur in combination with spinifex (*Triodia* sp.). Spinifex provides habitats provide important groundcover needed by a variety of reptiles and ground mammal species. This includes the Desert Mouse (*Pseudomys desertor).*

3. Description of area

3.1 Landscape context

The development footprint is located in the Scotia Plains and Scotia Groundwater Basins Mitchell Landscapes.

3.1.1 Scotia Sandplains (Sts)

These Scotia Sandplains exhibit slight undulation, featuring east-west trending sand dunes with relief ranging from 3 to 10 meters. These plains include broad swales and small depressions. The soil composition varies, with solonized brown soils and texture-contrast soils on the plains, red and brown sands and earthy sands on dunes, and non-cracking clays in depressions.

Vegetation is diverse, featuring mallee (*Eucalyptus* sp.), Porcupine Grass (*Triodia irritans*), Rosewood (*Alectryon oleifolius*), Belah (*Casuarina cristata*), Bladder Saltbush (*Atriplex vesicaria*), Sugarwood (*Myoporum platycarpum*), occasional Wilga (*Geijera parviflora*), White Cypress Pine (*Callitris glaucophylla*), and moderate to dense stands of Black Bluebush (*Maireana pyramidata*) and Pearl Bluebush (*Maireana sedifolia*). The dunes support vegetation such as Belah, White Cypress Pine, mallee, and Narrow-leaf Hopbush (*Dodonaea attenuata*). Depressions are characterized by annual saltbush (Atriplex sp.) and Canegrass (*Eragrostis australasica*), bordered by Black Box (*Eucalyptus largiflorens*) and Dillon Bush (*Nitraria billardierei*).

3.1.2 Scotia Groundwater Basins (Stb)

This landscape is comprised of small sub-circular to irregular relict saline lakes and lunettes are accompanied by extensive sandplains and isolated dunes with a relief up to 6m. The lake floors consist of highly saline, gypseous, or calcareous grey clays with copi islands. Lunettes and dunes feature deep sandy red earths, while the sandplains have scalded to sandy solonized brown soils. Swales contain sandy to loamy solonized brown soils.

The vegetation on the lake floors includes chenopods, Canegrass (*Eragrostis australasica*), and forbs, with margins hosting Belah (*Casuarina cristata*), White Cypress Pine (*Callitris glaucophylla*), Yarran (*Acacia homalophylla*), and Black Bluebush (*Maireana pyramidata*). Lunettes support mallee (*Eucalyptus* species), Porcupine Grass (*Triodia irritans*), and locally dense bluebush (*Maireana* species). Sandplains are populated with Belah, rosewood (*Alectryon oleifolius*), Sugarwood (*Myoporum platycarpum*), and mallee, along with abundant grasses and forbs.

3.1.3 Study area

The Study Area is located approximately 120km northwest by road from Wentworth in western NSW and 30-40 km east of the SA border (see Figure 1).

The Study Area is also roughly 20 km southeast of Tarawi Nature Reserve (NSW National Parks and Wildlife Service).

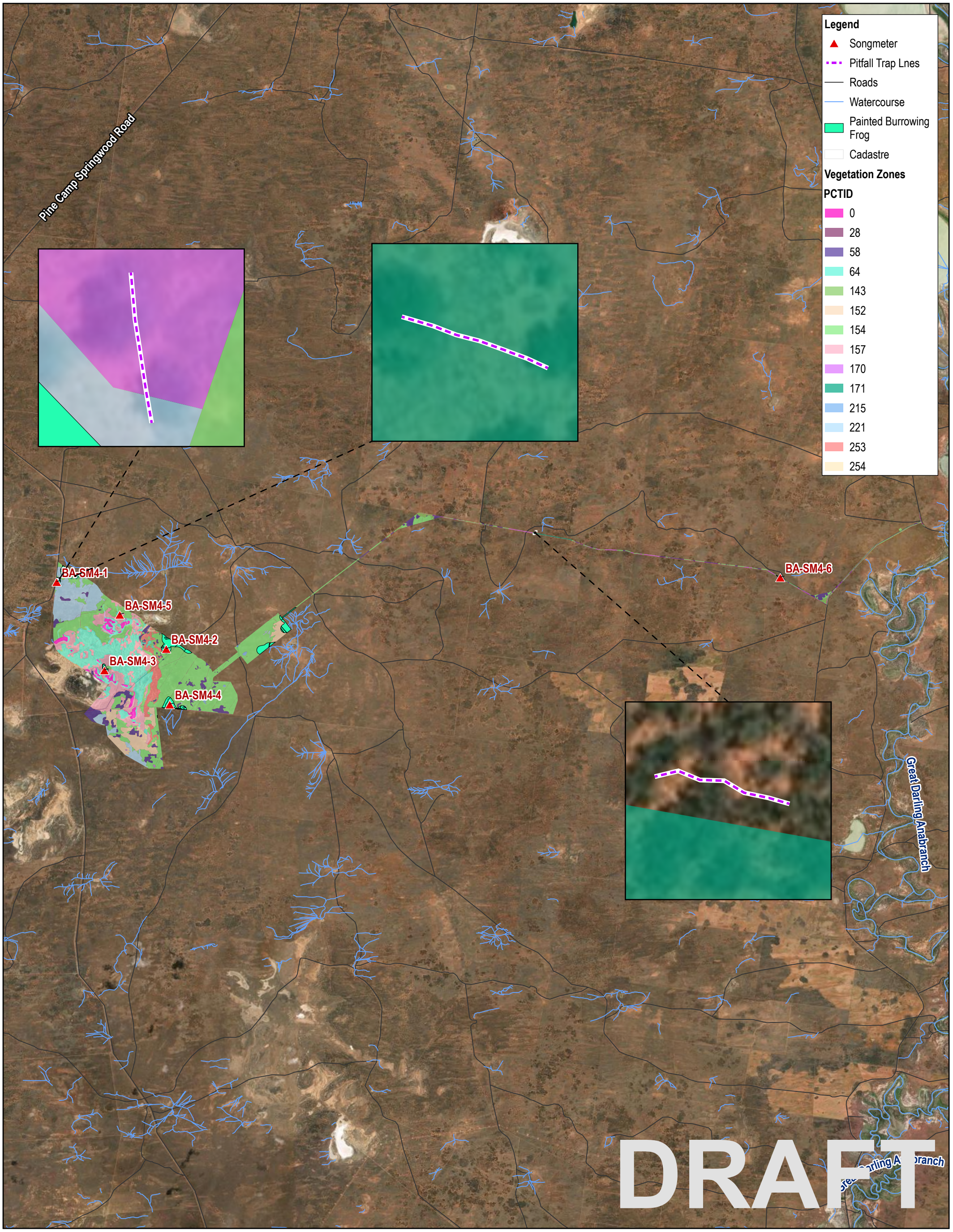
3.2 Native vegetation

The development footprint is primarily Plant Community Type (PCT) 154, which is an open Pearl Bluebush shrubland and PCT 64, a Samphire mixed saline shrubland with smaller areas of Bladder Saltbush shrubland (PCT 157) and Black Oak – Pearl Bluebush shrubland (PCT 221). There are an additional 10 PCT's with smaller areas. The description and area of each PCT is shown in Figure 1 and are described below (Table 1).

Table 1 Plant community types, status and area mapped within development footprint

Veg Zone	PCT		total area ha
MS - Cleared area	0		109.98
MS-VZ-PCT64-Low	64	Samphire - Water Weed - Sea-Heath shrubland saline wetland	641.45
MS-VZ-PCT58-Low	58	Black Oak - Western Rosewood open woodland	189.82
MS-VZ-PCT254-Low	254	Black Oak - Bladder Saltbush on light clays	1.16
MS-VZ-PCT253-Low	253	Gypseous shrubland on rises in the semi-arid and arid plains	139.97
MS-VZ-PCT221-Low-Moderate	221	Black Oak - Pearl Bluebush open woodland	3.20
MS-VZ-PCT221-Low	221	Black Oak - Pearl Bluebush open woodland	391.77
MS-VZ-PCT215-Low-Moderate	215	Woollybutt Grass open grassland on red earths	0.82
MS-VZ-PCT215-Low	215	Woollybutt Grass open grassland on red earths	5.07
MS-VZ-PCT171-Low	171	Spinifex linear dune mallee	5.57
MS-VZ-PCT170-Low	170	Chenopod sandplain mallee woodland/shrubland	1.98
MS-VZ-PCT157-Low-Moderate	157	Bladder Saltbush shrubland on alluvial plains	3.58
MS-VZ-PCT157-Low	157	Bladder Saltbush shrubland on alluvial plains	492.12
MS-VZ-PCT154-Low	154	Pearl Bluebush low open shrubland	1564.74
MS-VZ-PCT152-Low	152	Lunette chenopod shrubland	249.98
LC - Cleared area	0		29.06
LC-VZ-PCT58-Low	58	Black Oak - Western Rosewood open woodland	48.56
LC-VZ-PCT28-Low	28	White Cypress Pine open woodland of sand plains	0.77

Veg Zone	PCT		total area ha
LC-VZ-PCT171-Low	171	Spinifex linear dune mallee	6.56
LC-VZ-PCT170-Low	170	Chenopod sandplain mallee woodland/shrubland	13.60
LC-VZ-PCT154-Low	154	Pearl Bluebush low open shrubland	102.74
LC-VZ-PCT143-Low	143	Narrow-leaved Hopbush - Scrub Turpentine - Senna shrubland	16.81
			4019.31 ha



Data Disclaimer

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Paper Size ISO A3

0 1,000 2,000 3,000 4,000

Meters

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 54

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GHD

Biosis Pty Ltd

Junction Rivers Desert Mouse Habitat Assessment

Vegetation with Painted Burrowing Frogs

Project No. **12662383**
Revision No. **A**
Date **23/06/2025**

FIGURE 1

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Print date: 23 Jun 2025 - 14:27

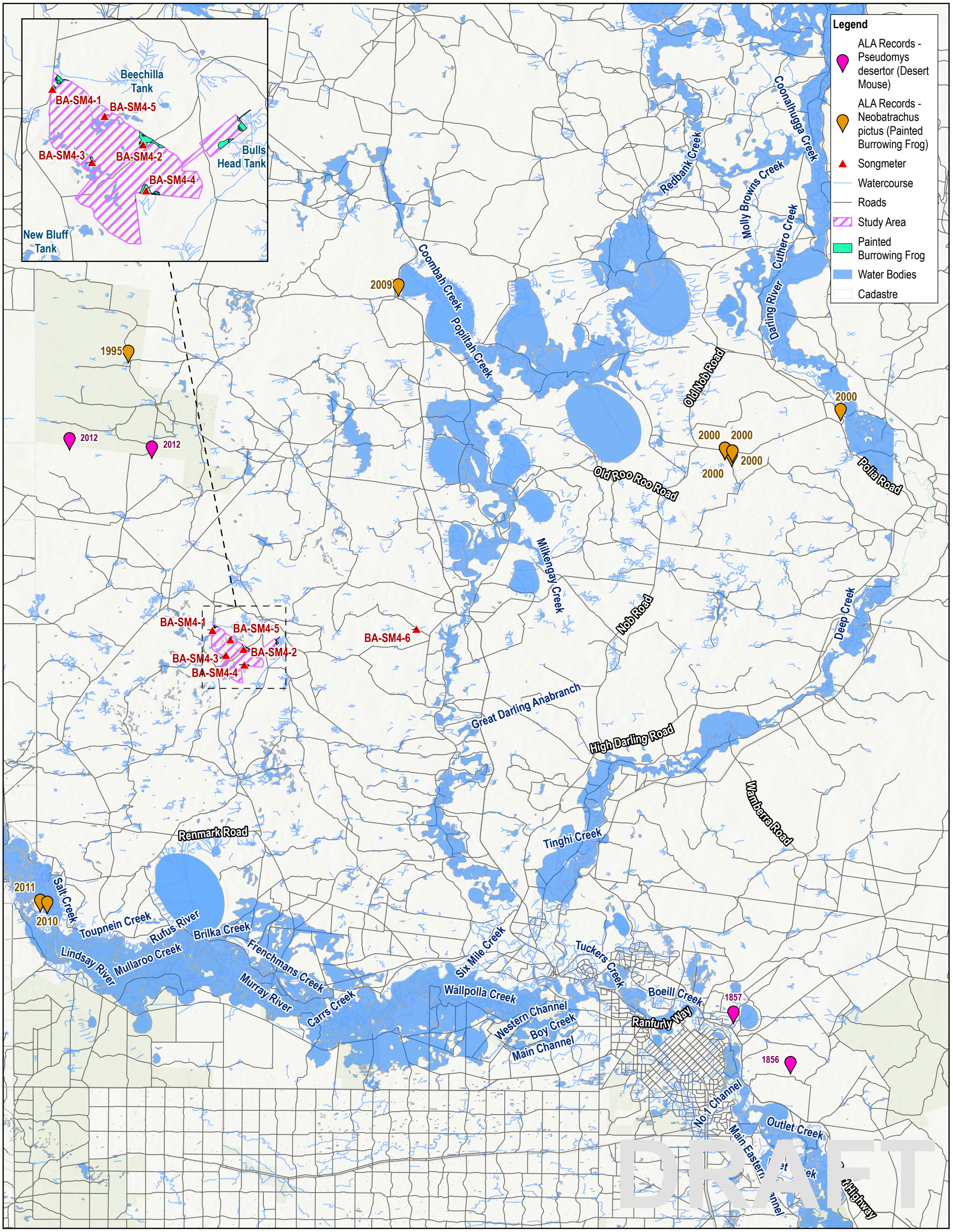
Data source: GHD: Vegetation Zones (2025). LSA: Road Watercourse (2021). ESRI:Earthstar Geographics, Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community (Date extracted: 23/062025) (Imagery date: 2024). Created by: aulayao

4. Assessment of species presence and habitat suitability

4.1 Species records and habitat assessments

The target species' for this assessment both have very few or no local records (within 10 km) across historical survey effort, however, there are records for both species from the Tarawi Reserve (Desert Mouse) and Scotia Sanctuary (Painted Burrowing Frog) that are 20 and 40 km respectively from the Study Area.

Previous survey effort including numerous surveys conducted across southwestern NSW by the author dating back to 2010, where pitfall and Elliot traps have been employed have not resulted in the detection of the Desert Mouse (unpublished surveys conducted for Tronox Plc and Western Local Land Services, including one survey of 11 large properties with over 3,100 pitfall trap nights). Although Mallee Cliffs National Park is some 200 km away from the study area, regular survey conducted at this location at least provides some indication of likelihood of occurrence of *P. desertor* in addition to recent surveys conducted since 2012 at Tarawi and also at Scotia Sanctuary, none of which have detected the species. Historical records from ALA and from BioNet across western New South Wales are displayed in Figure 2.



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Paper Size ISO A3

Meters

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 54

N

GHD

Biosis Pty Ltd

Junction Rivers Desert Mouse Habitat Assessment

Previous Records of Painted Burrowing Frogs

Project No. **12662383**
Revision No. **A**
Date **23/06/2025**

FIGURE 1

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Print date: 23 Jun 2025 - 15:44

Data source: GHD: Songmeter, Painted Burrowing Frogs (2025). LSA: Road Watercourse (2021). ESRI:Esri, TomTom, Garmin, FAO, METI/NASA, USGS, Esri, CGIAR, Esri, Geoscience Australia, NASA, NGA, USGS, Esri, TomTom, Garmin, METI/NASA, USGS (Date extracted: 23/062025) (Imagery date: 2024). Created by: aulayao

4.1.1 Painted Burrowing Frog (*Neobatrachus pictus*)

Suitable habitat for the Painted Burrowing Frog (*Neobatrachus pictus*) is primarily dependent on rainfall as opposed to vegetation type. This could lead to suitable habitat becoming present within the Study Area

The closest record to the Study Area is from 1995 with one individual from Scotia Sanctuary, ~40km away from the location. Until 2021 there had only been two locations within NSW with records of the Painted Burrowing Frog, Scotia Sanctuary and west of Pooncarie.

The Study Area appears to support primarily suboptimal (saline ephemeral wetlands) and some lower quality potential habitat for this species with no previous records within 10 km, although, as mentioned above, there is a record of Painted Burrowing Frog from Scotia Sanctuary, 40 km away from 1995.

4.1.2 Desert Mouse (*Pseudomys desertor*)

The closest records of the Desert Mouse are from 2012 within the Tarawi Nature Reserve ~20 km northwest of the study area. This record could be associated with the high rainfall within the two years prior which allowed the species to recolonize Tarawi Nature Reserve. Yearly rainfall statistics for the closest weather stations to Tarawi Nature Reserve is the Mildura Airport (station no. 076031) and Pooncarie Mail Agency (station no. 047029), a summary of these statistics can be seen in Table 2 ((BOM, 2024). The other record of Desert Mouse within NSW was in 2008 within Sturt National Park, approximately 650 km north, where a singular male was detected (OEH 2024).

Table 2 Annual Rainfall Data from Mildura and Pooncarie

Year	Annual Rainfall in Mildura (mm)	Annual Rainfall in Pooncarie (mm)
2008	202.0	227.4
2009	233.0	228.6
2010	591.2	567.1
2011	657.4	533.1
2012	214.6	N/A
2013	216.4	201.9

A very small and isolated patch of approximately 5.57 hectares of mallee woodland and spinifex dunes occurs within the Study Area. These habitats are the species preferred habitat however threats of predation and overgrazing likely limit the species ability to recolonise the area, even though they have been recorded only 20 km from the Study Area.

The infrequency of records within New South Wales in general and the heavily grazed status of the study indicate that under current conditions, it is unlikely that the Desert Mouse occurs within the Study Area.

4.2 Recent surveys in the region

4.2.1 Mallee Cliffs National Park

There has been extensive survey effort completed within the Mallee Cliffs National Park, approximately 200 km east of the Study Area, primarily completed by the Australian Wildlife Conservancy (AWC) from 2016 to present day. These surveys are done under the AWC-NSW Parks Partnership Projects. Across the AWC-NSW Parks Partnership Projects there have been 34,087 records of 171 species. Prior to this, records within the national park go back to 1965 producing an additional 12,419 records and 84 species.

Neither target species of the Painted Burrowing Frog or the Desert Mouse have been detected throughout the history of survey effort within Mallee Cliffs National Park despite extensive survey effort. Various survey methods were utilized including live trapping (box, cage, pitfall and funnel), camera traps, acoustic recorder deployment and spotlight transects across the standard monitoring sites. A summary of the threatened species that have been detected within the park is below (Table 3).

Status

EPBC Act - Commonwealth Environment Protection and Biodiversity Conservation Act 1999.
BC Act - Biodiversity Conservation Act 2016 or Fisheries Management Act 1994.

CE – Critically Endangered
EN – Endangered population
V – Vulnerable

Table 3 Threatened Species detected within Mallee Cliffs National Park

Scientific Name	Common Name	EPBC/BC Act Listing
Mammals		
Cercartetus concinnus	Western Pygmy Possum	- / EN
Chalinolobus picatus	Little Pied Bat	- / VU
Ningaui yvonneae	Southern Ningaui	- / VU
Nyctophilus corbeni	Corben's Long-eared Bat	VU / VU
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	- / VU
Vespadelus baverstocki	Inland Forest Bat	- / VU
Aves		
Aphelocephala leucopsis	Southern Whiteface	VU / VU
Artamus cyanopterus cyanopterus	Dusky Woodswallow	- / VU
Certhionyx variegatus	Pied Honeyeater	- / VU
Cinclosoma castanotum	Chestnut Quail-thrush	- / VU
Circus assimilis	Spotted Harrier	- / VU
Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	- / VU
Daphoenositta chrysoptera	Varied Sittella	- / VU
Drymodes brunneopygia	Southern Scrub-robin	- / VU
Epthianura albifrons	White-fronted Chat	- / VU
Falco subniger	Black Falcon	- / VU
Haliaeetus leucogaster	White-bellied Sea-Eagle	- / VU
Hieraaetus morphnoides	Little Eagle	- / VU
Hylacola cautus	Shy Heathwren	- / VU
Leipoa ocellata	Malleefowl	VU / EN
Lichenostomus cratitius	Purple-gaped Honeyeater	- / VU
Lophochroa leadbeateri	Pink Cockatoo	- / VU
Melanodryas cucullata cucullata	South-eastern Hooded Robin	EN / EN
Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)	- / VU
Pachycephala inornata	Gilbert's Whistler	- / VU
Petroica phoenicea	Flame Robin	- / VU
Polytelis anthopeplus monarchoides	Regent Parrot (eastern subspecies)	VU / EN
Reptilia		
Aprasia inaurita	Mallee Worm-lizard	- / EN
Cyclodomorphus melanops elongatus	Mallee Slender Blue-tongue Lizard	- / EN
Strophurus elderi	Jewelled Gecko	- / VU
Tiliqua occipitalis	Western Blue-tongued Lizard	- / VU

4.2.2 2025 GHD site visit

In May 2025, Alex Holmes (GHD Technical Director, Ecology) travelled to the Study Area to assess patches of habitat for the potential to provide habitat for the Painted Burrowing Frog (*Neobatrachus pictus*) and Desert Mouse (*Pseudomys desertor*). In particular, a polygon prepared by Biodiversity Australia was also reviewed on-site to assess whether the Painted Burrowing Frog has the potential to occur within the entirety of the mapped area.

A total of six songmeters have also been deployed by a Biodiversity Australia ecologist in potentially suitable habitat for Painted Burrowing Frog, and these were also visited by the GHD ecologist to assess the suitability of habitat for the frog.

Songmeter Site 1

Habitat was assessed in the vicinity of Songmeter 1, which was comprised of a depression which is known to hold water in large rainfall events (RZ Mining *pers. comm.*). The area is surrounded by Pearl Bluebush and Belah-Rosewood woodland. The habitat at this location appeared potentially suitable for Painted Burrowing Frog.

Plate 3 Habitat in the vicinity of Songmeter 1

Songmeter Site 2

Habitat was assessed in the vicinity of Songmeter 2, which was comprised of a small, constructed farm dam, which would be assumed to hold water following a large rainfall event. The area is surrounded by treeless bluebush shrubland. The habitat at this location appeared potentially suitable for Painted Burrowing Frog.

Plate 4 *Habitat in the vicinity of Songmeter 2*

Songmeter Site 3

Habitat was assessed in the vicinity of Songmeter 3, which was comprised of an open area thought to retain water following a large rainfall event. The area is surrounded by treeless bluebush shrubland. The habitat at this location has the potential to support the Painted Burrowing Frog, although it is isolated from other nearby potential habitat by saline ephemeral wetlands, therefore the likelihood of the species being present is low.

Plate 5 *Habitat in the vicinity of Songmeter 3*

Songmeter Site 4

Habitat was assessed in the vicinity of Songmeter 4, which was comprised of a large, open area assumed to retain water in a heavy rainfall event, although due to the size of the area, several large events would be required to fill this location. The area is surrounded by treeless bluebush shrubland. The habitat at this location appeared potentially suitable for Painted Burrowing Frog, although the apparent need for a sustained wet period indicates that it might only occasionally provide suitable habitat.

Plate 6 ***Habitat in the vicinity of Songmeter 4***

Songmeter Site 5

Habitat was assessed in the vicinity of Songmeter 5, which was comprised of a large saline ephemeral wetland assumed to hold water following a large rainfall event. The area is surrounded by treeless samphire shrubland. Due to the saline nature of the site, it is unlikely that the Painted Burrowing Frog occurs at this location.

Plate 7 ***Habitat in the vicinity of Songmeter 5***

Songmeter Site 6

Habitat was assessed in the vicinity of Songmeter 6, which was comprised of an open area which would be assumed to hold water following a large rainfall event. The area is surrounded by treeless bluebush shrubland and scattered Belah-Rosewood woodland. The habitat at this location appeared potentially suitable for Painted Burrowing Frog.

Plate 8 ***Habitat in the vicinity of Songmeter 6***

Potential Desert Mouse habitat

A very small and isolated patch of approximately 5.57 hectares of mallee woodland and spinifex dunes occurs within the Study Area and was assessed during the site visit. These habitats are the species preferred habitat, however, threats of predation and overgrazing likely limit the species ability to recolonise the area, even though they have been recorded only 20 km from the Study Area.

The infrequency of records within New South Wales in general and the heavily grazed status of the study indicate that under current conditions, it is unlikely that the Desert Mouse occurs at this location.

Plate 9 ***Spinifex mallee habitat within the study area***

Assessment of Painted Burrowing Frog habitat polygon

During the site visit, an assessment was made of the Painted Burrowing Frog potential habitat polygon made by Biodiversity Australia. On closer inspection, it was found that much of the habitat polygon was comprise of ephemeral saline wetlands and as such, unlikely to support habitat for the Painted Burrowing Frog. The Painted Burrowing Frog habitat polygon was adjusted on consultation between GHD's and Biodiversity Australia's ecologists with the result being a reduction in the overall extent of the polygon as indicated in Figure 1.

4.2.3 Likelihood of occurrence assessment

The likelihood of occurrence of both the Desert Mouse and Painted Burrowing Frog is summarised below:

Table 4 Likelihood of occurrence table for target species

Common Name Scientific Name	BC Status	EPBC Status	Habitat association	Likelihood of occurrence
Desert Mouse *Pseudomys desertor*	CE	-	Most records of the Desert Mouse come from sand dune or sand plain habitats dominated by Spinifex *(Triodia* spp.). Depends on a dense groundcover of grasses, sedges or shrubs; survives in small pockets of habitat and expands into other areas following rains and subsequent vegetation growth. Found to be most abundant in areas with the least historical grazing pressure and disturbance, including fire.	Low: Some potentially suitable habitat occurs in the Study Area, however the patch is very small and isolated and heavily grazed by feral goats.
Painted Burrowing Frog *Neobatrachus pictus*	E	-	Widespread in southeastern South Australia and western Victoria but found at only two locations in NSW, in Scotia Sanctuary, adjacent to the South Australian border and in an area to the west of Pooncarie. Inhabit open grassland, mallee, woodland, farmland and cleared areas and are usually found in or around flooded areas after periods of heavy rainfall, including grassy marshes, lagoons, flooded claypans, temporary roadside pools, ditches, mallee swales and farm dams.	Low: Generally low quality ephemeral saline depressions exist within the study area, although some small depressions that are known to hold fresh water indicate some potential for the species to occasionally occur. It is likely that the non-saline depressions present on-site would require sustained La Niña conditions to fill, possibly over several years.

5. Conclusion

Based upon the lack of historical records and generally low quality of habitat within the Study Area (much of the area occupied by saline ephemeral wetlands), there is a low likelihood that the Painted Burrowing Frog (*Neobatrachus pictus*) is present within the development footprint provided. This species requires temporary pools of water, such as claypans or floodplains, to breed and burrow into moist soil during dry periods (ALA 2024a). The Study Area is dominated by saline depressions and lacks extensive surface water features that could regularly support the Painted Burrowing Frog. As indicated in the report, small depressions that are known to hold fresh water indicate some potential for the species to occasionally occur. It is likely that these non-saline depressions present on-site would require sustained La Niña conditions to fill, possibly over several years.

Despite potentially suitable habitat being present for the Desert Mouse (*Pseudomys desertor*), the sparse records accompanied with high predation pressure, overgrazing and disturbed vegetation within the Study Area, it is unlikely the species is present. The Desert Mouse is a small nocturnal rodent that inhabits semi-arid and arid areas with spinifex or hummock grasslands (ALA 2024b). The development footprint contains some patches of spinifex, but they are highly degraded, very small in extent and isolated from other larger patches of the same habitat. The high survey effort within reserves such as Tarawi, Scotia Sanctuary and Mallee Cliffs through the partnership with the Australian Wildlife Conservancy and NSW National Parks would be expected to detect both species if present.

6. References

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A-9 Field Datasheets

Development Footprint – Mine Site

				Plot Num Project Specific	2020_43_b
				Plot Number ?	40
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	20.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.010
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.200
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	1.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	2020_43_b
				Plot Number ?	40
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	0.200
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	2020_43_b
				Plot Number ?	40
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	2020_43_b
				Plot Number ?	40
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	2020_43_b
				Plot Number ?	40
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	100.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	1.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	750.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	400.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	2020_43_b
				Plot Number ?	40
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	100.000
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	2020_43_b
				Plot Number ?	40
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	2020_43_b
				Plot Number ?	40
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	2022_11_b
				Plot Number ?	124
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	15.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	5.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.200
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	3.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	2022_11_b
				Plot Number ?	124
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	1.000
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	15.000
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	2022_11_b
				Plot Number ?	124
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	2022_11_b
				Plot Number ?	124
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	0.100
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	2022_11_b
				Plot Number ?	124
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	120.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	250.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	50.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	75.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	2022_11_b
				Plot Number ?	124
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	60.000
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	17.000
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	2022_11_b
				Plot Number ?	124
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	2022_11_b
				Plot Number ?	124
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	5.000
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	2022_12_b
				Plot Number ?	123
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	5.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	3.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.500
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	20.000
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	5.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	0.200
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	2022_12_b
				Plot Number ?	123
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	0.500
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	5.000
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	35.000
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	2022_12_b
				Plot Number ?	123
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	2022_12_b
				Plot Number ?	123
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	2022_12_b
				Plot Number ?	123
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	30.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	40.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	50.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	250.000
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	50.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	10.000
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	2022_12_b
				Plot Number ?	123
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	20.000
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	50.000
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	16.000
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	2022_12_b
				Plot Number ?	123
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	2022_12_b
				Plot Number ?	123
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	2022_17_b
				Plot Number ?	134
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	25.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	3.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	2022_17_b
				Plot Number ?	134
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	0.100
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	5.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	2022_17_b
				Plot Number ?	134
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	2022_17_b
				Plot Number ?	134
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			0.010
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	0.020
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	2022_17_b
				Plot Number ?	134
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	80.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	30.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	2022_17_b
				Plot Number ?	134
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	5.000
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	60.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	2022_17_b
				Plot Number ?	134
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	2022_17_b
				Plot Number ?	134
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			50.000
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	50.000
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	2022_19_b
				Plot Number ?	133
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	10.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.100
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	0.500
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	2022_19_b
				Plot Number ?	133
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	2.000
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	50.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	2022_19_b
				Plot Number ?	133
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	2022_19_b
				Plot Number ?	133
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	2022_19_b
				Plot Number ?	133
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	40.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	20.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	2022_19_b
				Plot Number ?	133
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	100.000
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	2000.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	2022_19_b
				Plot Number ?	133

Scientific Name	Common Name	Exotic	High Threat Weed (Manageable Yes/No)	BAM Growth Form Group	Abundance
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	2022_19_b
				Plot Number ?	133
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	2022_6_b
				Plot Number ?	110
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.500
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	0.500
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	0.200
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	2022_6_b
				Plot Number ?	110
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	0.050
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	1.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	5.000
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	0.050
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	2022_6_b
				Plot Number ?	110
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	2022_6_b
				Plot Number ?	110
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			0.050
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	20.000
Eucalyptus socialis	Red Mallee			Tree (TG)	5.000
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	0.020
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	2022_6_b
				Plot Number ?	110
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	100.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	2.000
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	10.000
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	2022_6_b
				Plot Number ?	110
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	10.000
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	20.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	75.000
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	75.000
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	2022_6_b
				Plot Number ?	110
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	2022_6_b
				Plot Number ?	110
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			250.000
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	50.000
Eucalyptus socialis	Red Mallee			Tree (TG)	1.000
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	50.000
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	2022_9_b
				Plot Number ?	125
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	5.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.500
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	10.000
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	0.100
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	2022_9_b
				Plot Number ?	125
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	2.000
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	0.500
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					0.200
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	20.000
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	1.000
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	2022_9_b
				Plot Number ?	125
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	0.100
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	2022_9_b
				Plot Number ?	125
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	15.000
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	2022_9_b
				Plot Number ?	125
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	30.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	75.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	50.000
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	5.000
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	2022_9_b
				Plot Number ?	125
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	75.000
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	25.000
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					20.000
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	7.000
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	50.000
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	2022_9_b
				Plot Number ?	125
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	10.000
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	2022_9_b
				Plot Number ?	125
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	1.000
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	23_O_14_b
				Plot Number ?	18
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	2.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.100
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	1.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	0.500
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			0.010
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	23_O_14_b
				Plot Number ?	18
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	0.500
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	0.200
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	23_O_14_b
				Plot Number ?	18
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	23_O_14_b
				Plot Number ?	18
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	5.000
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	0.010
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	23_O_14_b
				Plot Number ?	18
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	50.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	25.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	75.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	50.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			50.000
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	23_O_14_b
				Plot Number ?	18
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	5.000
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	50.000
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	23_O_14_b
				Plot Number ?	18
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	23_O_14_b
				Plot Number ?	18
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	2.000
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	5.000
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	23_O_15_b
				Plot Number ?	98
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	17.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	5.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	5.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	10.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	23_O_15_b
				Plot Number ?	98
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	3.000
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	3.000
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	10.000
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	23_O_15_b
				Plot Number ?	98
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	23_O_15_b
				Plot Number ?	98
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	20.000
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	23_O_15_b
				Plot Number ?	98
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	20.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	100.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	150.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	300.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	23_O_15_b
				Plot Number ?	98
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	2.000
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	20.000
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	40.000
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	23_O_15_b
				Plot Number ?	98
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	23_O_15_b
				Plot Number ?	98
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	1.000
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	24_3_b
				Plot Number ?	16
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	15.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	3.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.200
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	0.100
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	5.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	24_3_b
				Plot Number ?	16
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	0.200
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	20.000
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	24_3_b
				Plot Number ?	16
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	24_3_b
				Plot Number ?	16
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	24_3_b
				Plot Number ?	16
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	100.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	200.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	55.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	2.000
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	500.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	24_3_b
				Plot Number ?	16
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	25.000
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	5.000
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	24_3_b
				Plot Number ?	16
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	24_3_b
				Plot Number ?	16
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	24_4_b
				Plot Number ?	15
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	12.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	1.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	1.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	5.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	24_4_b
				Plot Number ?	15
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	5.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	5.000
Rhagodia gaudichaudiana					1.000
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	5.000
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	0.500
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	24_4_b
				Plot Number ?	15
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	24_4_b
				Plot Number ?	15
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	30.000
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	24_4_b
				Plot Number ?	15
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	50.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	50.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	75.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	300.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	24_4_b
				Plot Number ?	15
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	75.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	35.000
Rhagodia gaudichaudiana					20.000
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	200.000
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	15.000
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	24_4_b
				Plot Number ?	15
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	24_4_b
				Plot Number ?	15
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	3.000
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	24_5_b
				Plot Number ?	13
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	20.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	3.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	2.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	24_5_b
				Plot Number ?	13
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	0.500
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	24_5_b
				Plot Number ?	13
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	24_5_b
				Plot Number ?	13
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	15.000
Medicago sativa	Lucerne	YES			5.000
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	24_5_b
				Plot Number ?	13
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	55.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	120.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	100.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	24_5_b
				Plot Number ?	13
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	5.000
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	24_5_b
				Plot Number ?	13
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	24_5_b
				Plot Number ?	13
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	4.000
Medicago sativa	Lucerne	YES			500.000
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 10
				Plot Number ?	116
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.100
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.100
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	80.000
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	0.020
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 10
				Plot Number ?	116
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 10
				Plot Number ?	116
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 10
				Plot Number ?	116
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 10
				Plot Number ?	116
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	60.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	300.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	40.000
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 10
				Plot Number ?	116
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 10
				Plot Number ?	116
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 10
				Plot Number ?	116
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 11
				Plot Number ?	45
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	2.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.100
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	1.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	0.010
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	15.000
Tetragonia moorei				Forb (FG)	0.010
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	0.010
Sclerolaena patenticuspis				Shrub (SG)	1.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			0.010
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 11
				Plot Number ?	45
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	0.010
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 11
				Plot Number ?	45
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 11
				Plot Number ?	45
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 11
				Plot Number ?	45
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	10.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	10.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	100.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	1.000
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	40.000
Tetragonia moorei				Forb (FG)	1.000
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	1.000
Sclerolaena patenticuspis				Shrub (SG)	50.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			15.000
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 11
				Plot Number ?	45
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	350.000
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 11
				Plot Number ?	45
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 11
				Plot Number ?	45
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 12
				Plot Number ?	118
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.010
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	10.000
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	0.010
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	25.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	0.010
Tribulus terrestris	Cat-head	YES			0.010
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 12
				Plot Number ?	118
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			0.010
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 12
				Plot Number ?	118
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 12
				Plot Number ?	118
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 12
				Plot Number ?	118
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	10.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	500.000
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	30.000
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	400.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	300.000
Tribulus terrestris	Cat-head	YES			1.000
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 12
				Plot Number ?	118
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			200.000
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 12
				Plot Number ?	118
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 12
				Plot Number ?	118
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 13
				Plot Number ?	58
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	1.500
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.500
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	1.500
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	0.500
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	1.000
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	0.100
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	0.001
Salvia verbenaca	Vervain	YES			0.001
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 13
				Plot Number ?	58
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 13
				Plot Number ?	58
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 13
				Plot Number ?	58
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 13
				Plot Number ?	58
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	8.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	26.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	300.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	7.000
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	4.000
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	5.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	1.000
Salvia verbenaca	Vervain	YES			25.000
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 13
				Plot Number ?	58
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 13
				Plot Number ?	58
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 13
				Plot Number ?	58
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 15
				Plot Number ?	47
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	25.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.050
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.010
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	1.000
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	0.010
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	0.010
Sclerolaena patenticuspis				Shrub (SG)	2.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			0.010
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 15
				Plot Number ?	47
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			0.010
Vittadinia cuneata				Forb (FG)	0.010
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			0.010
Carrichtera annua	Ward's Weed	YES	No		0.010
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 15
				Plot Number ?	47
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 15
				Plot Number ?	47
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 15
				Plot Number ?	47
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	40.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	28.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	120.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	20.000
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	20.000
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	5.000
Sclerolaena patenticuspis				Shrub (SG)	30.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			3.000
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 15
				Plot Number ?	47
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			2.000
Vittadinia cuneata				Forb (FG)	50.000
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			1.000
Carrichtera annua	Ward's Weed	YES	No		15.000
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 15
				Plot Number ?	47
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 15
				Plot Number ?	47
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 16
				Plot Number ?	130
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	20.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	5.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.100
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	0.500
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	30.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	0.010
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	0.500

				Plot Num Project Specific	BAMCo24 16
				Plot Number ?	130
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	0.100
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 16
				Plot Number ?	130
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 16
				Plot Number ?	130
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 16
				Plot Number ?	130
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	100.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	80.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	25.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	75.000
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	200.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	1.000
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	50.000

				Plot Num Project Specific	BAMCo24 16
				Plot Number ?	130
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	150.000
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 16
				Plot Number ?	130
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 16
				Plot Number ?	130
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCO24 19_b
				Plot Number ?	132
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	25.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.100
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.100
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	15.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 19_b
				Plot Number ?	132
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	0.300
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	15.000
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 19_b
				Plot Number ?	132
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 19_b
				Plot Number ?	132
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			2.000
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCO24 19_b
				Plot Number ?	132
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	100.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	25.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	50.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	200.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 19_b
				Plot Number ?	132
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	30.000
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	3.000
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 19_b
				Plot Number ?	132
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 19_b
				Plot Number ?	132
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			500.000
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 2
				Plot Number ?	57
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	2.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	1.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	2.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	1.000
Sida corrugata	Corrugated Sida			Forb (FG)	0.001
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	15.000
Tetragonia moorei				Forb (FG)	0.001
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	0.001
Sclerolaena patenticuspis				Shrub (SG)	1.000
Phyllanthus spp.				Shrub (SG)	0.001
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 2
				Plot Number ?	57
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 2
				Plot Number ?	57
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 2
				Plot Number ?	57
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 2
				Plot Number ?	57
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	7.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	30.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	200.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	10.000
Sida corrugata	Corrugated Sida			Forb (FG)	1.000
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	30.000
Tetragonia moorei				Forb (FG)	10.000
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	5.000
Sclerolaena patenticuspis				Shrub (SG)	20.000
Phyllanthus spp.				Shrub (SG)	1.000
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 2
				Plot Number ?	57
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 2
				Plot Number ?	57
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 2
				Plot Number ?	57
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 22
				Plot Number ?	73
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	30.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.100
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	0.012
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	1.000

				Plot Num Project Specific	BAMCo24 22
				Plot Number ?	73
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 22
				Plot Number ?	73
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	0.100
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 22
				Plot Number ?	73
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 22
				Plot Number ?	73
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	35.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	50.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	2.000

				Plot Num Project Specific	BAMCo24 22
				Plot Number ?	73
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 22
				Plot Number ?	73
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	10.000
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 22
				Plot Number ?	73
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 23
				Plot Number ?	59
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	25.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.001
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	15.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	0.010
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	5.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	0.010
Tribulus terrestris	Cat-head	YES			0.010
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	0.010
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	0.100
Rhagodia spp.				Shrub (SG)	0.200
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	0.050
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 23
				Plot Number ?	59
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 23
				Plot Number ?	59
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 23
				Plot Number ?	59
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 23
				Plot Number ?	59
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	30.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	2.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	250.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	3.000
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	132.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	150.000
Tribulus terrestris	Cat-head	YES			25.000
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	15.000
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	5.000
Rhagodia spp.				Shrub (SG)	5.000
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	2.000
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 23
				Plot Number ?	59
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 23
				Plot Number ?	59
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 23
				Plot Number ?	59
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 24
				Plot Number ?	48
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	35.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	5.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	1.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	0.010
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	15.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	0.010

				Plot Num Project Specific	BAMCo24 24
				Plot Number ?	48
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	0.100
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		0.010
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 24
				Plot Number ?	48
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 24
				Plot Number ?	48
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 24
				Plot Number ?	48
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	65.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	60.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	90.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	50.000
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	40.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	1.000

				Plot Num Project Specific	BAMCo24 24
				Plot Number ?	48
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	1.000
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		2.000
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 24
				Plot Number ?	48
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 24
				Plot Number ?	48
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 25
				Plot Number ?	94
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	0.500
Sida corrugata	Corrugated Sida			Forb (FG)	0.010
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	30.000
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	0.010
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 25
				Plot Number ?	94
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		0.010
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	45.000
Maireana appressa				Shrub (SG)	0.100
Osteocarpum acropterum	Water Weed			Shrub (SG)	5.000
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	3.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	0.010
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 25
				Plot Number ?	94
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 25
				Plot Number ?	94
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 25
				Plot Number ?	94
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	2.000
Sida corrugata	Corrugated Sida			Forb (FG)	6.000
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	480.000
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	30.000
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 25
				Plot Number ?	94
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		2.000
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	3700.000
Maireana appressa				Shrub (SG)	3.000
Osteocarpum acropterum	Water Weed			Shrub (SG)	60.000
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	50.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	1.000
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 25
				Plot Number ?	94
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 25
				Plot Number ?	94
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCO24 28_b
				Plot Number ?	14
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	15.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.010
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	12.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 28_b
				Plot Number ?	14
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	0.100
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	0.100
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 28_b
				Plot Number ?	14
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 28_b
				Plot Number ?	14
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			0.200
Atriplex quinii				Shrub (SG)	0.100
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCO24 28_b
				Plot Number ?	14
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	60.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	5.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	300.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 28_b
				Plot Number ?	14
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	5.000
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	5.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 28_b
				Plot Number ?	14
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 28_b
				Plot Number ?	14
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			500.000
Atriplex quinii				Shrub (SG)	5.000
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 3
				Plot Number ?	117
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	85.000
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	0.010
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	2.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 3
				Plot Number ?	117
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 3
				Plot Number ?	117
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 3
				Plot Number ?	117
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 3
				Plot Number ?	117
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	3.000
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	60.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 3
				Plot Number ?	117
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 3
				Plot Number ?	117
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 3
				Plot Number ?	117
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 30
				Plot Number ?	26
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	2.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	1.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			0.001
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	2
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 30
				Plot Number ?	26
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	0.100
Osteocarpum acropterum	Water Weed			Shrub (SG)	0.100
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 30
				Plot Number ?	26
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	0.001
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	50.000
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 30
				Plot Number ?	26
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 30
				Plot Number ?	26
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	35.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	18.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			2.000
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	32.000
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 30
				Plot Number ?	26
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	1.000
Osteocarpum acropterum	Water Weed			Shrub (SG)	10.000
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 30
				Plot Number ?	26
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	1.000
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	50.000
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 30
				Plot Number ?	26
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 33
				Plot Number ?	60
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	20.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	3.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	2.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	0.020
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	0.010
Tetragonia moorei				Forb (FG)	0.010
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	2.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			0.010
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 33
				Plot Number ?	60
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	0.020
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		0.010
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	0.500
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	0.010
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	0.010
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	0.010

				Plot Num Project Specific	BAMCo24 33
				Plot Number ?	60
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 33
				Plot Number ?	60
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 33
				Plot Number ?	60
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	60.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	80.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	120.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	50.000
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	1.000
Tetragonia moorei				Forb (FG)	20.000
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	100.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			5.000
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 33
				Plot Number ?	60
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	100.000
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		5.000
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	15.000
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	5.000
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	1.000
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	1.000

				Plot Num Project Specific	BAMCo24 33
				Plot Number ?	60
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 33
				Plot Number ?	60
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 34
				Plot Number ?	74
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	5.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.010
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	5.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	3.000
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	10.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			0.010
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 34
				Plot Number ?	74
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	0.001
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 34
				Plot Number ?	74
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 34
				Plot Number ?	74
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 34
				Plot Number ?	74
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	20.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	5.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	200.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	10.000
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	100.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			5.000
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 34
				Plot Number ?	74
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	10.000
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 34
				Plot Number ?	74
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 34
				Plot Number ?	74
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 35
				Plot Number ?	126
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	2.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	40.000
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	0.010
Sclerolaena patenticuspis				Shrub (SG)	5.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 35
				Plot Number ?	126
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	1.000
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			0.010
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	0.010
Conyza spp.		YES			0.010
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 35
				Plot Number ?	126
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 35
				Plot Number ?	126
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 35
				Plot Number ?	126
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	30.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	150.000
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	1.000
Sclerolaena patenticuspis				Shrub (SG)	80.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 35
				Plot Number ?	126
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	300.000
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			1.000
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	8.000
Conyza spp.		YES			1.000
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 35
				Plot Number ?	126
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 35
				Plot Number ?	126
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCO24 35_b
				Plot Number ?	129
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.100
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.100
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	25.000
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	1.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 35_b
				Plot Number ?	129
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	0.200
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	10.000
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	0.100
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 35_b
				Plot Number ?	129
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 35_b
				Plot Number ?	129
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCO24 35_b
				Plot Number ?	129
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	20.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	100.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	120.000
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	100.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 35_b
				Plot Number ?	129
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	10.000
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	2.000
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	20.000
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 35_b
				Plot Number ?	129
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 35_b
				Plot Number ?	129
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 36
				Plot Number ?	122
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	3.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.100
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	1.000
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 36
				Plot Number ?	122
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	1.000
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 36
				Plot Number ?	122
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	15.000
Frankenia spp.				Forb (FG)	0.010
Thysanotus spp.				Forb (FG)	0.001
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 36
				Plot Number ?	122
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 36
				Plot Number ?	122
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	4.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	5.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	15.000
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 36
				Plot Number ?	122
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	30.000
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 36
				Plot Number ?	122
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	300.000
Frankenia spp.				Forb (FG)	2.000
Thysanotus spp.				Forb (FG)	1.000
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 36
				Plot Number ?	122
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 38
				Plot Number ?	120
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	25.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.010
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	1.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	0.800
Tetragonia moorei				Forb (FG)	0.001
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	1.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	0.001
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	0.001
Tribulus terrestris	Cat-head	YES			0.001
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 38
				Plot Number ?	120
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	0.100
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	0.001
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	0.200
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	0.020
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 38
				Plot Number ?	120
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 38
				Plot Number ?	120
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 38
				Plot Number ?	120
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	75.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	15.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	100.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	8.000
Tetragonia moorei				Forb (FG)	7.000
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	120.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	2.000
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	25.000
Tribulus terrestris	Cat-head	YES			25.000
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 38
				Plot Number ?	120
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	10.000
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	50.000
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	40.000
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	3.000
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 38
				Plot Number ?	120
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 38
				Plot Number ?	120
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 39
				Plot Number ?	75
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	15.000
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	0.100
Atriplex spp.				Shrub (SG)	0.100
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 39
				Plot Number ?	75
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	40.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 39
				Plot Number ?	75
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	2.000
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	20.000
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 39
				Plot Number ?	75
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 39
				Plot Number ?	75
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	40.000
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	10.000
Atriplex spp.				Shrub (SG)	20.000
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 39
				Plot Number ?	75
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	75.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 39
				Plot Number ?	75
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	150.000
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	70.000
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 39
				Plot Number ?	75
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 4
				Plot Number ?	46
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	40.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.010
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.100
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	0.010
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	0.010
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	0.500
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	0.010
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			0.010
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 4
				Plot Number ?	46
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 4
				Plot Number ?	46
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 4
				Plot Number ?	46
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 4
				Plot Number ?	46
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	64.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	6.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	1.000
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	400.000
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	100.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	1.000
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			6.000
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 4
				Plot Number ?	46
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 4
				Plot Number ?	46
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 4
				Plot Number ?	46
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 42
				Plot Number ?	49
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	1.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	2.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	5.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	15.000
Tetragonia moorei				Forb (FG)	0.010
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	5.000
Sclerolaena patenticuspis				Shrub (SG)	1.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	0.010
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	0.010
Tribulus terrestris	Cat-head	YES			50.000
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 42
				Plot Number ?	49
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	0.100
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	50.000
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	0.010
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 42
				Plot Number ?	49
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 42
				Plot Number ?	49
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 42
				Plot Number ?	49
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	2.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	70.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	50.000
Tetragonia moorei				Forb (FG)	4.000
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	16.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	6.000
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	45.000
Tribulus terrestris	Cat-head	YES			0.020
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 42
				Plot Number ?	49
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	500.000
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	0.020
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	45.000
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 42
				Plot Number ?	49
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 42
				Plot Number ?	49
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 45
				Plot Number ?	23
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.200
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.010
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	25.000
Eragrostis spp.				Grass & grasslike (GG)	0.010
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	1.000
Frankenia serpyllifolia				Forb (FG)	0.050
Atriplex holocarpa	Pop Saltbush			Forb (FG)	1.000
Atriplex spp.				Shrub (SG)	0.500
Tecticornia halocnemoides				Shrub (SG)	10.000
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 45
				Plot Number ?	23
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 45
				Plot Number ?	23
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 45
				Plot Number ?	23
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 45
				Plot Number ?	23
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	21.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	10.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	128.000
Eragrostis spp.				Grass & grasslike (GG)	25.000
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	23.000
Frankenia serpyllifolia				Forb (FG)	20.000
Atriplex holocarpa	Pop Saltbush			Forb (FG)	250.000
Atriplex spp.				Shrub (SG)	15.000
Tecticornia halocnemoides				Shrub (SG)	35.000
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 45
				Plot Number ?	23
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 45
				Plot Number ?	23
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 45
				Plot Number ?	23
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 46
				Plot Number ?	61
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	27.500
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	1.500
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	3.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	0.500
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	6.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			0.003
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 46
				Plot Number ?	61
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	0.300
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	0.002
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					0.001
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	4.000
Thysanotus baueri	Fringe-lily			Forb (FG)	0.001
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 46
				Plot Number ?	61
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			0.010
Tagetes minuta	Stinking Roger	YES			0.001
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 46
				Plot Number ?	61
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 46
				Plot Number ?	61
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	100.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	65.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	800.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	150.000
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	150.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			150.000
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 46
				Plot Number ?	61
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	400.000
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	60.000
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					1.000
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	120.000
Thysanotus baueri	Fringe-lily			Forb (FG)	1.000
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 46
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Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			5.000
Tagetes minuta	Stinking Roger	YES			25.000
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

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				Plot Number ?	61
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

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Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.100
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	0.020
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 47
				Plot Number ?	86
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	1.000
Maireana appressa				Shrub (SG)	0.001
Osteocarpum acropterum	Water Weed			Shrub (SG)	2.000
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	35.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	1.000
Thysanotus baueri	Fringe-lily			Forb (FG)	0.010
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	0.001

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Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	2.000
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 47
				Plot Number ?	86
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

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				Plot Number ?	86
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	200.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	5.000
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 47
				Plot Number ?	86
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	25.000
Maireana appressa				Shrub (SG)	1.000
Osteocarpum acropterum	Water Weed			Shrub (SG)	250.000
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	1000.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	65.000
Thysanotus baueri	Fringe-lily			Forb (FG)	5.000
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	5.000

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Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	50.000
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

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Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 48
				Plot Number ?	91
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	5.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.100
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.100
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	0.010
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 48
				Plot Number ?	91
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	0.001
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	10.000
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	10.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	0.010
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

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				Plot Number ?	91
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 48
				Plot Number ?	91
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 48
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Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	20.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	2.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	80.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	5.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 48
				Plot Number ?	91
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	100.000
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	25.000
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	40.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	1.000
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 48
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Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 48
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Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

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Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	0.100
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	10.000
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 49
				Plot Number ?	27
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	0.010
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

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Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	1.000
Calandrinia spp.				Forb (FG)	0.500
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 49
				Plot Number ?	27
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

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Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	90.000
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	80.000
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 49
				Plot Number ?	27
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	4.000
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 49
				Plot Number ?	27
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	5.000
Calandrinia spp.				Forb (FG)	40.000
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 49
				Plot Number ?	27
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCO24 51_b
				Plot Number ?	28
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.010
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 51_b
				Plot Number ?	28
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	15.000
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	0.100
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 51_b
				Plot Number ?	28
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 51_b
				Plot Number ?	28
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					10.000
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCO24 51_b
				Plot Number ?	28
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	5.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 51_b
				Plot Number ?	28
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	250.000
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	15.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 51_b
				Plot Number ?	28
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 51_b
				Plot Number ?	28
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					130.000
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 53
				Plot Number ?	25
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.100
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	15.000
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	0.500
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 53
				Plot Number ?	25
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	20.000
Maireana appressa				Shrub (SG)	0.500
Osteocarpum acropterum	Water Weed			Shrub (SG)	5.000
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	15.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 53
				Plot Number ?	25
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 53
				Plot Number ?	25
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 53
				Plot Number ?	25
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	8.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	120.000
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	5.000
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 53
				Plot Number ?	25
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	1600.000
Maireana appressa				Shrub (SG)	7.000
Osteocarpum acropterum	Water Weed			Shrub (SG)	220.000
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	232.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 53
				Plot Number ?	25
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 53
				Plot Number ?	25
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 54
				Plot Number ?	24
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	0.001
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	20.000
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 54
				Plot Number ?	24
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	0.001
Osteocarpum acropterum	Water Weed			Shrub (SG)	10.000
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	5.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	0.500
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	2.500
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 54
				Plot Number ?	24
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					40.000
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 54
				Plot Number ?	24
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 54
				Plot Number ?	24
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	20.000
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	90.000
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 54
				Plot Number ?	24
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	5.000
Osteocarpum acropterum	Water Weed			Shrub (SG)	1600.000
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	125.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	10.000
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	100.000
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 54
				Plot Number ?	24
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					4500.000
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 54
				Plot Number ?	24
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 55
				Plot Number ?	89
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	10.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.001
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	0.800
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	0.003
Tribulus terrestris	Cat-head	YES			0.020
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 55
				Plot Number ?	89
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	0.001
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 55
				Plot Number ?	89
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	1.000
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	15.000
Malva parviflora	Small-flowered Mallow	YES			0.001
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 55
				Plot Number ?	89
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 55
				Plot Number ?	89
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	40.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	3.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	20.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	450.000
Tribulus terrestris	Cat-head	YES			100.000
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 55
				Plot Number ?	89
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	1.000
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 55
				Plot Number ?	89
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	8.000
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	84.000
Malva parviflora	Small-flowered Mallow	YES			12.000
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 55
				Plot Number ?	89
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 56
				Plot Number ?	63
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	4.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.005
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.500
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	2.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	0.020
Tribulus terrestris	Cat-head	YES			0.010
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 56
				Plot Number ?	63
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	10.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	0.001
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	0.010
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 56
				Plot Number ?	63
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 56
				Plot Number ?	63
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 56
				Plot Number ?	63
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	35.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	10.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	250.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	110.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	1500.000
Tribulus terrestris	Cat-head	YES			20.000
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 56
				Plot Number ?	63
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	140.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	70.000
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	2.000
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 56
				Plot Number ?	63
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 56
				Plot Number ?	63
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 58
				Plot Number ?	92
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 58
				Plot Number ?	92
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	70.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 58
				Plot Number ?	92
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	0.010
Austrostipa spp.				Grass & grasslike (GG)	0.010
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	0.001
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 58
				Plot Number ?	92
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 58
				Plot Number ?	92
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 58
				Plot Number ?	92
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	250.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 58
				Plot Number ?	92
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	70.000
Austrostipa spp.				Grass & grasslike (GG)	40.000
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	15.000
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 58
				Plot Number ?	92
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCO24 59_b
				Plot Number ?	17
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	1.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.100
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	0.100
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 59_b
				Plot Number ?	17
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	0.010
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	0.500
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	0.200
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	30.000
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	0.500
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	1.000
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 59_b
				Plot Number ?	17
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	0.500
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 59_b
				Plot Number ?	17
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	0.010
Apophyllum anomalum	Warrior Bush			Shrub (SG)	3.000
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCO24 59_b
				Plot Number ?	17
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	25.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	15.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	50.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 59_b
				Plot Number ?	17
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	5.000
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	50.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	30.000
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	9.000
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	50.000
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	25.000
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 59_b
				Plot Number ?	17
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	25.000
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 59_b
				Plot Number ?	17
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	2.000
Apophyllum anomalum	Warrior Bush			Shrub (SG)	5.000
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 6
				Plot Number ?	56
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	20.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.500
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.020
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	0.010
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	5.000
Sida corrugata	Corrugated Sida			Forb (FG)	0.010
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 6
				Plot Number ?	56
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 6
				Plot Number ?	56
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 6
				Plot Number ?	56
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 6
				Plot Number ?	56
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	50.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	20.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	50.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	50.000
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	20.000
Sida corrugata	Corrugated Sida			Forb (FG)	5.000
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 6
				Plot Number ?	56
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 6
				Plot Number ?	56
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 6
				Plot Number ?	56
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 62
				Plot Number ?	36
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	20.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.300
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	10.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	0.200
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	0.001
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	0.001
Sclerolaena patenticuspis				Shrub (SG)	0.100
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	300.000
Tribulus terrestris	Cat-head	YES			0.001
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 62
				Plot Number ?	36
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	0.001
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 62
				Plot Number ?	36
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 62
				Plot Number ?	36
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 62
				Plot Number ?	36
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	45.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	50.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	500.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	5.000
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	1.000
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	12.000
Sclerolaena patenticuspis				Shrub (SG)	20.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	0.005
Tribulus terrestris	Cat-head	YES			20.000
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 62
				Plot Number ?	36
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	5.000
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 62
				Plot Number ?	36
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 62
				Plot Number ?	36
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCO24 63_b
				Plot Number ?	41
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	15.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.500
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.500
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	0.200
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 63_b
				Plot Number ?	41
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	0.500
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	3.000
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	0.200
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 63_b
				Plot Number ?	41
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 63_b
				Plot Number ?	41
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	0.100

				Plot Num Project Specific	BAMCO24 63_b
				Plot Number ?	41
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	85.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	50.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	250.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	5.000
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 63_b
				Plot Number ?	41
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	25.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	250.000
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	10.000
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 63_b
				Plot Number ?	41
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 63_b
				Plot Number ?	41
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	5.000

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Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	30.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.200
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	2.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	38.000
Sida corrugata	Corrugated Sida			Forb (FG)	0.500
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	0.010
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	0.010
Sclerolaena patenticuspis				Shrub (SG)	5.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	0.020
Tribulus terrestris	Cat-head	YES			0.010
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 65
				Plot Number ?	35
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	0.800
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	0.010
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		0.010
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	0.100
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	0.500
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 65
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Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 65
				Plot Number ?	35
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 65
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Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	70.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	5.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	160.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	2.000
Sida corrugata	Corrugated Sida			Forb (FG)	10.000
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	6.000
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	2.000
Sclerolaena patenticuspis				Shrub (SG)	150.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	30.000
Tribulus terrestris	Cat-head	YES			15.000
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 65
				Plot Number ?	35
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	4.000
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	4.000
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		15.000
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	300.000
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	5.000
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 65
				Plot Number ?	35
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

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Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 7
				Plot Number ?	42
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	2.500
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	1.500
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	5.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	0.010
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	30.000
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			0.010
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 7
				Plot Number ?	42
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	0.100
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 7
				Plot Number ?	42
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 7
				Plot Number ?	42
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 7
				Plot Number ?	42
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	40.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	200.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	420.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	1.000
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	70.000
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			5.000
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 7
				Plot Number ?	42
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	15.000
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 7
				Plot Number ?	42
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 7
				Plot Number ?	42
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 72
				Plot Number ?	131
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	40.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.010
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	2.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	0.010
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			0.001
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 72
				Plot Number ?	131
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	1.000
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 72
				Plot Number ?	131
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	0.100
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	0.010
Tetragonia tetragonoides	New Zealand Spinach				0.001
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 72
				Plot Number ?	131
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 72
				Plot Number ?	131
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	50.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	11.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	50.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	3.000
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			13.000
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 72
				Plot Number ?	131
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	60.000
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 72
				Plot Number ?	131
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	500.000
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	18.000
Tetragonia tetragonoides	New Zealand Spinach				1.000
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 72
				Plot Number ?	131
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 73
				Plot Number ?	87
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.010
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 73
				Plot Number ?	87
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	0.010
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	1.000
Osteocarpum acropterum	Water Weed			Shrub (SG)	6.000
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	15.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	2.500
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	0.010
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	0.800

				Plot Num Project Specific	BAMCo24 73
				Plot Number ?	87
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	1.500
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	2.000
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 73
				Plot Number ?	87
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 73
				Plot Number ?	87
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	1.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 73
				Plot Number ?	87
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	4.000
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	10.000
Osteocarpum acropterum	Water Weed			Shrub (SG)	640.000
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	120.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	350.000
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	5.000
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	50.000

				Plot Num Project Specific	BAMCo24 73
				Plot Number ?	87
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	30.000
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	120.000
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 73
				Plot Number ?	87
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 74
				Plot Number ?	90
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	20.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.050
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	5.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	0.010
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	0.010
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	0.500
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	0.010
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 74
				Plot Number ?	90
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	0.050
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	25.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					0.800
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	5.000
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 74
				Plot Number ?	90
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 74
				Plot Number ?	90
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 74
				Plot Number ?	90
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	50.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	6.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	500.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	20.000
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	3.000
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	6.000
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	50.000
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 74
				Plot Number ?	90
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	180.000
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	300.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					60.000
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	500.000
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 74
				Plot Number ?	90
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 74
				Plot Number ?	90
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCO24 75_b
				Plot Number ?	135
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	15.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.500
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.500
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	5.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 75_b
				Plot Number ?	135
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	0.010
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	0.020
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 75_b
				Plot Number ?	135
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 75_b
				Plot Number ?	135
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCO24 75_b
				Plot Number ?	135
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	100.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	50.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	250.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	500.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 75_b
				Plot Number ?	135
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	5.000
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	2.000
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 75_b
				Plot Number ?	135
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 75_b
				Plot Number ?	135
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 76
				Plot Number ?	38
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	20.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	1.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			0.001
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			0.001
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 76
				Plot Number ?	38
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	0.010
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 76
				Plot Number ?	38
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	0.010
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	0.010
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	0.001
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 76
				Plot Number ?	38
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 76
				Plot Number ?	38
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	40.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	20.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			1.000
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			6.000
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 76
				Plot Number ?	38
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	41.000
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 76
				Plot Number ?	38
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	5.000
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	300.000
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	3.000
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 76
				Plot Number ?	38
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCO24 77_b
				Plot Number ?	39
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	15.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	5.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	5.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 77_b
				Plot Number ?	39
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	0.010
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 77_b
				Plot Number ?	39
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 77_b
				Plot Number ?	39
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCO24 77_b
				Plot Number ?	39
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	30.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	400.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	120.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 77_b
				Plot Number ?	39
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	1.000
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 77_b
				Plot Number ?	39
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 77_b
				Plot Number ?	39
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 78
				Plot Number ?	37
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.500
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 78
				Plot Number ?	37
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	40.000
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 78
				Plot Number ?	37
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	0.010
Tetragonia spp.				Forb (FG)	0.001
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 78
				Plot Number ?	37
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 78
				Plot Number ?	37
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	30.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 78
				Plot Number ?	37
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	200.000
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 78
				Plot Number ?	37
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	10.000
Tetragonia spp.				Forb (FG)	2.000
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 78
				Plot Number ?	37
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 79
				Plot Number ?	88
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	15.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	2.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 79
				Plot Number ?	88
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	0.010
Osteocarpum acropterum	Water Weed			Shrub (SG)	1.500
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	15.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	0.010
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					1.000
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	1.000
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	1.000
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 79
				Plot Number ?	88
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	0.500
Vittadinia cervicularis				Forb (FG)	0.010
Maireana pentatropis				Shrub (SG)	0.010
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 79
				Plot Number ?	88
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 79
				Plot Number ?	88
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	43.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	450.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 79
				Plot Number ?	88
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	1.000
Osteocarpum acropterum	Water Weed			Shrub (SG)	50.000
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	200.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	1.000
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					60.000
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	36.000
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	3.000
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 79
				Plot Number ?	88
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	20.000
Vittadinia cervicularis				Forb (FG)	42.000
Maireana pentatropis				Shrub (SG)	6.000
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 79
				Plot Number ?	88
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 8
				Plot Number ?	43
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	25.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.010
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	1.500
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	2.000
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	0.010
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	0.020
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 8
				Plot Number ?	43
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			0.010
Vittadinia cuneata				Forb (FG)	0.010
Eremophila sturtii	Turpentine Bush			Shrub (SG)	4.000
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 8
				Plot Number ?	43
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 8
				Plot Number ?	43
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 8
				Plot Number ?	43
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	200.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	10.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	600.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	410.000
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	50.000
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	1.000
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 8
				Plot Number ?	43
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			10.000
Vittadinia cuneata				Forb (FG)	20.000
Eremophila sturtii	Turpentine Bush			Shrub (SG)	1.000
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 8
				Plot Number ?	43
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 8
				Plot Number ?	43
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 81
				Plot Number ?	62
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	0.100
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.100
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.300
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	20.000
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	0.500
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			0.010
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 81
				Plot Number ?	62
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	0.050
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	0.010
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	0.400
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 81
				Plot Number ?	62
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 81
				Plot Number ?	62
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 81
				Plot Number ?	62
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	3.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	15.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	500.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	50.000
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	44.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			3.000
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 81
				Plot Number ?	62
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	600.000
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	15.000
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	92.000
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 81
				Plot Number ?	62
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 81
				Plot Number ?	62
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 82
				Plot Number ?	121
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	0.100
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.100
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.010
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	20.000
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	0.500
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 82
				Plot Number ?	121
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	0.100
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	0.010
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	30.000
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	0.200
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 82
				Plot Number ?	121
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 82
				Plot Number ?	121
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 82
				Plot Number ?	121
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	3.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	28.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	10.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	52.000
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	20.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 82
				Plot Number ?	121
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	6.000
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	1.000
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	8.000
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	10.000
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 82
				Plot Number ?	121
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 82
				Plot Number ?	121
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCO24 88_b
				Plot Number ?	29
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	15.000
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	0.100
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 88_b
				Plot Number ?	29
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	15.000
Maireana appressa				Shrub (SG)	10.000
Osteocarpum acropterum	Water Weed			Shrub (SG)	0.500
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	25.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 88_b
				Plot Number ?	29
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 88_b
				Plot Number ?	29
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					10.000
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCO24 88_b
				Plot Number ?	29
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	200.000
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	15.000
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 88_b
				Plot Number ?	29
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	500.000
Maireana appressa				Shrub (SG)	175.000
Osteocarpum acropterum	Water Weed			Shrub (SG)	25.000
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	300.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 88_b
				Plot Number ?	29
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 88_b
				Plot Number ?	29
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					100.000
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 9
				Plot Number ?	44
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	0.080
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.100
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.100
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	60.000
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	1.000
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 9
				Plot Number ?	44
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			0.010
Oxalis spp.				Forb (FG)	0.010
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 9
				Plot Number ?	44
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 9
				Plot Number ?	44
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 9
				Plot Number ?	44
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	9.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	60.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	400.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	300.000
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 9
				Plot Number ?	44
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			10.000
Oxalis spp.				Forb (FG)	5.000
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 9
				Plot Number ?	44
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 9
				Plot Number ?	44
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCO24 91_b
				Plot Number ?	95
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	0.100
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.500
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 91_b
				Plot Number ?	95
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	15.000
Maireana appressa				Shrub (SG)	10.000
Osteocarpum acropterum	Water Weed			Shrub (SG)	1.000
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	30.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 91_b
				Plot Number ?	95
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 91_b
				Plot Number ?	95
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCO24 91_b
				Plot Number ?	95
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	5.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	50.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 91_b
				Plot Number ?	95
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	300.000
Maireana appressa				Shrub (SG)	150.000
Osteocarpum acropterum	Water Weed			Shrub (SG)	250.000
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	400.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 91_b
				Plot Number ?	95
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 91_b
				Plot Number ?	95
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 94.2
				Plot Number ?	128
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	0.500
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.100
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	0.500
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	20.000
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	0.200
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	0.100
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	1.000

				Plot Num Project Specific	BAMCo24 94.2
				Plot Number ?	128
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	0.200
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	20.000
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	0.100
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 94.2
				Plot Number ?	128
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	3.000
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	0.100
Olearia pimeleoides var. pimeleoides					2.000
Lycium australe	Australian Boxthorn			Shrub (SG)	0.100
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	0.200

				Plot Num Project Specific	BAMCo24 94.2
				Plot Number ?	128
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	0.100
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				0.100
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 94.2
				Plot Number ?	128
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	4.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	8.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	10.000
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	70.000
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	10.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	3.000
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	4.000

				Plot Num Project Specific	BAMCo24 94.2
				Plot Number ?	128
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	1.000
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	50.000
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	3.000
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 94.2
				Plot Number ?	128
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	1.000
Olearia pimeleoides var. pimeleoides					20.000
Lycium australe	Australian Boxthorn			Shrub (SG)	4.000
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	10.000

				Plot Num Project Specific	BAMCo24 94.2
				Plot Number ?	128
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	1.000
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				6.000
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCO24 95_b
				Plot Number ?	109
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	3.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	5.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.500
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	0.500
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	0.500
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 95_b
				Plot Number ?	109
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	0.200
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	0.100
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	3.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	2.000
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 95_b
				Plot Number ?	109
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 95_b
				Plot Number ?	109
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	2.000
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	10.000
Eucalyptus socialis	Red Mallee			Tree (TG)	10.000
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCO24 95_b
				Plot Number ?	109
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	10.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	50.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	100.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	75.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	10.000
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 95_b
				Plot Number ?	109
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	50.000
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	25.000
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	15.000
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	25.000
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 95_b
				Plot Number ?	109
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCO24 95_b
				Plot Number ?	109
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	1.000
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	30.000
Eucalyptus socialis	Red Mallee			Tree (TG)	1.000
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 96
				Plot Number ?	119
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.020
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.010
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	30.000
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	0.050
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	0.020
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	8.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	0.010
Tribulus terrestris	Cat-head	YES			0.010
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 96
				Plot Number ?	119
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	0.020
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 96
				Plot Number ?	119
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 96
				Plot Number ?	119
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 96
				Plot Number ?	119
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	2.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	5.000
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	400.000
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	45.000
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	10.000
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	80.000
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	80.000
Tribulus terrestris	Cat-head	YES			20.000
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 96
				Plot Number ?	119
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	100.000
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 96
				Plot Number ?	119
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 96
				Plot Number ?	119
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 97
				Plot Number ?	137
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Maireana pyramidata	Black Bluebush			Shrub (SG)	2.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	0.100
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	30.000
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 97
				Plot Number ?	137
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	20.000
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	1.000
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 97
				Plot Number ?	137
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 97
				Plot Number ?	137
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	1.000
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

				Plot Num Project Specific	BAMCo24 97
				Plot Number ?	137
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Maireana pyramidata	Black Bluebush			Shrub (SG)	5.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)	
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	
Sida corrugata	Corrugated Sida			Forb (FG)	
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	
Tetragonia moorei				Forb (FG)	
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	
Sclerolaena patenticuspis				Shrub (SG)	
Phyllanthus spp.				Shrub (SG)	
Convolvulus remotus				Other (OG)	
Salvia verbenaca	Vervain	YES			
Tecticornia pergranulata				Shrub (SG)	
Eragrostis spp.				Grass & grasslike (GG)	
Maireana spp.	Cotton Bush, Bluebush, Fissure-w			Shrub (SG)	1.000
Frankenia serpyllifolia				Forb (FG)	
Atriplex holocarpa	Pop Saltbush			Forb (FG)	
Atriplex spp.				Shrub (SG)	130.000
Tecticornia halocnemoides				Shrub (SG)	
Boerhavia dominii	Tarvine			Forb (FG)	
Tribulus terrestris	Cat-head	YES			
Enneapogon spp.	Nineawn Grass, Bottlewashers			Grass & grasslike (GG)	
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	
Rhagodia spp.				Shrub (SG)	
Rhagodia spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 97
				Plot Number ?	137
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Boerhavia spp.				Forb (FG)	
Chenopodium curvispicatum				Shrub (SG)	
Medicago polymorpha	Burr Medic	YES			
Vittadinia cuneata				Forb (FG)	
Eremophila sturtii	Turpentine Bush			Shrub (SG)	
Onopordum spp.		YES			
Oxalis spp.				Forb (FG)	
Sonchus oleraceus	Common Sowthistle	YES			
Carrichtera annua	Ward's Weed	YES	No		
Maireana turbinata				Shrub (SG)	
Conyza spp.		YES			
Disphyma crassifolium subsp. clavellatum				Forb (FG)	
Maireana appressa				Shrub (SG)	
Osteocarpum acropterum	Water Weed			Shrub (SG)	
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	
Tripogon loliiformis	Fiveminute Grass			Grass & grasslike (GG)	
Euphorbia drummondii	Caustic Weed			Forb (FG)	
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	
Rhagodia gaudichaudiana					
Sclerolaena divaricata	Tangled Copperburr			Shrub (SG)	
Casuarina pauper	Black Oak			Tree (TG)	7.000
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	10.000
Thysanotus baueri	Fringe-lily			Forb (FG)	
Goodenia pusilliflora				Forb (FG)	
Oxalis perennans				Forb (FG)	
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)	
Sclerolaena brachyptera	Short-winged Copperburr			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 97
				Plot Number ?	137
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Cardamine hirsuta	Common Bittercress	YES			
Tagetes minuta	Stinking Roger	YES			
Sarcozona praecox	Sarcozona			Forb (FG)	
Disphyma crassifolium subsp. subclavellatum					
Sclerolaena stelligera	Star Copperburr			Shrub (SG)	
Sclerolaena decurrens	Green Copperburr			Shrub (SG)	
Vittadinia cervicularis				Forb (FG)	
Maireana pentatropis				Shrub (SG)	
Atriplex vesicaria subsp. macrocystidia	Bladder Saltbush			Shrub (SG)	
Malva parviflora	Small-flowered Mallow	YES			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	
Austrostipa spp.				Grass & grasslike (GG)	
Frankenia spp.				Forb (FG)	
Thysanotus spp.				Forb (FG)	
Maireana spp. 2	ZZZZ - Not Found			ZZZZ - Not Found	
Tecticornia pergranulata subsp. pergranulata				Shrub (SG)	
Calandrinia spp.				Forb (FG)	
Chenopodium melanocarpum				Forb (FG)	
Tetragonia spp.				Forb (FG)	
Salsola australis				Shrub (SG)	
Tetragonia tetragonoides	New Zealand Spinach				
Hydrocotyle spp.				Forb (FG)	
Austrostipa scabra subsp. scabra	Rough Speargrass			Grass & grasslike (GG)	
Chenopodium desertorum subsp. desertorum	Desert Goosefoot			Shrub (SG)	
Olearia pimeleoides var. pimeleoides					
Lycium australe	Australian Boxthorn			Shrub (SG)	
Atriplex stipitata	Mallee Saltbush			Shrub (SG)	

				Plot Num Project Specific	BAMCo24 97
				Plot Number ?	137
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Abundance**
Pterocaulon sphacelatum	Applebush			Forb (FG)	
Enchylaena tomentosa var. tomentosa	Ruby Saltbush				
Chenopodium desertorum subsp. rectum				Shrub (SG)	12.000
Eucalyptus leptophylla	Narrow-leaved Red Mallee			Tree (TG)	
Alectryon oleifolius	Western Rosewood			Tree (TG)	
Medicago sativa	Lucerne	YES			
Atriplex quinii				Shrub (SG)	
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	
Eucalyptus socialis	Red Mallee			Tree (TG)	
Dodonaea viscosa	Sticky Hop-bush			Shrub (SG)	
Chenopodium gaudichaudianum				Shrub (SG)	
Tecticornia indica					
Austrostipa nullanulla	A spear-grass			Grass & grasslike (GG)	
Olearia pimeleoides				Shrub (SG)	
Apophyllum anomalum	Warrior Bush			Shrub (SG)	
Sclerolaena limbata				Shrub (SG)	

A-9 Field Datasheets

Development Footprint – Linear Corridor

				Plot Num Project Specific	BAMHR24 1	BAMHR24 1	BAMHR24 2	BAMHR24 2
				Plot Number ?	52	52	65	65
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Dodonaea viscosa subsp. angustissima	Narrow-leaf Hop-bush			Shrub (SG)				
Eremophila sturtii	Turpentine Bush			Shrub (SG)				
Sclerolaena patenticuspis				Shrub (SG)	0.100	25.000	3.000	100.000
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)			0.010	150.000
Salvia verbenaca	Vervain	YES						
Maireana pyramidata	Black Bluebush			Shrub (SG)	3.000	10.000	1.500	8.000
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)				
Vittadinia cuneata				Forb (FG)	0.010	5000.000	0.500	3500.000
Euphorbia drummondii	Caustic Weed			Forb (FG)			0.010	300.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.300		0.800	450.000
Panicum effusum	Hairy Panic			Grass & grasslike (GG)				
Medicago polymorpha	Burr Medic	YES			0.020	7.000	0.010	1.000
Chenopodium curvispicatum				Shrub (SG)				

				Plot Num Project Specific	BAMHR24 1	BAMHR24 1	BAMHR24 2	BAMHR24 2
				Plot Number ?	52	52	65	65
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Olearia pimeleoides				Shrub (SG)				
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	0.100	25.000	1.000	25.000
Convolvulus remotus				Other (OG)				
Vittadinia cervicularis				Forb (FG)				
Boerhavia dominii	Tarvine			Forb (FG)				
Tribulus terrestris	Cat-head	YES					0.020	300.000
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	8.000	33.000	13.000	52.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.010	1.000		
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	0.100	1.000	0.100	2.000
Psilocaulon granulicaule	Wiry Noon-flower	YES	No		0.500	15.000		
Casuarina pauper	Black Oak			Tree (TG)				
Alectryon oleifolius subsp. canescens				Tree (TG)				
Sida corrugata	Corrugated Sida			Forb (FG)			0.010	200.000
Portulaca oleracea	Pigweed			Forb (FG)				

				Plot Num Project Specific	BAMHR24 1	BAMHR24 1	BAMHR24 2	BAMHR24 2
				Plot Number ?	52	52	65	65
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Maireana pentatropis				Shrub (SG)				
Vittadinia cuneata var. hirsuta				Forb (FG)				
Maireana spp.	Cotton Bush, Bluebush, Fissure-weed			Shrub (SG)				
Eucalyptus dumosa	White Mallee			Tree (TG)				
Roepera eremaea	Climbing Twinleaf			Forb (FG)				
Einadia nutans subsp. oxycarpa	Climbing Saltbush			Forb (FG)				
Mesembryanthemum crystallinum	Common Ice Plant	YES						
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)				
Asphodelus fistulosus	Onion Weed	YES						
Convolvulus arvensis	Field Bindweed	YES						
Heliotropium europaeum	Potato Weed	YES						
Alectryon oleifolius	Western Rosewood			Tree (TG)				

				Plot Num Project Specific	BAMHR24 1	BAMHR24 1	BAMHR24 2	BAMHR24 2
				Plot Number ?	52	52	65	65
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Atriplex stipitata	Mallee Saltbush			Shrub (SG)				
Maireana appressa				Shrub (SG)				
Tetragonia moorei				Forb (FG)			0.050	120.000
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)				
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)				
Atriplex holocarpa	Pop Saltbush			Forb (FG)				
Maireana brevifolia				Shrub (SG)				
Lysiana exocarpi				Other (OG)				
Ehrharta spp.	Veldtgrass	YES						
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)				
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)				
Marsdenia australis	Doubah			Other (OG)				
Citrullus amarus	Camel Melon	YES						
Carrichtera annua	Ward's Weed	YES	No					
Salsola australis				Shrub (SG)				
Exocarpos aphyllus	Leafless Ballart			Shrub (SG)				

				Plot Num Project Specific	BAMHR24 1	BAMHR24 1	BAMHR24 2	BAMHR24 2
				Plot Number ?	52	52	65	65
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)				
Solanum esuriale	Quena			Forb (FG)				
Sida intricata				Shrub (SG)				
Goodenia fascicularis	Mallee Goodenia			Forb (FG)				
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)				
Chrysocephalum apiculatum	Common Everlasting			Forb (FG)				

				Plot Num Project Specific	BAMHR24 3	BAMHR24 3	BAMHR24 5	BAMHR24 5
				Plot Number ?	69	69	71	71
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Dodonaea viscosa subsp. angustissima	Narrow-leaf Hop-bush			Shrub (SG)				
Eremophila sturtii	Turpentine Bush			Shrub (SG)				
Sclerolaena patenticuspis				Shrub (SG)	8.500	850.000	0.900	47.000
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)			0.100	15.000
Salvia verbenaca	Vervain	YES						
Maireana pyramidata	Black Bluebush			Shrub (SG)	20.000	150.000	35.000	120.000
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	0.100	1.000		
Vittadinia cuneata				Forb (FG)			0.001	3.000
Euphorbia drummondii	Caustic Weed			Forb (FG)	0.010	60.000		
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.100		0.050	50.000
Panicum effusum	Hairy Panic			Grass & grasslike (GG)				
Medicago polymorpha	Burr Medic	YES						
Chenopodium curvispicatum				Shrub (SG)				

				Plot Num Project Specific	BAMHR24 3	BAMHR24 3	BAMHR24 5	BAMHR24 5
				Plot Number ?	69	69	71	71
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Olearia pimeleoides				Shrub (SG)				
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)				
Convolvulus remotus				Other (OG)				
Vittadinia cervicularis				Forb (FG)				
Boerhavia dominii	Tarvine			Forb (FG)	0.010	50.000	0.010	120.000
Tribulus terrestris	Cat-head	YES			0.010	40.000		
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	1.500	3.000		
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	2.000	75.000	0.050	12.000
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	0.500	6.000	0.010	30.000
Psilocaulon granulicaule	Wiry Noon-flower	YES	No					
Casuarina pauper	Black Oak			Tree (TG)	8.000	1.000		
Alectryon oleifolius subsp. canescens				Tree (TG)				
Sida corrugata	Corrugated Sida			Forb (FG)				
Portulaca oleracea	Pigweed			Forb (FG)				

				Plot Num Project Specific	BAMHR24 3	BAMHR24 3	BAMHR24 5	BAMHR24 5
				Plot Number ?	69	69	71	71
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Maireana pentatropis				Shrub (SG)				
Vittadinia cuneata var. hirsuta				Forb (FG)				
Maireana spp.	Cotton Bush, Bluebush, Fissure-weed			Shrub (SG)				
Eucalyptus dumosa	White Mallee			Tree (TG)				
Roepera eremaea	Climbing Twinleaf			Forb (FG)				
Einadia nutans subsp. oxycarpa	Climbing Saltbush			Forb (FG)				
Mesembryanthemum crystallinum	Common Ice Plant	YES						
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)				
Asphodelus fistulosus	Onion Weed	YES						
Convolvulus arvensis	Field Bindweed	YES						
Heliotropium europaeum	Potato Weed	YES						
Alectryon oleifolius	Western Rosewood			Tree (TG)				

				Plot Num Project Specific	BAMHR24 3	BAMHR24 3	BAMHR24 5	BAMHR24 5
				Plot Number ?	69	69	71	71
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Atriplex stipitata	Mallee Saltbush			Shrub (SG)				
Maireana appressa				Shrub (SG)				
Tetragonia moorei				Forb (FG)	0.200	80.000	0.010	85.000
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	0.050	1.000		
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)	0.200	30.000		
Atriplex holocarpa	Pop Saltbush			Forb (FG)	0.100	20.000	0.010	50.000
Maireana brevifolia				Shrub (SG)				
Lysiana exocarpi				Other (OG)				
Ehrharta spp.	Veldtgrass	YES						
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)				
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)				
Marsdenia australis	Doubah			Other (OG)				
Citrullus amarus	Camel Melon	YES						
Carrichtera annua	Ward's Weed	YES	No					
Salsola australis				Shrub (SG)				
Exocarpos aphyllus	Leafless Ballart			Shrub (SG)				

				Plot Num Project Specific	BAMHR24 3	BAMHR24 3	BAMHR24 5	BAMHR24 5
				Plot Number ?	69	69	71	71
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)			2.000	
Solanum esuriale	Quena			Forb (FG)			0.010	45.000
Sida intricata				Shrub (SG)			0.020	11.000
Goodenia fascicularis	Mallee Goodenia			Forb (FG)			0.001	25.000
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)				
Chrysocephalum apiculatum	Common Everlasting			Forb (FG)				

				Plot Num Project Specific	BAMHR24 6	BAMHR24 6	BAMHR24 7	BAMHR24 7
				Plot Number ?	68	68	11	11
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Dodonaea viscosa subsp. angustissima	Narrow-leaf Hop-bush			Shrub (SG)				
Eremophila sturtii	Turpentine Bush			Shrub (SG)				
Sclerolaena patenticuspis				Shrub (SG)	1.000	25.000	0.100	25.000
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)			0.010	
Salvia verbenaca	Vervain	YES						
Maireana pyramidata	Black Bluebush			Shrub (SG)			20.000	80.000
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)			1.000	12.000
Vittadinia cuneata				Forb (FG)	0.100	80.000		
Euphorbia drummondii	Caustic Weed			Forb (FG)	0.100	300.000		
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.100		0.010	
Panicum effusum	Hairy Panic			Grass & grasslike (GG)				
Medicago polymorpha	Burr Medic	YES			0.100	4.000	0.010	22.000
Chenopodium curvispicatum				Shrub (SG)				

				Plot Num Project Specific	BAMHR24 6	BAMHR24 6	BAMHR24 7	BAMHR24 7
				Plot Number ?	68	68	11	11
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Olearia pimeleoides				Shrub (SG)				
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)			1.000	26.000
Convolvulus remotus				Other (OG)				
Vittadinia cervicularis				Forb (FG)				
Boerhavia dominii	Tarvine			Forb (FG)			0.010	45.000
Tribulus terrestris	Cat-head	YES			0.010	28.000	0.010	5.000
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	0.200	2.000		
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.800	21.000	0.040	8.000
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	2.000	25.000		
Psilocaulon granulicaule	Wiry Noon-flower	YES	No					
Casuarina pauper	Black Oak			Tree (TG)				
Alectryon oleifolius subsp. canescens				Tree (TG)			40.000	22.000
Sida corrugata	Corrugated Sida			Forb (FG)			0.010	8.000
Portulaca oleracea	Pigweed			Forb (FG)				

				Plot Num Project Specific	BAMHR24 6	BAMHR24 6	BAMHR24 7	BAMHR24 7
				Plot Number ?	68	68	11	11
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Maireana pentatropis				Shrub (SG)				
Vittadinia cuneata var. hirsuta				Forb (FG)				
Maireana spp.	Cotton Bush, Bluebush, Fissure-weed			Shrub (SG)				
Eucalyptus dumosa	White Mallee			Tree (TG)				
Roepera eremaea	Climbing Twinleaf			Forb (FG)				
Einadia nutans subsp. oxycarpa	Climbing Saltbush			Forb (FG)				
Mesembryanthemum crystallinum	Common Ice Plant	YES						
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)			0.010	1.000
Asphodelus fistulosus	Onion Weed	YES						
Convolvulus arvensis	Field Bindweed	YES						
Heliotropium europaeum	Potato Weed	YES						
Alectryon oleifolius	Western Rosewood			Tree (TG)				

				Plot Num Project Specific	BAMHR24 6	BAMHR24 6	BAMHR24 7	BAMHR24 7
				Plot Number ?	68	68	11	11
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Atriplex stipitata	Mallee Saltbush			Shrub (SG)				
Maireana appressa				Shrub (SG)				
Tetragonia moorei				Forb (FG)	0.100	6.000		
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)				
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)				
Atriplex holocarpa	Pop Saltbush			Forb (FG)				
Maireana brevifolia				Shrub (SG)				
Lysiana exocarpi				Other (OG)				
Ehrharta spp.	Veldtgrass	YES						
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)				
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)				
Marsdenia australis	Doubah			Other (OG)				
Citrullus amarus	Camel Melon	YES						
Carrichtera annua	Ward's Weed	YES	No					
Salsola australis				Shrub (SG)				
Exocarpos aphyllus	Leafless Ballart			Shrub (SG)				

				Plot Num Project Specific	BAMHR24 6	BAMHR24 6	BAMHR24 7	BAMHR24 7
				Plot Number ?	68	68	11	11
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)				
Solanum esuriale	Quena			Forb (FG)				
Sida intricata				Shrub (SG)				
Goodenia fascicularis	Mallee Goodenia			Forb (FG)				
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)			0.500	9.000
Chrysocephalum apiculatum	Common Everlasting			Forb (FG)				

				Plot Num Project Specific	BAMHR24 8	BAMHR24 8	BAMHR24 9	BAMHR24 9
				Plot Number ?	50	50	19	19
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Dodonaea viscosa subsp. angustissima	Narrow-leaf Hop-bush			Shrub (SG)				
Eremophila sturtii	Turpentine Bush			Shrub (SG)				
Sclerolaena patenticuspis				Shrub (SG)				
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)				
Salvia verbenaca	Vervain	YES						
Maireana pyramidata	Black Bluebush			Shrub (SG)	8.000	40.000	4.000	20.000
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)			0.500	12.000
Vittadinia cuneata				Forb (FG)				
Euphorbia drummondii	Caustic Weed			Forb (FG)	0.010	23.000		
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.010		0.020	
Panicum effusum	Hairy Panic			Grass & grasslike (GG)				
Medicago polymorpha	Burr Medic	YES			0.010	11.000		
Chenopodium curvispicatum				Shrub (SG)				

				Plot Num Project Specific	BAMHR24 8	BAMHR24 8	BAMHR24 9	BAMHR24 9
				Plot Number ?	50	50	19	19
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Olearia pimeleoides				Shrub (SG)				
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	0.050	20.000		
Convolvulus remotus				Other (OG)				
Vittadinia cervicularis				Forb (FG)				
Boerhavia dominii	Tarvine			Forb (FG)				
Tribulus terrestris	Cat-head	YES			0.010	45.000		
Maireana sedifolia	Pearl Bluebush			Shrub (SG)			0.100	2.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	2.000	11.000	0.100	8.000
Maireana georgei	Slit-wing Bluebush			Shrub (SG)				
Psilocaulon granulicaule	Wiry Noon-flower	YES	No					
Casuarina pauper	Black Oak			Tree (TG)			40.000	13.000
Alectryon oleifolius subsp. canescens				Tree (TG)				
Sida corrugata	Corrugated Sida			Forb (FG)				
Portulaca oleracea	Pigweed			Forb (FG)				

				Plot Num Project Specific	BAMHR24 8	BAMHR24 8	BAMHR24 9	BAMHR24 9
				Plot Number ?	50	50	19	19
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Maireana pentatropis				Shrub (SG)				
Vittadinia cuneata var. hirsuta				Forb (FG)	0.010	250.000		
Maireana spp.	Cotton Bush, Bluebush, Fissure-weed			Shrub (SG)			0.020	5.000
Eucalyptus dumosa	White Mallee			Tree (TG)				
Roepera eremaea	Climbing Twinleaf			Forb (FG)				
Einadia nutans subsp. oxycarpa	Climbing Saltbush			Forb (FG)				
Mesembryanthemum crystallinum	Common Ice Plant	YES						
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)				
Asphodelus fistulosus	Onion Weed	YES						
Convolvulus arvensis	Field Bindweed	YES						
Heliotropium europaeum	Potato Weed	YES						
Alectryon oleifolius	Western Rosewood			Tree (TG)			0.500	1.000

				Plot Num Project Specific	BAMHR24 8	BAMHR24 8	BAMHR24 9	BAMHR24 9
				Plot Number ?	50	50	19	19
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Atriplex stipitata	Mallee Saltbush			Shrub (SG)			0.200	25.000
Maireana appressa				Shrub (SG)				
Tetragonia moorei				Forb (FG)	0.010	5.000		
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)				
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)				
Atriplex holocarpa	Pop Saltbush			Forb (FG)				
Maireana brevifolia				Shrub (SG)				
Lysiana exocarpi				Other (OG)				
Ehrharta spp.	Veldtgrass	YES						
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)				
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)				
Marsdenia australis	Doubah			Other (OG)				
Citrullus amarus	Camel Melon	YES						
Carrichtera annua	Ward's Weed	YES	No		0.010	1.000		
Salsola australis				Shrub (SG)				
Exocarpos aphyllus	Leafless Ballart			Shrub (SG)				

				Plot Num Project Specific	BAMHR24 8	BAMHR24 8	BAMHR24 9	BAMHR24 9
				Plot Number ?	50	50	19	19
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)				
Solanum esuriale	Quena			Forb (FG)				
Sida intricata				Shrub (SG)				
Goodenia fascicularis	Mallee Goodenia			Forb (FG)				
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)			0.050	3.000
Chrysocephalum apiculatum	Common Everlasting			Forb (FG)				

				Plot Num Project Specific	BAMHR24 10	BAMHR24 10	BAMHR24 11	BAMHR24 11
				Plot Number ?	30	30	10	10
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Dodonaea viscosa subsp. angustissima	Narrow-leaf Hop-bush			Shrub (SG)	35.000	120.000		
Eremophila sturtii	Turpentine Bush			Shrub (SG)	0.500	1.000		
Sclerolaena patenticuspis				Shrub (SG)	0.500	80.000		
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	0.010	37.000		
Salvia verbenaca	Vervain	YES			0.050	400.000		
Maireana pyramidata	Black Bluebush			Shrub (SG)	8.000	4.000	13.000	70.000
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	0.200	3.000	0.500	18.000
Vittadinia cuneata				Forb (FG)	0.010	10.000		
Euphorbia drummondii	Caustic Weed			Forb (FG)	0.010	10.000		
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.200		0.010	
Panicum effusum	Hairy Panic			Grass & grasslike (GG)	0.010	1.000		
Medicago polymorpha	Burr Medic	YES			0.010	1.000		
Chenopodium curvispicatum				Shrub (SG)	0.100	1.000		

				Plot Num Project Specific	BAMHR24 10	BAMHR24 10	BAMHR24 11	BAMHR24 11
				Plot Number ?	30	30	10	10
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Olearia pimeleoides				Shrub (SG)	0.050	1.000		
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	0.030	8.000	0.300	11.000
Convolvulus remotus				Other (OG)	0.010	1.000		
Vittadinia cervicularis				Forb (FG)	0.010	1.000		
Boerhavia dominii	Tarvine			Forb (FG)	0.100	45.000		
Tribulus terrestris	Cat-head	YES			0.010	25.000		
Maireana sedifolia	Pearl Bluebush			Shrub (SG)				
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)			0.100	12.000
Maireana georgei	Slit-wing Bluebush			Shrub (SG)				
Psilocaulon granulicaule	Wiry Noon-flower	YES	No					
Casuarina pauper	Black Oak			Tree (TG)			20.000	6.000
Alectryon oleifolius subsp. canescens				Tree (TG)				
Sida corrugata	Corrugated Sida			Forb (FG)				
Portulaca oleracea	Pigweed			Forb (FG)				

				Plot Num Project Specific	BAMHR24 10	BAMHR24 10	BAMHR24 11	BAMHR24 11
				Plot Number ?	30	30	10	10
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Maireana pentatropis				Shrub (SG)				
Vittadinia cuneata var. hirsuta				Forb (FG)			0.010	1.000
Maireana spp.	Cotton Bush, Bluebush, Fissure-weed			Shrub (SG)			0.300	7.000
Eucalyptus dumosa	White Mallee			Tree (TG)				
Roepera eremaea	Climbing Twinleaf			Forb (FG)				
Einadia nutans subsp. oxycarpa	Climbing Saltbush			Forb (FG)				
Mesembryanthemum crystallinum	Common Ice Plant	YES						
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)				
Asphodelus fistulosus	Onion Weed	YES						
Convolvulus arvensis	Field Bindweed	YES						
Heliotropium europaeum	Potato Weed	YES						
Alectryon oleifolius	Western Rosewood			Tree (TG)				

				Plot Num Project Specific	BAMHR24 10	BAMHR24 10	BAMHR24 11	BAMHR24 11
				Plot Number ?	30	30	10	10
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Atriplex stipitata	Mallee Saltbush			Shrub (SG)			0.300	21.000
Maireana appressa				Shrub (SG)				
Tetragonia moorei				Forb (FG)				
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)				
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)				
Atriplex holocarpa	Pop Saltbush			Forb (FG)				
Maireana brevifolia				Shrub (SG)				
Lysiana exocarpi				Other (OG)				
Ehrharta spp.	Veldtgrass	YES						
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)				
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)				
Marsdenia australis	Doubah			Other (OG)			0.010	2.000
Citrullus amarus	Camel Melon	YES						
Carrichtera annua	Ward's Weed	YES	No					
Salsola australis				Shrub (SG)				
Exocarpos aphyllus	Leafless Ballart			Shrub (SG)				

				Plot Num Project Specific	BAMHR24 10	BAMHR24 10	BAMHR24 11	BAMHR24 11
				Plot Number ?	30	30	10	10
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)				
Solanum esuriale	Quena			Forb (FG)				
Sida intricata				Shrub (SG)				
Goodenia fascicularis	Mallee Goodenia			Forb (FG)				
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)				
Chrysocephalum apiculatum	Common Everlasting			Forb (FG)				

				Plot Num Project Specific	BAMHR24 12	BAMHR24 12	BAMHR24 13	BAMHR24 13
				Plot Number ?	67	67	97	97
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Dodonaea viscosa subsp. angustissima	Narrow-leaf Hop-bush			Shrub (SG)	0.100	3.000		
Eremophila sturtii	Turpentine Bush			Shrub (SG)			6.000	7.000
Sclerolaena patenticuspis				Shrub (SG)	3.000	0.200	0.100	15.000
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	0.100	12.000	0.010	12.000
Salvia verbenaca	Vervain	YES			0.200	600.000	0.100	200.000
Maireana pyramidata	Black Bluebush			Shrub (SG)	10.000	60.000	2.000	13.000
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)			2.000	32.000
Vittadinia cuneata				Forb (FG)				
Euphorbia drummondii	Caustic Weed			Forb (FG)	0.500	400.000	0.100	300.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.010			
Panicum effusum	Hairy Panic			Grass & grasslike (GG)				
Medicago polymorpha	Burr Medic	YES						
Chenopodium curvispicatum				Shrub (SG)				

				Plot Num Project Specific	BAMHR24 12	BAMHR24 12	BAMHR24 13	BAMHR24 13
				Plot Number ?	67	67	97	97
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Olearia pimeleoides				Shrub (SG)				
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	0.100	5.000		
Convolvulus remotus				Other (OG)				
Vittadinia cervicularis				Forb (FG)				
Boerhavia dominii	Tarvine			Forb (FG)	1.000	4000.000	0.100	5.000
Tribulus terrestris	Cat-head	YES						
Maireana sedifolia	Pearl Bluebush			Shrub (SG)				
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)			0.100	4.000
Maireana georgei	Slit-wing Bluebush			Shrub (SG)				
Psilocaulon granulicaule	Wiry Noon-flower	YES	No					
Casuarina pauper	Black Oak			Tree (TG)				
Alectryon oleifolius subsp. canescens				Tree (TG)				
Sida corrugata	Corrugated Sida			Forb (FG)	0.100	12.000		
Portulaca oleracea	Pigweed			Forb (FG)				

				Plot Num Project Specific	BAMHR24 12	BAMHR24 12	BAMHR24 13	BAMHR24 13
				Plot Number ?	67	67	97	97
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Maireana pentatropis				Shrub (SG)			0.200	10.000
Vittadinia cuneata var. hirsuta				Forb (FG)	0.030	5.000		
Maireana spp.	Cotton Bush, Bluebush, Fissure-weed			Shrub (SG)				
Eucalyptus dumosa	White Mallee			Tree (TG)			30.000	2.000
Roepera eremaea	Climbing Twinleaf			Forb (FG)			0.100	8.000
Einadia nutans subsp. oxycarpa	Climbing Saltbush			Forb (FG)				
Mesembryanthemum crystallinum	Common Ice Plant	YES						
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)				
Asphodelus fistulosus	Onion Weed	YES						
Convolvulus arvensis	Field Bindweed	YES						
Heliotropium europaeum	Potato Weed	YES						
Alectryon oleifolius	Western Rosewood			Tree (TG)				

				Plot Num Project Specific	BAMHR24 12	BAMHR24 12	BAMHR24 13	BAMHR24 13
				Plot Number ?	67	67	97	97
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Atriplex stipitata	Mallee Saltbush			Shrub (SG)			0.100	10.000
Maireana appressa				Shrub (SG)				
Tetragonia moorei				Forb (FG)				
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)				
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)				
Atriplex holocarpa	Pop Saltbush			Forb (FG)				
Maireana brevifolia				Shrub (SG)				
Lysiana exocarpi				Other (OG)				
Ehrharta spp.	Veldtgrass	YES						
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)				
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)				
Marsdenia australis	Doubah			Other (OG)				
Citrullus amarus	Camel Melon	YES						
Carrichtera annua	Ward's Weed	YES	No					
Salsola australis				Shrub (SG)				
Exocarpos aphyllus	Leafless Ballart			Shrub (SG)				

				Plot Num Project Specific	BAMHR24 12	BAMHR24 12	BAMHR24 13	BAMHR24 13
				Plot Number ?	67	67	97	97
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)				
Solanum esuriale	Quena			Forb (FG)				
Sida intricata				Shrub (SG)				
Goodenia fascicularis	Mallee Goodenia			Forb (FG)				
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)				
Chrysocephalum apiculatum	Common Everlasting			Forb (FG)	0.010	1.000		

				Plot Num Project Specific	BAMHR24 14	BAMHR24 14	BAMHR24 15	BAMHR24 15
				Plot Number ?	108	108	53	53
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Dodonaea viscosa subsp. angustissima	Narrow-leaf Hop-bush			Shrub (SG)				
Eremophila sturtii	Turpentine Bush			Shrub (SG)				
Sclerolaena patenticuspis				Shrub (SG)	0.100	15.000		
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)			0.010	3.000
Salvia verbenaca	Vervain	YES						
Maireana pyramidata	Black Bluebush			Shrub (SG)			0.200	5.000
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	10.000	72.000	0.500	25.000
Vittadinia cuneata				Forb (FG)				
Euphorbia drummondii	Caustic Weed			Forb (FG)			0.010	55.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)			0.010	
Panicum effusum	Hairy Panic			Grass & grasslike (GG)				
Medicago polymorpha	Burr Medic	YES						
Chenopodium curvispicatum				Shrub (SG)				

				Plot Num Project Specific	BAMHR24 14	BAMHR24 14	BAMHR24 15	BAMHR24 15
				Plot Number ?	108	108	53	53
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Olearia pimeleoides				Shrub (SG)				
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)				
Convolvulus remotus				Other (OG)				
Vittadinia cervicularis				Forb (FG)				
Boerhavia dominii	Tarvine			Forb (FG)			0.010	320.000
Tribulus terrestris	Cat-head	YES						
Maireana sedifolia	Pearl Bluebush			Shrub (SG)				
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)				
Maireana georgei	Slit-wing Bluebush			Shrub (SG)				
Psilocaulon granulicaule	Wiry Noon-flower	YES	No					
Casuarina pauper	Black Oak			Tree (TG)			35.000	4.000
Alectryon oleifolius subsp. canescens				Tree (TG)			4.000	1.000
Sida corrugata	Corrugated Sida			Forb (FG)			0.010	44.000
Portulaca oleracea	Pigweed			Forb (FG)			0.010	1.000

				Plot Num Project Specific	BAMHR24 14	BAMHR24 14	BAMHR24 15	BAMHR24 15
				Plot Number ?	108	108	53	53
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Maireana pentatropis				Shrub (SG)			1.000	10.000
Vittadinia cuneata var. hirsuta				Forb (FG)			0.010	1.000
Maireana spp.	Cotton Bush, Bluebush, Fissure-weed			Shrub (SG)				
Eucalyptus dumosa	White Mallee			Tree (TG)	60.000	11.000		
Roepera eremaea	Climbing Twinleaf			Forb (FG)				
Einadia nutans subsp. oxycarpa	Climbing Saltbush			Forb (FG)				
Mesembryanthemum crystallinum	Common Ice Plant	YES						
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)				
Asphodelus fistulosus	Onion Weed	YES						
Convolvulus arvensis	Field Bindweed	YES						
Heliotropium europaeum	Potato Weed	YES						
Alectryon oleifolius	Western Rosewood			Tree (TG)				

				Plot Num Project Specific	BAMHR24 14	BAMHR24 14	BAMHR24 15	BAMHR24 15
				Plot Number ?	108	108	53	53
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Atriplex stipitata	Mallee Saltbush			Shrub (SG)				
Maireana appressa				Shrub (SG)				
Tetragonia moorei				Forb (FG)				
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)	0.500	15.000		
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)				
Atriplex holocarpa	Pop Saltbush			Forb (FG)				
Maireana brevifolia				Shrub (SG)				
Lysiana exocarpi				Other (OG)				
Ehrharta spp.	Veldtgrass	YES			0.100	35.000		
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)	15.000			
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)	0.100	30.000		
Marsdenia australis	Doubah			Other (OG)				
Citrullus amarus	Camel Melon	YES						
Carrichtera annua	Ward's Weed	YES	No					
Salsola australis				Shrub (SG)				
Exocarpos aphyllus	Leafless Ballart			Shrub (SG)				

				Plot Num Project Specific	BAMHR24 14	BAMHR24 14	BAMHR24 15	BAMHR24 15
				Plot Number ?	108	108	53	53
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)				
Solanum esuriale	Quena			Forb (FG)				
Sida intricata				Shrub (SG)				
Goodenia fascicularis	Mallee Goodenia			Forb (FG)				
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)				
Chrysocephalum apiculatum	Common Everlasting			Forb (FG)				

				Plot Num Project Specific	BAMHR24 16	BAMHR24 16	BAMHR24 17	BAMHR24 17
				Plot Number ?	6	6	64	64
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Dodonaea viscosa subsp. angustissima	Narrow-leaf Hop-bush			Shrub (SG)				
Eremophila sturtii	Turpentine Bush			Shrub (SG)			2.000	9.000
Sclerolaena patenticuspis				Shrub (SG)	0.200	45.000		
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)				
Salvia verbenaca	Vervain	YES					0.010	1.000
Maireana pyramidata	Black Bluebush			Shrub (SG)	1.500	18.000	0.100	5.000
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)			0.010	5.000
Vittadinia cuneata				Forb (FG)				
Euphorbia drummondii	Caustic Weed			Forb (FG)	0.050	150.000	0.010	88.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)				
Panicum effusum	Hairy Panic			Grass & grasslike (GG)				
Medicago polymorpha	Burr Medic	YES						
Chenopodium curvispicatum				Shrub (SG)				

				Plot Num Project Specific	BAMHR24 16	BAMHR24 16	BAMHR24 17	BAMHR24 17
				Plot Number ?	6	6	64	64
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Olearia pimeleoides				Shrub (SG)				
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	0.200	15.000		
Convolvulus remotus				Other (OG)				
Vittadinia cervicularis				Forb (FG)				
Boerhavia dominii	Tarvine			Forb (FG)			0.010	44.000
Tribulus terrestris	Cat-head	YES					0.010	55.000
Maireana sedifolia	Pearl Bluebush			Shrub (SG)				
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.100	20.000		
Maireana georgei	Slit-wing Bluebush			Shrub (SG)				
Psilocaulon granulicaule	Wiry Noon-flower	YES	No					
Casuarina pauper	Black Oak			Tree (TG)	20.000	10.000		
Alectryon oleifolius subsp. canescens				Tree (TG)				
Sida corrugata	Corrugated Sida			Forb (FG)				
Portulaca oleracea	Pigweed			Forb (FG)			0.010	3.000

				Plot Num Project Specific	BAMHR24 16	BAMHR24 16	BAMHR24 17	BAMHR24 17
				Plot Number ?	6	6	64	64
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Maireana pentatropis				Shrub (SG)			0.200	4.000
Vittadinia cuneata var. hirsuta				Forb (FG)				
Maireana spp.	Cotton Bush, Bluebush, Fissure-weed			Shrub (SG)			0.500	22.000
Eucalyptus dumosa	White Mallee			Tree (TG)			20.000	7.000
Roepera eremaea	Climbing Twinleaf			Forb (FG)			0.010	2.000
Einadia nutans subsp. oxycarpa	Climbing Saltbush			Forb (FG)			0.100	3.000
Mesembryanthemum crystallinum	Common Ice Plant	YES					0.500	25.000
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)				
Asphodelus fistulosus	Onion Weed	YES						
Convolvulus arvensis	Field Bindweed	YES						
Heliotropium europaeum	Potato Weed	YES						
Alectryon oleifolius	Western Rosewood			Tree (TG)	4.000	1.000		

				Plot Num Project Specific	BAMHR24 16	BAMHR24 16	BAMHR24 17	BAMHR24 17
				Plot Number ?	6	6	64	64
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Atriplex stipitata	Mallee Saltbush			Shrub (SG)				
Maireana appressa				Shrub (SG)				
Tetragonia moorei				Forb (FG)				
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)				
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)				
Atriplex holocarpa	Pop Saltbush			Forb (FG)				
Maireana brevifolia				Shrub (SG)	0.200	10.000		
Lysiana exocarpi				Other (OG)	1.000	1.000		
Ehrharta spp.	Veldtgrass	YES						
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)				
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)				
Marsdenia australis	Doubah			Other (OG)				
Citrullus amarus	Camel Melon	YES						
Carrichtera annua	Ward's Weed	YES	No					
Salsola australis				Shrub (SG)				
Exocarpos aphyllus	Leafless Ballart			Shrub (SG)				

				Plot Num Project Specific	BAMHR24 16	BAMHR24 16	BAMHR24 17	BAMHR24 17
				Plot Number ?	6	6	64	64
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)				
Solanum esuriale	Quena			Forb (FG)				
Sida intricata				Shrub (SG)				
Goodenia fascicularis	Mallee Goodenia			Forb (FG)				
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)				
Chrysocephalum apiculatum	Common Everlasting			Forb (FG)				

				Plot Num Project Specific	BAMHR24 18	BAMHR24 18	BAMHR24 19	BAMHR24 19
				Plot Number ?	96	96	55	55
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Dodonaea viscosa subsp. angustissima	Narrow-leaf Hop-bush			Shrub (SG)				
Eremophila sturtii	Turpentine Bush			Shrub (SG)				
Sclerolaena patenticuspis				Shrub (SG)	0.100	14.000	0.200	26.000
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	0.100	300.000		
Salvia verbenaca	Vervain	YES					0.100	55.000
Maireana pyramidata	Black Bluebush			Shrub (SG)	0.500	6.000	5.000	12.000
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)				
Vittadinia cuneata				Forb (FG)	0.050	250.000		
Euphorbia drummondii	Caustic Weed			Forb (FG)	0.500	3500.000	0.100	150.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.050	100.000	0.500	
Panicum effusum	Hairy Panic			Grass & grasslike (GG)				
Medicago polymorpha	Burr Medic	YES					0.100	15.000
Chenopodium curvispicatum				Shrub (SG)				

				Plot Num Project Specific	BAMHR24 18	BAMHR24 18	BAMHR24 19	BAMHR24 19
				Plot Number ?	96	96	55	55
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Olearia pimeleoides				Shrub (SG)				
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	0.050	5.000		
Convolvulus remotus				Other (OG)				
Vittadinia cervicularis				Forb (FG)				
Boerhavia dominii	Tarvine			Forb (FG)	0.100	450.000	0.200	400.000
Tribulus terrestris	Cat-head	YES					0.100	65.000
Maireana sedifolia	Pearl Bluebush			Shrub (SG)				
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.010	3.000	0.300	20.000
Maireana georgei	Slit-wing Bluebush			Shrub (SG)				
Psilocaulon granulicaule	Wiry Noon-flower	YES	No					
Casuarina pauper	Black Oak			Tree (TG)				
Alectryon oleifolius subsp. canescens				Tree (TG)				
Sida corrugata	Corrugated Sida			Forb (FG)			0.100	35.000
Portulaca oleracea	Pigweed			Forb (FG)	0.100	400.000	0.100	300.000

				Plot Num Project Specific	BAMHR24 18	BAMHR24 18	BAMHR24 19	BAMHR24 19
				Plot Number ?	96	96	55	55
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Maireana pentatropis				Shrub (SG)				
Vittadinia cuneata var. hirsuta				Forb (FG)				
Maireana spp.	Cotton Bush, Bluebush, Fissure-weed			Shrub (SG)				
Eucalyptus dumosa	White Mallee			Tree (TG)				
Roepera eremaea	Climbing Twinleaf			Forb (FG)				
Einadia nutans subsp. oxycarpa	Climbing Saltbush			Forb (FG)				
Mesembryanthemum crystallinum	Common Ice Plant	YES						
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)				
Asphodelus fistulosus	Onion Weed	YES						
Convolvulus arvensis	Field Bindweed	YES						
Heliotropium europaeum	Potato Weed	YES						
Alectryon oleifolius	Western Rosewood			Tree (TG)				

				Plot Num Project Specific	BAMHR24 18	BAMHR24 18	BAMHR24 19	BAMHR24 19
				Plot Number ?	96	96	55	55
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Atriplex stipitata	Mallee Saltbush			Shrub (SG)				
Maireana appressa				Shrub (SG)				
Tetragonia moorei				Forb (FG)				
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)				
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)				
Atriplex holocarpa	Pop Saltbush			Forb (FG)				
Maireana brevifolia				Shrub (SG)	20.000	0.100		
Lysiana exocarpi				Other (OG)				
Ehrharta spp.	Veldtgrass	YES						
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)				
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)				
Marsdenia australis	Doubah			Other (OG)				
Citrullus amarus	Camel Melon	YES						
Carrichtera annua	Ward's Weed	YES	No					
Salsola australis				Shrub (SG)				
Exocarpos aphyllus	Leafless Ballart			Shrub (SG)				

				Plot Num Project Specific	BAMHR24 18	BAMHR24 18	BAMHR24 19	BAMHR24 19
				Plot Number ?	96	96	55	55
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)				
Solanum esuriale	Quena			Forb (FG)				
Sida intricata				Shrub (SG)				
Goodenia fascicularis	Mallee Goodenia			Forb (FG)				
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)				
Chrysocephalum apiculatum	Common Everlasting			Forb (FG)				

				Plot Num Project Specific	BAMHR24 20 W	BAMHR24 20 W	BAMHR24 21	BAMHR24 21
				Plot Number ?	8	8	4	4
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Dodonaea viscosa subsp. angustissima	Narrow-leaf Hop-bush			Shrub (SG)				
Eremophila sturtii	Turpentine Bush			Shrub (SG)				
Sclerolaena patenticuspis				Shrub (SG)			0.200	25.000
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	0.100	10.000		
Salvia verbenaca	Vervain	YES			0.100	200.000		
Maireana pyramidata	Black Bluebush			Shrub (SG)			30.000	35.000
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	0.200	2.000	0.300	4.000
Vittadinia cuneata				Forb (FG)	0.100	100.000	0.010	6.000
Euphorbia drummondii	Caustic Weed			Forb (FG)	0.200	600.000	0.010	30.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.100	50.000		
Panicum effusum	Hairy Panic			Grass & grasslike (GG)				
Medicago polymorpha	Burr Medic	YES			0.100	10.000		
Chenopodium curvispicatum				Shrub (SG)				

				Plot Num Project Specific	BAMHR24 20 W	BAMHR24 20 W	BAMHR24 21	BAMHR24 21
				Plot Number ?	8	8	4	4
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Olearia pimeleoides				Shrub (SG)				
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	20.000	120.000	0.100	15.000
Convolvulus remotus				Other (OG)				
Vittadinia cervicularis				Forb (FG)				
Boerhavia dominii	Tarvine			Forb (FG)	0.200	800.000		
Tribulus terrestris	Cat-head	YES			0.100	50.000		
Maireana sedifolia	Pearl Bluebush			Shrub (SG)				
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.100	15.000	0.500	15.000
Maireana georgei	Slit-wing Bluebush			Shrub (SG)				
Psilocaulon granulicaule	Wiry Noon-flower	YES	No					
Casuarina pauper	Black Oak			Tree (TG)			45.000	11.000
Alectryon oleifolius subsp. canescens				Tree (TG)				
Sida corrugata	Corrugated Sida			Forb (FG)				
Portulaca oleracea	Pigweed			Forb (FG)	0.100	50.000		

				Plot Num Project Specific	BAMHR24 20 W	BAMHR24 20 W	BAMHR24 21	BAMHR24 21
				Plot Number ?	8	8	4	4
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Maireana pentatropis				Shrub (SG)	0.100	2.000	0.100	4.000
Vittadinia cuneata var. hirsuta				Forb (FG)				
Maireana spp.	Cotton Bush, Bluebush, Fissure-weed			Shrub (SG)				
Eucalyptus dumosa	White Mallee			Tree (TG)				
Roepera eremaea	Climbing Twinleaf			Forb (FG)				
Einadia nutans subsp. oxycarpa	Climbing Saltbush			Forb (FG)				
Mesembryanthemum crystallinum	Common Ice Plant	YES						
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)				
Asphodelus fistulosus	Onion Weed	YES						
Convolvulus arvensis	Field Bindweed	YES						
Heliotropium europaeum	Potato Weed	YES						
Alectryon oleifolius	Western Rosewood			Tree (TG)	5.000	1.000		

				Plot Num Project Specific	BAMHR24 20 W	BAMHR24 20 W	BAMHR24 21	BAMHR24 21
				Plot Number ?	8	8	4	4
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Atriplex stipitata	Mallee Saltbush			Shrub (SG)				
Maireana appressa				Shrub (SG)				
Tetragonia moorei				Forb (FG)				
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)				
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)				
Atriplex holocarpa	Pop Saltbush			Forb (FG)				
Maireana brevifolia				Shrub (SG)				
Lysiana exocarpi				Other (OG)	1.000	1.000		
Ehrharta spp.	Veldtgrass	YES						
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)				
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)				
Marsdenia australis	Doubah			Other (OG)			0.100	3.000
Citrullus amarus	Camel Melon	YES			0.100	3.000		
Carrichtera annua	Ward's Weed	YES	No					
Salsola australis				Shrub (SG)				
Exocarpos aphyllus	Leafless Ballart			Shrub (SG)				

				Plot Num Project Specific	BAMHR24 20 W	BAMHR24 20 W	BAMHR24 21	BAMHR24 21
				Plot Number ?	8	8	4	4
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)				
Solanum esuriale	Quena			Forb (FG)				
Sida intricata				Shrub (SG)				
Goodenia fascicularis	Mallee Goodenia			Forb (FG)				
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)				
Chrysocephalum apiculatum	Common Everlasting			Forb (FG)				

				Plot Num Project Specific	BAMHR24 22	BAMHR24 22	BAMHR24 23	BAMHR24 23
				Plot Number ?	72	72	12	12
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Dodonaea viscosa subsp. angustissima	Narrow-leaf Hop-bush			Shrub (SG)				
Eremophila sturtii	Turpentine Bush			Shrub (SG)				
Sclerolaena patenticuspis				Shrub (SG)				
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)				
Salvia verbenaca	Vervain	YES			0.050	75.000		
Maireana pyramidata	Black Bluebush			Shrub (SG)	0.050	2.000	8.000	35.000
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	0.500	16.000	0.100	7.000
Vittadinia cuneata				Forb (FG)			0.100	12.000
Euphorbia drummondii	Caustic Weed			Forb (FG)				
Austrostipa scabra	Speargrass			Grass & grasslike (GG)				
Panicum effusum	Hairy Panic			Grass & grasslike (GG)				
Medicago polymorpha	Burr Medic	YES						
Chenopodium curvispicatum				Shrub (SG)				

				Plot Num Project Specific	BAMHR24 22	BAMHR24 22	BAMHR24 23	BAMHR24 23
				Plot Number ?	72	72	12	12
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Olearia pimeleoides				Shrub (SG)	0.010	1.000		
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)			1.000	25.000
Convolvulus remotus				Other (OG)	0.010	1.000		
Vittadinia cervicularis				Forb (FG)				
Boerhavia dominii	Tarvine			Forb (FG)			0.010	45.000
Tribulus terrestris	Cat-head	YES						
Maireana sedifolia	Pearl Bluebush			Shrub (SG)			0.050	1.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)			0.100	8.000
Maireana georgei	Slit-wing Bluebush			Shrub (SG)				
Psilocaulon granulicaule	Wiry Noon-flower	YES	No		10.000	50.000		
Casuarina pauper	Black Oak			Tree (TG)	30.000	5.000	30.000	5.000
Alectryon oleifolius subsp. canescens				Tree (TG)				
Sida corrugata	Corrugated Sida			Forb (FG)	0.010	1.000		
Portulaca oleracea	Pigweed			Forb (FG)				

				Plot Num Project Specific	BAMHR24 22	BAMHR24 22	BAMHR24 23	BAMHR24 23
				Plot Number ?	72	72	12	12
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Maireana pentatropis				Shrub (SG)	0.010	1.000		
Vittadinia cuneata var. hirsuta				Forb (FG)				
Maireana spp.	Cotton Bush, Bluebush, Fissure-weed			Shrub (SG)				
Eucalyptus dumosa	White Mallee			Tree (TG)				
Roepera eremaea	Climbing Twinleaf			Forb (FG)				
Einadia nutans subsp. oxycarpa	Climbing Saltbush			Forb (FG)				
Mesembryanthemum crystallinum	Common Ice Plant	YES						
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	1.000	12.000		
Asphodelus fistulosus	Onion Weed	YES			0.100	25.000		
Convolvulus arvensis	Field Bindweed	YES						
Heliotropium europaeum	Potato Weed	YES						
Alectryon oleifolius	Western Rosewood			Tree (TG)			1.000	1.000

				Plot Num Project Specific	BAMHR24 22	BAMHR24 22	BAMHR24 23	BAMHR24 23
				Plot Number ?	72	72	12	12
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Atriplex stipitata	Mallee Saltbush			Shrub (SG)			0.100	5.000
Maireana appressa				Shrub (SG)	0.500	4.000		
Tetragonia moorei				Forb (FG)				
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)				
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)				
Atriplex holocarpa	Pop Saltbush			Forb (FG)				
Maireana brevifolia				Shrub (SG)				
Lysiana exocarpi				Other (OG)				
Ehrharta spp.	Veldtgrass	YES						
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)				
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)				
Marsdenia australis	Doubah			Other (OG)				
Citrullus amarus	Camel Melon	YES						
Carrichtera annua	Ward's Weed	YES	No					
Salsola australis				Shrub (SG)				
Exocarpos aphyllus	Leafless Ballart			Shrub (SG)				

				Plot Num Project Specific	BAMHR24 22	BAMHR24 22	BAMHR24 23	BAMHR24 23
				Plot Number ?	72	72	12	12
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)				
Solanum esuriale	Quena			Forb (FG)				
Sida intricata				Shrub (SG)				
Goodenia fascicularis	Mallee Goodenia			Forb (FG)				
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)				
Chrysocephalum apiculatum	Common Everlasting			Forb (FG)				

				Plot Num Project Specific	BAMHR24 24	BAMHR24 24	BAMHR24 25	BAMHR24 25
				Plot Number ?	9	9	31	31
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Dodonaea viscosa subsp. angustissima	Narrow-leaf Hop-bush			Shrub (SG)			5.000	80.000
Eremophila sturtii	Turpentine Bush			Shrub (SG)				
Sclerolaena patenticuspis				Shrub (SG)				
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	0.010	15.000	0.030	35.000
Salvia verbenaca	Vervain	YES			0.050	220.000	0.010	1.000
Maireana pyramidata	Black Bluebush			Shrub (SG)	10.000	35.000		
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)			0.050	4.000
Vittadinia cuneata				Forb (FG)				
Euphorbia drummondii	Caustic Weed			Forb (FG)	0.100	450.000		
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.010	5.000		
Panicum effusum	Hairy Panic			Grass & grasslike (GG)				
Medicago polymorpha	Burr Medic	YES						
Chenopodium curvispicatum				Shrub (SG)				

				Plot Num Project Specific	BAMHR24 24	BAMHR24 24	BAMHR24 25	BAMHR24 25
				Plot Number ?	9	9	31	31
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Olearia pimeleoides				Shrub (SG)				
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	0.500	25.000	1.000	60.000
Convolvulus remotus				Other (OG)				
Vittadinia cervicularis				Forb (FG)				
Boerhavia dominii	Tarvine			Forb (FG)	0.010	35.000		
Tribulus terrestris	Cat-head	YES			0.010	5.000	0.010	1.000
Maireana sedifolia	Pearl Bluebush			Shrub (SG)			0.100	1.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.010	8.000	0.010	3.000
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	0.100	1.000		
Psilocaulon granulicaule	Wiry Noon-flower	YES	No					
Casuarina pauper	Black Oak			Tree (TG)	8.000	1.000		
Alectryon oleifolius subsp. canescens				Tree (TG)				
Sida corrugata	Corrugated Sida			Forb (FG)				
Portulaca oleracea	Pigweed			Forb (FG)				

				Plot Num Project Specific	BAMHR24 24	BAMHR24 24	BAMHR24 25	BAMHR24 25
				Plot Number ?	9	9	31	31
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Maireana pentatropis				Shrub (SG)	0.010	18.000		
Vittadinia cuneata var. hirsuta				Forb (FG)			0.010	53.000
Maireana spp.	Cotton Bush, Bluebush, Fissure-weed			Shrub (SG)				
Eucalyptus dumosa	White Mallee			Tree (TG)				
Roepera eremaea	Climbing Twinleaf			Forb (FG)				
Einadia nutans subsp. oxycarpa	Climbing Saltbush			Forb (FG)				
Mesembryanthemum crystallinum	Common Ice Plant	YES						
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)	0.100	3.000	0.500	3.000
Asphodelus fistulosus	Onion Weed	YES			0.010	3.000	25.000	500.000
Convolvulus arvensis	Field Bindweed	YES					0.001	1.000
Heliotropium europaeum	Potato Weed	YES			0.100	30.000		
Alectryon oleifolius	Western Rosewood			Tree (TG)				

				Plot Num Project Specific	BAMHR24 24	BAMHR24 24	BAMHR24 25	BAMHR24 25
				Plot Number ?	9	9	31	31
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Atriplex stipitata	Mallee Saltbush			Shrub (SG)				
Maireana appressa				Shrub (SG)				
Tetragonia moorei				Forb (FG)				
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)				
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)				
Atriplex holocarpa	Pop Saltbush			Forb (FG)				
Maireana brevifolia				Shrub (SG)				
Lysiana exocarpi				Other (OG)				
Ehrharta spp.	Veldtgrass	YES						
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)				
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)				
Marsdenia australis	Doubah			Other (OG)				
Citrullus amarus	Camel Melon	YES						
Carrichtera annua	Ward's Weed	YES	No					
Salsola australis				Shrub (SG)				
Exocarpos aphyllus	Leafless Ballart			Shrub (SG)				

				Plot Num Project Specific	BAMHR24 24	BAMHR24 24	BAMHR24 25	BAMHR24 25
				Plot Number ?	9	9	31	31
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)				
Solanum esuriale	Quena			Forb (FG)				
Sida intricata				Shrub (SG)				
Goodenia fascicularis	Mallee Goodenia			Forb (FG)				
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)				
Chrysocephalum apiculatum	Common Everlasting			Forb (FG)				

				Plot Num Project Specific	BAMHR24 26	BAMHR24 26	BAMHR24 27	BAMHR24 27
				Plot Number ?	7	7	66	66
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Dodonaea viscosa subsp. angustissima	Narrow-leaf Hop-bush			Shrub (SG)				
Eremophila sturtii	Turpentine Bush			Shrub (SG)				
Sclerolaena patenticuspis				Shrub (SG)	1.500	24.000	4.000	120.000
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	0.100	20.000	0.200	
Salvia verbenaca	Vervain	YES					0.100	80.000
Maireana pyramidata	Black Bluebush			Shrub (SG)	35.000	80.000	2.000	8.000
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)	2.500	9.000		
Vittadinia cuneata				Forb (FG)			0.300	450.000
Euphorbia drummondii	Caustic Weed			Forb (FG)	0.100	40.000	0.500	400.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)			1.500	
Panicum effusum	Hairy Panic			Grass & grasslike (GG)				
Medicago polymorpha	Burr Medic	YES						
Chenopodium curvispicatum				Shrub (SG)	1.500	6.000		

				Plot Num Project Specific	BAMHR24 26	BAMHR24 26	BAMHR24 27	BAMHR24 27
				Plot Number ?	7	7	66	66
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Olearia pimeleoides				Shrub (SG)				
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)				
Convolvulus remotus				Other (OG)				
Vittadinia cervicularis				Forb (FG)				
Boerhavia dominii	Tarvine			Forb (FG)	0.200	75.000		
Tribulus terrestris	Cat-head	YES			0.100	35.000	0.200	150.000
Maireana sedifolia	Pearl Bluebush			Shrub (SG)			10.000	45.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.100	10.000	0.200	200.000
Maireana georgei	Slit-wing Bluebush			Shrub (SG)			1.500	7.000
Psilocaulon granulicaule	Wiry Noon-flower	YES	No					
Casuarina pauper	Black Oak			Tree (TG)	30.000	4.000		
Alectryon oleifolius subsp. canescens				Tree (TG)				
Sida corrugata	Corrugated Sida			Forb (FG)	1.500	60.000	0.100	20.000
Portulaca oleracea	Pigweed			Forb (FG)	0.300	80.000		

				Plot Num Project Specific	BAMHR24 26	BAMHR24 26	BAMHR24 27	BAMHR24 27
				Plot Number ?	7	7	66	66
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Maireana pentatropis				Shrub (SG)				
Vittadinia cuneata var. hirsuta				Forb (FG)				
Maireana spp.	Cotton Bush, Bluebush, Fissure-weed			Shrub (SG)				
Eucalyptus dumosa	White Mallee			Tree (TG)				
Roepera eremaea	Climbing Twinleaf			Forb (FG)				
Einadia nutans subsp. oxycarpa	Climbing Saltbush			Forb (FG)				
Mesembryanthemum crystallinum	Common Ice Plant	YES						
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)				
Asphodelus fistulosus	Onion Weed	YES			2.000	75.000		
Convolvulus arvensis	Field Bindweed	YES						
Heliotropium europaeum	Potato Weed	YES						
Alectryon oleifolius	Western Rosewood			Tree (TG)				

				Plot Num Project Specific	BAMHR24 26	BAMHR24 26	BAMHR24 27	BAMHR24 27
				Plot Number ?	7	7	66	66
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Atriplex stipitata	Mallee Saltbush			Shrub (SG)				
Maireana appressa				Shrub (SG)				
Tetragonia moorei				Forb (FG)				
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)				
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)				
Atriplex holocarpa	Pop Saltbush			Forb (FG)				
Maireana brevifolia				Shrub (SG)				
Lysiana exocarpi				Other (OG)				
Ehrharta spp.	Veldtgrass	YES						
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)				
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)				
Marsdenia australis	Doubah			Other (OG)				
Citrullus amarus	Camel Melon	YES						
Carrichtera annua	Ward's Weed	YES	No					
Salsola australis				Shrub (SG)				
Exocarpos aphyllus	Leafless Ballart			Shrub (SG)	3.000	3.000		

				Plot Num Project Specific	BAMHR24 26	BAMHR24 26	BAMHR24 27	BAMHR24 27
				Plot Number ?	7	7	66	66
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)				
Solanum esuriale	Quena			Forb (FG)				
Sida intricata				Shrub (SG)				
Goodenia fascicularis	Mallee Goodenia			Forb (FG)				
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)				
Chrysocephalum apiculatum	Common Everlasting			Forb (FG)				

				Plot Num Project Specific	BAMHR24 28	BAMHR24 28	BAMHR24 29	BAMHR24 29
				Plot Number ?	54	54	5	5
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Dodonaea viscosa subsp. angustissima	Narrow-leaf Hop-bush			Shrub (SG)				
Eremophila sturtii	Turpentine Bush			Shrub (SG)				
Sclerolaena patenticuspis				Shrub (SG)	1.500	20.000	8.000	136.000
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	0.500		1.000	120.000
Salvia verbenaca	Vervain	YES			4.000	700.000		
Maireana pyramidata	Black Bluebush			Shrub (SG)	8.000	28.000	13.000	50.000
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)				
Vittadinia cuneata				Forb (FG)	0.100	5.000		
Euphorbia drummondii	Caustic Weed			Forb (FG)	0.500	400.000	0.500	120.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	3.000		0.300	50.000
Panicum effusum	Hairy Panic			Grass & grasslike (GG)				
Medicago polymorpha	Burr Medic	YES						
Chenopodium curvispicatum				Shrub (SG)				

				Plot Num Project Specific	BAMHR24 28	BAMHR24 28	BAMHR24 29	BAMHR24 29
				Plot Number ?	54	54	5	5
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Olearia pimeleoides				Shrub (SG)				
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)				
Convolvulus remotus				Other (OG)			0.100	3.000
Vittadinia cervicularis				Forb (FG)				
Boerhavia dominii	Tarvine			Forb (FG)	0.100	35.000	0.200	200.000
Tribulus terrestris	Cat-head	YES			0.500	350.000	0.200	100.000
Maireana sedifolia	Pearl Bluebush			Shrub (SG)	5.000	7.000	4.000	24.000
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.200	60.000	2.000	20.000
Maireana georgei	Slit-wing Bluebush			Shrub (SG)	3.000	15.000	1.000	2.000
Psilocaulon granulicaule	Wiry Noon-flower	YES	No					
Casuarina pauper	Black Oak			Tree (TG)				
Alectryon oleifolius subsp. canescens				Tree (TG)				
Sida corrugata	Corrugated Sida			Forb (FG)	0.2	50.000		
Portulaca oleracea	Pigweed			Forb (FG)	0.100	1.000		

				Plot Num Project Specific	BAMHR24 28	BAMHR24 28	BAMHR24 29	BAMHR24 29
				Plot Number ?	54	54	5	5
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Maireana pentatropis				Shrub (SG)				
Vittadinia cuneata var. hirsuta				Forb (FG)				
Maireana spp.	Cotton Bush, Bluebush, Fissure-weed			Shrub (SG)				
Eucalyptus dumosa	White Mallee			Tree (TG)				
Roepera eremaea	Climbing Twinleaf			Forb (FG)				
Einadia nutans subsp. oxycarpa	Climbing Saltbush			Forb (FG)				
Mesembryanthemum crystallinum	Common Ice Plant	YES					0.100	2.000
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)				
Asphodelus fistulosus	Onion Weed	YES					1.500	22.000
Convolvulus arvensis	Field Bindweed	YES						
Heliotropium europaeum	Potato Weed	YES						
Alectryon oleifolius	Western Rosewood			Tree (TG)				

				Plot Num Project Specific	BAMHR24 28	BAMHR24 28	BAMHR24 29	BAMHR24 29
				Plot Number ?	54	54	5	5
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Atriplex stipitata	Mallee Saltbush			Shrub (SG)				
Maireana appressa				Shrub (SG)				
Tetragonia moorei				Forb (FG)				
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)				
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)				
Atriplex holocarpa	Pop Saltbush			Forb (FG)				
Maireana brevifolia				Shrub (SG)				
Lysiana exocarpi				Other (OG)				
Ehrharta spp.	Veldtgrass	YES						
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)				
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)				
Marsdenia australis	Doubah			Other (OG)				
Citrullus amarus	Camel Melon	YES						
Carrichtera annua	Ward's Weed	YES	No				0.200	60.000
Salsola australis				Shrub (SG)				
Exocarpos aphyllus	Leafless Ballart			Shrub (SG)				

				Plot Num Project Specific	BAMHR24 28	BAMHR24 28	BAMHR24 29	BAMHR24 29
				Plot Number ?	54	54	5	5
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)				
Solanum esuriale	Quena			Forb (FG)				
Sida intricata				Shrub (SG)				
Goodenia fascicularis	Mallee Goodenia			Forb (FG)				
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)				
Chrysocephalum apiculatum	Common Everlasting			Forb (FG)				

				Plot Num Project Specific	BAMHR24 30	BAMHR24 30	BAMHR24 20 E	BAMHR24 20 E
				Plot Number ?	70	70	51	51
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Dodonaea viscosa subsp. angustissima	Narrow-leaf Hop-bush			Shrub (SG)				
Eremophila sturtii	Turpentine Bush			Shrub (SG)				
Sclerolaena patenticuspis				Shrub (SG)	7.000	90.000	0.200	35.000
Enneapogon avenaceus	Bottle Washers			Grass & grasslike (GG)	0.100	35.000	0.100	10.000
Salvia verbenaca	Vervain	YES						
Maireana pyramidata	Black Bluebush			Shrub (SG)	5.000	12.000	35.000	110.000
Enchylaena tomentosa	Ruby Saltbush			Shrub (SG)				
Vittadinia cuneata				Forb (FG)	0.100	15.000	0.100	30.000
Euphorbia drummondii	Caustic Weed			Forb (FG)	0.200	50.000	0.100	35.000
Austrostipa scabra	Speargrass			Grass & grasslike (GG)	0.100	30.000	0.100	35.000
Panicum effusum	Hairy Panic			Grass & grasslike (GG)				
Medicago polymorpha	Burr Medic	YES						
Chenopodium curvispicatum				Shrub (SG)				

				Plot Num Project Specific	BAMHR24 30	BAMHR24 30	BAMHR24 20 E	BAMHR24 20 E
				Plot Number ?	70	70	51	51
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Olearia pimeleoides				Shrub (SG)				
Sclerolaena diacantha	Grey Copperburr			Shrub (SG)	0.500	16.000	0.100	20.000
Convolvulus remotus				Other (OG)	0.100	1.000		
Vittadinia cervicularis				Forb (FG)				
Boerhavia dominii	Tarvine			Forb (FG)	0.300	250.000		
Tribulus terrestris	Cat-head	YES			1.000	350.000	0.100	50.000
Maireana sedifolia	Pearl Bluebush			Shrub (SG)				
Dissocarpus paradoxus	Cannonball Burr			Shrub (SG)	0.100	7.000	0.200	30.000
Maireana georgei	Slit-wing Bluebush			Shrub (SG)			5.000	20.000
Psilocaulon granulicaule	Wiry Noon-flower	YES	No					
Casuarina pauper	Black Oak			Tree (TG)				
Alectryon oleifolius subsp. canescens				Tree (TG)				
Sida corrugata	Corrugated Sida			Forb (FG)				
Portulaca oleracea	Pigweed			Forb (FG)				

				Plot Num Project Specific	BAMHR24 30	BAMHR24 30	BAMHR24 20 E	BAMHR24 20 E
				Plot Number ?	70	70	51	51
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Maireana pentatropis				Shrub (SG)				
Vittadinia cuneata var. hirsuta				Forb (FG)				
Maireana spp.	Cotton Bush, Bluebush, Fissure-weed			Shrub (SG)				
Eucalyptus dumosa	White Mallee			Tree (TG)				
Roepera eremaea	Climbing Twinleaf			Forb (FG)				
Einadia nutans subsp. oxycarpa	Climbing Saltbush			Forb (FG)				
Mesembryanthemum crystallinum	Common Ice Plant	YES			0.010	2.000		
Rhagodia spinescens	Thorny Saltbush			Shrub (SG)				
Asphodelus fistulosus	Onion Weed	YES			2.500	18.000		
Convolvulus arvensis	Field Bindweed	YES						
Heliotropium europaeum	Potato Weed	YES						
Alectryon oleifolius	Western Rosewood			Tree (TG)				

				Plot Num Project Specific	BAMHR24 30	BAMHR24 30	BAMHR24 20 E	BAMHR24 20 E
				Plot Number ?	70	70	51	51
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Atriplex stipitata	Mallee Saltbush			Shrub (SG)				
Maireana appressa				Shrub (SG)				
Tetragonia moorei				Forb (FG)	0.100	10.000		
Chenopodium spp.	Goosefoot, Crumbweed			Shrub (SG)				
Atriplex vesicaria	Bladder Saltbush			Shrub (SG)				
Atriplex holocarpa	Pop Saltbush			Forb (FG)	0.100	3.000		
Maireana brevifolia				Shrub (SG)				
Lysiana exocarpi				Other (OG)				
Ehrharta spp.	Veldtgrass	YES						
Triodia scariosa	Porcupine Grass			Grass & grasslike (GG)				
Sclerolaena spp.	Copperburr, Poverty-bush			Shrub (SG)				
Marsdenia australis	Doubah			Other (OG)				
Citrullus amarus	Camel Melon	YES						
Carrichtera annua	Ward's Weed	YES	No		0.200	300.000		
Salsola australis				Shrub (SG)	0.100	2.000		
Exocarpos aphyllus	Leafless Ballart			Shrub (SG)				

				Plot Num Project Specific	BAMHR24 30	BAMHR24 30	BAMHR24 20 E	BAMHR24 20 E
				Plot Number ?	70	70	51	51
Scientific Name	**Common Name**	**Exotic**	**High Threat Weed (Manageable Yes/No)**	**BAM Growth Form Group**	**Cover**	**Abundance**	**Cover**	**Abundance**
Eragrostis setifolia	Neverfail			Grass & grasslike (GG)				
Solanum esuriale	Quena			Forb (FG)				
Sida intricata				Shrub (SG)				
Goodenia fascicularis	Mallee Goodenia			Forb (FG)				
Chenopodium desertorum	Desert Goosefoot			Shrub (SG)				
Chrysocephalum apiculatum	Common Everlasting			Forb (FG)				

A-10 Preliminary Observations of Groundwater Dependent Ecosystems – Greenloaning Biostudies September 2022

Preliminary Observations of Groundwater Dependent Ecosystems – Greenloaning Biostudies

1. Introduction

1.1 Groundwater Dependent Ecosystem Mapping

Greenloaning Biostudies has performed some preliminary desktop interrogation of Groundwater Dependent Ecosystem (GDE) mapping for the Huntingfield, Sunshine and Warwick properties, in far South-Western New South Wales. This mapping was sourced from data provided by:

- NSW Department of Planning and Environment (DPE, 2022a), and
- Plant Community Type (PCT) mapping undertaken by EnviroKey in 2018 and 2020.

As far as GIS mapping is concerned, this work should be considered preliminary in nature, and is only intended as a comparison of the two data inputs to be used to inform future, more detailed work on potential GDE mapping.

This work concentrated on the Pitshell Boundary where it occurs on the subject properties plus a 50 metre buffer (Disturbance Area).

More detailed ground-truthing of PCTs was undertaken during mid-September, 2022. Greenloaning Biostudies (accompanied and greatly assisted by Phil Grant – RZ Resources), conducted field inspections at sixteen (16) points within the southern Disturbance Area on Warwick Station (see maps that accompany this document – Map 5).

1.2 Groundwater Levels and Salinity

Groundwater quality, especially salt concentrations, and the impact that it has on groundwater use by vegetation was not considered by DPE when 'probable' GDE PCTs were developed for the area (2016).

The preliminary work undertaken by Greenloaning will provide some analysis and discussion of the potential impacts of groundwater levels and salinity concentrations in conjunction with the likelihood of GDEs being present at the places mapped by DPE and by EnviroKey.

2. GDE Mapping Methods DPE

2.1 DPE- Determining Probable GDEs

The DPE (2016) use a complex model with numerous variants to determine which PCTs are most likely to be GDEs. Some of these variants include how well a PCT survives drought periods.

Given the preliminary nature of this analysis, in this section, we have only examined some of the 'coarser', more accessible inputs to the model.

2.1.1 Determining Probability of Occurrence - DPE

The NSW Department of Primary Industries – Water (DPI-Water, 2016) uses vegetation and PCT occurrence as an indicator of probable DGEs. The probability is categorised into 'Very High – High - Moderate and Low'.

DPE? mapping for the Disturbance Area rates the probability of GDEs occurring into two categories, viz: 1) High probability of GDE, and 2) Low Probability of GDE.

Some of the rules (relevant to the Disturbance Area) used by the DPI-Water (2016) model to determine High Probability GDEs, are as follows:

- groundwater is present at a depth of less than 12 metres (woody vegetation), or less than 0.8 metres (non-woody vegetation),
- topography is low lying, characterised by such features as depressions where groundwater is likely to be close to the surface,
- species with a documented association with groundwater are present,
- species that are considered to be deep rooted are present, and
- there are well drained geological substrates, for example gravels and sandy soils.

Note: There are other considerations that do not apply to the Disturbance Area eg. riverbanks, coastal sands, etc.

Some of the rules (relevant to the Disturbance Area) used by the DPI-Water (2016) model to determine Low Probability GDEs, are as follows:

- depth to groundwater greater than 16 metres,
- steep, or hilltops, ridges and rocky hills,
- shallow rooted (eg. chenopods, grasslands) species, and
- clay soils, skeletal or shallow soils.

2.1.2 Determining value of GDEs – DPE

The NSW Government has adopted the guidelines developed by Dabovic *et al* (2019) for identifying High Ecological Value Aquatic Ecosystems. This approach is applied to PCTs that have a high probability of being GDEs. The variants used to determine ecological value are:

- Naturalness,
- Diversity,
- Distinctiveness, and
- Vital Habitat.

These High Value GDEs are a priority for New South Wales Water Sharing Plans. Data on High Value GDEs was sourced from DPE (2022b).

3. Greenloaning Biostudies Field Observation Methods

Greenloaning conducted field inspections at sixteen (16) points within the southern Disturbance Area on Warwick Station (see maps that accompany this document – Map 5).

These observation points included floristics data collection at two vegetation plots, in accordance with the requirements of the Biodiversity Assessment Method (BAM plots) (DPE, 2020). The aim of these field inspections was to estimate whether probable GDE mapping sourced from the DPE (2022a), aligned with PCT mapping undertaken by EnviroKey in 2018 and 2020.

4. Depth to Groundwater and Groundwater Salinity Concentrations

RZ Resources has undertaken an extensive drilling program within the Disturbance area, which has provided data on depth to groundwater and average salinity concentrations. Preliminary data

supplied to Greenloaning (M. Robertson *pers comm* 07/10/2022) indicates that groundwater levels are fairly constant at 24.7m with average total dissolved solids of 61 grams per litre.

5. Results of GDE Mapping Comparison

5.1 Results of DPI and EnviroKey Mapping of GDEs

The following maps have been attached to the email accompanying this document (maps have been produced as A3 Georeferenced PDF format):

- **Map 1** - High Probability (High Value) GDE mapping undertaken by DPE (2022a);
- **Map 2** - High Probability (High Value) PCT mapping by EnviroKey (2018 & 2020 work);
- **Map 3** – Low Probability GDE mapping undertaken by DPE (2022a);
- **Map 4** - Low Probability PCT mapping by EnviroKey (2018 & 2020 work).

The following tables provide the results of High Probability/High Value GDEs mapped by DPE (2022a) and as mapped by EnviroKey (2018 & 2020 mapping). The **PCTs mapped by both DPE and EnviroKey are distinguished in Tables 1-4 by * and blue shading (Note: For these PCTs, the mapped extent of each [ha] vary between the two data sources).**

Please note that there are discrepancies between the PCTs mapped by DPE (2022a) and those mapped by EnviroKey.

Table 1. High Probability Groundwater Dependent Ecosystems Mapped by DPE (2022a).

PCT_Name	Area (ha)
15 - Black Box open woodland wetland with chenopod understorey mainly on the outer floodplains in south-western NSW (mainly Riverina Bioregion and Murray Darling Depression Bioregion)	165.76
24 - Canegrass swamp tall grassland wetland of drainage depressions, lakes and pans of the inland plains	7.99
* 64 - Samphire - Water Weed - Sea-Heath shrubland saline wetland of depressions of the arid and semi-arid (warm) zones	577.98
65 - Halosarcia lylei low, open shrubland saline wetland of arid and semi-arid regions	0.93
153 - Black Bluebush low open shrubland of the alluvial plains and sandplains of the arid and semi-arid zones	2.64
* 157 - Bladder Saltbush shrubland on alluvial plains in the semi-arid (warm) zone including Riverina Bioregion	156.87
191 - Snap and Rattle Mallee - Moonah open mallee shrubland in the Murray Darling Depression Bioregion	17.13
* 221 - Black Oak - Pearl Bluebush open woodland of the sandplains of the semi-arid warm and arid climate zones	2.35
* 253 - Gypseous shrubland on rises in the semi-arid and arid plains	20.28

Table 2. High Probability Groundwater Dependent Ecosystems Mapped by EnviroKey.

PCT_Name	CONDITION	Area (ha)
64 - Samphire - Water Weed - Sea-Heath shrubland saline wetland of depressions	Mod-good	135.97
157 - Bladder Saltbush shrubland on alluvial plains in the semi-arid (warm) zone including Riverina Bioregion	Low	306.64
157 - Bladder Saltbush shrubland on alluvial plains in the semi-arid (warm) zone including Riverina Bioregion	Mod-good	251.57
221 - Black Oak - Pearl Bluebush open woodland of the sandplains	Mod-good	343.49
253 - Gypseous shrubland on rises in the semi-arid and arid plains	Low	217.88

*s missing?

Table 3. Low Probability Groundwater Dependent Ecosystems Mapped by DPE (2022a).

PCT_Name	Area (ha)
* 28 - White Cypress Pine open woodland of sand plains, prior streams and dunes mainly of the semi-arid (warm) climate zone	199.96
* 58 - Black Oak - Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion	452.44
61 - Mitchell Grass - saltbush grassland/shrubland of the gibber downs of the arid climate zone	315.75
139 - Prickly Wattle tall open shrubland of dunes and sandplains of semi-arid and arid regions	118.08
143 - Narrow-leaved Hopbush - Scrub Turpentine - Senna shrubland on semi-arid and arid sandplains and dunes.	2.5
150 - Bottlewasher - Copperburr grassland of the arid zone	451.79
152 - Lunette chenopod shrubland mainly of the Murray Darling Depression Bioregion	1.29
* 154 - Pearl Bluebush low open shrubland of the arid and semi-arid plains	821.8
165 - Derived corkscrew grass grassland/forbland on sandplains and plains in the semi-arid (warm) climate zone	1.07
170 - Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones	0.89
* 171 - Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion	25.98
215 - Woollybutt Grass open grassland on red earths of the inland plains	621.76
* 252 - Sugarwood open woodland of the inland plains mainly Murray Darling Depression Bioregion	2.1
254 - Black Oak - Bladder Saltbush on light clays in the arid zone	4.42

Table 4. Low Probability Groundwater Dependent Ecosystems Mapped by EnviroKey.

PCT_Name	CONDITION	Area
28 - White Cypress Pine open woodland of sand plains, prior streams and dunes mainly of the semi-arid (warm) climate zone	Very Low	4.3
58 - Black Oak - Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion	Low	13.46
58 - Black Oak - Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion	Mod-good	357.52
154 - Pearl Bluebush low open shrubland of the arid and semi-arid plains	Very Low	1048.48
154 - Pearl Bluebush low open shrubland of the arid and semi-arid plains	Low	0.56
154 - Pearl Bluebush low open shrubland of the arid and semi-arid plains	Mod-good	738
171 - Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion	Mod-good	520.6
252- Sugarwood open woodland of the inland plains	Low	2.51

*s missing???

6. Greenloaning Observations - Southern Disturbance Area Only

Map 5 depicts the results of Greenloaning Biostudies field observations, compared with:

- High Probability (High Value) GDE mapping undertaken by DPE (2022a).
- High Probability (High Value) PCTs as mapped by EnviroKey (2018 & 2020 work).

6.1 Key Results of Field Observations

Map 5 contains detailed notes that describe identified on-ground discrepancies with both DPE and EnviroKey mapping of GDEs in the detailed study area of the southern Disturbance Area.

Generally, vegetation mapping will most likely need to be at a finer scale to satisfy the current Biodiversity Assessment Method requirements. There are large areas of vegetation forming a mosaic of PCTs that will require more detailed survey work to determine more precise boundaries of vegetation communities.

The following key observations are made regarding the mapping of High Probability/High Value/High Priority GDEs by DPE (2022a & 2022b, EnviroKey):

- Looking west from CM 11, CM 15 and CM 16 (**Map 5**) Greenloaning observations do not clearly indicate the dominance of PCT 64 (DPE) or PCT 154 (EnviroKey) in this area. Observations suggest a mosaic of communities that includes PCT 157 (Bladder Saltbush present);
- Where aquatic areas have receded, the bottom and edges of these 'lakes' show no evidence of plant growth, most likely due to hypersaline conditions;

- In most areas, the EnviroKey Mapping is generally more accurate in mapping the PCT 64 'fringes' around aquatic areas than the DPE (2022a) mapping which tends to map the whole area as PCT 64 with no allowance for areas of semi-permanent water (**Map 5**);
- Observations from point CM 9, near the 'Pink Lake' (**Map 5**) showed that the DPE (2022a) mapping was more accurate in this area, especially in relation to mapping the 'fringes' of PCT 64 around waterbodies;
- The EnviroKey mapping has not mapped some areas of PCT 64 that were evident during the September 2022 field observations. An example of this is areas of PCT 64 adjacent to PCT 157 and PCT 253, in proximity to Greenloaning observation point CM 8, as shown on **Map 5**;
- An area near CM 3 was mapped as 'Aquatic' by EnviroKey but was found to be dry and covered in a herbfield/grassland. Greenloaning conducted a floristic plot survey within this area to assist with determining the most relevant PCT; and
- DPE (2022a) mapping had identified areas of PCT 24 at CMGBAM3 (**Map 5**) but this Canegrass dominated PCT was not evident during the 2022 field inspections. A floristics plot was established at this location to assist with determining the PCT (most likely PCT 253).

6. Depth to Groundwater and Salinity Levels

RZ data from the drilling program indicate average potential salinity levels of 61 grams per litre (g/l). This is considered to be a hypersaline environment that is almost twice the salinity levels of seawater. In some parts of the Disturbance Area, the topography drops down to about the level of groundwater at 24.7m.

It is important to understand the ability of plants to utilise hypersaline groundwater when considering whether a PCT has the ability to be groundwater dependent. Below are the results of Greenloaning's preliminary investigations into the salt tolerance of plants that are indicative of the PCTs that have been mapped as groundwater dependent, noting the following:

- For the purpose of understanding whether indicative plants could survive when utilising hypersaline groundwater, millisiemens per meter (mS/m) have been used as the unit of measurement (as most information is only available in this unit).
- For comparison purposes, the average total dissolved solids figure of 61 g/l for Disturbance Area groundwater has been converted to 10,167 mS/m.

The guide to salinity tolerance levels of plants have been sourced from the Department of Primary Industries and Regional Development (DPI&RD WA), (2022), and are as follows:

- Extremely saline sites = >1,600 mS/m
- Very saline sites = 800-1,600 mS/m
- Moderately saline sites = 400-800 mS/m

Table 5. The salt tolerance of indicative species for High Probability GDEs within the Disturbance Area

PCT No.	PCT Name	Indicative species	Salt Tolerance (mS/m)	Reference
15	15 - Black Box open woodland wetland with chenopod understorey mainly on the outer floodplains in south-western NSW (mainly Riverina Bioregion and Murray Darling Depression Bioregion)	*Eucalyptus largiflorens* (Black Box)	Very tolerant 800-1,600	Agriculture Victoria (2022)
24	24 - Canegrass swamp tall grassland wetland of drainage depressions, lakes and pans of the inland plains	*Eragrostis australasica* (Canegrass)	No information	N/A
64	64 - Samphire - Water Weed - Sea-Heath shrubland saline wetland of depressions	*Halosarcia pergranulata* subsp. *pergranulata*	Extremely tolerant 2,700-6,500 mS/m Extremely tolerant 7,000-10,000 mS/m	Ismail, S, Malcolm, C.V & Ahmad, R (1990) DPI&RD WA (2021)
65	65 - Halosarcia lylei low, open shrubland saline wetland of arid and semi-arid regions	*Halosarcia pergranulata* subsp. *pergranulata*	Extremely tolerant 2,700-6,500 mS/m	Ismail, S, Malcolm, C.V & Ahmad, R (1990)
153	153 - Black Bluebush low open shrubland of the alluvial plains and sandplains of the arid and semi-arid zones	*Maireana* spp.	Very Tolerant 600-1,100 mS/m	Barrett-Lennard, E.G, Bennett, S. J & Altman, M (2013)
157	157 - Bladder Saltbush shrubland on alluvial plains in the semi-arid (warm) zone including Riverina Bioregion	*Atriplex vesicaria* (Bladder Saltbush)	Extremely Tolerant Up to 5,000 mS/m Very Tolerant 800-1,600 mS/m	Mahmood, K. & Malik, K. A (1987) Agriculture Victoria (2022)
191	191 - Snap and Rattle Mallee - Moonah open mallee shrubland in the Murray Darling Depression Bioregion	*Melaleuca lanceolata* subsp. *lanceolata*	Very tolerant 800-1,600 mS/m	Agriculture Victoria (2022)
221	221 - Black Oak - Pearl Bluebush open woodland of the sandplains	*Casuarina pauper* (Black Oak)	Very tolerant 800-1,600 mS/m	Agriculture Victoria (2022)
253	253 - Gypseous shrubland on rises in the semi-arid and arid plains	*Maireana* spp.	Very Tolerant 600-1,100 mS/m	Barrett-Lennard, E.G, Bennett, S. J & Altman, M (2013)

7. Discussion

7.1 Vegetation Mapping

A general comment on vegetation mapping is that it will most likely need to be at a finer scale to satisfy the current BAM (DPE, 2020) requirements. There are large areas of vegetation forming a mosaic of PCTs. More detailed survey work would be required to determine limits of PCTs/GDEs.

The above situation is most evident where DPE (2022a) have mapped large areas of PCT 64 and EnviroKey have mapped large areas of PCT 157. Both of these PCTs are mapped as High Probability GDEs (**Map 5**).

7.2 Salinity Tolerance and Groundwater Levels

It is likely that there are two main factors in determining High Value/High Probability GDE occurrence, in the study area, as follows:

1. Depth to groundwater,
2. Topography, and
3. Groundwater salinity levels and the ability of identified PCTs to utilise hypersaline water.

Information supplied from the drilling program (M. Robertson *pers comm* 7/10/2022) indicates that the groundwater present under the Disturbance Area is almost double the average salinity of seawater (33-38 g/l or 5,500-6,300 mS/m for seawater cf. 61 g/l or 10,167 mS/m for groundwater within the Disturbance Area).

The majority of the areas mapped as High Probability of GDE by DPE are located within the Digital Elevation Model (DEM) (ICSM, 2022) range of around 24m - 34m. Data collected from the RZ drilling program estimates a consistent groundwater level, across the Disturbance Area of approximately 25m.

Depth to groundwater becomes almost redundant as a means of determining whether a PCT is groundwater dependent, when the salinity levels of the groundwater are much too high to support the plants of that PCT.

Table 5 demonstrates that even the most salt tolerant species (Samphires - 2,700-6,500 mS/m) would be at the limit of their ability to survive if forced to access hypersaline groundwater with an average electrical conductivity of 10,167 mS/m. DPI&RD WA (2021) reports that an uncited study in Western Australia demonstrated salinity tolerance for *Halosarcia pergranulata* subsp. *pergranulata* of 7,000-10,000 mS/m but that would be at the extreme limit of their ability to survive hypersaline groundwater.

7.3 Likely Overall Impacts on GDEs

The groundwater below the Disturbance Area has an average electrical conductivity of 10,167 mS/m. It is very unlikely, that most of the indicative plants listed in **Table 5** could tolerate such groundwater.

The PCT with the greatest likelihood of being able to utilise hypersaline groundwater is:

- PCT 64 - Samphire - Water Weed - Sea-Heath shrubland saline wetland of depressions (using *Halosarcia pergranulata* subsp. *pergranulata* as an indicator species – extreme tolerance 2,700-6,500 mS/m).

Photograph 1. Facing South from CM 9 with PCT 64 fringing the playa and on elevated areas.

Photograph 2. Facing North from CM 9 with PCT 64 fringing the playa and on elevated areas.

Samphire is present in the area, particularly around the margins of saline lakes and on the elevated areas (**Photograph 1 & 2**)

Ferguson *et al* (1997) states that in the Nulla Groundwater Discharge Complex, saline lakes similar to those that occur in the Disturbance Area, contain salts mainly from the evaporation of groundwater discharge. Ferguson *et al* (1997) comment that most drainage into the lakes, is from subsurface discharge (groundwater) and that local precipitation causes some minor contribution through runoff and seepage from adjacent aeolian dunes.

Photograph 2 clearly shows the extent of the salina (salt lake) with the shallow water level approximating the lowest point on the DEM, at around 24m. The groundwater level is estimated to be approximately 1m above the base of the lake, indicating a correlation with groundwater discharge. The elevation at Greenloaning Biostudies observation point CM 9 was recorded as approximately 30m.

The whiter areas of the playa (dried area of the salina) are clear in **Photograph 2** and most likely represent the 'ephemeral crust' of halite (salts), with a further, unvegetated, fringe of gypsite and other minerals as described by Ferguson *et al* (1997). The halite area and the unvegetated fringe occur within approximately 24-26m elevation.

It is estimated that the majority of the Samphire vegetation is present at elevations above 26m. That is, between 26m and 30m at this point (CM 9). There is, essentially, no vegetation at less than 26m elevation, or within 1m of the groundwater table.

Barret-Lennard *et al* (2013) found that depth to the saline watertable for good growth and survival was 0.7–1 m and salinity of 2,700–6,500 mS/m. The difference between the vegetated areas and groundwater levels is approximately 1m, which correlates with the maximum rooting depth for survival of Samphire.

Botanica Consulting (2018) observed that some *Halosarcia* sp. roots growing in extreme salinity conditions were restricted to the upper sandy loam soil layer. At about 20 centimetres into the soil, vertical root penetration was retarded and lateral roots started to spread.

The exclusion of PCT 64 from low-lying areas below 26m indicates that this community cannot utilise groundwater with salinity levels such as those present in the Disturbance Area.

It is therefore, even more unlikely that the other high probability GDEs identified by DPE would survive if forced to access groundwater with such extreme salinity levels.

8. Conclusions and Recommendations

The following conclusions and recommendations have been reached through preliminary investigations by Greenloaning Biostudies:

- Vegetation mapping will need to be at a finer scale to satisfy the current BAM (DPE, 2020) requirements. There are large areas of vegetation forming a mosaic of PCTs. More detailed survey work would be required to determine the presence of any GDEs.
- The most salt tolerant species *Halosarcia pergranulata* subsp*. pergranulata,* which is an indicator species for PCT 64, is not likely to be able to utilise groundwater with such extreme salinity levels of 61 g/l (10,167 mS/m).
- Groundwater within the Disturbance Area is likely to be too saline to support other, less salinity tolerant plant community types as GDEs.

- The model for High Probability GDEs, as mapped by DPE, does not consider the salt tolerance of plants, within PCTs.
- This preliminary work establishes that the High Probability GDE mapping by DPE, is inadequate as a basis for determining the definite existence of GDEs in the Disturbance Area.
- Further field-based research, to establish such factors as soil profile salinity, rooting depth, location of extremely salt tolerant plants, elevation and depth to groundwater would be required to confirm that PCTs within the Disturbance Area, are groundwater dependent.

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A-11 Survey of Austrostipa nullanulla (Club Spear-grass) Dr John Hunter Expert Report

Survey of *Austrostipa nullanulla* (Club Spear-grass)

Document Prepared by
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For Biodiversity Australia
2025

Austrostipa nullanulla

Nulla Station 2025

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1. INTRODUCTION

Biodiversity Australia requested John Hunter to survey for the threatened species *Austrostipa nullanulla* within pre-arranged accessible properties and report on:

a. Collated existing information of the species including the expertise gained by Phil Grant based on his observations and experiences,
b. The distribution of the species,
c. The habitat of the species,
d. The estimated population and area of occupancy,
e. Other relevant information that may assist the conservation of the species.

Background

Stipa nullanulla was first described (Everett & Jacobs 1983) as being similar to but differing from *Stipa eremophila* by its glabrous and shorter lemma and long ciliate ligules and from *S. vickeryana* by the courser folded leaves with a more constricted inflorescence and longer lemma and awn. The species was described as being restricted to gypsum rises and to the shelter of shrubs but otherwise grazed out by rabbits and sheep. At the time of description, the species was thought to be limited to the bounds of Nulla Nulla Station with the earliest collection cited occurring in 1975. The habitat of the type specimen being Saltbush, Mallee, and *Myoporum* sp. In 1996 the species was transferred to the new genus *Austrostipa* (Jacobs & Everett 1996) and placed within the subgenus *Lanterna* (Jacobs & Everett 1996) with *Austrostipa nullanulla* being the type with *A. lanata* and *A. vickeryana* also being included. The subgenus being distinguished by a shiny, glabrous (or almost so) lemma. The subgeneric name Lanterna referring to the bright and shiny lemma.

Austrostipa nullanulla is known to occur within South Australia (SA), Victoria, and with its largest known populations within New South Wales (NSW). Pressey et al. (1990) in an assessment of threat status, considered the species restricted with a small range and few records interstate but not currently threatened (Category 3A). It has been listed as Vulnerable under the South Australian *National Parks and Wildlife Act 1972* and as Endangered originally under the NSW *Threatened Species Conservation Act 1995,* but now as Endangered under the NSW *Biodiversity Conservation Act 2016.*

The species is currently reserved within the Murray-Sunset National Park, Towan Plains National Park, and Lake Gillies Conservation Reserve. As with congeners, dispersal is believed to be via seed, by wind and rain, and may have a viability of three to five years (DECC NSW 2005).

Threats have been listed as grazing and browsing by rabbits, domestic stock, kangaroos, and warren building by rabbits (DECC NSW 2005). Also listed as threats are mining of gypsum deposits, the naturally restricted soil type, increases in watering points and increasing grazing pressure, along with agricultural cultivation (DECC NSW 2005), and off-road vehicles (Pobke 2007).

An amendment to the inclusion of the species within the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) on the 10 August 2010 suggested that there was no data to assess any reduction in population size. Additionally, there was insufficient information on the extent of occurrence and therefore not enough information to assess the threat of extinction. Within the Eyre peninsula in SA there is an estimated 10,000 individuals (Pobke 2007), and 200,000 within Nullla Nulla Station in NSW (with 110,000 tussocks within a total grazing exclosure established in 2001), and 2000 individuals in Victoria (DECC NSW 2002; 2005). Based on this information the Threatened Species Scientific Committee recommended removal of Vulnerable status from the *EPBC* Act (Beeton 2010). Bionet NSW (OEH *Austrostipa nullanulla* species profile https://threatenedspecies.bionet.nsw.gov.au/profile?id=10081) currently list the species as being from four sites within Nulla Nulla Station, (two from the same lunette ca. 60,000

tussocks), the type location to the south with 10 plants and another lunette south-west with a further 60,000 (ca. 120,000 in total), though the current estimate for Nulla Nulla Station is listed as 200,000 individuals. The management actions listed for the species in NSW include (**priority)**:

- The use of management agreements and incentives on private and leasehold land to manage total grazing pressure through such actions as fencing of populations, removal of artificial water points, and feral and native herbivore control. **Medium.**
- Establish and maintain herbivore proof fencing at sites with significant populations (may have added benefit by preventing accidental damage through other means such as road-maintenance). **High.**
- Using current records and literature on habitat requirements to determine the current distribution and identify areas of potential habitat to undertake survey and management actions. **Medium.**
- Undertake an annual monitoring program at both fenced and unfenced locations to determine the condition of plants and fencing and the effects of management actions. **High.**
- Undertake studies on the biology, habitat requirements, and potential threats on the species, and incorporate results into future management actions. **Medium.**

Currently the Atlas of Living Australia (ALA, accessed 11/12/2025) contains 160 records of *Austrostipa nullanulla,* some of which appear to be duplicate records, and many have the location withheld due to the threatened species status. The locations within ALA, including verified herbarium samples, indicate that the species is known within NSW beyond Nulla Nulla Station. Very little information is contained within these records, with most describing plant height, and few indicating population numbers, general habitat, or associated species. Notes given in ALA state:

Population size:

- 150 in stand scattered plants. Total about 200.
- About 150 plants.
- Stand c. 200 m long, several 1000 plants.
- Very localised. 100 plants in 10 x 10 m.
- About 200 plants.
- Some older tussocks found, mostly dead, but occasionally with shoots. Nearly all plants recently germinated ca. 15-25 tussocks per m2. About 300 plants present.
- 400+ plants growing as the dominant understorey.
- Area 250 m long, 10-20 m wide, more than 1000 plants.
- Relatively large stand.
- Occasional plants scattered through area.
- Uncommon.

Habitat:

- Disturbed gypsum mounds. Regrowth on coarse gypsum.
- Sporadic on gypsum.
- W facing Copi dune with barely any other vegetation. Mallee above and *Dodonaea* shrubland below.
- Copi lunette, soil pure Copi (flour gypsum). *Haloscarcia pergranulata, Bromus ruben,* & *Dissocarpus paradoxa* around edge.
- N facing Copi dune.
- Reddish grown sand on Copi rise with gypsum. Mallee scrub. *Eucalyptus socialis, E. leptophylla, Zygophyllum aurantiacum, Brachyscome ciliaris, Maireana erioclada, Nitraria billardierei, Brachyscome lineariloba, Lawrencia glomerata.*
- NE facing Copi dune

- W Facing Copi dune. Monospecific stand.
- Cypseous dune, consolidate dune.
- N facing Copi dune
- N facing Copi dune with *Zygophyllum* and *Halosarcia.*
- *Zygophyllum* sp. *Heterodendron* sp. *Casuarina pauper, Maireana sedifolia.*
- On calcareous gypsum white soil between red sand dunes. *Calytrix gypsopila, Atriplex* sp. *Maireana* sp.
- On crest of large lunette of flour gypsum (Copi) with *Zygophyllum aurantiacum* & *Frankenia foliosa*.
- *Atriplex versicaria – Lycium australe – Zygophyllum eremaeum* shrubland with *Maireana pyramidata*. Brown clay sand with gypsum overlay on crest above salt claypah.
- Edge of small salt lake, pale sand.
- Lunette of salt lake, whitish saline deposits on soil.
- Sand ridge around salt pan, *Zygophyllum, Maireana, Scaevola.*
- Adjacent to salt lake, Copi dunes
- On western side of large lunette of flour gypsum (Copi). With *Atriplex vesicaria* & *Zygophyllum aurantiacum*.
- Near Salt lake with *Sclerostegia arbuscula, Darwinia salina, Angianthus glabratus* and *Acacia papyrocarpa*.
- On large lunette of flour gypsum (Copi).
- Saltbush, Mallee, *Myoporum* sp.
- Kopis. Scattered Belah, dense Black Bluebush, poor herbage and pasture. Only grass sp. Growing on Copis. Soil highly gypseous, shallow topsoil.
- Lunette of salt lake, pale sand.
- *Atriplex vesicaria – Zygophyllum auranticum* scrubland with *Maireana pentatropis, Ausrostipa nullanulla* & herbs. White gypsum on crest of lunette.
- Disturbed gypsum mounds. Regrowth on pure coarse gypsum.
- W side of lunette of flour gypsum (Copi) with *Angianthus tomentosus, Eucalyptus gracilis*.
- Kopi country.
- Copi lunette, soil pure copi with *Nicotiana glauca, Halosarcia pergranulata, Eucalyptus Dumosa,* and *Sonchus* sp.
- Open chenopod Mallee, Yamba formation gypsum.
- Copi lunette, soil pure Copi (flour gypsum). *Halosarcia pergranulata, Bromus rubens* & *Dissocarpus paradoxa*.
- Gypseous plain, shrubland dominated by *Tecticornia* spp.
- On gypseous rise (Copi) *Atriplex vesicaria, Halosarcia ptergosperma, Brachyscome cilaris* & *Maireana erioclada*.
- Grows on pure Copi dune
- Western aspect of gypseous/copi rise. Powder gypsum with an obvious thick cryptogamic crist.
- Gypseous plain, dominated by samphire shrubland.
- W side of lunette of flour gypsum (Copi) with *Angianthus tomentosa, Eucalyptus gracilis.*
- Open *Eucalyptus socialis – E. leptophylla* Mallee woodland with *Rhagodia crassifolia, Roepera aruantiaca, Maireana erioclada.* Yamba formation powder gypsum.
- Open grassland. A west facing gypseous rise. Yamba formation powder gypsum.
- Gypseous lunette with *Eucalyptus oleosa*. Gypseous light clay Copi rise with hard setting surface and westerly aspect.
- Gypseous ridge above *Halosarcia* flats.

While notes on populations are sparse, there is indication that in any one location numbers are often in the hundreds and at times described in the 1000s. In terms of habitat all

descriptions are unified in describing gypsum as the substrate, though sometimes as loose and powdery (Copi) or with a hard crust (biocrust). Notes largely describe dunes/lunettes and less commonly as plains of gypsum. The species has been described as monodominant; however it also commonly occurs with various Mallee communities, Saltbush and more rarely Belah.

Austrostipa nullanulla is currently listed as a site-managed species under the NSW Saving Our Species project. Funds within 2014-2015 were spent on installation of cages at other known locations away from Nulla Nulla Station to allow the species to seed, and to help in positive identification (Saving Our Species Annual Report Card 2014). Funds within the 2015-2016 year included population monitoring within the exclosures on Nulla Nulla Station. The population was deemed to be stable within 2.77 ha of exclosures, with an estimated 20-30,000 individuals (Saving Our Species Annual Report Card 2015).

In addition to the published notes, a number of unpublished experiments have been undertaken by Phil Grant in the Wentworth-Mildura area. All plant material was collected in accordance with Victorian and NSW non-commercial cultivation guidelines. These experiments largely comprised the placing of collected seed within different substrate types to assess the species ability to grow on varying qualities of gypsum, and on other non-gypseous soil types (Figure 1). This included growing seed within potting mix and sand. The results indicated that the species could grow and set seed in non-gypsum soils, although these observations have not been documented in natural populations to date.

Gypsum endemics

The mineral gypsum is rarely seen on the surface anywhere except in deserts, however it has been found across 112 countries (Cera et al. 2023). Gypsum occurs where a CaSO4 molecule is chemically combined with two water molecules to form a crystal. It is a highly soluble mineral so will only accumulate or become exposed in dry environments. These soils are high in sulphur and calcium which reduces the availability of some macronutrients, and due to limited clay and organic matter many other plant nutrients are also of low availability particularly nitrogen and phosphorous (Cera et al. 2021; 2023). Both soil and nutrient availability are strongly seasonal especially in Mediterranean climates (Cera et al. 2021). These strong physical and chemical characteristics make gypsum soils highly stressful environments and have led to the evolution of many specialist endemics species (Sluiter 2010; Cera et al. 2023; Modeoz Fernandez et al. 2023). These endemic species known as gypsophytes (Duvigneaud & Denaeger-De Smet 1968) have evolved independently across five continents (Cera et al. 2023).

Plants that grow on gypsum soils have been categorised into two groups; those that are habitat specific (gypsophytes) and those that are not specialists but grow on gypsum due to broad tolerances and/or avoiding competition (gypsovags) (Duvigneaud & Denaeger-De Smet 1968; Luzuriaga et al. 2020). Studies have shown that there are a number of strategies that gypsophytes use to enable them to survive on this harsh substrate. Gypsophyiles have shown convergence in accumulating a high sulphur, calcium content within leaves and high magnesium across the whole plant (stems and course roots) but less phosphorous and nitrogen compared to gypsovags (Palacio et al 2007; Muller et al. 2024). Cera et al. (2023) found that gypsophytes used sulphates to manage calcium accumulation and safeguard phosphorous depletion. The accumulation of sulphur, gypsum, and oxalate crystals within the plants has been suggested to reduce comparative palatability (Palacio et all 2014; Cera et al. 2022).

Water crystallization within gypsum is known to account for up to 20.8% of gypsum by weight and is the key water holding mineral on Mars (Palacio et al. 2014). Accessing this crystallized water helps gypsophytes remain active during intense droughts and has been shown to account for 70-90% of water used by shallow rooted species (Palacio et al. 2014; de la Puente et al. 2022) and are less responsive to greater water availability (Luzuriaga et al. 2020).

Satellite imagery has shown vegetation on gypsum soils in arid areas are more productive and less seasonal than vegetation on adjacent soils (Cadenas 2015).

Cera et al. (2021) found that all gypsophytes studied were able to complete their lifecycles in non-gypsum soils and were able to produce viable seeds and attain greater biomass and higher photosynthetic assimilation rates. Both in and out of gypsum soils gypsophytes had higher unique chemical signatures, more sulphur, magnesium, and lower leaf potassium than gypsovags (Cera et al. 2021). From a demographic and distributional perspective gypsophytes commonly have short distance dispersal mechanisms and a clustered spatial pattern (Escudero et al. 2015; Parelta et al. 2023).

An additional aspect of gypsum soils worldwide is the propensity to form diverse soil crusts of cyanobacteria, lichens and mosses (Escudero et al. 2015). These crusts play important roles in assisting gypsum occurring higher plants by being drivers of carbon and nitrogen cycling, assist in water infiltration and soil stability (Escudero et al. 2015).

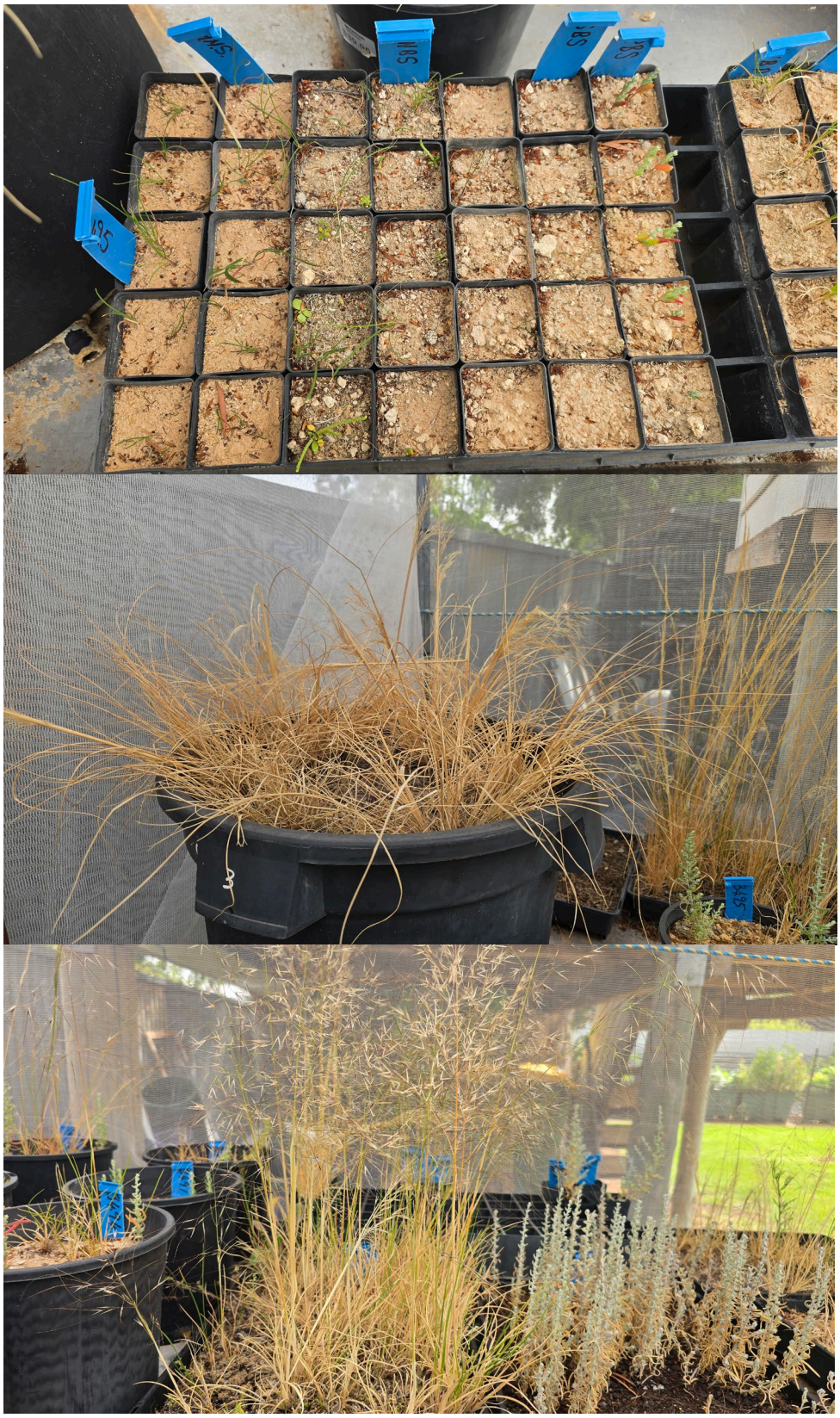


Fig. 1. Experiments growing *Austrostipa nullanulla* within different soil types. *Austrostipa nullanulla* was found to grow and set seed in a variety of soil types.

2 METHODS

A survey of known and potential sites containing *Austrostipa nullanulla* was conducted over five days from 14 to 18 November 2025. On each day a different property was assessed, spanning the likely distribution of the species based on known records and visual assessment of habitat from remote imagery. The first two days were spent at locations within Warwick Station and Nulla Nulla Station (including the exclusion plot) where the species had been positively identified These initial surveys were focussed on becoming familiar with the clear identification features of fruiting, non-reproductive and seedling features of the grass (Figure 3).

At each location, a selection of areas appearing to be dominated by gypsum were visited. Randomly placed 5 x 5 m plots were established to assess the number of individuals present. Plots were also randomly placed in areas where it appeared no *Austrostipa nullanulla* were growing at the site. All plots were marked out by the placement of a 20 m length of cordage around four corner pegs, ensuring a consistent 25m^2 was surveyed. All plots were surveyed by the same two staff (JTH & PG) with one staff searching for 'mature' individuals and the other staff searching for newly sprouted seedlings. Random plot placement was intended to avoid bias when assessing population size.

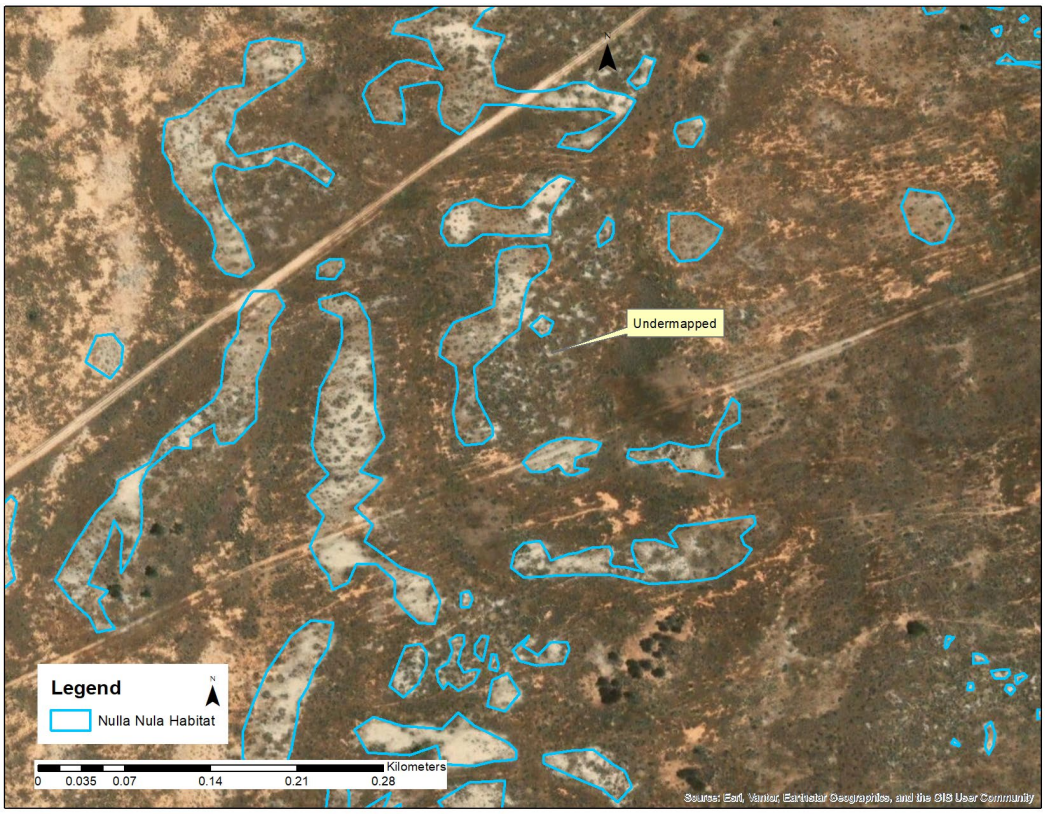
The population estimate for *A.nullanulla* (restricted to the far south-west corner of NSW) was calculated via an extrapolation process. Plot locations were randomly positioned, thus encompassing areas where the species occurs in varied densities, and also where the species is absent. Tussock densities within plots ranged from one per 5 x 5 m plot to 400+ per plot. Samples contributing to the estimated NSW population size were collected from all known mapped locations, across the known distribution of the species. The calculated species count and area covered by all 5 x 5 m plots was then extrapolated onto the mapped species polygon area which covers 675 ha of suitable habitat for the species.

Landscape and site-scale population estimates were calculated by considering a range of factors including historic records and notes, on-ground observations at all 5 survey locations, geomorphology, local knowledge, satellite and aerial imagery and data from recent surveys at Warwick Station for the Copi Mineral Sands Project. At sites where *A.nullanulla* forms extensive stands (e.g., Nulla Nulla exclosures) plots were established across population gradients to refine density estimates and spatial patterns. Stand boundaries and patch extents were mapped using high-accuracy GPS and high-resolution imagery. This data underpins population size estimates for each of the sites and the extrapolation across suitable habitat, contributing to regional and range-wide species abundance estimates.

Mapping of habitat was conducted by visual interpretation of exposed gypsum deposits with reference to locations visited on foot and sampled via plots using ESRI World Imagery (WGS84 - Vantor, Earthstar Geographics, and the GIS User Community) within ArcGIS pro. Caveats to mapping include both over and under-mapping polygons depending on the nature of the gypsum deposits and the level of surface exposure (Figure 4).

Fig. 2. Example of 5 x 5m plot used to assess population size.

Fig. 3. A number of features enable the species to be recognised in the field when fruiting and when non-reproductive, including via strongly incurved and distinctly veined leaves as juveniles, and via ligule hairiness.



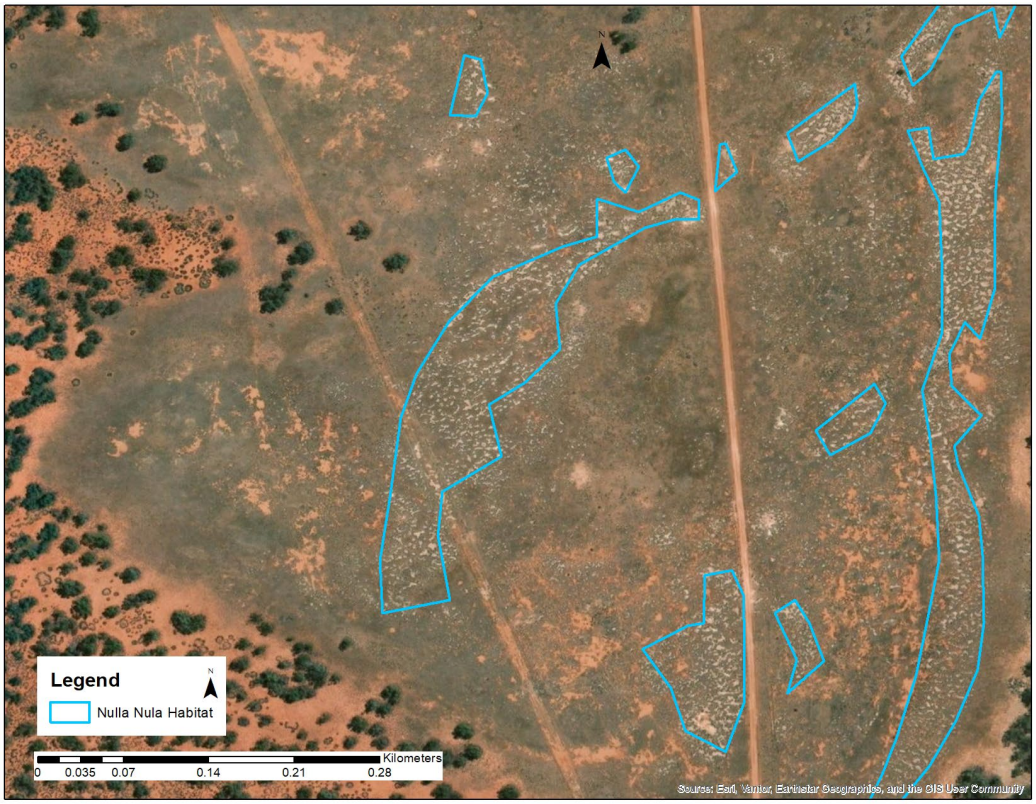


Fig 4. Above - Area where small patches were undermapped. Below - Example of both over mapping and undermapping. In this example gypsum deposits were exposed within a lakebed in a gilgai (golf ball surface) type formation. The individual 'outcroppings' were too small and too numerous to be mapped individually, and therefore a broader mapping approach over the collective 'outcroppings' was adopted; this resulted in the less dense or less obvious areas not being mapped. This was an uncommon feature.

3 RESULTS

A total of 108 plots were placed across five properties (Naya Station, Nulla Nulla Station, Warwick Station, Bells Grove, and Oakbank) with 11,646 individual tussocks counted (Figures 5-9). The highest number of individuals within a 5 x 5 m plot was 490 tussocks and 17 plots were found to have no tussocks. The mapping area amounted to 675 ha with an area of occupancy within NSW and an extent of occurrence of about 120 km north south and 50 km east west (approximate extent of occurrence polygon of 2,863 km^2). Based on the plot counts and mapping, it is estimated that the population within NSW could be in the order of 30 million individuals.

Habitat

Austrostipa nullanulla was mostly found on exposed gypsaceous soils most commonly associated with dunes/lunettes of lake beds. However, gilgai-like exposed gypsum within lake beds were also found to have this species present (Figure 10 & 11). In a broader context, the habitat was found associated with a number of vegetation types including Mallee (*Eucalyptus* dominated), Saltbush (*Maireana* and *Tecticornia*), Belah (*Casuarina pauper*), Rosewood (*Alectryon oleifolius*) and low open shrublands (*Roepera* and *Frankenia*) (Figure 10). However, more generally these broader vegetation types occur most commonly only as adjacent communities, with *Austrostipa nullanulla* occurring separately as monospecific stands of low sparse grassland (Figure 10). These areas generally had a hard surface with a diverse cryptogamic crust layer (Figure 12). Although described from copi – flour gypsum, *Austrostipa nullanulla* was rarely found on the powdery/flour gypsum which sometimes occurred at the base of lunettes. The in-tact copi is considered to provide suitable habitat for the species, however the loose powdery (like talcum powder) form of copi appears to provide poor unsuitable habitat, and more data is required to confirm or disprove this hypothesis.

Grazing

The only location during the entire survey that had substantial patches of mature and fruiting material was within the exclosure at Nulla Nulla Station (Figure 13). In all other visited locations, *Austrostipa nullanulla* was grazed very heavily with only a few individuals either escaping grazing allowing them to grow to full or near full height or were found to be reproductive even when a few centimetres tall (Figure 14).

Additional Threats

Austrostipa nullanulla in most instances was restricted to pure gypsum surfaces and any addition of other soil types over this surface restricted its occurrence. This was not universal and, in some instances, even a depth of silt and sand likely greater than the rooting depth still had tussocks of the species (Figure 15). Based on these observations it is likely that increased deposition of silts and sands over exposed gypsum will reduce the potential suitable habitat for this species.

Due to the harsh conditions of growing on pure gypsum soils, it is likely that weed invasion is generally not a major threat across most of the species' distribution. However, in a few locations *Asphodelus fistulosus* (Onionweed) and *Nicotiana glauca* (Tree Tobacco) were found to be competing well on gypsum and likely reducing tussock occurrence and population sizes (Figure 16).

Rabbits are already listed as a threatening process as they prefer the soft gypsum soils for their burrows. However, more extensive damage was seen to be caused by mechanical ripping of dens. Much larger areas than affected by dens was damaged by this eradication method (Figure 17).

The breaking of gypsum hard surfaces and destroying of cryptogamic crusts by trampling and vehicle traffic can reduce population numbers where this is extensive (Figure 18).

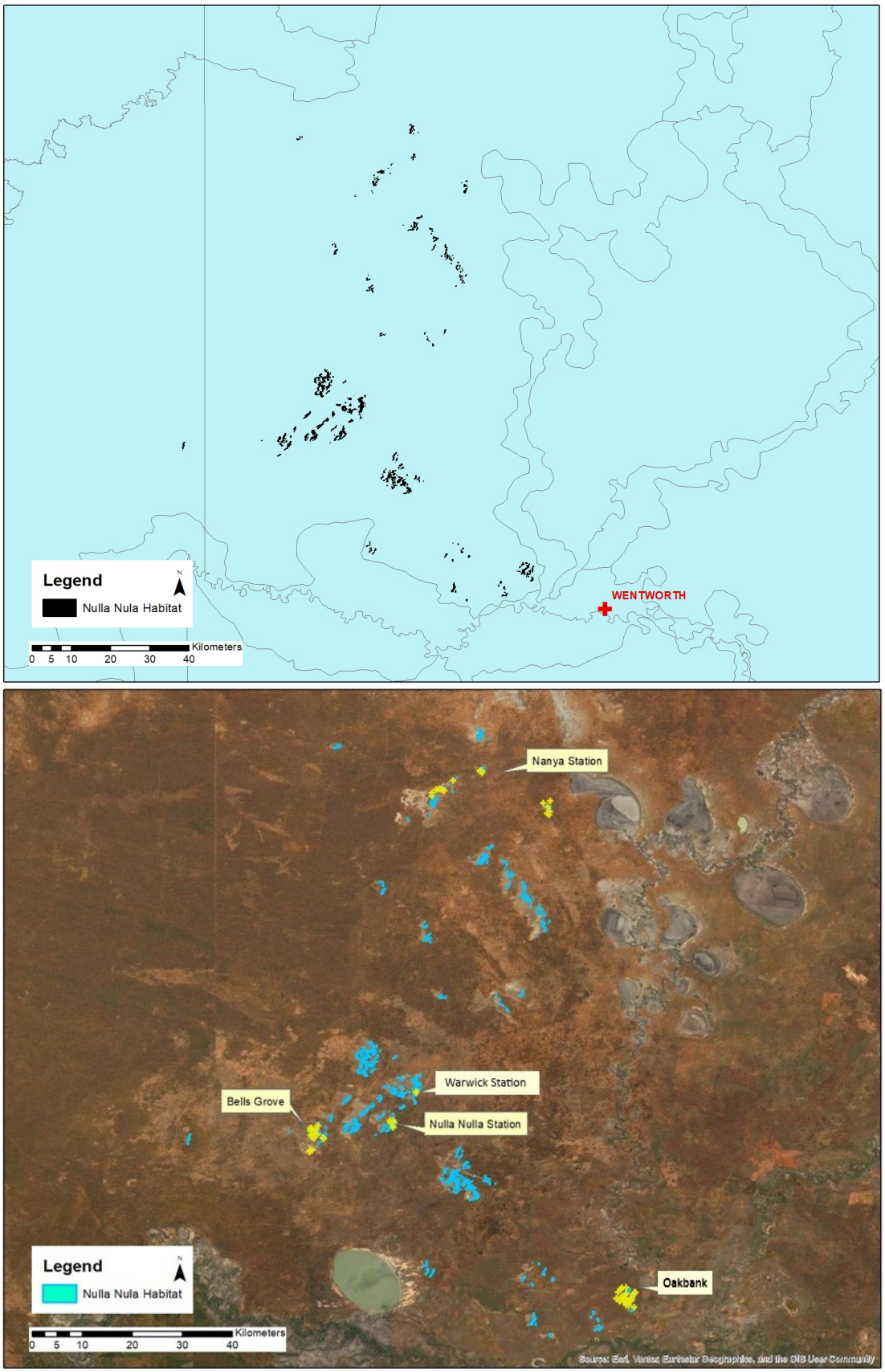


Fig. 5. Above - Total mapping of potential *Austrostipa nullanulla* habitat which is restricted within the Murray Darling Depression (South Olary Plain) Bioregion. Below - Plot locations (yellow) and properties visited.

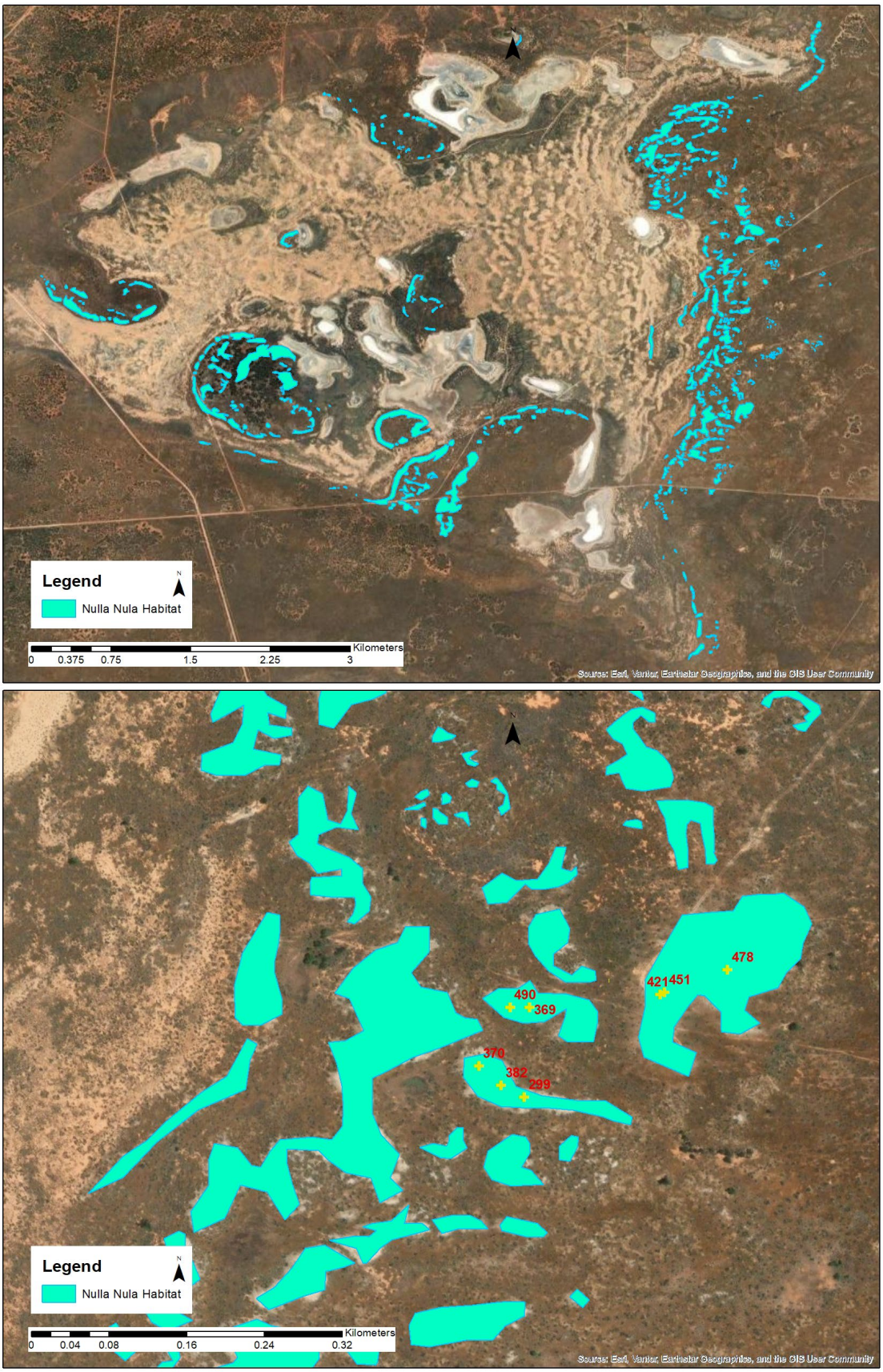


Fig. 6. Above - Mapping of *Austrostipa nullanulla* habitat within Warwick Station. Below - Plot placement and the number of individuals found within 5 x 5 m plots.

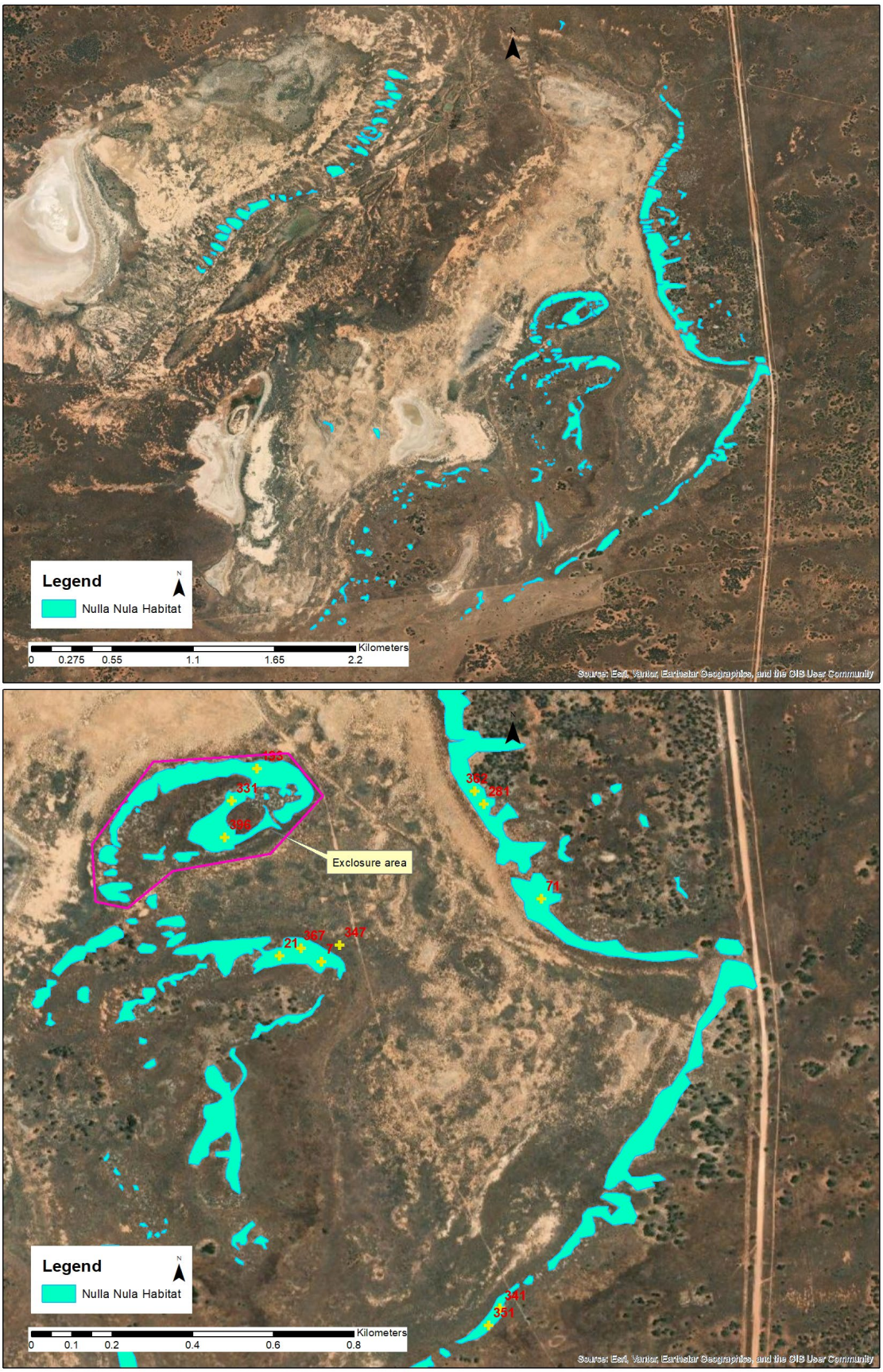


Fig. 7. Above - Mapping of *Austrostipa nullanulla* habitat within Nulla Nulla Station. Below - Plot placement and the number of individuals found within 5 x 5 m plots and the approximate area of the grazing exclosure site.

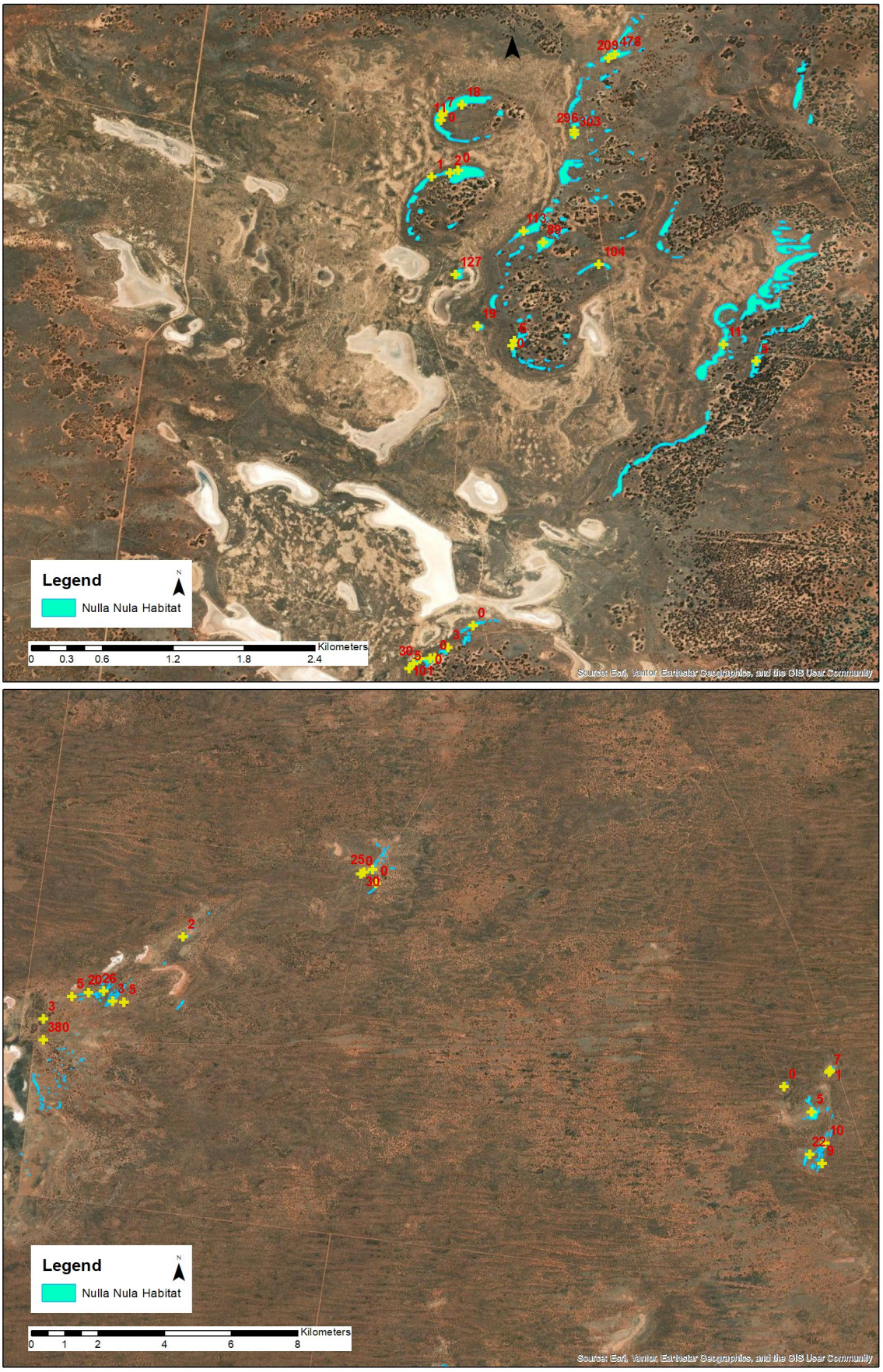


Fig. 8. Above - Mapping of *Austrostipa nullanulla* habitat within the Bells Grove area with plot placement and the number of individuals found within 5 x 5 m plots. Below - Nanya Station mapping and plots.

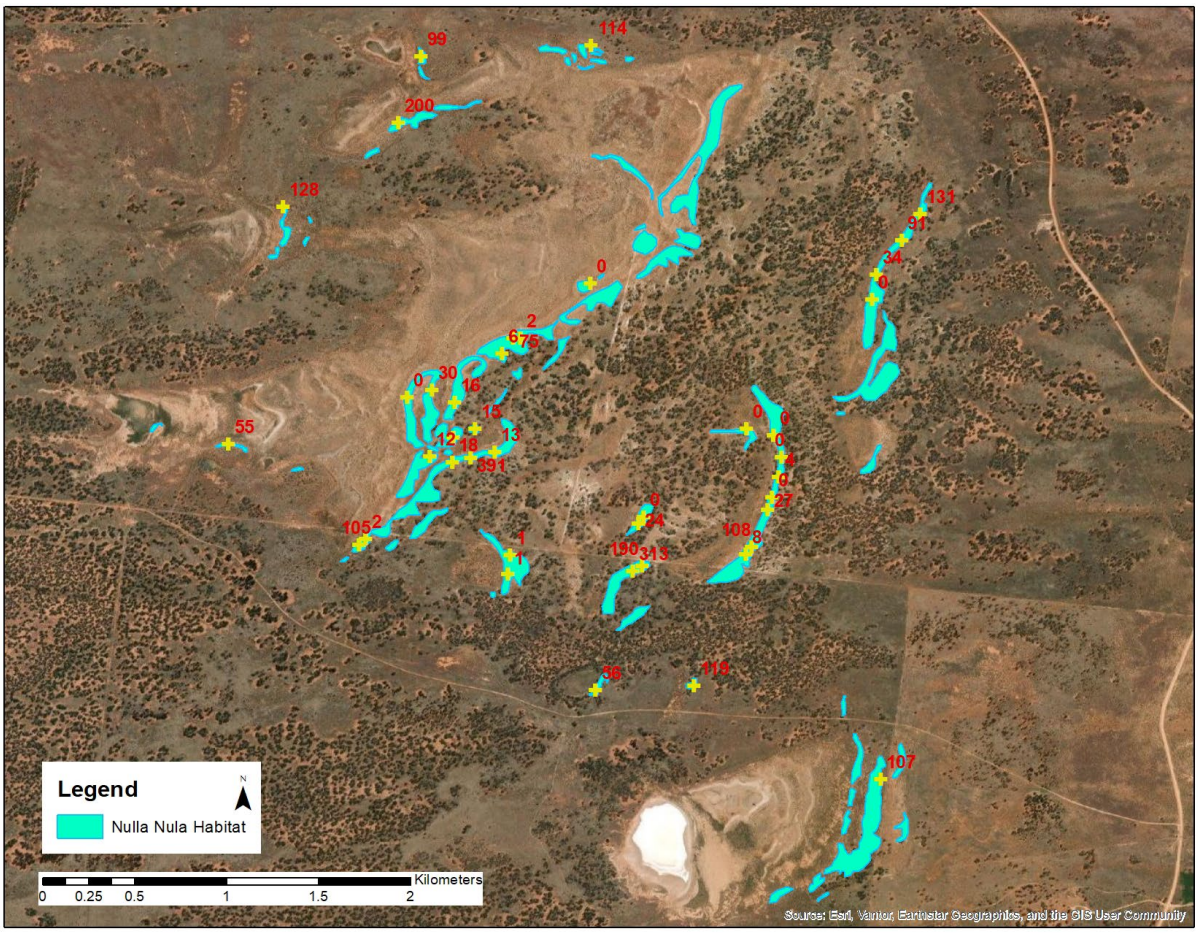


Fig. 9. Above - Mapping of *Austrostipa nullanulla* habitat within Oakbank and plot placement with the number of individuals found within 5 x 5 m plots.

Fig. 10. Although *Austrostipa nullanulla* is described as occurring in variations of shrubland and Mallee plant community types, the species generally forms patches of monodominant stands on hard crust gypsum deposits adjacent to these communities at a more proximal scale. In many areas these can be mapped out as distinct grassland patches.

Fig. 11. Gilgai-like exposed occurrences of gypsum in some lake beds also were found to contain *Austrostipa nullanulla* occurrences.

Fig. 12. Hard surface of gypsum deposits with diverse cryptogamic crusts typical of areas containing *Austrostipa nullanulla*.

Fig. 13. Photographs taken within grazing exclusion area located at Nulla Nulla Station. Note in the middle photo the vehicle trails which broke the hard crust surface has been colonised with denser patches of *Austrostipa nullanulla*. This was the only location found where the majority of individuals had or were setting seed.

Fig. 14. Typical photos of grazed *Austrostipa nullanulla* (above 2 taken from unfenced dune opposite the exclosure site at Nulla Nulla Station). Bottom three photos showing vehicle trail with denser patch of grass tussocks and even heavily grazed tussocks can produce seed.

Fig. 15. Above & middle - Uncommon examples of *Austrostipa nullanulla* growing on silt and sand overlaying gypsum with a greater depth than the roots may reach. Below - exposed Mallee root indicating that the gypsum at this location may have been exposed by erosion exposing new exposed gypsum surfaces for *Austrostipa nullanulla* colonisation.

Fig. 16. Weed taxa observed invading *Austrostipa nullanulla* habitat include *Asphodelus fistulosus* (Onionweed above) and *Nicotiana glauca* (Tree Tabacco below).

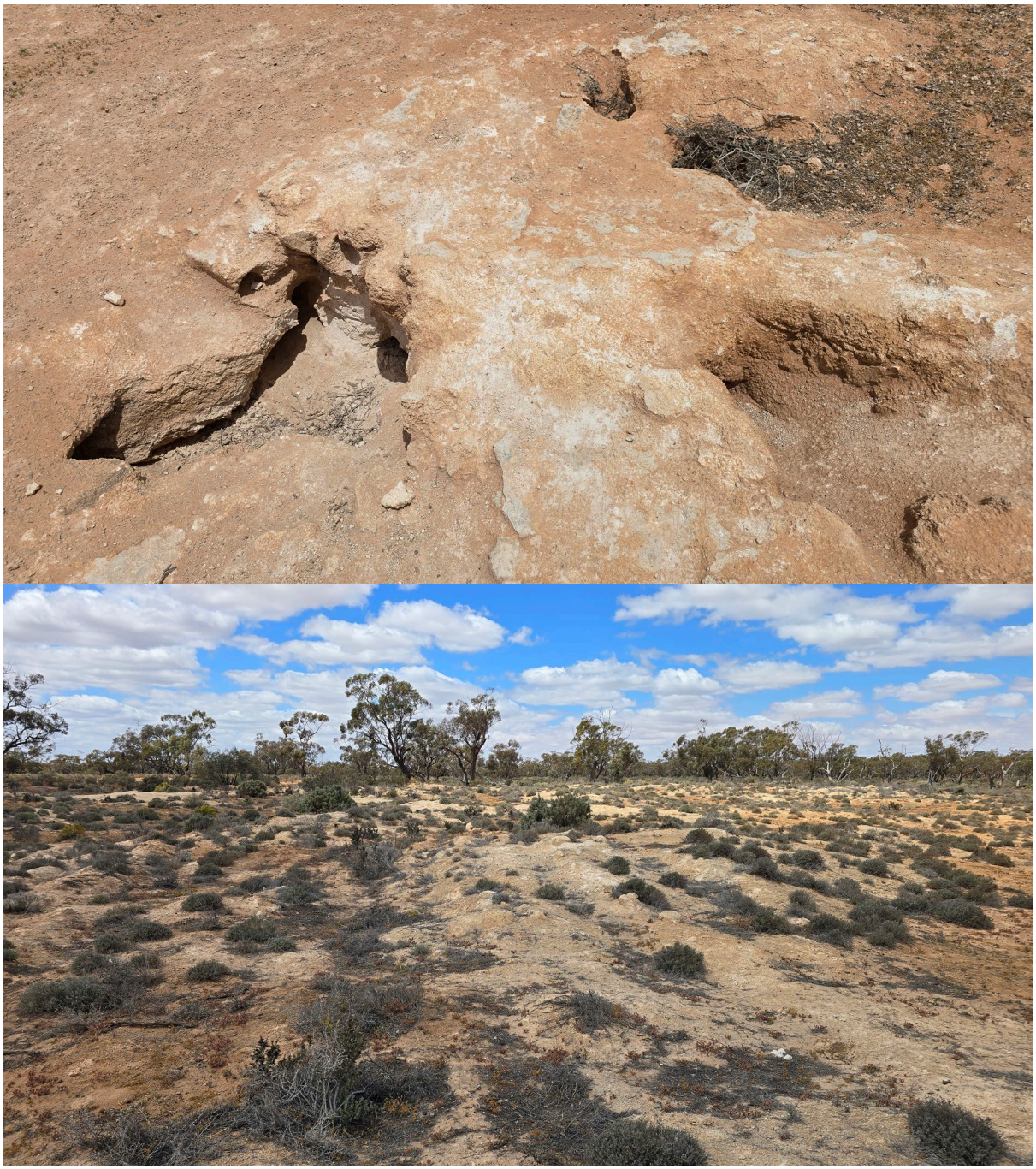


Fig. 17. Rabbit dens are common on gypsum soils, and these pose a threat to *A.nullanulla* habitat, however, ripping of burrows was found to cause more widespread damage.

Fig. 18. Trampling by stock (above and middle) can cause a reduction in population numbers by the physical removal of plants, destruction of the soil integrity (from firm to powdery) and removal of soil cryptogamic crusts that may play a role in nutrient cycling. Similar issues are caused by vehicle tracks (below).

4 DISCUSSION

The results presented here indicate that *Austrostipa nullanulla* is highly likely to be a gypsophyte (gypsum specialist). Thus, it is likely that the species has a number of life history and physiological characteristics that enable it to survive within these stressful habitats. Further work should investigate if the species shows similar characteristics as found in other gypsophytes, including accumulation of sulphur, calcium, magnesium, and oxalate crystals and if this may affect palatability to grazers. During the survey, *Austrostipa nullanulla* individuals commonly exhibited green shoots where other Austrostipa species did not, indicating that it may, like other gypsophytes, access crystallised water, enabling it to persist through dry periods. As with other gypsophytes, experiments conducted by Phil Grant showed that *Austrostipa nullanulla* was able to grow on a variety of soil types (Cera et al. 2021) other than gypsum. This may indicate that there is not a fundamental edaphic reason the species is restricted to exposed gypsum, and lack of competition on these specialist soils may be a major reason for why this species is highly restricted.

While a number of vegetation community types have been described that include *Austrostipa nullanulla,* it was our observation that in most instances this species grows as monospecific stands adjacent to, or as patches within these types, rather than an integrated part/subcomponent. As with other examples globally, these gypsum lunettes/dunes and outcroppings were associated with a significant and diverse cryptogamic crust that may be a key component in helping *Austrostipa nullanulla* persist on these soils (Escudero et al. 2015).

Current population estimates indicate that around 200,000 tussocks are known. However, this estimate is largely based on the population at Nulla Nulla Station of which 110,000 is thought to be within the exclusion plots alone. However, more recently collections of the species has occurred beyond Nulla Nulla Station within NSW. Based on our survey and plot counts it is likely that the species population size in NSW alone (not including SA or Victoria populations) is an order of magnitude larger and may be up to approximately 30 million individuals, spanning an EOO area 6,000 km2 in size (120 km north-south and 50 km east-west), with an AOO (potential habitat) estimated as 6.75 km2 (675 ha) located within the NSW EOO. This is likely to affect the current conservation status as Endangered within the *Biodiversity Conservation Act* 2016.

Listed threats to the species include rabbit warrens, mining, agricultural cultivation, natural restriction to a specific habitat, increased watering points, and grazing (native and non-native animals). As the species was still found to exist in heavily grazed areas, grazing alone is unlikely to directly cause widespread extinction. However, grazing would substantially reduce the amount of seed being produced, particularly in poor/dry seasons. The combination of grazing and drought over a 3 year period would pose a threat to this species. Only in seasons where rainfall is well above average might there be enough biomass growth to allow for more substantial reproductive output. This could be an issue if the seed bank only lasts three to five years. A prolonged drought lasting at least three to five years in combination with heavy grazing pressure could cause a substantial reduction in the species' ability to persist. Other threats noted during the investigation include windblown soil deposition (overgrazed landscapes) covering exposed gypsum, weed invasion specifically by *Asphodelus fistulosus* and *Nicotiana glauca*, warren ripping, and physical trampling and vehicle tracks.

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6 APPENDIX

Plot	*Easting*	*Northing*	*Count*
1	533,650.00	6,276,706.00	421
2	533,654.00	6,276,708.00	451
3	533,708.00	6,276,731.00	478
4	533,538.00	6,276,693.00	369
5	533,521.00	6,276,693.00	490
6	533,494.00	6,276,633.00	370
7	533,513.00	6,276,613.00	382
8	533,533.00	6,276,601.00	299
9	529,228.00	6,271,068.00	193
10	529,176.00	6,270,989.00	331
11	529,161.00	6,270,898.00	396
12	529,678.00	6,271,011.00	362
13	529,697.00	6,270,979.00	281
14	529,815.00	6,270,744.00	71
15	529,360.00	6,270,590.00	7
16	529,318.00	6,270,624.00	367
17	529,398.00	6,270,632.00	347
18	529,274.00	6,270,605.00	21
19	529,726.00	6,269,734.00	341
20	529,703.00	6,269,691.00	351
21	515,730.00	6,264,871.00	5
22	515,761.00	6,264,913.00	30
23	515,807.00	6,264,951.00	101
24	515,878.00	6,264,957.00	0
25	515,913.00	6,264,964.00	0
26	516,002.00	6,265,046.00	3
27	516,183.00	6,265,234.00	0
28	517,142.00	6,270,015.00	209
29	517,188.00	6,270,049.00	478
30	515,979.00	6,269,564.00	0
31	515,972.00	6,269,536.00	7
32	515,960.00	6,269,492.00	11
33	516,108.00	6,269,622.00	18
34	516,899.00	6,269,405.00	296
35	516,904.00	6,269,375.00	303
36	516,081.00	6,269,070.00	0
37	516,023.00	6,269,050.00	2
38	515,897.00	6,269,019.00	1
39	516,542.00	6,268,557.00	113
40	516,677.00	6,268,461.00	89
41	516,060.00	6,268,190.00	127
42	516,215.00	6,267,755.00	19
43	516,461.00	6,267,595.00	0

Plot	*Easting*	*Northing*	*Count*
44	516,477.00	6,267,632.00	6
45	518,180.00	6,267,458.00	5
46	517,949.00	6,267,600.00	11
47	517,072.00	6,268,277.00	104
48	569,626.00	6,236,555.00	91
49	569,489.00	6,236,236.00	0
50	569,510.00	6,236,368.00	34
51	569,711.00	6,236,696.00	131
52	568,911.00	6,234,860.00	8
53	568,937.00	6,234,898.00	108
54	569,041.00	6,235,502.00	0
55	568,920.00	6,235,537.00	0
56	569,075.00	6,235,384.00	0
57	569,062.00	6,235,278.00	4
58	569,030.00	6,235,165.00	0
59	569,012.00	6,235,099.00	27
60	568,442.00	6,234,798.00	190
61	568,401.00	6,234,773.00	313
62	568,450.00	6,235,062.00	0
63	568,427.00	6,235,027.00	24
64	567,836.00	6,234,761.00	1
65	567,848.00	6,234,863.00	1
66	567,165.00	6,234,924.00	105
67	567,197.00	6,234,956.00	2
68	567,590.00	6,235,367.00	18
69	567,674.00	6,235,391.00	391
70	567,783.00	6,235,419.00	13
71	567,695.00	6,235,547.00	15
72	567,596.00	6,235,500.00	323
73	567,489.00	6,235,398.00	12
74	567,389.00	6,235,720.00	0
75	567,503.00	6,235,760.00	30
76	567,603.00	6,235,689.00	16
77	567,818.00	6,235,953.00	6
78	567,902.00	6,236,037.00	2
79	567,869.00	6,236,038.00	75
80	568,220.00	6,236,329.00	0
81	568,234.00	6,237,618.00	114
82	567,466.00	6,237,567.00	99
83	567,361.00	6,237,206.00	200
84	566,836.00	6,236,754.00	128
85	566,582.00	6,235,471.00	55
86	568,228.00	6,234,128.00	56
87	568,672.00	6,234,148.00	119
88	569,509.00	6,233,636.00	107
89	536,411.00	6,335,542.00	380
90	536,414.00	6,336,163.00	3

Plot	*Easting*	*Northing*	*Count*
91	537,140.00	6,336,842.00	5
92	537,555.00	6,336,947.00	20
93	537,931.00	6,336,990.00	26
94	538,170.00	6,336,691.00	3
95	538,454.00	6,336,653.00	5
96	539,940.00	6,338,607.00	2
97	544,422.00	6,340,471.00	0
98	544,508.00	6,340,515.00	25
99	544,727.00	6,340,598.00	30
100	544,799.00	6,340,181.00	0
101	555,052.00	6,334,057.00	0
102	555,660.00	633,364.00	9
103	555,736.00	6,333,300.00	5
104	555,690.00	6,332,031.00	22
105	555,994.00	6,331,744.00	9
106	556,072.00	6,332,356.00	10
107	556,214.00	6,334,535.00	1
108	556,181.00	6,334,479.00	7

ACKNOWLEDGEMENTS

Thanks to staff at RZ Resources and Biodiversity Australia for assistance with the project both in the office and the field.

A-12 Team CVs

Our people

Karl Robertson

Principal Consultant and Senior Business Manager

Professional profile

Karl has 12 years' experience in Ecological Consulting throughout NSW, QLD & NT. Through this time Karl has played a lead role in an extremely broad service offering in the fields of; ecological impact assessment; aviation wildlife hazard management, rehabilitation and ecological restoration; vertebrate pest management; human wildlife conflict resolution (specialising in Flying-foxes and Macropods); and vegetation management.

Throughout his career, Karl has worked on a large number of exceptionally complicated and challenging projects testing his skills technically, politically and legally with his unrelenting drive, work ethic, client focus and commitment to objectivity underpinning his success.

Karl continues to gain an holistic knowledge of Australian Ecology. In doing so, he has developed advanced survey and assessment skills. He is able to survey for and identify the full complement of Australian native and exotic fauna and flora with extensive experience in all state and federal survey guidelines for flora and fauna.

Karl has demonstrated his ability to undertake native and exotic flora survey on numerous occasions and can readily identify NSW Endangered Ecological Communities, QLD Regional Ecosystems and Federal - Threatened Ecological Communities. Karl has ample experience working in Australia's east coast environments from Sydney to Cairns as well as inland environments throughout the Brigalow Belt, Brigalow Belt South and Cobar Peneplain Bioregions.

Through his report preparation, Karl has developed a broad understanding of both State and Federal Legislation, having prepared hundreds of Ecological Assessments, Monitoring and Audit Reports, Seven Part Tests, MSES, EPBC Act MNES, BDAR's, as well as the preparation of Reviews of Environmental Factors, Vegetation Management Plans and countless Control Plans for Exotic Flora including the regionally adopted eradication plans for Class 1 noxious weeds in Northern NSW.

Given this experience, Karl frequently serves as an expert witness within the NSW Land and Environment Court and Federal Court.

Karl now leads the Biodiversity Australia's major projects in his role as Principal Consultant and Business Manager which encompasses a range of diverse projects. His ability to lead the Biodiversity Australia team stems from his core values of integrity, open-mindedness, resilience, comradery, and inclusiveness – particularly with Indigenous Australians.

Qualifications, certifications and memberships

- Bachelor of Environmental Science and Management (Southern Cross University), 2011.
- National Cleared Defence Pass including escort and after hours previlledges,
- ASIC Pass
- Chemical users certificate
- Construction Industry Induction OH&S (Whitecard).
- Boat Licence
- Firearms Licence

Career history

Biodiversity Australia – Principal Consultant and Senior Business Manager

August 2015 – Present

GreenCollar Services – Field Ecologist

November 2014 – August 2015

Cumberland Ecology – Ecologist

May 2014- March 2015

Greenloaning Biostudies – Ecologist

May 2014 – November 2014

Far North Coast Weeds – Noxious Weeds Officer

Jan 2012 – May 2014

Relevant project Experience

Expert Witness

Biodiversity Stewardship Assessment

Date	Project	Role / Key Tasks	Ecological Surveys	Threatened Flora	Vegetation Community Verification	TEC Verification	Approvals / Mgt Plans	Offsets	EPBC Act
Ecological Impact Assessment									
2024 Ongoing	Brokerage Mid-north Coast	*Principal Consultant and Project Manager* Application of the BAM 2020 in relation to the establishment of a Biodiversity Stewardship Assessment. 3,800ha	✓	✓	✓	✓	✓	✓	
2024 Ongoing	Brokerage Guyra BSSAR	*Principal Consultant and Project Manager* Application of the BAM 2020 in relation to the establishment of a Biodiversity Stewardship Assessment. 680ha.	✓	✓	✓	✓	✓	✓	
2024 - Ongoing	Brokerage – Kangaroo Creek Road, Glenreigh BSSAR	*Principal Consultant and Project Manager* Application of the BAM 2020 in relation to the establishment of a Biodiversity Stewardship Assessment. 6,200ha.	✓	✓	✓	✓	✓	✓	
2024 - Ongoing	Brokerage – Cogra Bay BSSAR	*Principal Consultant and Project Manager* Application of the BAM 2020 in relation to the establishment of a Biodiversity Stewardship Assessment. 26. Circa 172 ecosystem credits	✓	✓	✓	✓	✓	✓	
2024	NSW Biodiversity Credit Taskforce – Rasberry Road, Jeolga - BSSAR	*Principal Consultant and Project Manager* Application of the BAM 2020 in relation to the establishment of a Biodiversity Stewardship Assessment. 2,800ha.	✓	✓	✓	✓	✓	✓	

Date	Project	Role / Key Tasks	Ecological Surveys	Threatened Flora	Vegetation Community Verification	TEC Verification	Approvals / Mgt Plans	Offsets	EPBC Act
		Circa 15,000 ecosystem credits + 48,500 species credits.							
2024	NSW Biodiversity Credit Taskforce – Tambar Springs - BSSAR	*Principal Consultant and Project Manager* Application of the BAM 2020 in relation to the establishment of a Biodiversity Stewardship Assessment. 2,882 ha. Circa 19,500 ecosystem credits + 3,500 species credits.	✓	✓	✓	✓	✓	✓	
2024	NSW Biodiversity Credit Taskforce – Euroka Wearnes Road - BSSAR	*Principal Consultant and Project Manager* Application of the BAM 2020 in relation to the establishment of a Biodiversity Stewardship. Due diligence.	✓	✓	✓	✓	✓	✓	
2024	NSW Biodiversity Credit Taskforce – Tumut - BSSAR	*Principal Consultant and Project Manager* Application of the BAM 2020 in relation to the establishment of a Biodiversity Stewardship Assessment. 855 ha. Circa 2,000 ecosystem credits + 4,500 species credits.	✓	✓	✓	✓	✓	✓	
2023	NSW Biodiversity Credit Taskforce – Breeza - BSSAR	*Principal Consultant and Project Manager* Application of the BAM 2020 in relation to the establishment of a Biodiversity Stewardship Assessment. 1,771 ha. Circa 10,000 ecosystem credits + 18,000 species credits.	✓	✓	✓	✓	✓	✓	
2023	Clarence Property, Red Rock BSSAR	*Principal Consultant and Project Manager* Application of the BAM 2020 in relation to the establishment of a Biodiversity Stewardship Assessment.	✓	✓	✓	✓	✓	✓	

Ecological Impact Assessment

Date	Project	Role / Key Tasks	Ecological Surveys	Threatened Flora	Vegetation Community Verification	TEC Verification	Approvals / Mgt Plans	Offsets	EPBC Act
Ecological Impact Assessment									
2024	Kings and Campbell, Emerald Drive BDAR	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act (BAM 2020), EP&A Act, EPBC Act.	✓	✓	✓	✓	✓	✓	✓
2024	Barnsons, Fig Tree SW Rocks BDAR	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act (BAM 2020), EP&A Act, EPBC Act.	✓	✓	✓	✓	✓	✓	✓
2024	Keiley Hunter, SherwoodCreek Road BDAR.	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act (BAM 2020), EP&A Act, EPBC Act.	✓	✓	✓	✓	✓	✓	✓
2024	Habitat Planning, Thurgona Quarry BDAR	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act (BAM 2020), EP&A Act, EPBC Act.	✓	✓	✓	✓	✓	✓	✓
2024	Hammock Investments, Ewingsdale Road BDAR	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act (BAM 2020), EP&A Act, EPBC Act.	✓	✓	✓	✓	✓	✓	✓
2024	Interface Planning, Wisemans Ferr Road BDAR	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act (BAM 2020), EP&A Act, EPBC Act.	✓	✓	✓	✓	✓	✓	✓
2024	Barnsons, Mulli Mulli BDAR		✓	✓	✓	✓	✓	✓	✓

Date	Project	Role / Key Tasks	Ecological Surveys	Threatened Flora	Vegetation Community Verification	TEC Verification	Approvals / Mgt Plans	Offsets	EPBC Act
		Principal Consultant and Project Manager Statutory ecological assessment including BC Act (BAM 2020), EP&A Act, EPBC Act.							
2024	Clarence Property, Bark Hut Road BDAR	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act (BAM 2020), EP&A Act, EPBC Act.	✓	✓	✓	✓	✓	✓	✓
2024	Barnson, Pacific Highway Boambee BDAR	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act (BAM 2020), EP&A Act, EPBC Act.	✓	✓	✓	✓	✓	✓	✓
2024	Habitat Planning, Davey Road Interchange Albury BDAR	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act (BAM 2020), EP&A Act, EPBC Act.	✓	✓	✓	✓	✓	✓	✓
2024	Keiley Hunter, Woolgoolga South Town Planning	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act (BAM 2020), EP&A Act, EPBC Act.	✓	✓	✓	✓	✓	✓	✓
2024	King and Campbell, Port Macquarie Community Church.	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act (BAM 2020), EP&A Act, EPBC Act.	✓	✓	✓	✓	✓	✓	✓
2024	GHD, Garden Island and Chowder Bay Defence Precint	*Principal Consultant and Project Manager* EPBC Act.	✓	✓	✓	✓	✓	✓	✓
2024	Bathla, Cearleon Estate Mudgee, BDAR	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act (BAM 2020), EP&A Act, EPBC Act.	✓	✓	✓	✓	✓	✓	✓

Date	Project	Role / Key Tasks	Ecological Surveys	Threatened Flora	Vegetation Community Verification	TEC Verification	Approvals / Mgt Plans	Offsets	EPBC Act
2024	Halo Energy, Solar Farm BDAR	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act (BAM 2020), EP&A Act, EPBC Act.	✓	✓	✓	✓	✓	✓	✓
2024	King and Campbell, Ocean Drive BDAR	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act (BAM 2020), EP&A Act, EPBC Act.	✓	✓	✓	✓	✓	✓	✓
2024	Arbus, Cudgera Creek Road Subdivision BDAR.	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act (BAM 2020), EP&A Act, EPBC Act.	✓	✓	✓	✓	✓	✓	✓
2024	RW Corkey, Dunbogan Quarry BDAR.	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act (BAM 2020), EP&A Act, EPBC Act.	✓	✓	✓	✓	✓	✓	✓
2024	Newton Denny Chapelle, Pineapple Road, Goonellabah BDAR.	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act (BAM 2020), EP&A Act, EPBC Act.	✓	✓	✓	✓	✓	✓	✓
2024	Hargreaves, Maclean Hwy Service Centre BDAR	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act (BAM 2020), EP&A Act, EPBC Act.	✓	✓	✓	✓	✓	✓	✓
2024	Rise Projects Phillips Drive BDAR	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act (BAM 2020), EP&A Act, EPBC Act.	✓	✓	✓	✓	✓	✓	✓
2024	Gyde Consulting Englands Road BDAR	*Principal Consultant and Project Manager*	✓	✓	✓	✓	✓	✓	✓

Date	Project	Role / Key Tasks	Ecological Surveys	Threatened Flora	Vegetation Community Verification	TEC Verification	Approvals / Mgt Plans	Offsets	EPBC Act
		Statutory ecological assessment including BC Act (BAM 2020), EP&A Act, EPBC Act.							
2024	HSN Property, Bundanoon Road BDAR	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act (BAM 2020), EP&A Act, EPBC Act.	✓	✓	✓	✓	✓	✓	✓
2024	Keiley Hunter Town Planning, Corindi Beach Subdivion.	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act (BAM 2020), EP&A Act, EPBC Act.	✓	✓	✓	✓	✓	✓	✓
2024	Planners North, Greenwood Place Lennox Head BDAR	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act (BAM 2020), EP&A Act, EPBC Act.	✓	✓	✓	✓	✓	✓	✓
2024	Clarence Property, Red Rock BSSAR	*Principal Consultant and Project Manager* Application of the BAM 2020 in relation to the establishment of a Biodiversity Stewardship Assessment.	✓	✓	✓	✓	✓	✓	
2023	Barnson – Tafe Musswellbrook - BAR	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act (BAM 2020), EP&A Act, EPBC Act.	✓	✓	✓	✓	✓	✓	✓
2023	Clarence Property – Torkina Road, Brunswick Head – Peer Review	*Principal Consultant and Project Manager* Detailed Peer Review of EPBC Act assessment of likelihood of significant impact inline with assessment of significance guideline 1.1 .	✓	✓	✓	✓	✓	✓	✓
2023	Astoria – Kookaburra Way, Albury. BAR	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act (BAM 2020), EP&A Act, EPBC Act.	✓	✓	✓	✓	✓	✓	✓

Date	Project	Role / Key Tasks	Ecological Surveys	Threatened Flora	Vegetation Community Verification	TEC Verification	Approvals / Mgt Plans	Offsets	EPBC Act
2023	RW Corkey – Sand Quarry Dunbogan BAR	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act (BAM 2020), EP&A Act, EPBC Act.	✓	✓	✓	✓	✓	✓	✓
2023	Planners North – Greenwood Place, Lennox Head - BDAR	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act (BAM 2020), EP&A Act, EPBC Act.	✓	✓	✓	✓	✓	✓	✓
2023	BGIS Environmental Impact Reports – Holsworthy Barracks	*Principal Consultant and Project Manager* Comprehensive Ecological Baseline assessment including due diligence assessment against the EPBC Act Assessment of Significance Guidelines.	✓	✓	✓	✓	✓	✓	✓
2023	Bathla – Niagara St, Armidale – Ecological Assessment	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act (BAM 2020), EP&A Act, EPBC Act.	✓	✓	✓	✓	✓	✓	✓
2023	BGIS Environmental Reports – Singleton Training Area	*Principal Consultant and Project Manager* Comprehensive Ecological Baseline assessment including due diligence assessment against the EPBC Act Assessment of Significance Guidelines.	✓	✓	✓	✓	✓	✓	✓
2023	ANSTO EPBC Act Assessment	*Principal Consultant and Project Manager* Comprehensive Ecological Baseline assessment including due diligence assessment against the EPBC Act Assessment of Significance Guidelines.	✓	✓	✓	✓	✓	✓	✓
2023	RW Corkey – Elizebth Drive, Badgerys Creek BDAR	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act (BAM 2020), EP&A Act, EPBC Act.	✓	✓	✓	✓	✓	✓	✓

Date	Project	Role / Key Tasks	Ecological Surveys	Threatened Flora	Vegetation Community Verification	TEC Verification	Approvals / Mgt Plans	Offsets	EPBC Act
2023	Ashby Tullymorgan Road, Ashby Heights - BAR	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act (BAM 2020), EP&A Act, EPBC Act.	✓	✓	✓	✓	✓	✓	✓
2023	GHD Englands Drive, Coffs Harbour BDAR	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act (BAM 2020), EP&A Act, EPBC Act..	✓	✓	✓	✓	✓	✓	✓
2022	LGES – Review of Environmental Factors Bucketts Way	*Principal Consultant and Project Manager* Undertake comprehensive Review of Environmental Factors as well as undertake technical assessment of biodiversity in accordance with section 7.3 of the BC Act, EP&A Act and the EPBC Act.	✓	✓	✓	✓	✓	✓	✓
2022	Bathla Group – Gillieston Heights – Ecological Assessment	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act (BAM 2020), EP&A Act, EPBC Act.	✓	✓	✓	✓	✓	✓	✓
2022	Astoria Group – Beach Street Bonny Hills BDAR	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act (BAM 2020), EP&A Act, EPBC Act.	✓	✓	✓	✓	✓	✓	✓
2022	GHD – WillowTree WMF Expansion	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act (BAM 2020), EP&A Act, EPBC Act..	✓	✓	✓	✓	✓	✓	✓
2021	Bravus – Carmichael Rail Project	*Principal Consultant and Project Manager* Comprehensive Ecological Baseline assessment including the full complement of ecological survey and reporting to achieve final QLD and Federal approvals.	✓	✓	✓	✓	✓	✓	✓

Date	Project	Role / Key Tasks	Ecological Surveys	Threatened Flora	Vegetation Community Verification	TEC Verification	Approvals / Mgt Plans	Offsets	EPBC Act
2021	Ecological Assessment (Section 7.3) Ngambaa Project	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act, EP&A Act, EPBC Act..	✓	✓	✓	✓	✓	✓	✓
2021	GHD – Woolgoolga Creek Road Repair – Ecological Assessment	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act, EP&A Act, EPBC Act..	✓	✓	✓	✓	✓	✓	✓
2021	Planit Consulting – Revetment Wall Remediation – Ecological Assessment	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act, EP&A Act, EPBC Act..	✓	✓	✓	✓	✓	✓	✓
2021	Private Client – Yamba Street Development – Ecological Assessment	*Principal Consultant and Project Manager* Statutory ecological assessment including BC Act, EP&A Act, EPBC Act.	✓	✓	✓	✓	✓	✓	✓
2021	Seymour Whyte – M1 Varsity Lakes to Burleigh	*Principal Consultant and Project Manager* Comprehensive ecological advice, additional approvals and provision of construction related ecological services. .	✓	✓	✓		✓		
2021	Origin Energy – Spring Gully Ecological Services	*Principal Consultant* Undertaking deconfliction survey and assessment of the Spring Gully exploration area. Includes threatened fauna survey and assessment as well as RE and TEC verification and reporting.	✓	✓	✓	✓	✓	✓	
2016-2019	Origin Energy Rehabilitation Monitoring and Compliance	*Principal Consultant* Comprehensive botany survey; species composition assessments, biosecurity assessment, vertebrate	✓	✓	✓	✓	✓	✓	

Date	Project	Role / Key Tasks	Ecological Surveys	Threatened Flora	Vegetation Community Verification	TEC Verification	Approvals / Mgt Plans	Offsets	EPBC Act
		pest survey and assessment, recommendation of rectification actions. .							
2017	Middlemount Coal Northeast Extension Offset Verification	*Senior Ecologist* Comprehensive botany survey; threatened flora survey; RE verification; TEC verification; targeted threatened fauna survey; fauna habitat assessment; terrestrial habitat scoring; exotic vegetation survey; EPBC Act MNES.	✓	✓	✓	✓	✓	✓	
2016	Department of Defence – Baseline Biodiversity Surveys	*Senior Ecologist* Comprehensive botany survey; threatened flora survey; RE verification; TEC verification; targeted threatened fauna survey; fauna habitat assessment; terrestrial habitat scoring; exotic vegetation survey; EPBC Act MNES.	✓	✓	✓	✓			
2016	Middlemount Northeastern Extension	*Ecologist* Comprehensive botany survey; threatened flora survey; RE verification; TEC verification; targeted threatened fauna survey; fauna habitat assessment; terrestrial habitat scoring; exotic vegetation survey; EPBC Act MNES.	✓	✓	✓	✓	✓	✓	
2013 -2014	Maules Creek Coal Project	*Field Ecologist* Field Ecologist responsible for threatened flora surveys TEC verification, EEC verification, weed survey, targeted threatened fauna survey, fauna habitat survey, report writing and GIS mapping.	✓	✓	✓	✓	✓	✓	
2013	Carbon Farming Floristic Survey	*Field Botanist* Undertaking comprehensive botanical survey throughout the Brigalow Belt Bioregion.	✓	✓	✓	✓	✓	✓	

Date	Project	Role / Key Tasks	Active Mitigation	Risk Assessment	Expert Advice	Field Survey	Training and Upskilling	Policy Development
Wildlife Hazard Assessment								
2014 - present	Wildlife Hazard Management RAAF Amberley	*Technical Advisor* Karl has undertaken a range of services for the Department of Defence at RAAF Amberley over the past 6 years, ranging from expert advice of mitigation through to formal risk assessment.	✓	✓	✓			✓
2015 - 2017	Wildlife Monitoring – Brisbane Airport	*Technical advisor* Karl provided technical survey and advice services relating to wildlife strike, permits and approvals to Brisbane Airport Corporation through the development of the New Parallel Runway project.			✓	✓		
2017	Expert Advice and Peer Review of Wildlife Hazard – Mackay Airport	*Technical Advisor* Karl was engaged by Mackay airport to undertake a comprehensive peer review of a wildlife hazard assessment relating to infrastructure upgrades in the vicinity of the airport. He successfully undertook gap analysis of the existing hazard assessment and provided practical solutions to maintain wildlife hazard in the changing environment.		✓	✓	✓		✓
2018 - present	WHMP - Lismore City Council Airport	*Technical Advisor* Karl successful lead the development of the Lismore City Council Wildlife Hazard Management Plan include stakeholder engagement, report preparation against state and federal statutory considerations including CASA Regs and expert advice.	✓	✓	✓	✓	✓	✓
2017	Expert Advice and Peer Review of Wildlife Hazard – Mackay Airport	*Technical Advisor* Karl was engaged by Mackay airport to undertake a comprehensive peer review of a wildlife hazard assessment relating to infrastructure upgrades in the vicinity of the airport. He successfully undertook gap analysis of the existing hazard assessment and provided practical solutions to maintain wildlife hazard in the changing environment.		✓	✓	✓		✓

Date	Project	Role / Key Tasks	Active Mitigation	Risk Assessment	Expert Advice	Field Survey	Training and Upskilling	Policy Development
2019 - 2021	Department of Defence – WHMP Development	*Technical Advisor* Karl sat as the lead technical advisor and senior reviewer in the development of all Wildlife Hazard Management Plans for the Department of Defence aviation ports in Northern Territory, Queensland and Southern NSW.	✓	✓	✓	✓	✓	✓
2019	Wildlife Hazard Assessment – Proposed Development – Karratha Airport	*Technical Advisor* Karl was engaged by a private proponent to undertake a comprehensive wildlife hazard assessment for development of large aquaculture facility in the vicinity of the Karratha Airport.		✓	✓	✓		✓
2021	Expert Advise – Transport NSW	*Technical Advisor* Karl was engaged Transport NSW and various principal contractors to NSW Transport to undertake a comprehensive review of the proposed landscape designs relating to the M12 upgrades leading to the Western Sydney Airport.		✓	✓	✓		✓
2019-2021	Expert Advise – Western Sydney Airport Co.	*Technical Advisor* Karl has sat as the lead technical advisor to Western Sydney Airport Co. for over 2 years and has provided expert technical advice on all aspects concerning Wildlife Hazard within 13km of the Western Sydney Airport.	✓	✓	✓	✓	✓	✓

Our people

Daniel Joyce (BSc. ENV)

Business Manager Ecology - Principal Ecologist

Professional profile

As a Principal Ecologist & Senior Project Manager with Biodiversity Australia, Daniel has undertaken numerous ecological and environmental consulting projects. Daniels experience is across a wide variety of sectors including mining, oil and gas, land development and transport corridors. While he has been based in South East Qld since 2005, his project experience is throughout Australia, the South Pacific and Africa.

Having worked on local, remote, and international projects, Daniel understands the complex environmental, ecological and logistic issues of various size projects. He also understands that no matter the size of the project, every project requires a high level of technical expertise and must be delivered on time and on budget.

Daniel has undertaken a range of ecological and environmental assessments, including ecological impact assessments; vegetation management, rehabilitation and restoration, habitat and vegetation offsets. Daniel has significant experience working under the Environmental Protection and Biodiversity Act, Vegetation Management Act, Nature Conservation Act, Biosecurity Act and various environmental policies within Australia and Queensland.

Daniel has demonstrated his ability to undertake native and exotic flora survey on numerous occasions and can readily identify QLD Regional Ecosystems and Federal - Threatened Ecological Communities. Daniel has significant experience working throughout Queensland's environments from Stanthorpe Granite Belt to Burketown, Gulf Plains and the Wild Rivers, through the Gas fields and Brigalow country to the east coast rainforests.

His experience on a variety of projects has allowed him to grow his core skills of flora, fauna and habitat surveys into compiling complex high-level technical reports and management plans, in accordance with relevant legislation, for development approvals and ongoing environmental management.

Daniel has also managed large multi-discipline consulting and field investigation teams in remote areas for State Significant Projects. Daniel has managed and undertaken ecological, acid sulphate soils, noise, vibration, air quality, groundwater, surface water and contaminated land investigations. Daniel has undertaken the field investigations, been a part of the technical reporting team as well as managing these works for baseline assessments to post construction monitoring.

Daniel has extensive experience leading teams in remote environments and managing challenging logistic projects, driving high levels of health, safety and environmental team cultures and systems.

Qualifications, Certifications and Memberships

- Bachelor of Science Environmental Science (USC 2000)
- Regional Ecosystem Assessment Under the VMA (2003)
- Suitably Qualified Protected Plant Surveys (QLD) (2008)
- BioCondition Assessment Training
- Using Animals in Science, Department of Agriculture and Fisheries
- Vegetation Structure and Remnant Status under the VMA (2003)
- Construction Industry Induction OH&S (White card)
- First Aid and CPR
- Various 4WD – driving and recovery
- The Standard 11 (S11) Mining Induction

Key Skills

- All aspects of fauna and flora surveys including targeted surveys and nocturnal surveys
- Significant Ecological Impact Assessment
- Protected Plant Surveys
- Species ID (flora/fauna)
- Threatened species management
- Rapid weed assessments
- Project management of multi-disciplinary environmental teams
- Remote projects team management
- Developing and driving high level health, safety and quality team culture

Relevant Project Experience

Project	Key Role / Tasks
Coomera Connector 1 North	Engaged by Acciona Georgiou, scope included marine plant and seagrass surveys, terrestrial habitat and weed surveys, fauna management, and pre-clearance assessments.
Steve Irwin Way to Caboolture Bruce Highway Upgrade	Led a team of ecologists undertaking pre-clearance surveys (Habitat and weed). Significant species (Wallum frogs) surveys and relocation.
Middlemount Coal Mine	Targeted MNES surveys as part of offset vegetation monitoring.
Stanwell-Gladstone Infrastructure Corridor SDA	Engaged by the Minister for Economic Development QLD to conduct a comprehensive baseline survey to assess existing land conditions, infrastructure, and vegetation.
Middlemount Coal Mine	BioCondition assessments and classification for proposed offset area and ongoing monitoring of existing offset areas. Significant species (MNES) surveys (Greater Glider, Ornamental Snake, Squatter Pigeon).
Gladstone Mt Larcom Euroa Circuit Transmission Line EA	Engaged by the Economic Minister of Queensland to provide an ecological assessment for a proposed transmission line from the Mt Larcom Sub Station development to Euroa circuit.
Carmichael Rail Network	Ecological assessments including undertaking all field verification and ecological baseline studies to gain final state and federal approvals
Surat Basin – Ruby Jo and Southern and Central Gas Fields	Engaged by QGC/Shell to conduct ongoing ecological surveys, providing assessment reports and compliance data against Key Performance Indicator (KPI) criteria for multiple offset rehabilitation sites.
Deception Bay Interchange Bruce Highway upgrade	Protected plant survey and report for south extension clearing.
Kraft Road, Pallara, QLD	High Risk Species Management plan colonial breeders.
Brentwood Estate, Bellbird Park QLD	Protected Plant Survey and habitat assessment. Development of High-Risk Species Management plan for Powerful Owl and Colonial Breeders.
Hillside Stage 2, Mooloolah QLD	Comprehensive pre-clear surveys and load reductions including trapping programs.

Nigel Cotsell

Principal Ecologist

Professional profile

Nigel is a highly experienced employee with 10+ years of industry management experience currently employed with Biodiversity Australia as a Principal Ecologist. Having held a diverse range of environmental portfolios across the three tiers of Australian Government, the private sector and overseas, he has developed into a vastly skilled and valued resource and member of the team. Nigel has proven competency in assessing State and Federal compliance, approvals, impact assessments, executing field surveys (5+ years), flora, fauna, habitat and vegetation mapping and report writing.

Nigel has completed a master's degree in Natural Resources and a bachelor's in science. Throughout his professional career he has been responsible for major contributions to large scale projects. Nigel currently holds membership in a multitude of societies and has a large assortment of publications in the ecological field.

Qualifications, Certifications and Memberships

- Member of Ecological Society of Australia
- Member of Coffs Climate Action Group
- Member of Australian Forest History Society Inc
- Member of Karangi Landcare
- Masters of Natural Resources
- Bachelor of Science
- Working Safely at Heights
- BAM Accredited NSW
- Boat license
- Law Enforcement Licence
- Guns in workplace Licence
- 4WD Driving
- Construction Industry White Card
- First aid and CPR

Key Skills

- Ecological surveying (designing, coordinating and implementing) and research
- Ecological health assessments in a variety of ecosystems
- Vegetation mapping and monitoring techniques, fauna trapping and monitoring techniques
- Threatened species (Flora and fauna) and communities surveys.
- Identification, surveys and analysis of native and exotic flora and fauna Mapping,
- Landscape and ecological processes mapping and monitoring
- Ecological restoration and rehabilitation methods and techniques
- Preparing and assessing the progress of rehabilitation and restoration plans, ecological monitoring plans
- Statistical and GIS analysis (ArcGIS, QGIS)
- Working safely in teams conducting large scale and remote ecological field work
- Approvals and assessing compliance with environmental regulations, legislations (NSW and QLD)
- Environmental Value and risk assessment

Career summary

Principal Ecologist	Biodiversity Australia	2023 - Present
Director/Principal Ecologist	Songbird Ecology	2021 – 2023

Senior Ecologist	EcoLogical Australia	2022 - 2023
Senior Ecologist/Coffs Harbour Manager **Regional Manager – South Pacific (Vanuatu)**	Ecosure	2016 - 2021
Senior Team Leader – Ecosystems and Threatened Species Section	NSW Office of Environment and Heritage	2015 - 2016
Team Leader – Biodiversity **Acting Executive Director – Planning**	Coffs Harbour City Council	2008 - 2015
Executive Officer – Gondwana Rainforests of Australia	Commonwealth Department of Climate Change, Energy, Environment and Water	2007
Director/Principal Ecologist	Great Eastern Ecology	2005 - 2007
North East Wilderness Coordinator	Environmental Protection and Regulation Division Department of Environment and Conservation – Coffs Harbour NSW	2005
Species Protection Officer **Biodiversity Recovery Unit**	Department of Conservation Wellington NZ	2002 - 2004

Professional Experience

Principal Ecologist

Biodiversity Australia (2023 - Present)

- Designing and implementing flora and fauna surveys
- Data collection to satisfy legislation.
- Field Ecological assessment and authoring ecological reports.
- GIS analysis
- Threatened species and communities surveys as per regulations.

Director/Principal Ecologist

Songbird Ecology (2021 - 2023)

- Report writing (BSSAR, BDAR, BAR)
- Environmental Approvals and Regulatory Compliance (NSW)
- Usage of BAM methodology
- Ecological Services and compliance for developmental and conservation projects
- Designing and executing field surveys – flora, fauna, habitat, threatened species and communities
- Ecological assessments, preparing and assessing progress of rehabilitation plans

Senior Ecologist

EcoLogical Australia (2022 – 2023)

- Informing clients and developers regarding compliance of projects to NSW legislation
- Planning and conducting ecological surveys.
- Environmental Monitoring
- Collaborative Projects and Management of other employees
- Regulated vegetation assessment, mapping, and management projects
- Providing recommendations on conservation programs

Author

- Cotsell N., & Vernes K., (2016) Camera traps in the canopy: surveying wildlife at tree hollow entrances. Pacific Conservation Biology 22, 48-60.
- Cotsell N., Fisher M., Scotts D., Cameron M., (2016) Identifying High Value Arboreal Habitat in forested areas using high-resolution digital imagery. Pacific Conservation Biology 22, 367- 376.
- Cotsell, N. (2015). The importance of old eucalypt trees and the wildlife that depend on them. Masters of Natural Resources thesis. University of New England
- Scotts, D., Cotsell., N (2014) Landscape Corridors of the Coffs Harbour Local Government Area. Coffs Harbour City Council, Coffs Harbour, New South Wales, Australia. Unpublished report.

Our people

Alison Martin

Principal Ecologist, BAM Accredited Assessor

Professional profile

Alison has over 40 years' experience in ecological surveys and impact assessment over much of NSW and Qld and over 30 years' experience in project management and the preparation of professional reports and plans. She is currently the Director of Greenloaning Biostudies Pty Ltd, specialising in ecological studies, impact assessment and biodiversity management. During her career, she has been responsible for both intensive and extensive ecological studies and managed large field teams for large scale mining and infrastructure projects subject to intense scrutiny. This experience, in conjunction with extensive appearances as an expert witness in the Land and Environment Court and a Master of Environmental Law, has rendered Alison well versed in local, state and commonwealth legislation. This background and ongoing interest in environmental legislation, has equipped her with the skills to provide effective strategic advice to local and state government authorities, as well as the private sector. Alison is an accredited assessor for the Biodiversity Assessment Method Order 2020 under the Biodiversity Conservation Act 2016 (NSW) and trained in the Biocondition assessment process in Qld.
During the course of her career, Alison has prepared/co-prepared numerous impact assessments and has designed and/or implemented both pre-clearing/clearing/spotter catcher procedures and long term monitoring programmes for the mining sector, government authorities and smaller developments. She has carried out extensive flora and fauna surveys in both NSW and Qld and has extensive expertise in broad scale and fine scale vegetation mapping. Alison has managed long term monitoring programmes for a range of threatened plant species as well as for threatened fauna and ecological communities. Other studies include numerous intensive target threatened species surveys in Qld and NSW and the development and implementation of detailed pre-clearing protocols for a range of threatened species.

She has prepared numerous management plans, including Comprehensive Koala Plans of Management, Vegetation Management Plans, Microbat Management Plans and Flying-fox Management Plans. has carried out peer reviews for offsets under the EPBC Act and for documents such as Biodiversity Development Assessment Reports and Vegetation Management Plans. a Critically Endangered Ecological Community and for habitats for threatened fauna species. As an accredited assessor, Alison has undertaken numerous vegetation and fauna surveys under the Biodiversity Assessment Method Order 2017/2020 and prepared Biodiversity Development Assessment Reports and Feasibility Assessments for potential Biodiversity Stewardship Sites. Currently she was involved in reviewing Management Strategies under the Saving our Species Program for two threatened plant species and previously contributed to the threatened species expert review process for the NSW Office of Environment and Heritage/Department of Planning, Industry and Environment

Qualifications, Certifications and Memberships

B.Sc (Botany/Zoology/Ecology) - University of New England, 1975
Masters of Environmental Law - Macquarie University 2014
Environment Institute of Australia & NZ
Australasian Wildlife Management Society
Australasian Bat Society
Ecological Society of Australia

Key Skills

- Strategic advice on biodiversity issues
- Threatened species management.
- Biodiversity Assessment Reports
- Koala Surveys and Plans of Management
- Environmental legislation and policy
- Impact assessments
- Microbat and Flying-fox studies

Career summary

Principal Ecologist	Biodiversity Australia/ Sub consultant	2021 - Present
Director / Principal Ecologist	Greenloaning Biosttudies Pty Ltd	1996 -Present
Co-principal / Co-principal Ecologist	Bartrim & Martin Biological Surveys	1993-1996

Project Experience

Preparation of Biodiversity Development Assessment Report for Primitive Camping Project, Ember Valley/Ghinni Ghi, (2023-2024): Ember Valley Campground

Preparation of Biodiversity Development Assessment Report for Residential Subdivision Murray Downs, (current)

Preparation of Biodiversity Development Assessment Report for Resource Recovery Project, Crescent Head, (2019 - 2025) Green coast Environmental

Preparation of Biodiversity Development Assessment Report for Retrospective Residential DA The Pocket - (2022- 2023) Greencoast Environmental

Preliminary Assessment for a Potential Biodiversity Stewardship Site, Byrock (2023)

Feasibility Assessment for a Potential Biodiversity Stewardship Site, Capertee Valley JMBS Constructions/Weemala Land Management Pty Ltd (2022-current)

Initial Studies and Advice on the development of a Biodiversity Stewardship Site, Ballina Ballina Shire Council (2019 - 2020)

Preparation of Biodiversity Development Assessment Report - Joadja, Southern Tablelands (2019) Private rural landholder, Preliminary Studies and Advice

Preliminary Advice on the development of a Biodiversity Stewardship Site, Bonalbo area (2019) Private rural landholder

Preparation of Biodiversity Development Assessment Report, Lismore LGA (2018 - current) Major residential development - Allura Parklands

Expert Review of Current Ecological Data for North Eastern NSW Threatened Flora Species (2018-2021) Office of Environment and Heritage - Expert Reviewer. Reviewed data was to be used to support the biodiversity assessments under the *Biodiversity Conservation Act 2016*.

Our people

Dr Kimberley Fowler

Principal Ecologist

Professional profile

Kimberley is an experienced and highly educated Environmental Scientist employed with Biodiversity Australia as a Principal Ecologist. Kimberley is a passionate, results-driven Projects Lead with over 15 years of experience in delivering large-scale environmental initiatives in the fields of mine site closure and expansion, environmental impact studies, decarbonisation, waste valorisation, contaminated sites remediation and remote sensing.

Kimberley thrives in complex and challenging work environments with her calm, methodical approach and a focus on problem-solving. Kimberley effectively collaborates with both internal, cross-functional teams and external stakeholders, such as government agencies, academia, research organisations and industry consultants, driving project efficiencies and delivering innovative solutions to environmental problems.

Kimberley is adept at navigating complex environmental laws, policies, and regulations, ensures project compliance. Kimberley is highly organised, with expertise in risk management frameworks, risk analysis and development of mitigation measures, guaranteeing no detail of a project is overlooked, which allows her to provide high-quality outcomes within budget and on schedule.

Qualifications, Certifications and Memberships

- Master of Science (Environmental)
- Doctoral Degree of Ecology
- Bachelor Degree of Business (Management)
- Certificate IV in Project Management
- Geographical Information Systems (GIS)
- Member of the National Environmental Law Association
- Member of the Society of Ecological Restoration

Key Skills

- Project Management - Proven ability to develop and execute large-scale environmental projects that align with organisational goals.
- Team Collaboration - Skilled in guiding cross-functional teams, fostering a culture of teamwork, accountability, and continuous improvement.
- Project Planning - Ability to create detailed project plans, timelines, and schedules.
- Risk Management - Proficient in identifying, analysing, and mitigating project risks.
- Budget Management - Skilled in managing project budgets, forecasting costs, and ensuring financial accountability.
- Scope Management - Expertise in defining and controlling project scope to prevent scope creep.
- Problem Solving - Strong analytical skills to identify issues and develop effective solutions promptly.
- Data-Driven Decision Making - Proficient in leveraging data analytics and performance metrics to inform project strategies, assess risks, and enhance outcomes.
- Change Management - Ability to navigate and manage change effectively within projects.
- Stakeholder Engagement - Strong skills in building and maintaining relationships with diverse stakeholders, including government agencies, academic and research organisations, and community organisations to drive collaborative initiatives.
- Corporate Social Responsibility (CSR) and Cultural Competency - Ensuring community and Traditional Owner inclusion for sustainable and ethical project outcomes.
- Regulatory Compliance - In-depth knowledge of environmental laws, regulations and standards, at a federal, state, and local level, ensuring project adherence to legal requirements and promoting responsible practices.

- Permitting & Licensing - Assisting clients in obtaining necessary environmental permits and licenses for various projects.
- Communication Skills - Exceptional verbal and written communication abilities, adept at presenting complex information clearly to diverse audiences, including executives and technical teams.
- Innovation & Problem Solving - Track record of identifying opportunities for innovation and effectively addressing challenges in fast-paced and evolving environments.
- Time Management - Excellent organizational skills to prioritize tasks and meet deadlines effectively.
- Detail Orientation - Meticulous attention to detail to ensure project accuracy and quality.

Career summary

Principal Ecologist	Biodiversity Australia	2025 - Present
Senior Environmental Advisor	Rio Tinto	2021 - 2025
Environmental Advisor	Rio Tinto	2016 - 2021
Senior Zoologist	Ecologia Consulting	2013
Zoologist + Senior Environmental Officer	Mount Gibson Iron	2011 - 2013
Lecturer and PhD Candidate	The University of Western Australia	2008 - 2011
Environmental Scientist	RPS Environment Pty Ltd	2006 - 2008

Professional Experience

Principal Ecologist
Biodiversity Australia (2025 - Present)

- Responsible for reviewing, submitting and in some cases developing proposals and tenders
- Responsible for driving business development with existing clients
- Responsible for meeting budgetary measures and driving cost efficiencies in ecology projects
- Ensuring that projects are coordinated in a timely and financially appropriate manner to both internal and external client expectations
- Organising internal and external training of staff to ensure projects are run correctly, client expectations are met, and the work is of a technically high standard
- Undertaking field work for ecological surveys, vegetation, and fauna management, as required
- Planning resource requests in consultation with relevant Unit Project Coordinator
- Developing, maintaining, and enhancing client relationships
- Represent Biodiversity Australia in a variety of public forums and marketing opportunities, including media, conferences, and community events
- An understanding of government legislation, particularly relating to ecology
- Compiling, editing and reviewing scientific documents for clients and legislation driven applications, permits and reporting

Senior Environmental Advisor – Studies and projects
Rio Tinto (2021 - 2025)

- Provide project management support and technical expertise on the North of Weipa Environmental Baseline Study
- Provide technical environmental advice to the Pongamia biofuel project
- Provide technical environmental advice to the Smelter Waste Valorisation team
- Maintain oversight of Federal Environmental Reforms and report key risks to the product group
- Provide technical support to product group site environmental leads
- Collaborate across internal functional groups to ensure project success
- Risk management and mitigation, utilising RSA Archer
- Build positive collaborative partnerships amongst regulators, academia and industry consultants

Environmental Specialist – Weipa Operations
Rio Tinto (2021)

- Execution of compliance improvement projects and systems
- Recruitment of environmental advisor and monitoring officers

- Incident investigation, response and recording in RTBS
- Development of Archer environmental risk register, and ongoing site risk management
- Team development and relationship building
- Contractor management
- Scope development and management of contaminated sites investigations
- Engagement with state regulators regarding environmental performance on site
- Liaising with key site stakeholders regularly, including site management, supervisors, all operational staff and external contacts within the local and nearby indigenous community regarding environmental targets, plans and performance improvements
- Regulatory and operational updates for presentation to the PacOps Steering Committee and WCCCA committee
- Organisation of state regulator inspections, and response to previous inspections and ISO audits
- Environmental Operations budget tracking and reporting, and development of 2022/23 forecasts
- Active involvement in the Environmental Community of Practice group and Land and Biodiversity Community of Practice group

Environmental Study Lead – Bell Bay Smelter Closure and Weipa Northern Operations Mine Closure
Rio Tinto (2020 - 2021)

- Development of environmental consultant study scopes
- Development of study planning and governance documents
- Review of tender proposals
- Management of consultant field work
- Review and approval of consultant reports
- Assessment of study outcomes to ensure alignment with business objectives
- Collaboration with academia and research organisations to develop innovative solutions to environmental problems.
- Presentation of project progress to the Study Governance Board
- Risk management, including development and maintenance of Archer risk register, monthly risk workshops and Study Governance Board reporting

Environmental Advisor
Rio Tinto (2016 - 2020)

- Develop and execute environmental monitoring programs to understand risk with surface water, groundwater, air emissions and other aspects that have the potential to impact the environment
- Liaise with key stakeholders regularly, this includes site management, Supervisors, all operational staff and external contacts within the community regarding environmental targets, plans and performance improvement
- Maintain strong working relationships with environmental government stakeholders on behalf of Argyle Diamond Mine and maintain the stakeholder communication register
- Assess the compliance with environmental licence and ministerial conditions through inspection of work areas and to monitor effectiveness of controls as well as provide advice on incident response
- Provide technical critical reviews of operational and closure related environmental reports, and provides support to coach operational teams to improve environmental management on site
- Provide technical input to closure plans/programs on behalf of the operational environmental team
- Develops monitoring programs based on regulatory or closure study requirements
- Manage all internal and external environmental data reporting (e.g. S&E, NPI, NGER, CP, AER, AACR, CAR) including data collation, validation, review and submission
- Provide legislative advice to site personnel regarding environmental requirements/approvals
- Assist with incident investigations
- Environmental auditing
- Mining approvals & amendments; water monitoring & management, and data management & analysis
- Develop monitoring programs based on regulatory or closure study requirements
- Monitor legal compliance to legal requirements and develop mitigating strategies for non-compliances or expected non-compliances

Publications

I) Peter B. S. Spencer A D, Simon Sandover B, **Kimberley Nihill** B, Celeste H. Wale C, Richard A. How C and Lincoln H. Schmitt C (2016) "*Living in isolation: ecological, demographic and genetic patterns in northern Australia's top marsupial predator on Koolan Island*" Australian Mammalogy (CSIRO Publishing)

II) **Christie, K**., Stokes, V., Craig, M. & R.J. Hobbs. (2013). "*Micro-habitat preference of Egernia Napoleonis in undisturbed Jarrah Forest, and availability and introduction of micro-habitats to encourage colonisation of restored forest."* Restoration Ecology 21: 722-728

III) **Christie, K**., Craig, M., Stokes, V. & R.J. Hobbs. (2012). "*Home range size and micro-habitat density requirements of Egernia Napoleonis: implications for restored Jarrah Forest of South-Western Australia*." Restoration Ecology 20: 740-746

IV) Maron, M., Hobbs, R.J., Moilanen, A., Matthews, J.W., **Christie, K**., Gardner, T.A., Keith, D.A., Lindenmayer, D.B. & C.A. McAlpine. (2012). "*Faustian bargains? Restoration realities in the context of biodiversityoffset policies."* Biological Conservation 115: 141-148

V) **Christie, K**., Craig, M., Stokes, V. & R.J. Hobbs. (2011). "*Movement patterns by Egernia napoleonis following reintroduction into restored Jarrah forest."* Wildlife Research 38: 475-481

Our people

John Foster

Ecologist

Professional profile

BAM Accredited Assessor, with extensive experience in ecological consulting across diverse sectors, including urban development, industrial projects, mineral resource extraction, and infrastructure, John brings a robust background in environmental management and project coordination.

Jonn has contributed to both small and large-scale projects in NSW and Victoria. His expertise includes conducting ecological impact assessments for threatened flora, fauna species, and ecological communities in compliance with NSW and Commonwealth legislation.

John is adept at undertaking botanical surveys and reporting, employing the Biodiversity Assessment Method (BAM) to identify Plant Community Types, assess threatened ecological communities, map occurrences of threatened flora species and habitats, and identify weeds of national significance. His fieldwork experience spans numerous surveys across NSW and Victoria.

In addition to John's technical skills, he has completed Biodiversity Offsets Scheme Accredited Assessor training and has completed Tetra Tech - Level 1 Project Management training. John has successfully managed the ecological components of residential development applications, overseeing fieldwork coordination, and report preparation and has also contributed to ecological monitoring and management projects, including Biodiversity, Bushland, and Vegetation Management Plans, as well as Flora and Fauna Assessments and Rail Corridor Ecological Impact assessments.

John's career reflects a dedication to environmental stewardship, leveraging his expertise in GIS and field mapping technologies to support sustainable practices and biodiversity conservation efforts.

Qualifications, Certifications and Memberships

- CPR AED-Emergency Life Support-First Aid
- Plant Identification - Advanced
- Project Management – Level 1
- Operate 4WD & Light Vehicle
- NSW Animal Ethics
- Fauna trapping and Handling
- BAM Assessor Accreditation
- Bachelor of Science – Biology
-

Key Skills

- Threatened ecological community mapping
- Client management and communication
- Ability to undertake ecology surveys
- Knowledge of state and federal legislation
- Biodiversity assessment
- Impact assessment
- Biodiversity offsets
- Landscape and waterway ecology

- Environmental auditing
- Fauna and flora assessment
- Species identification
- Vegetation assessment and mapping

Career summary

Ecologist	Biodiversity Australia	2024 - Present
Ecologist	Eco Logical Australia	2022 – 2024
Ecologist	Cumberland Ecology	2019 - 2022

Professional Experience

Ecologist
Biodiversity Australia, NSW (Current)
- Provide environmental assessments and wildlife management
- Management advice and data collection
- Undertake ecological surveys
- Species identification – Flora and Fauna (native and introduced)
- Liaised with onsite workers
- Vegetation, TEC and regional ecosystem identification, verification and mapping
- Weed surveys and mapping
- Significant species habitat assessments and impact management during construction and mining activities used in relation to the Endangered, Vulnerable and Near Threatened Species (EVNT) List and governing legislation
- Compiling written reports, accurately reporting the findings and providing recommendations on how to mitigate impacts during the relocation of wildlife habitats
- Interpretation and compliance with statutory regulations, safety/environment practices and organisational guidelines
- Welfare management of wildlife and their habitats
- Ensuring impacts on wildlife, wildlife habitats and breeding places are considered and implementing minimisation design and scheduling
- Ensuring that disturbance/clearance works are planned and executed in a manner that incorporates the necessary wildlife management measures
- GIS Mapping
- Survey design and planning
- Managing and coordinating field survey teams to mobilise and conduct targeted threatened species surveys, either remotely or from the field

Ecologist
Eco Logical Australia, (Oct 2022 – Apr 2024)
- Project management
- Field surveys
- Site supervision
- Report and proposal preparation
- Conducting night and day field surveys, rescuing, trapping and handling native and exotic fauna
- Conducting desktop assessments
- Threatened species surveys
- Providing biodiversity impact assessment reports for line-of-sight surveys and pipe relining projects

Ecologist

Cumberland Ecology, (Nov 2019 – Sep 2022)

- Monitoring fauna
- Ensure safe capture and release of native animals including, frogs, lizards, spiders, snakes, possums and gliders
- Nest box installation
- Preclearance inspections and clearance supervision
- Report preparation
- Plant Identification

Kylie Alicia Lopes

Mossy Point NSW 2536
Mobile: 0403 305 553
Email: kyliealicialopes@gmail.com

Bio

I am based on the south coast NSW and am currently working as a mid-level Ecologist. I am experienced in many areas of fieldwork and survey work and specialize in fauna ecology, particularly nocturnal fauna and bats. I currently have 4 years of consulting experience and project management experience on a diverse variety of projects throughout eastern and southern Australia and have experience and training in ultrasonic bat call identification and specialize in microbat surveys and handling.

I have worked with Forestry Corporation of NSW as an assistant Field Ecologist, where I have greatly developed my skills in the identification of species native to the south coast. I have assisted in threatened species projects with the Office of Environment and Heritage and various post-fire targeted species surveys. I have been part of a variety of private property surveys ground truthing habitat suitability for Koala conservation within the Eurobodalla Koala Project and have quantified Lyrebird foraging activity with LaTrobe and Birdlife Australia and as a research assistant for a private project exploring native Owl post fire prey preferences using pellet analysis. Some other past experience includes coastal and estuarine work and tag release of bull sharks.

While I pursued my career in Ecology and studied, much of my experience was in the hospitality industry and as such my interpersonal skills and ability to time manage and work in a cooperative environment are highly developed. I also have experience in start-up small business, managing employees, accounting and bookkeeping, from creating and running two successful businesses. Running these allowed me to work for myself from home and pursue environmental volunteer work.

I am a physically active and fit person, regularly training, as well as hiking and diving so I believe I would have no problem passing any physical tests required. I am a qualified bushfire fighter with my local RFS and a trained WIRES volunteer with a range of experience in containing, handling and first aid treatment of our native wildlife and am certified to handle most native animals including bats and snakes, as well as aquatic species.

Certification and training

2009- 2015	**Bachelor of Science (Distinctions), major in Biology and Ecology** University of Southern Queensland GPA: 6.55 / 7
2006 - 2008	**Bachelor of Science** (transferred to USQ) Griffith University, Queensland
Other:	**NSW White card**
	NSW boat license
	WIRES NSW RICC qualified (also species specific trained)
	NSW RFS member (BF)
	4x4 competent

Skills & Abilities

Field survey techniques

- General flora and PCT identification
- Endangered Ecological community identification
- Targeted species transect / traverse– (orchid, floral species)
- BAM and rapid veg plots
- Vegetation integrity monitoring plots

- Spotlighting, call playback and call identification (nocturnal)
- Harp trapping, microbat exclusion and Emergence surveys
- Ultrasonic Bat Call Identification
- Frog call Identification and playback
- Species specific grid-based survey (including Koala SATs)
- Bird call Identification general
- Deployment of camera traps, song meters, hair tubes
- Use of Elliot traps, cage trapping, pit-fall trapping
- Skeletal Identification
- Aquatic Ecology- netting, diving, species relocation
- Reptile surveys (tile array, rock flip, embedded tubes)

Technology

- Use of GIS mapping (transects, incidental sighting, programing and mapping layers, data inputting)
- Ability to utilize field guide apps/books for ID assistance
- Familiarity with tablet-based mapping programs for data collection and navigation.
- General computer literacy (office, excel, statistical software, accounting software, web design, social media)
- High quality reporting skills.
- Familiar with the use of Anabat insight
- Use of navigation devices (GPS, traditional tools)
- Use of Inreach and satellite phones and radio comms

Personal skills

- Current White-card
- Can operate manual and 4x4 vehicles competently
- Willing and have the capability to attain all additional licensing and training with machinery, chainsaw etc. Including all physical competency testing
- BF qualified RFS
- Outgoing, friendly and works well with others
- Versatile, quick learner, energetic
- High level of initiative, independent
- Willing to travel, camp, physically fit
- Confident outdoors and in navigating in remote regions.
- High level of community engagement skills, skilled in PR and dispute management and resolution.
- Certified snake handler

Relevant Work experience

2021- current **Ecologist and Ultrasonic Call Analyst**
EcoLogical Australia

Key responsibilities
All aspects of general field assessments including flora and community identification, flora and fauna habitat assessment. Threatened species targeted surveys. BAM plots and surveys for BDARS. I have project managed numerous FFAs and small constraints and clearance works as well as supervising clearance and species-specific monitoring projects. I have been an active part of the proposal and contracting of new projects and clients, project managing and field planning, data collation and analysis, report writing and invoicing. In my role I work very closely with senior ecologists, species experts and a team of GIS, admin, bushfire and hydrology staff and environmental consultants and highly value feedback and advise. I am improving my ability to navigate legislative pathways and have been involved in numerous defense projects. I am trained in Ultrasonic Bat call analysis and reporting

2020-2021 **Field Ecologist assistant – Lyrebird project**
LaTrobe University/ Birdlife Australia Lyrebird monitoring project

Key responsibilities:
This projects aim is to use foraging evidence to give an idea of distribution and activity of Lyrebirds along the south coast of NSW pre and post fires. Primary Task was to collect data independently in prescribed Locations using GAIA Mapping app. Data tasks included habitat descriptors, dominant vegetation, percentage vegetation cover, incidental fauna sightings, fire damage and intensity, estimation of percentage area disturbed by Lyrebird foraging. My locations were remote and difficult to traverse but I had no issue in completing all my sites well before the cut off date for the project.

2020- 2021 **Field Ecologist Assistant – Eurobodalla Koala project**
EKP Keith Jolief

Key responsibilities:
Assist with data collection and recording for ground truthing mapping data related to potential viable Koala habitat within the Eurobodalla. Primary role is to identify dominant Eucalypt species, regenerating ground cover (post fire), incidental fauna sightings, as well as assess fire damage and plot characteristics.

2019- current **Field Ecologist Assistant**
Forestry Corporation of NSW

Key responsibilities:
Assist in pre-harvest field surveys for a variety of threatened species and habitat values; These included RGBSAT Koala surveys, endangered ecological community identification, targeted threatened flora transects, compartment traverse surveys, and incidental species identification.
Other skills and experiences in this role include

- Spotlighting and Call playback surveys for the Bago/Maragle Species monitoring program for the Yellow-bellied Glider
- Seasonal orchid surveys in montane forests of Bago and Maragle state forest
- Assisted with Northern Corroboree frog Surveys in collaboration with OEH Save our species program
- Use of GIS software and tablet-based mapping
- Familiarization with Coastal Integrated Forestry Operations Approval prescriptions and protocols

Other Employment History

2013 – 2021 **Owner operator**
I Know A Guy Handyman Service/ Blissful bedding, NSW

Key responsibilities:
Employee management, all Book keeping, invoicing, budgeting, Wages, Clientele management and advertising. Stock management and Delivery. Supplier ordering, providing high level service with strict deadlines and often short notice. Large amounts of heavy lifting and driving. Long hours.

2008 – 2010 **Guest Liaison Officer**
Icare Hamilton Island, QLD

Key responsibilities:

Meet and transport VIP quests, guest tours of the island. On- call 24 hours. Maintain buggies and units including cleaning and general repairs and maintenance to a 4.5 -5star standard with a very high level of customer care and service.

2005 -2019 **Waitress/ bar attendant/ supervisor/ staff trainer – various venues**

Café, takeaway, al a carte, nightclub, bistro, cocktail bars, silver service/fine dining, clubs and pubs

Key responsibilities/ skills:
Bar service, including pool cocktail 'island bars' and night club and restaurant bar service, beer line cleaning, keg tapping and rotation
Take-away alcohol service, Stock rotation
Coffee service and preparation, fully Barista Trained
All areas of front of house service, desert preparation
Fine dining wine service trained. High level of wine service and knowledge.
Working with KENO sales and gaming (poker) machines, including hopper refilling, payouts, error correction, end of night cash up and cash box clearing and resetting.
Outdoor service and functions, including weddings, corporate and private functions.
Staff trainer and supervisor. Events planner and coordinator.
End of night close and cash totaling.

Referees

Craig Dunne
Senior Ecologist, Forestry Corporation of NSW
Phone: 0413 209 025

Keith Jolief
Principal researcher,
Eurobodalla koala project
Phone: 0427 546 156

Dr Kristen Thompson
ELA previous work colleague
Kristen_thompson@outlook.com
0432 766 224

Our people

Jessica Hobart

Ecologist

Professional profile

Commencing with Biodiversity Australia in May 2020, Jess has become a valuable member of the BA team and has proven proficiency in a number of roles having been promoted internally. Jess is highly proficient in fauna habitat assessments, having completed these extensively in a range of ecosystems throughout South-East Queensland. Jess displays a high degree of knowledge of local fauna and flora, with a passion to continually learn within the industry.

Jess has extensive knowledge in handling wildlife, both captive and in the wild, obtained through the many work and volunteering experiences she has acquired in previous years. Throughout her previous experiences, Jess has attained adept knowledge in local flora and fauna identification and management. Through successful client consultation, Jess has been able to create extensive relationships that is continuous throughout entire projects. Jess is continuously evolving with the industry, learning new aspects and elements with every opportunity.

Qualifications, Certifications and Memberships

- Bachelor of Applied Science – Wildlife Science
- Certificate III Captive Wildlife
- Venomous Snake Handling Course
- Australian Wildlife Course
- First Aid & CPR Certificate
- White Card
- Manual Drivers Licence

Key Skills

- Fauna Habitat Assessments
- Threatened fauna surveys
- Threatened Ecological Community Mapping
- Fuel Hazard Assessments
- Research and Report Writing
- Data Collection and Analysis
- State legislation (Nature Conservation Act 1992, Vegetation Management Act 1999)
- Federal legislation (Environmental Protection & Biodiversity Conservation Act 1992)
- GIS Mapping
- OH&S

Professional Experience

Ecologist

Biodiversity Australia QLD. Brisbane. Mar 2023 to current

- Undertake Flora and Fauna Survey
- Statutory Impact Assessment
- EEC and RE verification
- Report Development and Review
- Management Plan Development and implementation

- GIS and Spatial Analysis
- Project Management and client liaison

Fauna Unit Coordinator

Biodiversity Australia QLD. Brisbane. Jan 2022 to Mar 2023

- Coordinate all functions of the Fauna unit including project management, team rostering, client communication, preparing quotes and job confirmations, along with performing as a Senior FSC in the field as required.
- Financial analysis and management reporting of the department performance to company targets
- Senior Report writing and GIS analysis;
- Recruitment of new FSC department personnel, onboarding and training new team members.

Fauna Spotter Catcher

Biodiversity Australia QLD. Brisbane. May 2020 to Jan 2022

- Undertake fauna and flora surveys including targeted EVNT species;
- Data collection to satisfy legislation and approval conditions;
- Report writing and GIS analysis;
- Animal dispersal, capture and rehabilitation (terrestrial and aquatic) – including venomous snakes;
- Fauna surveys including diurnal and nocturnal survey techniques (e.g. Anabat surveys);
- Species Identification – Flora and Fauna (native and pest);
- Fauna Potential Occurrence Assessments.

Volunteer

Ipswich Nature Centre (2017-2018); Lone Pine Koala Sanctuary (2016); Australia Zoo (2013).

- Provided high level husbandry care to native wildlife and domestic livestock, including maintenance of enclosures. Such as macropods, echidnas, koalas and wombats and exotic animal such as tigers, lemurs, rhinos and giraffes
- Handled exotic and native animals such as diamond pythons, echidnas, koalas, blue tongued skinks, cheetahs and lemurs
- Created, prepared, conducted and reported on enrichment strategies
- Prepared diets for both exotic and native animals
- Educated the public about wildlife conservation and management through keeper talks, children's zoo programs and answering all questions and queries
- Assisted keepers in animal health checks and treatments
- Continued a high level of enclosure hygiene and maintenance

Relevant Project Experience

Date	Project	Key Role / Tasks
May 2023	ENQ5494 APA – Weed Surveys	*Ecologist* • Conducted Weed surveys alongside APA escort within South Australia and New South Wales
April – November 2023	ENS Jobs Task Force – Raspberry Road, Tumut, Tambar Springs and Breeza	*Ecologist* Conducted Ecological Stewardship BSAR Assessments • Items included –Targeted Flora and/or Fauna Surveys, Nocturnal Surveys, Plots, Bird Dawn and Dusk Surveys, Call Playbacks, PIR Camera Set up, Anabat Setup, data management

Date	Project	Key Role / Tasks
November – December 2023	Numerous Jobs for Service Stream and Task Force	*Drone Pilot* Service Stream – Conducted Raptor Nest Checks via drone located on Telecom Towers. Observations were to include species that created nest and activity status of the nest. • Task Force BSARs – Conducted Thermal drone surveys across sites at dawn and dusk to look for species such as Koalas.
November – December 2023	ENS6144 Santos/GHD – Ecology Assessments for Pipeline	*Ecologist* Conducted Ecological Assessments as per scheduled for that particular week/fortnight. • Items included – KSATs, Targeted Flora and/or Fauna Surveys, Nocturnal Surveys, PIR Camera Set up, Songmeter set up, data management
December 2023	ENS6003 – Garden Island and Chowder Bay	*Ecologist* Conducted Ecological Assessments within Impact Zones of Chowder Bay and Garden Island Defence. • Items included – Habitat Assessments and Nocturnal Surveys.
June 2020 - present	Pacific Motorway (M1) Upgrade - Varsity Lakes to Burleigh	*Fauna Spotter Catcher* • Management of all fauna interactions and sightings including clearing direction and close communication with workers. • Handling, identification and relocating a wide range of fauna including venomous snakes (day and night works) in line with the Management Plans in place. • Euthanasia of invasive species on site where applicable. • Working closely with client and BA Fauna Project Manager to ensure a safe and progressive work site. Conducted EVNT specific surveys and spotting, including Koala specific spotting, in line with SMP's in place.
October 2020	New England Highway Upgrade – Warwick to Wallangarra	*Fauna Spotter Catcher* • Pre-clearance fauna habitat assessment. • Management of all fauna interactions and sightings including clearing direction and close communication with workers. • Handling, identification and relocating a wide range of fauna including venomous snakes (day and night works) in line with the Management Plans in place. • Euthanasia of invasive species on site where applicable. • Working closely with client and BA Fauna Project Manager to ensure a safe and progressive work site. • Surveyed adjacent areas of habitat for offset nest box installations.
Nov 2020	Bruce Hwy - Deception Bay Rd Interchange Upgrade	*Fauna Spotter Catcher* • Management of all fauna interactions and sightings including clearing direction and close communication with workers. • Handling, identification and relocating a wide range of fauna including venomous snakes (day and night works) in line with the Management Plans in place. • Euthanasia of invasive species on site where applicable. • Working closely with client and BA Fauna Project Manager to ensure a safe and progressive work site. • Conducted EVNT specific surveys and spotting, including anabat surveys, in line with SMP's in place.

Date	Project	Key Role / Tasks
Nov 2020 – present	Pacific Motorway (M1) Upgrade – Palm Beach to Tugun	*Fauna Spotter Catcher* • Management of all fauna interactions and sightings including clearing direction and close communication with workers. • Handling, identification and relocating a wide range of fauna including venomous snakes (day and night works) in line with the Management Plans in place. • Euthanasia of invasive species on site where applicable. • Working closely with client and BA Fauna Project Manager to ensure a safe and progressive work site.
Nov 2020 – Present	Pacific Motorway (M1) Upgrade – Burleigh to Palm Beach	*Fauna Spotter Catcher* • Management of all fauna interactions and sightings including clearing direction and close communication with workers. • Handling, identification and relocating a wide range of fauna including venomous snakes (day and night works) in line with the Management Plans in place. • Euthanasia of invasive species on site where applicable. • Working closely with client and BA Fauna Project Manager to ensure a safe and progressive work site.
Nov 2020	Ellendale Estate	*Fauna Spotter Catcher* • Management of all fauna interactions and sightings including clearing direction and close communication with workers. • Handling, identification and relocating a wide range of fauna including venomous snakes (day and night works) in line with the Management Plans in place. • Euthanasia of invasive species on site where applicable. • Working closely with client and BA Fauna Project Manager to ensure a safe and progressive work site.
Nov 2020	Coombabah STP Upgrade Stg 6	*Fauna Spotter Catcher* • Management of all fauna interactions and sightings including clearing direction and close communication with workers. • Handling, identification and relocating a wide range of fauna including venomous snakes (day and night works) in line with the Management Plans in place. • Euthanasia of invasive species on site where applicable. • Working closely with client and BA Fauna Project Manager to ensure a safe and progressive work site. • Conducted EVNT specific surveys and spotting, including Koala specific spotting, in line with SMP's in place.

Adam Robert May

Reedy Creek QLD 4227

0413 606 156

australian.science.education@gmail.com

Wiradjuri

A proud Wiradjuri man, vegetation ecologist, horticulturist and educator with extensive experience and qualifications within the environmental, education and horticulture sectors possessing excellent oral, written and graphic communication skills, demonstrated ability to liaise with people from diverse social, intellectual, and cultural backgrounds with confidence, maturity and sensitivity.

CAREER OBJECTIVE

To utilise my higher education, knowledge and experience and passion the environment to obtain a rewarding career in an inclusive local team of like-minded staff in conservation, ecology or environmental sectors to enhance our rich biodiversity and contribute to better outcomes for users.

EDUCATION & QUALIFICATIONS

- Graduate Diploma in Education (Science & Geography): Griffith University (2015)
- The Queensland Regional Ecosystem Framework and its Application (2007)
- Vegetation Structure and Remnant Status VMA 1999 (2007)
- Field identification of the Brigalow Belt (2007)
- Bachelor of Science/Ecology: University of Queensland (2006)
- Native Animal Conservation in Training Program: Moreton Institute of TAFE (2001)
- Diploma of Horticulture: Moreton Institute of TAFE (2000)
- 4WD Training (2008)
- Chainsaw Training (2011)

EMPLOYMENT HISTORY

Horticulturalist, Dec 2017 – Current

- Growing & the cultivation of Proteaceae plants including Proteas, Leucospermum, Leucadendron, Grevillea, Telopea and also Eucalyptus pulverulenta.
- Distribution to farmer's, hobbyists and gardeners in suitable growing regions.
- Provide advice to successfully grow these plants in challenging areas and varying seasonal conditions.
- Managing and cultivating of a small fruit orchard to ensure harvest success.
- Ensure good Health and vigour of specimens to prevent severe infestation of pest and/or disease.
- Provide exclusion barriers to prevent frugivores, marsupials, insects and ground dwelling rodents and birds from severe attack and fruit spoilage.
- Provide waste management systems to ensure nutrient recycling, waste reduction, plant nutrition and minimise input costs into the system.

Field Botany Tutor, Wild Outdoor Plant Outdoor Learning, Dec 2017 – Dec 2019 (Casual)

- Assist students in the class to identify features related to the workshop of the day.
- Supervise and assist students in the field on botanical and ecological features of the workshop.
- Assist Chief Botanist as required.

Teacher, Sarina State High School, January 2016 – May 2017

- Plan, implement and teach subject content consistent with ACARA, QCAA and the school syllabus.
- Create engaging hands-on lessons that stimulate kinaesthetic learners.
- Implement ACARA cross curriculum priorities
- Collect record and document student data on academic progress, behaviour, effort and report to parents/guardians.
- Provide a safe stimulating learning environment for all students.

Teacher Aide, Cleveland District State High School, (Casual Position) July – Sept 2015

- Assist junior secondary students with literacy and numeracy, Maths, Science, Geography and one on one /small group tutoring in the learning support unit.
- Support students during exams with reading, clarifying and scribing required tasks.
- Work with Aboriginal and Torres Strait Island students with a focus to 'Closing the Gap' to complete assignments and homework after school in the learning support unit.
- In class support for students with disabilities in the special education unit.

Youth Trainer, BoysTown Tjurabalan, Balgo - Western Australia (Contract Position) Oct 2014 – Nov 2014

- Deliver accredited and non-accredited training in horticultural and construction-based projects. This project includes the construction of garden beds, planter boxes, tables and seating, irrigation systems, plant knowledge and care, construction of a 3 bay composting system and education of waste management in an effort to reduce and recycle in the Wirrimanu Community. Associated visual and hands on education materials such as PowerPoint, handouts and actual exhibits were used to assist with the learning techniques of Aboriginal education.
- Clearly communicate with cultural sensitivity at all times with Trade Training Centre Staff, the Wirrimanu Community and Aboriginal youth to ensure understanding, respect and integrity of BoysTown's presence in Balgo.
- Maintain and create positive working relationships with government, community agencies and stakeholders.
- Empower students with various projects, skills and diversity by encouraging and using positive reinforcement for participation, teamwork and learning in the educational environment.
- Engage with the Aboriginal Peoples of the Tjurabalan region and deliver quality training, mentoring and life skills development in order to effect long term sustainable change.
- Facilitate an environment that increases student attendance, participation and contribution by keeping learning interesting, intellectually appropriate, ensuring respect of self and each other, and facilitating safe work and coping mechanisms in extreme heat.

Field Ecologist, Newground Environmental, June 2012 – Oct 2012

- Undertake Vegetation Structure data collection using The Queensland Regional Ecosystem Framework and its Application,
- Undertake and record complete site floristics
- Identify plants using the most up to date botanical keys and collect specimen if required for positive ID by the Newground head botanist and/or Queensland herbarium if required.
- Undertake biodiversity tasks as directed by the senior ecologist including fauna habitat assessment

Natural Areas Coordinator, Logan City Council, March 2009 – May 2012

- Manage and coordinate team of 13 staff in natural area management operations, abiding by Council policies and procedures and occupational health and safety guidelines.
- Conduct staff performance reviews to assess previous performance measures, provide and receive feedback on staff performance and job satisfaction.

- Deliver excellent customer service to the public, community groups and schools and facilitate capacity building and community engagement.
- Liaise with councillors, community and internal and external industry stakeholders in a professional manner for the best environmental outcomes in bushland and protected areas.
- Supervise emergency response from unit field crews to bushland parks following flooding and storms to ensure public safety.
- Perform risk assessments in natural landscapes and investigate opportunities to apply control measures that reduce any risks to an acceptable level within suitable assessment time frames.
- Educate staff in the identification of native and exotic species and associated vegetation communities, framework and community structure in local bushland areas and implement strategies for desired environmental outcomes.
- Inspect, evaluate and report development assessment applications with natural area park dedications to ensure approved Open Space Management Plans are consistent for natural area maintenance, management, enhancing biodiversity, community use and safety.
- Provide advice about vegetation significance and relate relevant state, federal and local planning schemes and offset policies where vegetation clearing is involved.
- Supervise offset planting mitigation strategies on behalf of council to ensure an equal or greater environmental outcome is achieved in our bushland, and develop and report on compensation plans as a result of requirements under the Nature Conservation Act (NCA) 1992.
- Implement and report on capital works projects and program in bushland areas including supervision and management of council staff and contractors, cost estimating and materials procurement within budget limits and ensure that appropriate community consultation and engagement is implemented.

Technical Officer, Queensland Herbarium, Jul 2007 – Feb 2009

- Collection of ecological field data in remote areas of Queensland including specimen collection, GPS location, landform, aspect, soils, geology, disturbance, species composition, basal area, crown cover, stem counts, all characterising dominant plant communities, using Queensland Herbarium methodologies, via interpretation of site field data for the CORVEG database
- Accurate CORVEG site data entry in a specifically designed database allows targeted report generation for Botanists across the state.
- Ortho rectification of aerial photographs using computer software package, Imagine 9.1.and digitising of aerial photography as required for mapping projects and senior staff.
- Rostered duties in the Plant Id room including botanical identification of Queensland native and exotic plant species. Identification is accomplished using the most up to date taxonomic dichotomous and interactive keys, herbrecs data, and herbarium specimens. Further, poison and general enquiries, via phone and counter are also a part of the rostered Botanist duties

Ecologist, Biodiversity Assessment and Management, Feb 2007 – June 2007

- Conduct preliminary site-specific background and database searches prior to field investigations; and the preparation of field activities including collection and compilation of required mapping, consumables, field equipment and the organisation of accommodation arrangements. Conduct regular stocktake for all field equipment and Personal Protective Equipment.
- On-site experience involved flora assessment and plant identification using Queensland Herbarium methodologies and fauna surveys using Elliot traps, cage traps, harp traps, spotlighting, Anabat II detector and pitfall traps. In addition, this role required liaison with Local and State government agencies and landholders as well as various other tasks as directed by senior staff.

Environmental Planning Cadet, Caboolture Shire Council, Jan 2004 – Feb 2007

- Implementation of self-guided walks including: the interpretive signage design; liaison with local Traditional Owners, Gubbi Gubbi (Eve Fesl), landholders and the general public; participation in team meetings; the review of project goals and the preparation of regular project reports.
- Assist contract botanist with complete site floristics where needed, and council staff in site assessment of conservation programs such as the Voluntary Conservation Agreement, Land for Wildlife and Urban Wildlife.

VOLUNTEER WORK

Cleveland District State High School, Term 2 2015

- Assist junior secondary students with literacy and numeracy, Maths, Science, Geography and one on one /small group tutoring in the learning support unit.
- Support students during exams with reading, clarifying and scribing required tasks.

Kindilan Outdoor Education and Conference Centre, July School Holiday Program 2014

- Assist outdoor recreation and education program staff with kayaking, bushwalking, archery, damper making, orienteering, soccer, skipping and other engaging activities for the young participants.

YMCA, September school holidays 2013

- Assist program staff at YMCA Victoria Point during Vocational Care with sports, games, food & organising activities for the young participants.

NAIDOC Week Celebrations

- Participate in NAIDOC celebrations on the Environmental Protection Agency display. Liaise with members of the public regarding the role of the agency, as well as answering any questions regarding plants, weeds etc. Distribute informative posters, badges, plant keys and Aboriginal bandanas.

REFEREES

Bruce Wilson
Retired Science Leader
Queensland Herbarium
Telephone: 0492 956 135
Email: wildoh9999@gmail.com

Justin Le Page
Program Manager - Parks and Open Spaces
Fraser Coast Regional Council
Telephone: 0455405117
Email: justin.lepage@bigpond.com

Our people

Nathan Eshraghi

Geospatial Specialist

Professional profile

Nathan Eshraghi is a customer-focused and detail-oriented IT graduate with diverse life and career experiences in IT, small business, and consulting. He is employed as Biodiversity Australia's Geospatial Specialist and has demonstrated the ability to adapt to various technologies, workplaces, and geographic contexts. Nathan holds a Graduate Diploma in Information Technology and a Bachelor of Urban & Environmental Planning. Nathan has extensive experience in GIS development and analysis, spatial data management, and architectural drafting, utilising advanced tools such as ESRI ArcGIS, QGIS, and AutoCAD.

His technical proficiency includes spatial analysis, cartography, 3D geo-spatial visualisation, FME data ETL, and programming with Python, ArcPy, and the ArcGIS API for Python. Nathan's strong ability to adapt to various technologies and environments allows him to deliver high-quality geospatial solutions consistently. His comprehensive skill set and commitment to excellence make him a valuable asset both to Biodiversity Australia and in the field of GIS.

Qualifications, Certifications and Memberships

- Graduate Diploma in Information Technology – 2022 (GPA 6.125)
- Bachelor Urban & Environmental Planning – 2011

Key Skills

- ESRI ArcGIS Pro, ArcMap, Enterprise skill
- QGIS, opensource GIS
- 3D Geo-spatial Visualisation
- FME, data ETL
- SQL / database management
- Spatial analysis and cartography
- Python, ArcPy, ArcGIS API for Python
- AutoCAD

Career summary

Geospatial Specialist	Biodiversity Australia	Current
GIS & Application Developer	GP One Consulting	May 2023 – Jul 2023
GIS Analyst	Yarraman Metals	Nov 2022 – Jan 2023
GIS Analyst	Toowoomba Regional Council	Feb 2012 – Aug 2013
Architectural Draftsperson	LT Design Architects	2001 - 2008

Professional Experience

Geospatial Specialist
Biodiversity Australia, QLD (Current)
• ArcGIS Pro and QGIS cartography, data management, analysis
• ArcGIS Field Maps and Survey123 development
• Spatial scripting, QA and ETL using ArcGIS API for Python, ArcPy

• User Interfaces with ArcGIS Dashboards and Experience Builder
• ArcGIS Online administration
• ArcGIS custom reporting

GIS & Application Developer
GP One Consulting
- GIS/App Development
- Spatial scripting, QA and ETL using ArcGIS API for Python, ArcPy
- Consulting within the ESRI Enterprise software stack including AGOL, ArcGIS Pro, ArcMap and VertiGIS studio

GIS Analyst
Yarraman Metals
- Used QGIS for spatial data analytics / cartography in the exploration sector

GIS Analyst
Toowoomba Regional Council
- Advised and attended to internal and external customers including planners, asset managers, engineers, consultants, and project managers
- Worked with ESRI software suite to analyse and manage spatial data
- Developed informative and presentable maps
- Developed interactive mapping products for internal clients
- Conducted quality assurance on externally generated data/maps

Architectural Draftsperson
LT Design Architects
- Worked for residential architect and interior designer
- Taking designs from concept to site-ready plans
- Utilised AutoCAD and Revit (3d/BIM)

Relevant Project Experience

Date	Project	Key Role / Tasks
2024	APA National Weed Survey	*Geospatial Specialist* Field survey development, database development, reporting.
2024	APA GIS Data Management	*Geospatial Specialist* Programmatic GIS data management and quality assurance.
2024	GHD General Ranges Training Area Redevelopment	*Geospatial Specialist* Undertook field survey development, cartography, data management.
2024	Toowoomba RC Biosecurity Matter Mapping	*Geospatial Specialist* Provided dashboard development and data management services.

References

Note references as required using table below

Name	Position	Organization	Phone Number
Peter Reyne	Chief Technology Officer	GP One Consulting Pty Ltd	+61 439 763 587
Gordon Webb	Head Geologist	Yarraman Metals	+61 460 872 820

Oisin Joachim Bartholomew Canney

Address: 13 Palmer Avenue, Ocean Shores, NSW, 2483
Telephone: +61 410 050 598 Email: oisincanney@gmail.com

Personal & Skills Profile

- Strong written and verbal communication
- Strong time management and organizational skills
- ICT skills including Microsoft Excel, ProjectWise, ArcGIS/QGIS and SPSS
-

Education

Aberystwyth University BSc Environmental Science 2017-21 (with Year in Industry)

- Graduate of Aberystwyth University BSc. (Hons) Upper Second-Class division (2:1)

St John Baptist, Aberdare

- 3 A-Levels – Chemistry, Geography, and advanced Welsh Baccalaureate

Cyfarthfa High School, Merthyr Tydfil

- 10 GCSE's (6 As, 3 Bs and 1C), BTEC Physical Education (Distinction)
-

Work Experience

Environmental Consulting, Greenloaning Biostudies October 2023 - Current
Since working for Greenloaning Biostudies I have conducted many consulting desk based tasks, but have also been heavily involved in fieldwork locally and further afield, with projects along the east coast and inland. Daily tasks include:

- Conducting biodiversity assessments for reports (BDAR)
- Using GIS-based applications for various professional map layouts from raw data & other sources
- Using biodiversity assessment method (BAM) data for the BAM calculator
- Research into plant community types (PCTs) for background for reports/fieldwork/mapping
- Conducting flora and fauna field surveys in various ecosystems across NSW
- Managing selected projects

Environmental Advisor, ReForest Now (RN): September 2022 - October 2023
Previously worked for RN restoring Australia's rainforests. RN has proudly planted over 500,000 trees since their inception in 2019, and over 250,000 of those trees have been planted since I joined. My many roles for the organization include:

- Analyzing soil samples from planned planting sites for a composition breakdown
- Advising on which fertilizers to use at a planted area based upon the soil composition of the site
- Augering holes, preparing water crystals, planting trees and fertilizing trees on planting days
- In charge of work vehicles (4WD) on planting days
- Maintenance work on areas that have been planted (Have gained a chemcert for this work)
- Forest regeneration work
- Lead our drone data collection for various reports
- Lead our vehicle and equipment registry

Environmental Hub Support, Natural Resources Wales (NRW): October 2021 – March 2022
Working for NRW as part of the environmental hub support, key accountabilities include:

- Providing front line response to a range of environmental quires
- Carry out transactional customer activity such as processing permitting applications, licenses etc
- Ensuring accurate data capture and processing to relevant systems
- Handling personal data and security policy when handling financial information
- Be an exemplar for excellent customer care across all NRW activities

ECO Consulting, ECO Connect Network: May 2021 - October 2021

Employed as an ECO consultant, my main responsibilities included:

- Engaging with homeowners regarding grants available to them to install new heating systems & insulation in homes with low EPC's (Energy Performance Certificate)
- Aiding businesses working in schemes such as the new Green Deal

Environmental Consulting, Arup: January - May 2020

I was employed as an environmental consultant. My main responsibilities while working here was:

- Writing the environmental statement for the new A417 'Missing Link' project.
- In charge of the progress tracker for the A417 'Missing Link' project.
- Using GIS to map new EV charging points across South Wales
- Taking part in ecological fieldwork
- Helping create job roles for an upcoming nuclear waste project
- Conducting literature reviews for greenways projects in Ireland
- Creating manifestos to bid for future projects

In my free time I took part in charitable work where I:

- Was part of a small team that organized a week of events for the charity RedR, an NGO that provides relief programmes across the world.
- Took part in a missing maps project where I mapped parts of the world that are vulnerable to natural disasters, conflicts, and disease epidemics.

Continued to work for Arup during the first UK lockdown due to COVID-19. I displayed my ability to continue to produce high quality work while working from home.

Waste Management, Merthyr Tydfil County Borough Council (MTCBC): October - December 2019

Working for MTCBC where my main responsibilities were:

- The assistant to the Parks and Bereavement Services Manager
- Reviewing the waste management practices of the council
- Produced a report that showed the council how they could be more efficient with their street sweeping fleet.

Interests and achievements

Gold Duke of Edinburgh – achieved Gold Duke of Edinburgh award August 2021, where I enhanced my teamwork skills and faced many challenging tasks which I worked through and overcame

Rugby- Currently play for the Byron Shire Rebels, but played for Aberystwth RFC 1st team while I was in Aberystwyth and Bedlinog RFC whilst at home. My highest level to date was being selected to play for the prestigious Welsh Crawshays (beating England Lambs albeit on a very heavy Usk rugby club pitch!)

Music- Play the Piano to grade 5 standard and the Bassoon to grade 8 standard. I was a member of the Four counties Youth Orchestra, supported the school orchestra and Big Band as a keen guitarist. I was invited to be the guest soloist with the Welsh Sinfonia (a team of professional musicians) and toured Holland with the school Orchestra.

Running- Active member of both the Byron Bay Run Club and Ocean Shores run club. Very passionate about being active in my spare time as I am a firm believer that the discipline sports gives you impact positively in every aspect of your life, including your work life. I found throughout university that the more active I was, the better I became at my university tasks.

References available on request

Our people

Dusty McLean

Ecologist

Professional profile

Dusty is an experienced and highly educated Scientist currently employed with Biodiversity Australia as an Ecologist. Dusty has proven competency in designing and implementing ecological research, executing field surveys, flora, fauna, habitat and vegetation mapping, and report writing.

Dusty has extensive experience with bird and mammal research in a variety of ecosystems in NE NSW and SE QLD. His work focussed on the effects and influence of fire and predation on wildlife populations and has informed conservation management plans for species including the long-nosed potoroo, red-legged pademelon and dingo. Dusty has had several research articles published in international academic journals and has experience engaging with a variety of stakeholders including universities, government agencies (NPWS), and First Nations communities to achieve desirable ecological outcomes.

Qualifications, Certifications and Memberships

- Bachelor of Science (Ecology & Conservation Biology)
- Bachelor of Science (Honours)
- Doctor of Philosophy (PhD)
- Member of Golden Key Honours Society
- First aid and CPR

Key Skills

- Ecological surveying (designing, coordinating and implementing) and research
- Ecological health assessments in a variety of ecosystems
- Fauna trapping and monitoring techniques
- Threatened species (Flora and fauna) and communities surveys
- Identification, surveys and analysis of native and exotic flora and fauna mapping
- Landscape and ecological processes mapping and monitoring
- Ecological restoration and rehabilitation methods and techniques
- Preparing and assessing the progress of rehabilitation and restoration plans, ecological monitoring plans
- Working safely in teams conducting large scale and remote ecological field work

Career summary

Ecologist	Biodiversity Australia	2025 - Present
Principal Ecological Consultant	Guerilla Eco - Ecological Consultancy	2021 - 2024
Advisor	Minyumai IPA Dingo Project	2023
Research Assistant	Southern Cross University	2021 - 2024

Professional Experience

Ecologist

Biodiversity Australia (2025 - Present)

- Designing and implementing flora and fauna surveys
- Data collection to satisfy legislation
- Field Ecological assessment and authoring ecological reports.
- GIS analysis
- Threatened species and communities' surveys as per regulations

Principal Ecological Consultant

Guerilla Eco - Ecological Consultancy (2021 - 2024)

- Scientific research report writing
- Ecological Services for conservation projects
- Designing and executing ecological field surveys – threatened fauna, habitat, and invasive species
- Ecological assessments, preparing and assessing progress of conservation management plans
- Threatened species monitoring
- Mapping

Research Assistant

Southern Cross University (2021 - 2024)

- Mapping for peer-reviewed publications and various fieldwork activities for wildlife research, such as camera-trapping, cage-trapping and collecting tissue samples for genetic analyses.

Volunteer and Other Work Experience

Forestry Corporation of NSW

Assisted with field surveys, including mark-recapture and spotlight surveys, for monitoring rare and threatened species within NE NSW State Forests alongside the Forestry Corporation ecology team.

Shamwari Game Reserve, South Africa

Monitored, tracked, and assisted in the relocation of wildlife, engaged in land rehabilitation, and participated in community engagement at a reserve situated on reclaimed and rehabilitated agricultural land and focused on conserving many of Africa's iconic megafauna.

Author

- McLean, D., Goldingay, R., & Letnic, M. (2024). *Experimenting with artificial shelters to assist habitat restoration for medium-sized ground-dwelling mammals.* Restoration Ecology, e14300.
- McLean, D. & Goldingay, R. (2024). *Response of medium-sized mammals in subtropical forests following Australian 'Black Summer' wildfires.* Forest Ecology and Management, 562, 121952.
- McLean, D., Goldingay, R., & Letnic, M. (2023). *Diet of the Dingo in Subtropical Australian Forests: Are Small, Threatened Macropods at Risk?* Animals, 13(14), 2257.
- Doctor of Philosophy Thesis topic: *The Ecology and Conservation of the Northern Long-nosed Potoroo (Potorous tridactylus tridactylus) and Other Small, Threatened Macropods in North-eastern New South Wales, Australia.*
- Honours Thesis topic: *Effects of residential development on bird diversity, abundance and community composition in South-eastern Queensland, Australia.*

Our people

Kody Kemp

Graduate Ecologist

Professional profile

Qualified with a Bachelor of Environmental Science (Honours) Kody is versed in all topics environment and wildlife. His passion for ecology has led him to joining Biodiversity Australia's ecology team as a Graduate Ecologist. Prior to working at Biodiversity Australia, Kody has volunteered extensively and worked in various roles completing many complex projects and tasks with the core objective being positive environmental outcomes. Kody aims to make a difference and achieve an impact on the environment with every job, focussing on sustainability and reducing the knowledge gap between community and council environmental issues.

Kody has experience with ecological restoration, vegetation management plans, pre-clearance surveys, EPBC Monitoring and reporting, compliance, species surveys, Elliot trapping, GIS remote sensing and vegetation quality assessments.

Qualifications, Certifications and Memberships

- Bachelor of Environmental Science (Honours) University of Queensland
- AQF3 Chem cert
- ELA fauna handling/ plant identification workshop
- Chainsaw Certificate
- Manual Open Class Drivers Licence
- Construction White Card
- First aid and CPR
- 4WD, Chainsaw and Tractor operations

Key Skills

- Wildlife removal/relocation,
- Animal capture, handling and rehabilitation
- Fauna and Flora Identification
- Ability to undertake ecology surveys
- Fauna Habitat assessments
- Knowledge of state and federal legislation
- Identification of native, pest and EVNT species
- GIS programs, e.g. ArcGIS
- Bush regeneration
- Experienced using power tools, chemicals and machinery

Career summary

Graduate Ecologist	Biodiversity Australia	2024 – Present
Graduate Restoration Ecologist	Eco Logical Australia Pty Ltd	2023 – 2024
Bush Regenerator Site Foreman	Atlas Golf Services	2018 – 2023
Landscaping Team Leader	Stone Will Landscaping	2018

Professional Experience

Graduate Ecologist
Biodiversity Australia QLD (2024-Present)

- Offset monitoring including BioCondition, BAM and Habitat Quality Assessment plots
- Flora identification Brigalow Belt and SEQ
- Targeted fauna surveys (trapping programs)
- Targeted species searches
- Remote field survey

Graduate Restoration Ecologist
Eco Logical Australia (2023-2024)

- VMP implementation management
- Development and preparation of various Ecological Management Plans (e.g. Weed, Biodiversity, Vegetation, Microbat, Restoration management plans)
- Vegetation Monitoring and Reporting
- Vegetation Clearance Supervision
- Pre-clearance surveys
- Biodiversity compliance reporting
- Client and Stakeholder engagement
- Directing and managing staff
- Data collection, fauna and flora surveys
- Invasive and native flora identification

Bush Regenerator Site Foreman
Atlas Golf Services (2018-2023)

- Management of Riparian VMP zones
- Data collection, fauna and flora surveys for third party reporting
- Biodiversity Report/Progress Report/ Site Audit compilation for Council
- Foresight of future work and planning of work
- Invasive and Native Plant Species Identification
- Chemical Spraying (Weed control)
- Use of Adaptive Management techniques
- Use of Integrated Practice Management techniques
- Clearing of Land
- Chainsaw use
- Tractor Operation (Slashing, Ripping, Aerating, 4in1 operation)
- 4wd Driving.
- Planting of native plant species (seeding and tube stocking)

Our people

Alex Mackenzie

Ecologist

Professional Profile

An experienced professional ecologist with over 7 years of experience and demonstrating sound ecological and plant identification knowledge applied on projects for major clients including several large resources and infrastructure sites. Alex has proven ability to develop knowledge related to company direction, achieving goals and optimizing business functions whilst delivering high standards.

Alex's most recent (June 2023- current) project included 18 months of ecological field surveys and reporting in the Brigalow Belt South Bioregion for a large seismic project. Field tasks included ecological field surveys identifying regional ecosystems, threatened ecological communities, and identifying EVNT habitat. Report writing on field data and GIS analysis to suit client requirements.

Alex is a highly competent and qualified Ecologist with skills including project managing, developing JSAs/SWMS, team leading, work procedures, fauna and flora surveys (throughout Queensland) – flora surveys undertaken in South East Queensland Coast, Surat Basin and Brigalow Belt. Alex has proven capabilities across several projects in her time at Biodiversity Australia (Shell QGC, Origin Energy, Terrex) in identifying a range of species from rainforest, open forest and arid, dry communities; Regional Ecosystems (RE) knowledge, assessment and mapping; Habitat assessments (aquatic and terrestrial); wildlife catching and handling (aquatic and terrestrial); report writing, research, monitoring, data collection, GPS/GIS navigation and mapping.

Qualifications, certifications and memberships

- Bachelor of Environmental Science & Management (University of Newcastle)
- Open manual car licence
- White card
- ACDC licence
- EIANZ membership
- Regional ecosystem and Bioconditioning training (CO2 Australia)
- Clean and Inspect machinery
- Venomous snake handling course

Professional Experience

Ecologist
Biodiversity Australia 2017 – Current

- Field surveys in the Brigalow Belt South Bioregion, undertaking protected plant surveys, regional ecosystem verification, and habitat quality assessments for EVNT fauna species
- Monitoring of Biodiversity Offset site for a large Renewable energy project in the Brigalow Belt South Bioregion
- Flora surveys of rehabilitated gas infrastructure sites in the Brigalow Belt South Bioregion
- Preclear surveys and baseline ecology surveys in the Brigalow Belt Bioregion
- Provide accurate GPS and GIS navigation, mapping, data collection

- Project managing and undertaking field ecological assessments and flora surveys (terrestrial). Flora surveys were followed accordingly with Qld Flora Survey Guidelines (2016) – Protected Plants under the Nature Conservation Act 1992
- Rapid weed assessments; Progressive weed control;
- GPS mapping of weed densities and locations; Reporting of EVNT animal sightings; Writing weed assessment reports
- Ecological and environmental consulting with various stakeholders Understanding, compliance and implementation of standard operating procedures, land access, WH&S, inductions, policies and legislations, environmental management plans, data collection information.

Volunteer
LMCC Landcare Resource Centre (2017)

Duties:

- Working in the nursery one day a week my duties include mixing potting mix, potting up seedlings, sorting and storing seeds, weeding and yard maintenance.

Volunteer
Office of Environment and Heritage Wild count program (2017)

Duties:

- Deployment and retrieval of monition sensor cameras
- Developed navigation skills using handheld GPS, compass and maps
- Recorded data, such as evidence of disturbance, GPS location

Volunteer
Community Ecosystems Monitoring Lake Macquarie City Council (2016)

Duties:

- Environmental monitoring in a variety of environments including rainforest and eucalypt forest.
- Plant identification skills for natives and weed species.
- Recorded data, such as plant species present, measuring DBH of large trees, canopy and ground cover and length of fallen limbs and trunks to give an overall health assessment of the site.

Volunteer
Landcare Wangi Wangi (2016)

- Applied and further developed native plant identification skills and weed identification and appropriate removal skills, confident with hand held tools such as mattock, rake, folding saw, lopper and secateurs.
- Completed team leader training course which included identifying hazards and assessing risks on site as well as the importance of good communication with team members.

Skills

Field Work

- Experienced flora, fauna and weed identification skills
- Experienced with various weed management techniques such as herbicide application method of cut and paint, and non-chemical methods such as mosaic technique
- Data collection and navigation with GIS based tools and tablets
- Experience working on large remote projects under various HSE systems

- Through studies and volunteer work Alex has extensive experience in environmental assessment in a range of environments such as mangrove forests, rock platforms, grasslands and eucalypt forests and using different techniques and equipment.
- Developed good understanding of work place health and safety procedures and constant awareness of my own safety and that of others while working in the field and wearing PPE.

Our people

Shirley Chia

Ecologist

Professional profile

Shirley is a skilled ecologist working with Biodiversity Australia, where she contributes to a wide range of ecological consulting projects across urban development, infrastructure, and conservation sectors. With a First-Class Honours degree in Ecology from UNSW and hands-on experience, Shirley brings a strong scientific foundation and practical field expertise to every project.

Shirley has played a key role in delivering BDARs. biodiversity offset monitoring programs, and ecological compliance assessments. Her ability to manage complex fieldwork logistics, maintain client relationships, and ensure timely, high-quality reporting makes her a valuable asset to the Biodiversity Australia Ecology team.

Her capabilities include conducting vegetation and fauna surveys, identifying threatened species and ecological communities, and applying the Biodiversity Assessment Method (BAM) to support regulatory compliance under NSW and Commonwealth legislation. Shirley's experience spans diverse habitats, including degraded landscapes and conservation reserves, where she has demonstrated adaptability in challenging field conditions.

In addition to her ecological expertise, Shirley has developed strong project management skills, leading annual biodiversity offset monitoring programs and maintaining open communication channels with clients to ensure transparency and satisfaction. Her background includes volunteer work with Taronga Zoo and Arid Recovery, further demonstrating her passion of wildlife conservation.

Shirley's career reflects a commitment to environmental stewardship and sustainable development. She leverages her skills to deliver insightful, science-based solutions that support biodiversity conservation and responsible land use planning.

Qualifications, Certifications and Memberships

- First Class Honours in Ecology (UNSW)
- Bachelor of Environmental Management (UNSW)
- Operate 4WD
- Full Manual License
- First aid and CPR

Key Skills

- Biodiversity Development Assessment Reports (BDARs)
- Biodiversity offset monitoring
- Project management and client liaison
- Vegetation and habitat assessment
- Threatened species identification
- RStudio and data manipulation
- Strategic planning
- Vegetation assessment and mapping
- Ecological field surveys
- Compliance assessment under NSW biodiversity legislation

Career summary

Ecologist	Biodiversity Australia	2025 – Present
Graduate Ecologist	Eco Logical Australia	2023 – 2025
Volunteer	Arid Recovery	2024
Volunteer Zookeeper	Taronga Zoo	2022 – 2023
Honours Student	UNSW Fowlers Gap Research Station	2022

Professional Experience

Ecologist
Biodiversity Australia, NSW (2025 - Present)

- Provide environmental assessments and wildlife management
- Management advice and data collection
- Undertake ecological surveys
- Species identification – Flora and Fauna (native and introduced)
- Liaised with onsite workers
- Vegetation, TEC and regional ecosystem identification, verification and mapping
- Weed surveys and mapping
- Significant species habitat assessments and impact management during construction and mining activities used in relation to the Endangered, Vulnerable and Near Threatened Species (EVNT) List and governing legislation
- Compiling written reports, accurately reporting the findings and providing recommendations on how to mitigate impacts during the relocation of wildlife habitats
- Interpretation and compliance with statutory regulations, safety/environment practices and organisational guidelines
- GIS Mapping
- Survey design and planning

Graduate Ecologist
Eco Logical Australia, NSW (2023 - 2025)

- Field surveys
- Site supervision
- Report and proposal preparation
- Conducting night and day field surveys, rescuing, trapping and handling native and exotic fauna
- Conducting desktop assessments
- Threatened species surveys

References

Name	Title	Company	Contact
A/Prof Lisa Schwanz	Deputy Director / Honours Supervisor	Evolution and Ecology Research Centre UNSW	l.schwanz@unsw.edu.au
Lachlan Metzler	Experienced Ecologist / Ecology Mentor	Eco Logical Australia	Contact number on request

Our people

Jonathan Vickers

Field Team Leader

Professional Profile

Jonathan joined Biodiversity Australia in 2020 as a field technician for the Carmichael Rail Network Project. Jonathan has been a valuable member of Biodiversity Australia and has demonstrated experience in pre-clearance inspection and reporting, fauna spotter/catcher works, fauna load reduction surveys, dewatering and weed management.

Qualifications, Certifications and Memberships

- James Cook University *-2014-2018-Bachelor of Science (Zoology and Botany)*
- Certificate II in Retail
- Certificate I Conservation and Land Management
- White Card Construction
- Chemical Distribution License ACDC

Career summary

Field Technician

Biodiversity Australia, QLD (Jan 2020- Present)

- Fauna Load Reduction surveys
- Pre-Clearance inspection & reporting
- Weed management
- Wildlife management services including snake handling, and fauna and habitat relocation
- Dewatering services

Conservation and Land Management Trainee

Townsville City Council – Mar - Aug 2018

- Ability to follow directions and complete tasks without supervision
- Working as part of a team to complete major tasks
- Safely using hazardous herbicides to poison noxious weeds
- Knowledge of the flora around the Townsville region
- Ability to assess threats and risks in order to complete tasks safely
- Maintaining and cleaning tools used on the job
- Using Brush cutters and pole saws to safely complete jobs

Sheet Fixer

Nick McConnell Plastering – 2013 – 2014

- Plasters assistant and general labourer

Sales Assistant

Gametraders – 2012 - 2013

- Greet and serve customers in a caring and concise manner
- Cash handling, cash register operation and reconciliation
- Merchandising and stocktaking
- Open and close procedures for the store
- Spearheading launch events for products (special releases, new products, deals and bundles)

Grounds Person
Laguna Quays Grounds and Maintenance – 2008 - 2010

- Used Greens Mowers to cut the aprons of the golf course
- Drove the Bunker Rake tractor over golf grounds to smooth the sand bunkers
- Used chainsaws and brush cutters safely to complete tasks
- Weeded and cleaned garden beds and resort areas
- Used spray packs with roundup to control weeds in bunkers

Relevant Project Experience

Date	Project	Key Role / Tasks
2020 - Present	BMD – Carmichael Rail Network for Adani	*Environmental Officer* Serviced the CRN project for wildlife management services including fauna handling and relocation and pre-clearance reporting
Present	Origin – Spring Gully	Serviced the Spring Gully project for wildlife management services including fauna handling and relocation and pre-clearance reporting. Further assisted with flora surveying for ecological works.

Our people

Rachel Fleming

Vegetation Field Team Leader

Professional profile

Rachel Fleming is a high-performing Field Team Leader in the Biodiversity Australia Vegetation Unit and is set to graduate with a Bachelor of Environmental Resource Management from Southern Cross University in 2025. With over five years of field experience in ecological restoration, she has a skilled understanding of ecological principles and practices. Rachel excels in fieldwork, data analysis, and environmental impact assessments, and is proficient in identifying native and invasive flora/fauna species. Her strong capabilities and experience, along with her attention to detail, ensure efficient work, and team safety

In the past, Rachel has led and coordinated teams in ecological restoration projects, fostering collaboration and accountability. Her extensive volunteer work with various not-for-profit organizations highlights her organisational abilities and commitment to a greater cause. Rachel also excels in engaging with stakeholders and the public, showcasing strong communication skills. Her work history includes roles such as a Graduate Ecologist, an Ecological Restoration Field Officer, and Bush Regenerator, among others.

Qualifications, Certifications and Memberships

- Bachelor of Environmental Science – Southern Cross University
- Accredited Chemical Distribution Certificate
- Commercial Operator's Licence
- Australian Construction White Card
- Backpack Spray Skill set
- Working Safely at Heights
- High Risk Work License – EWP
- Chainsaw License
- Traffic Management License
- First Aid and CPR

Key Skills

- Bush Regeneration & Ecological Restoration
- Handling & Application of Chemical Herbicides
- Native Plant & Invasive Weed Species Identification
- Post-Fire Recovery Works
- Spot Spraying and Erosion Control
- Hand Weeding and Pest Management
- Flora and Fauna Surveys
- Chemical Measurement and Mixing
- Data Collection and Analysis

Career summary

Vegetation Team Member	Biodiversity Australia	2024 - Current
Ecological Restoration Field Officer	Ecosure Environmental Consultancy	2023 - 2024
Wildlife Rescue Volunteer	WILVOS	2023 - 2024
Bush Regenerator	Toolijooa Environmental	2019 - 2021
Bush Regenerator	Dragonfly Environmental	2019 - 2021
Ecology Volunteer	Bush Heritage	2019 - 2024
Traffic Controller / Security Officer	Shusai Security	

Professional Experience

Vegetation Team Member
Biodiversity Australia, QLD (2024-Current)
- Native & Invasive weed species identification across South-East Queensland
- Tree removal including safe operation of chainsaws
- Safe operation of power tools including chainsaws and brush cutters and various hand tools
- Chemical Application for weed management through safe operation of QuikSpray, and Knapsack Spray units
- Provision of labour to environmental regeneration process, including ecological restoration
- Conduct vegetation assessment and surveys
- Tree planting
- Conducting BAM method flora surveys, threatened fauna surveys including; pitfall traps, spotlight transects and Elliot trapping.
- Remote field data collection.

Ecological Restoration Field Officer
Ecosure Environmental Consultancy (2023-2024)
- Led teams of 3-5 in ecological restoration, ensuring compliance with regulations.
- Managed maintenance and safety across diverse ecological communities.
- Proficient in chemical application for vegetation management.
- Worked effectively in remote settings with strong communication.
- Collected and analyzed ecological data to inform strategies.
- Managed reports, timesheets, and mapping using Avenza maps.

Bush Regenerator
Toolijooa Environmental (2019-2021)
- Conducted environmental restoration across Eastern Sydney, managing diverse plant communities.
- Performed primary, secondary, and maintenance work on various site conditions.
- Identified and removed plants, constructed fences, stabilized banks, brush cut, planted, and conducted intricate hand weeding.
- Worked independently and collaboratively on assigned tasks.
- Liaised with the public, explaining restoration principles and processes
- Data compilation and analysis
- Tree planting

Our people

Courtney Smith

Graduate Scientist

Professional profile

Courtney has recently joined the Biodiversity Australia team as a graduate marine scientist and is equipped with a well-rounded experience gained from a combination of industry appointments and formal qualifications. Courtney has completed a Bachelor of Coastal and Marine Science with a focus on water and resource management. Additionally, Courtney has proven her skills in the field with experience in data analysis and industry report writing for both private and government organisations across NSW.

Qualifications, Certifications and Memberships

- Bachelor of Coastal and Marine Science, University of Newcastle

Key Skills

- Data collection, entry, and analysis
- Academic writing and reporting
- Client relations (liaising with industry partners)
- Working in teams conducting marine field work

Professional Experience

Graduate Marine Scientist
Biodiversity Australia, QLD (2024-Current)

- Undertake data analysis and report writing
- *Data collection in field work activities*

Bar and Restaurant Supervisor
Royal Crown Hotel (2019-2024)

- Quality assurance of food and beverages
- Customer service of various clientele

Sailing Instructor
Newcastle Cruising Yacht Club (2019-2022)

- Creation and maintenance to a positive and safe environment
- Adherence to the Australian teaching curriculum
- Health and safety compliance

References

Name	Position	Organization	Phone Number
Alicia Marix-Evans	Manager	Property, Environment and Planning, Port of Newcastle	0487 405 508
Rebecca Frost	Manager	Newcastle Cruising Yacht Club	0411 205 765

A-13 BAM Minimum Information Requirements Checklist

Table 76: Minimum information required for the BDAR Stage 1

Report Section	BAM Ref	Information	Report Section
Introduction	Chapters 2 and 3	**INFORMATION** Introduction to the biodiversity assessment including: ☐ brief description of the proposal ☐ identification of Subject Land1 boundary, including: ☐ operational footprint (if BDAR) ☐ construction footprint indicating clearing associated with temporary/ancillary construction facilities and infrastructure (if BDAR) ☐ land proposed for biodiversity certification (if BCAR) ☐ general description of the Subject Land ☐ sources of information used in the assessment, including reports and spatial data	 ☐ Section 1.1 ☐ Section 1.2, Figures 1, 2, 3, ☐ Section 1.4 ☐ Section 1.5
		MAPS and TABLES (in document) ☐ Map of the Subject Land boundary showing the final proposal footprint, including the construction footprint for any clearing associated with temporary/ancillary construction facilities and infrastructure (if BDAR)	 ☐ Figures 1, 2, 3
		DATA (to be supplied) N/A	
Landscape Context	Sections 3.1 and 3.2, Appendix E	**INFORMATION** Identification of site context components and landscape features, including: ☐ general description of Subject Land topographic and hydrological setting, geology and soils ☐ percent native vegetation cover in the assessment area (as described in BAM Section 3.2) ☐ IBRA bioregions and subregions (as described in BAM Subsection 3.1.3(2.)) ☐ rivers and streams classified according to stream order (as described in BAM Subsection 3.1.3(3.) and Appendix E) ☐ wetlands within, adjacent to and downstream of the site (as described in BAM Subsection 3.1.3(3.)) ☐ connectivity of different areas of habitat (as described in BAM Subsection 3.1.3(5–6.)) ☐ karst, caves, crevices, cliffs, rocks and other geological features of significance and for vegetation clearing proposals, soil hazard features (as described in BAM Subsections 3.1.3(7.) and 3.1.3(12.) ☐ areas of outstanding biodiversity value occurring on the Subject Land and assessment area (as described in BAM Subsection 3.1.3(8–9.)) ☐ any additional landscape features identified in any SEARs for the proposal ☐ NSW (Mitchell) landscape on which the Subject Land occurs	 ☐ Section 2 ☐ Section 2.1.2, Figure 5 ☐ Section 2.1.1 ☐ Section 2.1.4 ☐ Section 2.1.4 ☐ Section 2.1.4, Figure 6 ☐ Section 2.1.4 ☐ Section 2.1.5, Figure 4 ☐ Section 2.1.4 ☐ Section 2.1.1
		MAPS and TABLES (in document) ☐ Site Map ☐ Boundary of Subject Land ☐ Cadastre of Subject Land ☐ Landscape features identified in BAM Subsection 3.1.3 ☐ Location Map ☐ Digital aerial photography at 1:1,000 scale or finer ☐ Boundary of Subject Land ☐ Assessment area, (i.e. the Subject Land and either 1500 m buffer area or 500 m buffer for linear development ☐ Landscape features identified in BAM Subsection 3.1.3 ☐ Additional detail (e.g. local government area boundaries) relevant at this scale	**For following maps and images:** ☐ Figures 1, 2, 4, 5, 6

Report Section	BAM Ref	Information	Report Section
		Landscape features identified in BAM Subsection 3.1.3 and to be shown on the Site Map and/or Location map include: ☐ IBRA bioregions and subregions ☐ rivers, streams and estuaries ☐ wetlands and important wetlands ☐ connectivity of different areas of habitat ☐ karst, caves, crevices, cliffs, rocks and other geological features of significance and if required, soil hazard features ☐ areas of outstanding biodiversity value occurring on the Subject Land and assessment area ☐ any additional landscape features identified in any SEARs for the proposal ☐ NSW (Mitchell) landscape on which the Subject Land occurs	
		DATA (to be supplied) ☐ All report maps as separate jpeg files Individual digital shape files of: ☐ Subject Land boundary ☐ assessment area (i.e. Subject Land and 1500 m buffer area) boundary ☐ cadastral boundary of Subject Land ☐ areas of native vegetation cover ☐ landscape features	
Native Vegetation	Chapter 4, Appendix A and Appendix H	**INFORMATION** ☐ Identify native vegetation extent within the Subject Land, including cleared areas and evidence to support differences between mapped vegetation extent and aerial imagery (as described in BAM Section 4.1(1–3.) and Subsection 4.1.1) ☐ Provide justification for all parts of the Subject Land that do not contain native vegetation (as described in BAM Subsection 4.1.2) ☐ Review of existing information on native vegetation including references to previous vegetation maps of the Subject Land and assessment area (described in BAM Section 4.1(3.) and Subsection 4.1.1) ☐ Describe the systematic field-based floristic vegetation survey undertaken in accordance with BAM Section 4.2 ☐ Where relevant, describe the use of more appropriate local data, provide reasons that support the use of more appropriate local data and include the written confirmation from the decision-maker that they support the use of more appropriate local data (as described in BAM Subsection 1.4.2 and Appendix A) For each PCT within the Subject Land, describe: ☐ vegetation class ☐ extent (ha) within Subject Land ☐ evidence used to identify a PCT including any analyses undertaken, references/sources, existing vegetation maps (BAM Section 4.2(1–3.)) ☐ plant species relied upon for identification of the PCT and relative abundance of each species ☐ if relevant, TEC status including evidence used to determine vegetation is the TEC (BAM Subsection 4.2.2(1–2.)) ☐ estimate of percent cleared value of PCT (BAM Subsection 4.2.1(5.)) Describe the vegetation integrity assessment of the Subject Land, including: ☐ identification and mapping of vegetation zones (as described in BAM Subsection 4.3.1) ☐ assessment of patch size (as described in BAM Subsection 4.3.2) ☐ survey effort (i.e. number of vegetation integrity survey plots) as described in BAM Subsection 4.3.4(1–2.) ☐ use of relevant benchmark data from BioNet Vegetation Classification (as described in BAM Subsection 4.3.3(5.)) Where use of more appropriate local benchmark data is proposed (as described in BAM Subsection 1.4.2, BAM Subsection 4.3.3(5.) and BAM Appendix A):	☐ Section 3.2 ☐ Section 3.2 ☐ Section 3.2, Figure 7 ☐ Section 3.1 ☐ Section 3.1 ☐ Section 3.2.1, Table 3 ☐ Section 3.2.1, Table 3 ☐ Section 3.2.2 ☐ Section 3.2.2 ☐ Section 3.2.1, Section 3.3 ☐ Section 3.2.1, Table 3 ☐ Section 3.4 ☐ Section 3.4, Figure 9 ☐ Section 3.4, Table 4 ☐ Section 3.1.1, 3.1.2 ☐ Section 3.1.2 ☐ Section 3.2 n/a n/a n/a n/a

Report Section	BAM Ref	Information	Report Section
		☐ identify the PCT or vegetation class for which local benchmark data will be applied ☐ identify published sources of local benchmark data (if benchmarks obtained from published sources) ☐ describe methods of local benchmark data collection (if reference plots used to determine local benchmark data) ☐ provide justification for use of local data rather than BioNet Vegetation Classification benchmark values ☐ provide written confirmation from the decision-maker that they support the use of local benchmark data	
		MAPS and TABLES (in document) ☐ Map of native vegetation extent within the Subject Land at scale not greater than 1:10,000 including identification of cleared areas (as described in BAM Section 4.1(1–3.)) and all parts of the Subject Land that do not contain native vegetation (BAM Subsection 4.1.2) ☐ Map of PCTs within the Subject Land (as described in BAM Section 4.2(1.)) ☐ Map of vegetation zones within the Subject Land (as described in BAM Subsection 4.3.1) ☐ Map the location of floristic vegetation survey plots and vegetation integrity survey plots relative to PCTs boundaries ☐ Map of TEC distribution on the Subject Land and table of TEC listing, status and area (ha) ☐ Map of patch size locations for each native vegetation zone and table of patch size areas (as described in BAM Subsection 4.3.2) Table of current vegetation integrity scores for each vegetation zone within the site and including: ☐ composition condition score ☐ structure condition score ☐ function condition score ☐ presence of hollow bearing trees	☐ Figure 5 ☐ Figure 7 **Maps/Figures for following:** ☐ Figure 9 **Table for following:** ☐ Table 4 ☐ Table 9
		DATA (to be supplied) ☐ All report maps as separate jpeg files ☐ Plot field data (MS Excel format) ☐ Plot field data sheets Digital shape files of: ☐ PCT boundaries within Subject Land ☐ TEC boundaries within Subject Land ☐ vegetation zone boundaries within Subject Land ☐ floristic vegetation survey and vegetation integrity plot locations	
Threatened Species	Chapter 5	**INFORMATION** Identify ecosystem credit species likely to occur on the Subject Land, including: ☐ list of ecosystem credit species derived from the BAM-C (as described in BAM Subsection 5.1.1 and Section 5.2(1.)) ☐ justification and supporting evidence for exclusion of any ecosystem credit species based on geographic limitations, habitat constraints or vagrancy (as described in BAM Subsections 5.2.1 and 5.2.2) ☐ justification for addition of any ecosystem credit species to the list Identify species credit species likely to occur on the Subject Land, including: ☐ list of species credit species derived from the BAM-C (as described in BAM Subsection 5.1.1) ☐ justification and supporting evidence for exclusions based on geographic limitations, habitat constraints or vagrancy (as described in BAM Subsections 5.2.1 and 5.2.2) ☐ justification and supporting evidence for exclusions based on degraded habitat constraints and/or microhabitats on which the species depends (as described in BAM Subsection 5.2.2)	☐ Section 4.1.1, Table 5 ☐ Section 4.1.1, Table 6 ☐ Section 4.1.1 ☐ Section 4.2.1, Table 7 ☐ Table 8 ☐ Table 8 ☐ Section 4.2.1

Report Section	BAM Ref	Information	Report Section
		☐ justification for addition of any species credit species to the list	
		From the list of candidate species credit species, identify:	
		☐ species assumed present within the Subject Land (if relevant) (as described in BAM Subsection 5.2.4(2.a.))	☐ Section 4.3
		☐ species present within the Subject Land on the basis of being identified on an important habitat map for a species (as described in BAM Subsection 5.2.4(2.d.))	☐ Section 4.3
		☐ species for which targeted surveys are to be completed to determine species presence (Subsection 5.2.4(2.b.))	☐ Section 4.3.1
		☐ species for which an expert report is to be used to determine species presence (Subsection 5.2.4(2.c.))	
		Present the outcomes of species credit species assessments from:	☐ Section 4.3.1
		☐ threatened species survey (as described in BAM Section 5.2.4)	☐ Section 4.3.1
		☐ expert reports (if relevant) including justification for presence of the species and information used to make this determination (as described in BAM Section 5.2.4 and 5.3, Box 3)	☐ Table 7, Section 4.3.1
		Where survey has been undertaken include detailed information on:	
		☐ survey method and effort, (as described in BAM Section 5.3)	☐ Section 4.3.1
		☐ justification of survey method and effort (e.g. citation of peer-reviewed literature) if approach differs from the Department's taxa-specific survey guides or where no relevant guideline has been published	☐ Section 4.3.1 n/a
		☐ timing of survey in relation to requirements in the TBDC or the Department's taxa-specific survey guides. Where survey was undertaken outside these guides include justification for the timing of surveys	n/a n/a
		☐ survey personnel and relevant experience	**N/a for following**
		☐ describe any limitations to surveys and how these were addressed/overcome	
		Where an expert report has been used in place of survey (as described in BAM Section 5.3, Box 3), include:	
		☐ justification of the use of an expert report	
		☐ identify the expert, provide evidence of their expert credentials and Departmental approval of expert status	
		☐ all requirements of Box 3 have been addressed in the expert report	N/a
		Where use of local data is proposed (BAM Subsection 1.4.2):	
		☐ identify relevant species	
		☐ identify data to be amended	☐ Figure 10
		☐ identify source of information for local data, e.g. published literature, additional survey data, etc.	N/a
		☐ justify use of local data in preference to VIS Classification or TBDC data	
		☐ provide written confirmation from the decision-maker that they support the use of local data	N/a N/a
		Species polygon completed for species credit species present within the Subject Land (assumed present or determined on the basis of survey, expert report or important habitat map) ensuring that:	N/a
		☐ the unit of measure for each species is documented	
		for species assessed by area:	N/a
		☐ the polygon includes the extent of suitable habitat for the target species within the Subject Land (as described in BAM Subsection 5.2.5)	
		☐ a description of, and evidence-based justification for, the habitat constraints, features or microhabitats used to map the species polygon including reference to information in the TBDC for that species and any buffers applied	
		for species assessed by counts of individuals:	
		☐ the number of individual plants present on the Subject Land (as described in BAM Subsection 5.2.5(3.))	
		☐ the method used to derive this number (i.e. threatened species survey or expert report) and evidence-based justification for the approach taken	
		☐ the polygon includes all individuals located on the Subject Land with a buffer of 30 m around the individuals or groups of individuals on the Subject Land	
		☐ Identify the biodiversity risk weighting for each species credit species identified as present within the Subject Land (as described in BAM Section 5.4)	

Report Section	BAM Ref	Information	Report Section
		MAPS and TABLES (in document)	
		☐ Table showing ecosystem credit species in accordance with BAM Section 5.1.1, and identifying:	☐ Table 5 ☐ Table 6
		☐ the ecosystem credit species removed from the list	
		☐ the sensitivity to gain class of each species	☐ Table 7
		☐ Table detailing species credit species in accordance with BAM section 5.2 and identifying:	☐ table 8
		☐ the species credit species removed from the list of species because the species is considered vagrant, out of geographic range or the habitat or micro habitat features are not present	☐ Section 4.4.1
		☐ the candidate species credit species not recorded on the Subject Land as determined by targeted survey, expert report or important habitat map	n/a
		☐ Table detailing species credit species recorded or assumed as present within the Subject Land, habitat constraints or microhabitats associated with the species, counts of individuals (flora)/extent of suitable habitat (flora and fauna) (as described in BAM Subsection 5.2.6) and biodiversity risk weighting (BAM Section 5.4)	n/a
		☐ Map indicating the GPS coordinates of all individuals of each species recorded within the Subject Land and the species polygon for each species (as described in BAM Subsection 5.2.5)	
		DATA (to be supplied)	
		☐ Digital shape files of suitable habitat identified for survey for each candidate species credit species	
		☐ Survey locations including GPS coordinates of any plots, transects, grids	
		☐ Digital shape files of each species polygon including GPS coordinates of located individuals	
		☐ Species polygon map in jpeg format	
		☐ Expert reports and any supporting data used to support conclusions of the expert report	
		☐ Field data sheets detailing survey information including prevailing conditions, date, time, equipment used, etc.	
Prescribed Impacts	Chapter 6	**INFORMATION**	
		Identify potential prescribed biodiversity impacts on threatened entities, including:	**For the following:**
		☐ karst, caves, crevices, cliffs, rocks and other geological features of significance (as described in BAM Subsection 6.1.1)	☐ Section 4.4.2, Table 9
		☐ occurrences of human-made structures and non-native vegetation (as described in BAM Subsection 6.1.2)	
		☐ corridors or other areas of connectivity linking habitat for threatened entities (as described in BAM Subsection 6.1.3)	
		☐ water bodies or any hydrological processes that sustain threatened entities (as described in BAM Subsection 6.1.4)	
		☐ protected animals that may use the proposed wind farm development site as a flyway or migration route (as described in BAM Subsection 6.1.5)	
		☐ where the proposed development may result in vehicle strike on threatened fauna or on animals that are part of a threatened ecological community (as described in BAM Subsection 6.1.6)	
		☐ Identify a list of threatened entities that may be dependent upon or may use habitat features associated with any of the prescribed impacts	n/a
		☐ Describe the importance of habitat features to the species including, where relevant, impacts on life-cycle or movement patterns (e.g. Subsection 6.1.3)	
		Where the proposed development is for a wind farm:	n/a
		☐ identify a candidate list of protected animals that may use the development site as a flyway or migration route, including: resident threatened aerial species, resident raptor species and nomadic and migratory species that are likely to fly over the proposal area (as described in BAM Subsection 6.1.5)	n/a
		☐ provide details of targeted survey for candidate species of wind farm developments undertaken in accordance with BAM Subsection 6.1.5(2–3.)	

Report Section	BAM Ref	Information	Report Section
		☐ predict the habitual flight paths for nomadic and migratory species likely to fly over the Subject Land and map the likely habitat for resident threatened aerial and raptor species (BAM Subsection 6.1.5(4.))	
		MAPS and TABLES (in document) ☐ Map showing location of any prescribed impact features (i.e. karst, caves, crevices, cliffs, rocks, human-made structures, etc.) ☐ Maps of habitual flight paths for nomadic and migratory species likely to fly over the site and maps of likely habitat for threatened aerial species resident on the site (for wind farm developments only)	n/a n/a
		DATA (to be supplied) ☐ Digital shape files of prescribed impact feature locations ☐ Prescribed impact features map in jpeg format	

Table 77: Minimum information required for the BDAR Stage 2

Report Section	BAM Ref	Information	Maps and Tables (in document)	Data (to be supplied)	Report Section
Avoid and minimise impacts	Chapter 7	**INFORMATION** Demonstration of efforts to avoid and minimise impacts on biodiversity values (including prescribed impacts) associated with the proposal location in accordance with Chapter 7, including an analysis of alternative: ☐ modes or technologies that would avoid or minimise impacts on biodiversity values and justification for selecting the proposed mode or technology ☐ routes that would avoid or minimise impacts on biodiversity values and justification for selecting the proposed route ☐ alternative locations that would avoid or minimise impacts on biodiversity values and justification for selecting the proposed location ☐ alternative sites within a property on which the proposal is located that would avoid or minimise impacts on biodiversity values and justification for selecting the proposed site ☐ Describe efforts to avoid and minimise impacts (including prescribed impacts) to biodiversity values through proposal design (as described in BAM Sections 7.1 and 7.2) ☐ Identification of any other site constraints that the proponent has considered in determining the location and design of the proposal (as described in BAM Section 7.2.1(3.))			☐ Section 5 **For the following:** ☐ Section 5.2, Section 5.3, 5.4 and 5.5
		MAPS and TABLES (in document) ☐ Table of measures to be implemented to avoid and minimise the impacts of the proposal, including action, outcome, timing and responsibility ☐ Map of alternative footprints considered to avoid or minimise impacts on biodiversity values; and of the final proposal footprint, including construction and operation ☐ Maps demonstrating indirect impact zones where applicable			☐ Table 10 n/a n/a
		DATA (to be supplied) Digital shape files of: ☐ alternative and final proposal footprint ☐ direct and indirect impact zones ☐ Maps in jpeg format			
Assessment of Impacts	Chapter 8, Sections 8.1 and 8.2	**INFORMATION** ☐ Determine the impacts on native vegetation and threatened species habitat, including a description of direct impacts of clearing of native vegetation, threatened ecological communities and threatened species habitat (as described in BAM Section 8.1) Assessment of indirect impacts on vegetation and threatened species and their habitat including (as described in BAM Section 8.2): ☐ description of the nature, extent, frequency, duration and timing of indirect impacts of the proposal ☐ documenting the consequences to vegetation and threatened species and their habitat including evidence-based justifications ☐ reporting any limitations or assumptions, etc. made during the assessment ☐ identification of the threatened entities and their habitat likely to be affected Assessment of prescribed biodiversity impacts (as described in BAM Section 8.3) including: assessment of the nature, extent and duration of impacts on the habitat of threatened species or ecological communities associated with: ☐ karst, caves, crevices, cliffs, rocks and other features of geological significance ☐ human-made structures ☐ non-native vegetation ☐ connectivity of different areas of habitat of threatened species that facilitates the movement of those species across their range ☐ movement of threatened species that maintains their life cycle			**For the following:** ☐ Section 5.2, 5.3, 5.4, and 6

Report Section	BAM Ref	Information	Maps and Tables (in document)	Data (to be supplied)	Report Section
		☐ water quality, water bodies and hydrological processes that sustain threatened species and threatened ecological communities ☐ assessment of the impacts of wind turbine strikes on protected animals ☐ assessment of the impacts of vehicle strikes on threatened species of animals or on animals that are part of a TEC			
		MAPS and TABLES (in document) ☐ Table showing change in vegetation integrity score for each vegetation zone as a result of identified impacts			☐ Table 11
		DATA (to be supplied) N/A			
Mitigation and Management of Impacts	Chapter 8, Sections 8.4 and 8.5	**INFORMATION** Identification of measures to mitigate or manage impacts in accordance with the recommendations in BAM Sections 8.4 and 8.5 including: ☐ techniques, timing, frequency and responsibility ☐ identify measures for which there is risk of failure ☐ evaluate the risk and consequence of any residual impacts ☐ document any adaptive management strategy proposed Identification of measures for mitigating impacts related to: ☐ displacement of resident fauna (as described in BAM Subsection 8.4.1(2.)) ☐ indirect impacts on native vegetation and habitat (as described in BAM Subsection 8.4.1(3.)) ☐ mitigating prescribed biodiversity impacts (as described in BAM Subsection 8.4.2) ☐ Details of the adaptive management strategy proposed to monitor and respond to impacts on biodiversity values that are uncertain (BAM Section 8.5)			**For the following:** ☐ Section 5.5
		MAPS and TABLES (in document) ☐ Table of measures to be implemented to mitigate and manage impacts of the proposal, including action, outcome, timing and responsibility DATA (to be supplied) – N/A			☐ Section 5.5.14, Table 10
		DATA (to be supplied) N/A			
Impact Summary	Chapter 9	**INFORMATION** Identification and assessment of impacts on TECs and threatened species that are at risk of a serious and irreversible impacts (SAII, in accordance with BAM Section 9.1) including: ☐ addressing all criteria in Subsection 9.1.1 for each TEC listed as at risk of an SAII present on the Subject Land ☐ addressing all criteria in Subsection 9.1.2 for each threatened species at risk of an SAII present on the Subject Land ☐ documenting assumptions made and/or limitations to information ☐ documenting all sources of data, information, references used or consulted ☐ clearly justifying why any criteria could not be addressed ☐ Identification of impacts requiring offset in accordance with BAM Section 9.2 ☐ Identification of impacts not requiring offset in accordance with BAM Subsection 9.2.1(3.) ☐ Identification of areas not requiring assessment in accordance with BAM Section 9.3			**For the following:** ☐ Section 6.1
		MAPS and TABLES (in document) ☐ Map showing the extent of TECs at risk of an SAII within the Subject Land ☐ Map showing location of threatened species at risk of an SAII within the Subject Land Map showing location of: ☐ impacts requiring offset ☐ impacts not requiring offset			n/a n/a n/a n/a

Report Section	BAM Ref	Information	Maps and Tables (in document)	Data (to be supplied)	Report Section
		☐ areas not requiring assessment			n/a
		DATA (to be supplied) Digital shape files of: ☐ extent of TECs at risk of an SAII within the Subject Land ☐ location of threatened species at risk of an SAII within the Subject Land ☐ boundary of impacts requiring offset ☐ boundary of impacts not requiring offset ☐ boundary of areas not requiring assessment ☐ Maps in jpeg format.			
Impact Summary	Chapter 10	**INFORMATION** Ecosystem credits and species credits that measure the impact of the development on biodiversity values, including: ☐ future vegetation integrity score for each vegetation zone within the Subject Land (Equation 25 and Equation 26 in BAM Appendix H) ☐ change in vegetation integrity score (BAM Subsection 8.1.1) ☐ number of required ecosystem credits for the direct impacts of the proposal on each vegetation zone within the Subject Land (BAM Subsection 9) ☐ number of required species credits for each candidate threatened species that is directly impacted on by the proposal (BAM Subsection 10.1.3)			☐ Section 6.2 and 6.3 ☐ Table 11 ☐ Table 11 ☐ Table 11 ☐ Table 12
		MAPS and TABLES (in document) ☐ Table of PCTs requiring offset and the number of ecosystem credits required ☐ Table of threatened species requiring offset and the number of species credits required			☐ Table 11 ☐ Table 12
		DATA (to be supplied) ☐ Submitted proposal in the BAM Calculator			
Biodiversity Credit Report	Chapter 10	**INFORMATION** ☐ Description of credit classes for ecosystem credits and species credits at the development or clearing site or land to be biodiversity certified (BAM Section 10.2)			☐ Section 6.2, 6.3
		MAPS and TABLES (in document) ☐ Table of credit class and matching credit profile			n/a
		DATA (to be supplied) ☐ BAM credit report in pdf format			☐ Appendix A-5
Biodiversity certification offsets and strategy (biodiversity certification only)	Chapter 12 and Appendix J	**INFORMATION** Land-based conservation measures including (strategic biodiversity certification only): ☐ identification of parcels subject to land-based conservation measures ☐ identification of land-based conservation measures proposed for each parcel ☐ supporting information to demonstrate suitability of land-based conservation measures (Appendix J) ☐ credit score of land-based conservation measures (Appendix J) Biodiversity certification strategy including: ☐ land proposed for biodiversity certification ☐ land proposed for biodiversity conservation ☐ proposed conservation measures ☐ legal mechanisms for securing delivery of proposed conservation measures ☐ parties to the biodiversity certification and responsibilities, noting where biodiversity certification agreements are proposed ☐ timing for delivery of conservation measures ☐ funding sources for delivery of conservation measures ☐ framework for monitoring, reporting or auditing implementation of conservation measures			**For the following:** n/a
		MAPS and TABLES (in document)			**For the following:**

Report Section	BAM Ref	Information	Maps and Tables (in document)	Data (to be supplied)	Report Section
		☐ Maps of parcels of land proposed for land-based conservation measures ☐ Maps as per Appendix M as required in relation to any land-based conservation measures ☐ Tables as per Appendix M as required in relation to any land-based conservation measures ☐ Table of credit scores for land-based conservation measures, including scores produced by BAM and weighting adjusted scores as per Appendix J			N/a
		DATA (to be supplied) ☐ Digital shape files of parcels of land proposed for land-based conservation measures ☐ Maps in jpeg format			

A-6 Profiles of all contributing Staff

Mitchell Bland

Managing Director / Principal

RWCorkery&co

ACADEMIC RECORD

- 1993 – B.Sc. (Hons), Geology and Oceanography, University of Sydney, N.S.W.
- 2000 – Masters of Economic Geology, University of Tasmania
- 2009 – Bachelor of Laws (LLB) (Hons), University of New England

INDUSTRY AFFILIATIONS

- NSW Registered Environmental Assessment Practitioner (REAP) - Registration Number 1659
- Certified Environmental Practitioner in Impact Assessment (CEP-IA)
- Fellow – Institute of Quarrying Australia (FIQA)
- Fellow – Australian Institute of Mining and Metallurgy (FAusIMM)
- Member – Environment Institute of Australia and New Zealand (MEIANZ)
- Member – NSW Farmers Association

EMPLOYMENT HISTORY AND EXPERIENCE

May 2006 to Present

R.W. Corkery & Co. Pty Limited
Managing Director / Principal (2019 – present)
Principal Environmental Consultant (2006 to 2019)

- Preparation of a variety of environmental documents for mining / quarrying / industrial / waste disposal / local government projects. Documents prepared have included:
  - Environmental Impact Statements
  - Statement of Environmental Effects
  - Review of Environmental Factors
  - Environmental Management Plans
  - Annual reporting, including Annual Environmental Management Reports
  - Rehabilitation and Closure Plans
  - Mining Operations Plans/Rehabilitation Management Plans
  - Environmental Audits
  - Rehabilitation Provision Assessments
  - Policy Review Documents
  - NSWMC Exploration Handbook
- Provision of a wide range of technical advice in relation to mineral exploration, resource definition planning approvals, environmental licencing and documentation, and rehabilitation and mine closure.
- Liaison with and management of specialist consultants across a wide range of specialisations
- Government Authority liaison and reporting
- Community Consultation, including individual and special interest group consultation
- Geological consultation for mining and quarrying operations

(List of selected projects available upon request)

July 1997 to May 2006

Senior Exploration Geologist, Newcrest Mining Limited

- Designed, directed, managed and supervised mineral exploration projects in all areas of Australia including area and target selection, program design and implementation, feasibility studies, rehabilitation, budget administration, contract negotiation and team selection / supervision.
- Other responsibilities included research, executive presentations, negotiation of property access and rehabilitation agreements, Government agency liaison and representation on committees of the NSW Minerals Council.

1996 to March 1997

Laboratory Manager, MRH Geotechnical – London UK

- Geotechnical evaluation and reporting.

1995 to 1996

Open Cut Geologist, Western Mining Corporation

Matthew Ayre

Senior Environmental Consultant

RWCorkery&co

ACADEMIC RECORD

- 2015 – Bachelor of Environmental Science and Management, University of Newcastle

EMPLOYMENT HISTORY AND EXPERIENCE

September 2025 to Present

R.W. Corkery & Co. Pty Limited
Senior Environmental Consultant (September 2025 - Present)

- Assist in the preparation of a variety of environmental documents for mining / quarrying / industrial / waste disposal / local government projects including:
  - Annual reporting, including Annual Reviews and Annual Rehabilitation Reports;
  - Environmental Impact Statements;
  - Statement of Environmental Effects;
  - Review of Environmental Factors;
  - Environmental Management Plans;
  - Rehabilitation Management Plans;
  - Landscape and Rehabilitation Plans; and
  - Environmental Audits.
- Provision of technical advice in relation to environmental monitoring, licencing and planning approvals. Management of Specialist Consultants, Project Management and budgeting.
- Data management and analysis.
- Liaison with Specialist Consultants, Government Agencies and Community Consultation.

November 2023 to September 2025

Ravenswood Gold Pty Limited
Senior Environment/Approvals Advisor
Ravenswood, Queensland

- Coordinate the Progressive Rehabilitation and Closure Plan and Estimated Rehabilitation Costing documentation.
- Assist in the preparation and submission of Safeguard and National Greenhouse and Energy Reporting requirements.
- Provide sound environmental and approvals advice to other company departments.
- Prepare state approvals documentation and liaise with government departments.
- Maintain and improve the company Environmental Management System.
- Prepare, review and improve environmental management plans, procedures and work instructions.
- Lead and coordinate environmental investigations as a result of environmental permit exceedances or environmental incidences.
- Lead and conduct environmental audits on a variety of different company departments.
- Conduct required compliance sampling including (but not limited to) surface water, groundwater & air quality.
- Work with indigenous stakeholders to ensure compliance with heritage agreements, Heritage Management Plan etc.
- Commence and coordinate the company Reconciliation Action Plan.
- Organise heritage surveys (both European and Indigenous) as required.

July 2021 to November 2023	*Wulguru Technical Services*
	Associate Environmental Scientist (October 2022 – November 2023)
	Associate Environmental Advisor (July 2021 – October 2022)
	Townsville, Queensland
	• Lead and coordinate multiple environmental technical projects such as:
	  o Soil and land suitability assessments.
	  o Acid sulfate soil assessments.
	  o Waste rock characterisation assessments.
	  o Water quality assessments.
	• Lead and coordinate environmental monitoring campaigns including surface water quality, air quality, ecological surveys, contaminated soils, acid sulfate soils and groundwater.
	• Lead and coordinate environmental investigations as a result of environmental permit exceedances or environmental incidences.
	• Preparation of project maps using GIS software.
	• Lead projects through state environmental permitting processes to obtain various environmental approvals.
	• Lead projects through the Progressive Rehabilitation and Closure Plans
	• Prepare Estimated Rehabilitation Cost documentation.
	• Provide sound environmental advice to clients to assist with project compliance.
	• Preparation, review, and implementation of Environmental Management Plans.

February 2018 to July 2021	*Wild Environmental Consultants* *Senior Environmental Consultant (July 2020 – July 2021)* *Environmental Consultant (February 2018 – July 2020)* *Townsville, Queensland* • Lead projects through state environmental approvals process. • Provide sound environmental advice to clients. • Preparation and review of environmental reports as per the requirements of project permits and approvals. • Coordination and completion of environmental audits with a focus on compliance with the project approvals. • Preparation, review, and implementation of Environmental Management Plans. • Environmental monitoring and data interpretation, including surface water quality, air quality, ecological surveys, contaminated soils, acid sulfate soils and groundwater.
February 2016 to February 2018	*VGT Environmental Compliance Solutions* *Environmental Consultant* *Newcastle, New South Wales* • Preparation and implementation of rehabilitation plans and rehabilitation cost estimates. • Preparation of environmental reports. • Environmental monitoring and data interpretation. • Coordinate and supervise exploration activities. • Log geological core samples. • Prepare mine designs and conduct resource calculations using 12d terrain modelling software

Georgina Thompson

Environmental Consultant

ACADEMIC RECORD

- *2023 – Bachelor of Environmental Science and Management, University of Newcastle*

EMPLOYMENT HISTORY AND EXPERIENCE

January 2026 to Present

R.W. Corkery & Co. Pty Limited
Environmental Consultant (January 2026 - Present)

- *Assist in the preparation of a variety of environmental documents for mining / quarrying / industrial / waste disposal / local government projects including:*
  - *Annual reporting, including Annual Reviews and Annual Rehabilitation Reports;*
  - *Environmental Impact Statements;*
  - *Statement of Environmental Effects;*
  - *Review of Environmental Factors;*
  - *Environmental Management Plans;*
  - *Rehabilitation Management Plans;*
  - *Landscape and Rehabilitation Plans; and*
  - *Environmental Audits.*
- *Provision of technical advice in relation to environmental monitoring, licencing and planning approvals. Management of Specialist Consultants, Project Management and budgeting*
- *Data management and analysis*
- *Liaison with Specialist Consultants, Government Agencies and Community Consultation*

September 2024 to January 2026

Environmental Resources Management (ERM)
Consulting Senior Associate
Newcastle, New South Wales

- *Lead environmental approvals for major renewable infrastructure projects (NSW and Commonwealth legislation);*
- *Prepare and review EIS, Scoping Reports, SEE and environmental management plans with a focus on impact assessment, compliance pathways, and risk mitigation;*
- *Coordinate multidisciplinary field teams delivering biodiversity assessments, survey and site investigations;*
- *Liaise directly with clients, councils and Commonwealth regulators to resolve complex approval issues;*
- *Provide strategic advice on biodiversity risk & mitigation strategies across diverse project types; and*
- *Deliver high-quality documentation, ensuring accuracy, legislative alignment, and strong justification for project approvals.*

September 2022 to September 2024

VGT Environmental Compliance Solutions

Environmental Consultant

Newcastle, New South Wales

- *Preparation and implementation of rehabilitation plans and rehabilitation cost estimates;*
- *Preparation of environmental reports;*
- *Environmental monitoring and data interpretation;*
- *Coordinate and supervise exploration activities;*
- *Log geological core samples; and*
- *Prepare mine designs using QGIS software*

Our people

Karl Robertson

Principal Consultant and Senior Business Manager

Professional profile

Karl has 12 years' experience in Ecological Consulting throughout NSW, QLD & NT. Through this time Karl has played a lead role in an extremely broad service offering in the fields of; ecological impact assessment; aviation wildlife hazard management, rehabilitation and ecological restoration; vertebrate pest management; human wildlife conflict resolution (specialising in Flying-foxes and Macropods); and vegetation management.

Throughout his career, Karl has worked on a large number of exceptionally complicated and challenging projects testing his skills technically, politically and legally with his unrelenting drive, work ethic, client focus and commitment to objectivity underpinning his success.

Karl continues to gain an holistic knowledge of Australian Ecology. In doing so, he has developed advanced survey and assessment skills. He is able to survey for and identify the full complement of Australian native and exotic fauna and flora with extensive experience in all state and federal survey guidelines for flora and fauna.

Karl has demonstrated his ability to undertake native and exotic flora survey on numerous occasions and can readily identify NSW Endangered Ecological Communities, QLD Regional Ecosystems and Federal - Threatened Ecological Communities. Karl has ample experience working in Australia's east coast environments from Sydney to Cairns as well as inland environments throughout the Brigalow Belt, Brigalow Belt South and Cobar Peneplain Bioregions.

Through his report preparation, Karl has developed a broad understanding of both State and Federal Legislation, having prepared hundreds of Ecological Assessments, Monitoring and Audit Reports, Seven Part Tests, MSES, EPBC Act MNES, BDAR's, as well as the preparation of Reviews of Environmental Factors, Vegetation Management Plans and countless Control Plans for Exotic Flora including the regionally adopted eradication plans for Class 1 noxious weeds in Northern NSW.

Given this experience, Karl frequently serves as an expert witness within the NSW Land and Environment Court and Federal Court.

Karl now leads the Biodiversity Australia's major projects in his role as Principal Consultant and Business Manager which encompasses a range of diverse projects. His ability to lead the Biodiversity Australia team stems from his core values of integrity, open-mindedness, resilience, comradery, and inclusiveness – particularly with Indigenous Australians.

Qualifications, certifications and memberships

- Bachelor of Environmental Science and Management (Southern Cross University), 2011.
- National Cleared Defence Pass including escort and after hours previlledges,
- ASIC Pass
- Chemical users certificate
- Construction Industry Induction OH&S (Whitecard).
- Boat Licence
- Firearms Licence

Career history

Biodiversity Australia – Principal Consultant and Senior Business Manager

August 2015 – Present

GreenCollar Services – Field Ecologist

November 2014 – August 2015

Cumberland Ecology – Ecologist

May 2014- March 2015

Greenloaning Biostudies – Ecologist

May 2014 – November 2014

Far North Coast Weeds – Noxious Weeds Officer

Jan 2012 – May 2014

Relevant project Experience

Nigel Cotsell

Principal Ecologist

Professional profile

Nigel is a highly experienced employee with 10+ years of industry management experience currently employed with Biodiversity Australia as a Principal Ecologist. Having held a diverse range of environmental portfolios across the three tiers of Australian Government, the private sector and overseas, he has developed into a vastly skilled and valued resource and member of the team. Nigel has proven competency in assessing State and Federal compliance, approvals, impact assessments, executing field surveys (5+ years), flora, fauna, habitat and vegetation mapping and report writing.

Nigel has completed a master's degree in Natural Resources and a bachelor's in science. Throughout his professional career he has been responsible for major contributions to large scale projects. Nigel currently holds membership in a multitude of societies and has a large assortment of publications in the ecological field.

Qualifications, Certifications and Memberships

- Member of Ecological Society of Australia
- Member of Coffs Climate Action Group
- Member of Australian Forest History Society Inc
- Member of Karangi Landcare
- Masters of Natural Resources
- Bachelor of Science
- Working Safely at Heights
- BAM Accredited NSW
- Boat license
- Law Enforcement Licence
- Guns in workplace Licence
- 4WD Driving
- Construction Industry White Card
- First aid and CPR

Key Skills

- Ecological surveying (designing, coordinating and implementing) and research
- Ecological health assessments in a variety of ecosystems
- Vegetation mapping and monitoring techniques, fauna trapping and monitoring techniques
- Threatened species (Flora and fauna) and communities surveys.
- Identification, surveys and analysis of native and exotic flora and fauna Mapping,
- Landscape and ecological processes mapping and monitoring
- Ecological restoration and rehabilitation methods and techniques
- Preparing and assessing the progress of rehabilitation and restoration plans, ecological monitoring plans
- Statistical and GIS analysis (ArcGIS, QGIS)
- Working safely in teams conducting large scale and remote ecological field work
- Approvals and assessing compliance with environmental regulations, legislations (NSW and QLD)
- Environmental Value and risk assessment

Career summary

Principal Ecologist	Biodiversity Australia	2023 - Present
Director/Principal Ecologist	Songbird Ecology	2021 – 2023

Senior Ecologist	EcoLogical Australia	2022 - 2023
Senior Ecologist/Coffs Harbour Manager **Regional Manager – South Pacific (Vanuatu)**	Ecosure	2016 - 2021
Senior Team Leader – Ecosystems and Threatened Species Section	NSW Office of Environment and Heritage	2015 - 2016
Team Leader – Biodiversity **Acting Executive Director – Planning**	Coffs Harbour City Council	2008 - 2015
Executive Officer – Gondwana Rainforests of Australia	Commonwealth Department of Climate Change, Energy, Environment and Water	2007
Director/Principal Ecologist	Great Eastern Ecology	2005 - 2007
North East Wilderness Coordinator	Environmental Protection and Regulation Division Department of Environment and Conservation – Coffs Harbour NSW	2005
Species Protection Officer **Biodiversity Recovery Unit**	Department of Conservation Wellington NZ	2002 - 2004

Professional Experience

Principal Ecologist

Biodiversity Australia (2023 - Present)

- Designing and implementing flora and fauna surveys
- Data collection to satisfy legislation.
- Field Ecological assessment and authoring ecological reports.
- GIS analysis
- Threatened species and communities surveys as per regulations.

Director/Principal Ecologist

Songbird Ecology (2021 - 2023)

- Report writing (BSSAR, BDAR, BAR)
- Environmental Approvals and Regulatory Compliance (NSW)
- Usage of BAM methodology
- Ecological Services and compliance for developmental and conservation projects
- Designing and executing field surveys – flora, fauna, habitat, threatened species and communities
- Ecological assessments, preparing and assessing progress of rehabilitation plans

Senior Ecologist

EcoLogical Australia (2022 – 2023)

- Informing clients and developers regarding compliance of projects to NSW legislation
- Planning and conducting ecological surveys.
- Environmental Monitoring
- Collaborative Projects and Management of other employees
- Regulated vegetation assessment, mapping, and management projects
- Providing recommendations on conservation programs

Author

- Cotsell N., & Vernes K., (2016) Camera traps in the canopy: surveying wildlife at tree hollow entrances. Pacific Conservation Biology 22, 48-60.
- Cotsell N., Fisher M., Scotts D., Cameron M., (2016) Identifying High Value Arboreal Habitat in forested areas using high-resolution digital imagery. Pacific Conservation Biology 22, 367- 376.
- Cotsell, N. (2015). The importance of old eucalypt trees and the wildlife that depend on them. Masters of Natural Resources thesis. University of New England
- Scotts, D., Cotsell., N (2014) Landscape Corridors of the Coffs Harbour Local Government Area. Coffs Harbour City Council, Coffs Harbour, New South Wales, Australia. Unpublished report.

Our people

Daniel Joyce (BSc. ENV)

Business Manager Ecology - Principal Ecologist

Professional profile

As a Principal Ecologist & Senior Project Manager with Biodiversity Australia, Daniel has undertaken numerous ecological and environmental consulting projects. Daniels experience is across a wide variety of sectors including mining, oil and gas, land development and transport corridors. While he has been based in South East Qld since 2005, his project experience is throughout Australia, the South Pacific and Africa.

Having worked on local, remote, and international projects, Daniel understands the complex environmental, ecological and logistic issues of various size projects. He also understands that no matter the size of the project, every project requires a high level of technical expertise and must be delivered on time and on budget.

Daniel has undertaken a range of ecological and environmental assessments, including ecological impact assessments; vegetation management, rehabilitation and restoration, habitat and vegetation offsets. Daniel has significant experience working under the Environmental Protection and Biodiversity Act, Vegetation Management Act, Nature Conservation Act, Biosecurity Act and various environmental policies within Australia and Queensland.

Daniel has demonstrated his ability to undertake native and exotic flora survey on numerous occasions and can readily identify QLD Regional Ecosystems and Federal - Threatened Ecological Communities. Daniel has significant experience working throughout Queensland's environments from Stanthorpe Granite Belt to Burketown, Gulf Plains and the Wild Rivers, through the Gas fields and Brigalow country to the east coast rainforests.

His experience on a variety of projects has allowed him to grow his core skills of flora, fauna and habitat surveys into compiling complex high-level technical reports and management plans, in accordance with relevant legislation, for development approvals and ongoing environmental management.

Daniel has also managed large multi-discipline consulting and field investigation teams in remote areas for State Significant Projects. Daniel has managed and undertaken ecological, acid sulphate soils, noise, vibration, air quality, groundwater, surface water and contaminated land investigations. Daniel has undertaken the field investigations, been a part of the technical reporting team as well as managing these works for baseline assessments to post construction monitoring.

Daniel has extensive experience leading teams in remote environments and managing challenging logistic projects, driving high levels of health, safety and environmental team cultures and systems.

Qualifications, Certifications and Memberships

- Bachelor of Science Environmental Science (USC 2000)
- Regional Ecosystem Assessment Under the VMA (2003)
- Suitably Qualified Protected Plant Surveys (QLD) (2008)
- BioCondition Assessment Training
- Using Animals in Science, Department of Agriculture and Fisheries
- Vegetation Structure and Remnant Status under the VMA (2003)
- Construction Industry Induction OH&S (White card)
- First Aid and CPR
- Various 4WD – driving and recovery
- The Standard 11 (S11) Mining Induction

Key Skills

- All aspects of fauna and flora surveys including targeted surveys and nocturnal surveys
- Significant Ecological Impact Assessment
- Protected Plant Surveys
- Species ID (flora/fauna)
- Threatened species management
- Rapid weed assessments
- Project management of multi-disciplinary environmental teams
- Remote projects team management
- Developing and driving high level health, safety and quality team culture

Relevant Project Experience

Project	Key Role / Tasks
Coomera Connector 1 North	Engaged by Acciona Georgiou, scope included marine plant and seagrass surveys, terrestrial habitat and weed surveys, fauna management, and pre-clearance assessments.
Steve Irwin Way to Caboolture Bruce Highway Upgrade	Led a team of ecologists undertaking pre-clearance surveys (Habitat and weed). Significant species (Wallum frogs) surveys and relocation.
Middlemount Coal Mine	Targeted MNES surveys as part of offset vegetation monitoring.
Stanwell-Gladstone Infrastructure Corridor SDA	Engaged by the Minister for Economic Development QLD to conduct a comprehensive baseline survey to assess existing land conditions, infrastructure, and vegetation.
Middlemount Coal Mine	BioCondition assessments and classification for proposed offset area and ongoing monitoring of existing offset areas. Significant species (MNES) surveys (Greater Glider, Ornamental Snake, Squatter Pigeon).
Gladstone Mt Larcom Euroa Circuit Transmission Line EA	Engaged by the Economic Minister of Queensland to provide an ecological assessment for a proposed transmission line from the Mt Larcom Sub Station development to Euroa circuit.
Carmichael Rail Network	Ecological assessments including undertaking all field verification and ecological baseline studies to gain final state and federal approvals
Surat Basin – Ruby Jo and Southern and Central Gas Fields	Engaged by QGC/Shell to conduct ongoing ecological surveys, providing assessment reports and compliance data against Key Performance Indicator (KPI) criteria for multiple offset rehabilitation sites.
Deception Bay Interchange Bruce Highway upgrade	Protected plant survey and report for south extension clearing.
Kraft Road, Pallara, QLD	High Risk Species Management plan colonial breeders.
Brentwood Estate, Bellbird Park QLD	Protected Plant Survey and habitat assessment. Development of High-Risk Species Management plan for Powerful Owl and Colonial Breeders.
Hillside Stage 2, Mooloolah QLD	Comprehensive pre-clear surveys and load reductions including trapping programs.

Dr Cheryl O'Dwyer

Principal Ecologist

Professional profile

Dr Cheryl O'Dwyer is a highly credentialed Principal Ecologist with over 25 years of experience spanning ecological research, biodiversity assessment, conservation management, and senior academic and industry leadership. She holds a PhD and Master of Science from the University of Melbourne, alongside extensive specialist training including NSW BAM Accreditation, environmental assessment qualifications, WHS competencies, and instructional training credentials.

Her technical strengths include evidence-based ecological assessment, regulator-ready documentation, risk-based analysis, and the design of robust monitoring and reporting frameworks. Cheryl is recognised for her ability to synthesise complex scientific information into clear, defensible documents that support statutory approvals, stakeholder engagement, and decision-making. She provides expert oversight across multidisciplinary teams, offering rigorous peer review, quality assurance, and consistent methodological direction.

With a career that includes senior ecological roles in consulting, academia, government-aligned institutions, and conservation organisations, Cheryl brings deep expertise in threatened species assessment, vegetation and habitat evaluation, offset calculations, field program design, and regulatory negotiation. She has a strong background in training and capability building, having delivered extensive conservation and land management programs—including culturally informed training for Indigenous Ranger groups—and supervised postgraduate research in applied ecology.
Cheryl's work is defined by scientific rigour, clarity in communication, and a commitment to practical, achievable ecological outcomes. She contributes strategic guidance, technical leadership, and high-level ecological judgement across all stages of project planning, assessment, and implementation.

Qualifications, Certifications and Memberships

- PhD (Ecology), University of Melbourne
- Master of Science, University of Melbourne
- Bachelor of Science (Zoology and Botany), University of Melbourne
- NSW BAM Accredited Assessor (BAAS18153)
- Certificate IV Training and Assessment (TAE40110 plus LLN upgrade)
- BEN301 Environmental Assessment
- WHS Representative and Emergency Response Training
- JSEA and Take 5 Risk Assessment Competency
- Cultural Awareness Training
- Ecological Society of Australia

Key Skills

- Evidence synthesis and technical writing, including development of practical, regulator-ready documentation based on legislation, policy and scientific literature
- Drafting and quality assurance of complex ecological documentation, ensuring consistency, traceability, and defensible rationale
- Developing clear minimum content requirements, consistent terminology and logical document structures that are easy to apply across projects
- Monitoring and reporting framework design, including objectives, methods descriptions, data quality expectations, reporting formats, review cycles, and revision pathways
- Risk-based assessment documentation, including transparent assumptions, limitations, uncertainty, and confidence statements
- Stakeholder and regulator engagement, including issue resolution, technical negotiation, and responses to submissions
- Peer review and technical oversight of multidisciplinary teams, including document control and internal quality systems
- Training and guidance development, including building capability through clear instructional materials and practical implementation advice

Career summary

Principal Ecologist	Biodiversity Australia	2026 - Present
Principal Ecologist	Eco Logical Australia, NSW	2018 – 2025
Senior Lecturer – Conservation & Land Management	Bachelor Institute, NT	2011- 2017
Senior Lecturer – Ecology & Biodiversity	University of Melbourne, VIC	1999 - 2009
Conservation Biologist	Zoos Victoria, VIC	1997- 1999

Professional Experience

Principal Ecologist

Biodiversity Australia (2026 – Present)

Cheryl provides senior technical oversight and leadership across ecology projects, with responsibility for reviewing and developing proposals, ensuring technical methodologies, resourcing approaches, and deliverables meet high professional and regulatory standards.

She undertakes critical review, editing, and approval of scientific and legislation-driven documentation, ensuring outputs are accurate, evidence-based, and clearly articulated for regulatory and stakeholder review. Kimberley also leads internal quality assurance processes and capability development, supporting consistency in interpretation, risk management, and reporting across project teams.

Principal Ecologist

Eco Logical Australia, NSW (2018–2026)

Cheryl acted as lead BAM-accredited assessor for biodiversity assessments supporting major projects, providing technical leadership on vegetation mapping, habitat condition assessment, and offset credit calculations. She delivered high-quality, defensible reports suited to regulatory review and, where required, legal scrutiny.

Her role involved undertaking targeted threatened species surveys, conducting desktop assessments, and preparing expert reports and responses to submissions. Cheryl regularly liaised with consent authorities, regulators, and proponents, providing impartial ecological advice grounded in legislative and scientific evidence.

She also led and mentored ecology teams, managing field programs, scientific licensing, quality control, and consistency of technical outputs.

Senior Lecturer – Conservation and Land Management

Bachelor Institute, Nhulunbuy, NT (2011–2017)

Cheryl delivered conservation and land management training to Indigenous Ranger teams across remote communities. She conceived and delivered culturally appropriate training programs integrating ecological science with land management practice.

Her role included leadership of field programs addressing threatened species management, biodiversity monitoring, and marine conservation, as well as mentoring emerging practitioners and building long-term capability within local environmental teams.

Senior Lecturer – Ecology & Biodiversity

University of Melbourne, VIC (1999–2009)

Cheryl taught undergraduate and postgraduate subjects in ecology and biodiversity management and supervised postgraduate research focused on woodland restoration, fauna conservation, and applied ecological outcomes. She acted as principal investigator for research programs producing applied outputs for habitat restoration, species recovery, and conservation planning, and authored peer-reviewed publications and recovery documents for threatened species.

Our people

John Foster

Ecologist

Professional profile

BAM Accredited Assessor, with extensive experience in ecological consulting across diverse sectors, including urban development, industrial projects, mineral resource extraction, and infrastructure, John brings a robust background in environmental management and project coordination.

Jonn has contributed to both small and large-scale projects in NSW and Victoria. His expertise includes conducting ecological impact assessments for threatened flora, fauna species, and ecological communities in compliance with NSW and Commonwealth legislation.

John is adept at undertaking botanical surveys and reporting, employing the Biodiversity Assessment Method (BAM) to identify Plant Community Types, assess threatened ecological communities, map occurrences of threatened flora species and habitats, and identify weeds of national significance. His fieldwork experience spans numerous surveys across NSW and Victoria.

In addition to John's technical skills, he has completed Biodiversity Offsets Scheme Accredited Assessor training and has completed Tetra Tech - Level 1 Project Management training. John has successfully managed the ecological components of residential development applications, overseeing fieldwork coordination, and report preparation and has also contributed to ecological monitoring and management projects, including Biodiversity, Bushland, and Vegetation Management Plans, as well as Flora and Fauna Assessments and Rail Corridor Ecological Impact assessments.

John's career reflects a dedication to environmental stewardship, leveraging his expertise in GIS and field mapping technologies to support sustainable practices and biodiversity conservation efforts.

Qualifications, Certifications and Memberships

- CPR AED-Emergency Life Support-First Aid
- Plant Identification - Advanced
- Project Management – Level 1
- Operate 4WD & Light Vehicle
- NSW Animal Ethics
- Fauna trapping and Handling
- BAM Assessor Accreditation
- Bachelor of Science – Biology
-

Key Skills

- Threatened ecological community mapping
- Client management and communication
- Ability to undertake ecology surveys
- Knowledge of state and federal legislation
- Biodiversity assessment
- Impact assessment
- Biodiversity offsets
- Landscape and waterway ecology

- Environmental auditing
- Fauna and flora assessment
- Species identification
- Vegetation assessment and mapping

Career summary

Ecologist	Biodiversity Australia	2024 - Present
Ecologist	Eco Logical Australia	2022 – 2024
Ecologist	Cumberland Ecology	2019 - 2022

Professional Experience

Ecologist
Biodiversity Australia, NSW (Current)
- Provide environmental assessments and wildlife management
- Management advice and data collection
- Undertake ecological surveys
- Species identification – Flora and Fauna (native and introduced)
- Liaised with onsite workers
- Vegetation, TEC and regional ecosystem identification, verification and mapping
- Weed surveys and mapping
- Significant species habitat assessments and impact management during construction and mining activities used in relation to the Endangered, Vulnerable and Near Threatened Species (EVNT) List and governing legislation
- Compiling written reports, accurately reporting the findings and providing recommendations on how to mitigate impacts during the relocation of wildlife habitats
- Interpretation and compliance with statutory regulations, safety/environment practices and organisational guidelines
- Welfare management of wildlife and their habitats
- Ensuring impacts on wildlife, wildlife habitats and breeding places are considered and implementing minimisation design and scheduling
- Ensuring that disturbance/clearance works are planned and executed in a manner that incorporates the necessary wildlife management measures
- GIS Mapping
- Survey design and planning
- Managing and coordinating field survey teams to mobilise and conduct targeted threatened species surveys, either remotely or from the field

Ecologist
Eco Logical Australia, (Oct 2022 – Apr 2024)
- Project management
- Field surveys
- Site supervision
- Report and proposal preparation
- Conducting night and day field surveys, rescuing, trapping and handling native and exotic fauna
- Conducting desktop assessments
- Threatened species surveys
- Providing biodiversity impact assessment reports for line-of-sight surveys and pipe relining projects

Our people

Nathan Eshraghi

Geospatial Specialist

Professional profile

Nathan Eshraghi is a customer-focused and detail-oriented IT graduate with diverse life and career experiences in IT, small business, and consulting. He is employed as Biodiversity Australia's Geospatial Specialist and has demonstrated the ability to adapt to various technologies, workplaces, and geographic contexts. Nathan holds a Graduate Diploma in Information Technology and a Bachelor of Urban & Environmental Planning. Nathan has extensive experience in GIS development and analysis, spatial data management, and architectural drafting, utilising advanced tools such as ESRI ArcGIS, QGIS, and AutoCAD.

His technical proficiency includes spatial analysis, cartography, 3D geo-spatial visualisation, FME data ETL, and programming with Python, ArcPy, and the ArcGIS API for Python. Nathan's strong ability to adapt to various technologies and environments allows him to deliver high-quality geospatial solutions consistently. His comprehensive skill set and commitment to excellence make him a valuable asset both to Biodiversity Australia and in the field of GIS.

Qualifications, Certifications and Memberships

- Graduate Diploma in Information Technology – 2022 (GPA 6.125)
- Bachelor Urban & Environmental Planning – 2011

Key Skills

- ESRI ArcGIS Pro, ArcMap, Enterprise skill
- QGIS, opensource GIS
- 3D Geo-spatial Visualisation
- FME, data ETL
- SQL / database management
- Spatial analysis and cartography
- Python, ArcPy, ArcGIS API for Python
- AutoCAD

Career summary

Geospatial Specialist	Biodiversity Australia	Current
GIS & Application Developer	GP One Consulting	May 2023 – Jul 2023
GIS Analyst	Yarraman Metals	Nov 2022 – Jan 2023
GIS Analyst	Toowoomba Regional Council	Feb 2012 – Aug 2013
Architectural Draftsperson	LT Design Architects	2001 - 2008

Professional Experience

Geospatial Specialist
Biodiversity Australia, QLD (Current)
• ArcGIS Pro and QGIS cartography, data management, analysis
• ArcGIS Field Maps and Survey123 development
• Spatial scripting, QA and ETL using ArcGIS API for Python, ArcPy

Our people

Dusty McLean

Ecologist

Professional profile

Dusty is an experienced and highly educated Scientist currently employed with Biodiversity Australia as an Ecologist. Dusty has proven competency in designing and implementing ecological research, executing field surveys, flora, fauna, habitat and vegetation mapping, and report writing.

Dusty has extensive experience with bird and mammal research in a variety of ecosystems in NE NSW and SE QLD. His work focussed on the effects and influence of fire and predation on wildlife populations and has informed conservation management plans for species including the long-nosed potoroo, red-legged pademelon and dingo. Dusty has had several research articles published in international academic journals and has experience engaging with a variety of stakeholders including universities, government agencies (NPWS), and First Nations communities to achieve desirable ecological outcomes.

Qualifications, Certifications and Memberships

- Bachelor of Science (Ecology & Conservation Biology)
- Bachelor of Science (Honours)
- Doctor of Philosophy (PhD)
- Member of Golden Key Honours Society
- First aid and CPR

Key Skills

- Ecological surveying (designing, coordinating and implementing) and research
- Ecological health assessments in a variety of ecosystems
- Fauna trapping and monitoring techniques
- Threatened species (Flora and fauna) and communities surveys
- Identification, surveys and analysis of native and exotic flora and fauna mapping
- Landscape and ecological processes mapping and monitoring
- Ecological restoration and rehabilitation methods and techniques
- Preparing and assessing the progress of rehabilitation and restoration plans, ecological monitoring plans
- Working safely in teams conducting large scale and remote ecological field work

Career summary

Ecologist	Biodiversity Australia	2025 - Present
Principal Ecological Consultant	Guerilla Eco - Ecological Consultancy	2021 - 2024
Advisor	Minyumai IPA Dingo Project	2023
Research Assistant	Southern Cross University	2021 - 2024

Professional Experience

Ecologist

Biodiversity Australia (2025 - Present)

- Designing and implementing flora and fauna surveys
- Data collection to satisfy legislation
- Field Ecological assessment and authoring ecological reports.
- GIS analysis
- Threatened species and communities' surveys as per regulations

Principal Ecological Consultant

Guerilla Eco - Ecological Consultancy (2021 - 2024)

- Scientific research report writing
- Ecological Services for conservation projects
- Designing and executing ecological field surveys – threatened fauna, habitat, and invasive species
- Ecological assessments, preparing and assessing progress of conservation management plans
- Threatened species monitoring
- Mapping

Research Assistant

Southern Cross University (2021 - 2024)

- Mapping for peer-reviewed publications and various fieldwork activities for wildlife research, such as camera-trapping, cage-trapping and collecting tissue samples for genetic analyses.

Volunteer and Other Work Experience

Forestry Corporation of NSW

Assisted with field surveys, including mark-recapture and spotlight surveys, for monitoring rare and threatened species within NE NSW State Forests alongside the Forestry Corporation ecology team.

Shamwari Game Reserve, South Africa

Monitored, tracked, and assisted in the relocation of wildlife, engaged in land rehabilitation, and participated in community engagement at a reserve situated on reclaimed and rehabilitated agricultural land and focused on conserving many of Africa's iconic megafauna.

Author

- McLean, D., Goldingay, R., & Letnic, M. (2024). *Experimenting with artificial shelters to assist habitat restoration for medium-sized ground-dwelling mammals.* Restoration Ecology, e14300.
- McLean, D. & Goldingay, R. (2024). *Response of medium-sized mammals in subtropical forests following Australian 'Black Summer' wildfires.* Forest Ecology and Management, 562, 121952.
- McLean, D., Goldingay, R., & Letnic, M. (2023). *Diet of the Dingo in Subtropical Australian Forests: Are Small, Threatened Macropods at Risk?* Animals, 13(14), 2257.
- Doctor of Philosophy Thesis topic: *The Ecology and Conservation of the Northern Long-nosed Potoroo (Potorous tridactylus tridactylus) and Other Small, Threatened Macropods in North-eastern New South Wales, Australia.*
- Honours Thesis topic: *Effects of residential development on bird diversity, abundance and community composition in South-eastern Queensland, Australia.*

Our people

Courtney Smith

Graduate Scientist

Professional profile

Courtney has recently joined the Biodiversity Australia team as a graduate marine scientist and is equipped with a well-rounded experience gained from a combination of industry appointments and formal qualifications. Courtney has completed a Bachelor of Coastal and Marine Science with a focus on water and resource management. Additionally, Courtney has proven her skills in the field with experience in data analysis and industry report writing for both private and government organisations across NSW.

Qualifications, Certifications and Memberships

- Bachelor of Coastal and Marine Science, University of Newcastle

Key Skills

- Data collection, entry, and analysis
- Academic writing and reporting
- Client relations (liaising with industry partners)
- Working in teams conducting marine field work

Professional Experience

Graduate Marine Scientist
Biodiversity Australia, QLD (2024-Current)

- Undertake data analysis and report writing
- *Data collection in field work activities*

Bar and Restaurant Supervisor
Royal Crown Hotel (2019-2024)

- Quality assurance of food and beverages
- Customer service of various clientele

Sailing Instructor
Newcastle Cruising Yacht Club (2019-2022)

- Creation and maintenance to a positive and safe environment
- Adherence to the Australian teaching curriculum
- Health and safety compliance

References

Name	Position	Organization	Phone Number
Alicia Marix-Evans	Manager	Property, Environment and Planning, Port of Newcastle	0487 405 508
Rebecca Frost	Manager	Newcastle Cruising Yacht Club	0411 205 765

A-7 Habitat Summary Table

Table 34: Summary of habitat values within the PAA, across Mine Site and Linear Corridor areas

MINE SITE Habitat/ Attribute Type	Vegetation Zone 1 PCT 58-Black Oak - Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion	Vegetation Zone 2 PCT 64-Samphire - Water Weed - Sea-Heath shrubland saline wetland of depressions of the arid and semi-arid (warm) zones	Vegetation Zone 3 PCT 152-Lunette chenopod shrubland mainly of the Murray Darling Depression Bioregion
Groundcover	Moderate density chenopod groundcover	Low - moderate density chenopod groundcover	Moderate density chenopod groundcover throughout Vegetation Zone
Leaf litter	Moderate density casuarina needle and chenopod debris litter	Low to absent litter cover	Moderate litter cover present
Logs and debris	Moderate density woody debris	Low to absent woody debris	Very low density of Logs present throughout the Vegetation Zone
Hollows	Some mature trees with small hollows (< 10 cm) that may provide nesting habitat for small arboreal mammals and birds. Medium-sized (10-20 cm) hollows present in lower abundances (12) which may provide nesting habitat for larger arboreal mammals and birds e.g. possums, cockatoos.	Absent	Absent
Nectar Sources	Absent	Absent	Absent
Sap and gum sources	Absent	Absent	Absent
Allocasuarinas	*Casuarina pauper* present in moderate-high densities	Absent	Absent
Aquatic/ wetland habitats	Absent	Scattered ephemeral depressions/salt pans present	Absent
Fruiting species	Absent	Absent	Absent
Forest bird habitat	Low to average quality bird habitat. Some nesting, forage and refuge habitat value provided by trees and shrubs.	Very poor-quality bird habitat due to absence of trees and associated nesting, refuge and foraging resources.	Poor-quality bird habitat due to low number of paddock trees and associated nesting, refuge and foraging resources.

MINE SITE Habitat/ Attribute Type	Vegetation Zone 1 PCT 58-Black Oak - Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion	Vegetation Zone 2 PCT 64-Samphire - Water Weed - Sea-Heath shrubland saline wetland of depressions of the arid and semi-arid (warm) zones	Vegetation Zone 3 PCT 152-Lunette chenopod shrubland mainly of the Murray Darling Depression Bioregion
Caves, cliffs, overhangs, culverts, bridges	Absent. Absence of roosts for obligate Microchiropteran bats.	Absent	Absent. Absence of roosts for obligate Microchiropteran bats.
Small terrestrial prey	Likely to be moderate prey abundance over most of the site due to scattered logs, dead and alive Hollow Bearing Trees and grassy ground cover.	Likely to be absent - low prey abundance over most of the zone due to lack of canopy and midstory, absence of logs.	Likely to be low prey abundance over most of the zone due to lack of canopy and midstory, absence of logs.
Habitat Linkages	Vegetation Zone provides some linkage with vegetation that will be retained on the Subject Land.	Patches isolated	Vegetation Zone provides some link with native vegetation to be retained on the Subject Land.

MINE SITE Habitat/ Attribute Type	Vegetation Zone 4 PCT 154-Pearl Bluebush low open shrubland of the arid and semi-arid plains	Vegetation Zone 5 PCT 157-Bladder Saltbush shrubland on alluvial plains in the semi-arid (warm) zone including Riverina Bioregion	Vegetation Zone 6 PCT 170-Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones	Vegetation Zone 7 PCT 171-Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion
Groundcover	Moderate density chenopod ground cover.	Sparse groundcover comprising of native and exotic herbs and grasses – high disturbance by goats.	Sparse chenopod groundcover moderately grazed by goats.	Sparse spinifex groundcover etc..
Leaf litter	Low to absent litter cover	Low density leaf litter present	Low to absent litter cover	Low to absent litter cover
Logs and debris	Low density woody debris from living and dead bluebush.	Low density of woody debris present.	Fallen timber littered throughout the Vegetation Zone.	Fallen timber littered throughout the Vegetation Zone.
Hollows	Absent	Absent	Twelve mature trees with small hollows (< 10 cm) that may provide	Twelve mature trees with small hollows (< 10 cm) that may provide

MINE SITE Habitat/ Attribute Type	Vegetation Zone 4	Vegetation Zone 5	Vegetation Zone 6	Vegetation Zone 7
	PCT 154-Pearl Bluebush low open shrubland of the arid and semi-arid plains	PCT 157-Bladder Saltbush shrubland on alluvial plains in the semi-arid (warm) zone including Riverina Bioregion	PCT 170-Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones	PCT 171-Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion
			nesting habitat for small arboreal mammals and birds. Medium-sized (10-20 cm) and large (> 20 cm) hollows present in lower abundances which may provide nesting habitat for larger arboreal mammals and birds e.g. possums, cockatoos.	nesting habitat for small arboreal mammals and birds. Medium-sized (10-20 cm) and large (> 20 cm) hollows present in lower abundances which may provide nesting habitat for larger arboreal mammals and birds e.g. possums, cockatoos.
Nectar Sources	Absent	Absent	Mistletoe abundant and flowering. *Eucalyptus dumosa, E. gracilis, E. socialis, Alectryon oleifolius canescens* species present on the Subject Land and would flower throughout the year.	Mistletoe abundant and flowering. *Eucalyptus socialis, E. Dumosa, E. gracilis* species present on the Subject Land and would flower throughout the year.
Sap and gum sources	Absent	Absent	*Eucalyptus dumosa, E. oleosa, E. gracilis, E. socialis, E. leptophylla, Alectryon oleifolius canescens* species present on the Subject Land.	*Eucalyptus socialis, E. Dumosa, E. gracilis, E. costata, E. leptophylla, E. oleosa* species present on the Subject Land.
Allocasuarinas	Absent	Absent	*Casuarina pauper* present in low densities.	*Casuarina pauper* present in low densities.
Aquatic/ wetland habitats	Absent	Absent	Absent	Absent
Fruiting species	Absent	Native apricot (*Pittosporum angustifolium*)	Absent	Some Eucalypt species present
Forest bird habitat	Low quality bird habitat. Shrubs may provide some limited habitat.	Moderate quality bird habitat. Shrubs may provide some limited habitat.	Average to high quality bird habitat due to abundance of refuge, forage and nesting habitat.	Average to high quality bird habitat due to abundance of refuge, forage and nesting habitat.
Caves, cliffs, overhangs, culverts, bridges	Absent. Absence of roosts for obligate Microchiropteran bats.	Absent. Absence of roosts for obligate Microchiropteran bats.	Absent. Absence of roosts for obligate Microchiropteran bats.	Absent. Absence of roosts for obligate Microchiropteran bats.

MINE SITE Habitat/ Attribute Type	Vegetation Zone 4	Vegetation Zone 5	Vegetation Zone 6	Vegetation Zone 7
	PCT 154-Pearl Bluebush low open shrubland of the arid and semi-arid plains	PCT 157-Bladder Saltbush shrubland on alluvial plains in the semi-arid (warm) zone including Riverina Bioregion	PCT 170-Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones	PCT 171-Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion
Small terrestrial prey	Likely to be moderate prey abundance over most of the zone due to presence of ground cover, shrub layer as well as an abundance of logs, litter and dead and alive Hollow Bearing Trees.	Likely to be low-moderate prey abundance over most of the zone due to presence of ground cover, shrub layer as well as an abundance of logs, litter and dead and alive Hollow Bearing Trees.	Likely to be moderate prey abundance over most of the zone due to soil type (suitable for borrowing), presence of ground cover, shrub layer and canopy trees, as well as an abundance of logs, litter and dead and alive Hollow Bearing Trees.	Likely to be moderate prey abundance over most of the zone due to soil type (suitable for borrowing), presence of ground cover, shrub layer and canopy trees, as well as an abundance of logs, litter and dead and alive Hollow Bearing Trees.
Habitat Linkages	Vegetation Zone provides some linkage with vegetation that will be retained on the Subject Land.	Vegetation Zone provides some linkage with vegetation that will be retained on the Subject Land.	Vegetation Zone provides some linkage with vegetation that will be retained on the Subject Land.	Vegetation Zone provides some linkage with vegetation that will be retained on the Subject Land.

MINE SITE Habitat/ Attribute Type	Vegetation Zone 8	Vegetation Zone 9	Vegetation Zone 10	Vegetation Zone 11
	PCT 215-Woollybutt Grass open grassland on red earths of the inland plains	PCT 221-Black Oak - Pearl Bluebush open woodland of the sandplains of the semi-arid warm and arid climate zones	PCT 253-Gypseous shrubland on rises in the semi-arid and arid plains	PCT 254-Black Oak - Bladder Saltbush on light clays in the arid zone
Groundcover	Sparse groundcover comprising of native and exotic herbs and grasses.	Moderate density chenopod groundcover with moderate to high levels of goat disturbance.	Patchy groundcover comprising of native and exotic herbs and grasses.	Moderate density chenopod groundcover with moderate to high levels of goat disturbance.
Leaf litter	Moderate density leaf litter throughout.	Moderate density casuarina needle and chenopod debris litter.	Low to absent litter cover.	Moderate density casuarina needle and chenopod debris litter.
Logs and debris	Few logs were present. Moderate density woody debris	Moderate density woody debris	Very few logs were present. Low density woody debris	Moderate density woody debris

MINE SITE Habitat/ Attribute Type	Vegetation Zone 8	Vegetation Zone 9	Vegetation Zone 10	Vegetation Zone 11
	PCT 215-Woollybutt Grass open grassland on red earths of the inland plains	PCT 221-Black Oak - Pearl Bluebush open woodland of the sandplains of the semi-arid warm and arid climate zones	PCT 253-Gypseous shrubland on rises in the semi-arid and arid plains	PCT 254-Black Oak - Bladder Saltbush on light clays in the arid zone
Hollows	Absent	Some mature trees (39) with small hollows (< 10 cm) that may provide nesting habitat for small arboreal mammals and birds. Medium-sized (10-20 cm) hollows present in lower abundances (12) which may provide nesting habitat for larger arboreal mammals and birds e.g. possums, cockatoos.	Absent	Some mature trees (39) with small hollows (< 10 cm) that may provide nesting habitat for small arboreal mammals and birds. Medium-sized (10-20 cm) hollows present in lower abundances (12) which may provide nesting habitat for larger arboreal mammals and birds e.g. possums, cockatoos.
Nectar Sources	Absent	Occasional *Eucalyptus dumosa* present.	Absent	Occasional *Eucalyptus dumosa* present.
Sap and gum sources	Absent	Occasional *Eucalyptus dumosa* present.	Absent	Occasional *Eucalyptus dumosa* present.
Allocasuarinas	Absent	*Casuarina pauper* present in moderate-high densities.	Absent	*Casuarina pauper* present in moderate-high densities.
Aquatic/ wetland habitats	Absent	Absent	Absent	Absent
Fruiting species	Absent	Absent	Absent	Absent
Forest bird habitat	Low quality habitat due to absence of Hollow Bearing Trees and areas of shrubs for refuge and forage.	Average quality habitat due to presence of trees that may contain hollows and some areas of dense shrubs for refuge and forage.	Low quality habitat due to absence of Hollow Bearing Trees and areas of shrubs for refuge and forage.	Average quality habitat due to presence of trees that may contain hollows and some areas of dense shrubs for refuge and forage.
Caves, cliffs, overhangs, culverts, bridges	Absent. Absence of roosts for obligate Microchiropteran bats.	Absent. Absence of roosts for obligate Microchiropteran bats.	Absent. Absence of roosts for obligate Microchiropteran bats.	Absent. Absence of roosts for obligate Microchiropteran bats.
Small terrestrial prey	Likely to be low-moderate prey abundance over most of the zone due to presence of ground cover, shrub layer as well as an	Likely to be moderate prey abundance over most of the zone due to presence of ground cover, shrub layer and scattered canopy trees, as well as an abundance of	Likely to be low prey abundance over most of the zone due to lack of canopy and understorey, very few logs and open ground cover.	Likely to be moderate prey abundance over most of the zone due to soil type (suitable for borrowing), presence of ground cover, shrub layer and canopy trees, as well as an abundance of

MINE SITE Habitat/ Attribute Type	Vegetation Zone 8	Vegetation Zone 9	Vegetation Zone 10	Vegetation Zone 11
	PCT 215-Woollybutt Grass open grassland on red earths of the inland plains	PCT 221-Black Oak - Pearl Bluebush open woodland of the sandplains of the semi-arid warm and arid climate zones	PCT 253-Gypseous shrubland on rises in the semi-arid and arid plains	PCT 254-Black Oak - Bladder Saltbush on light clays in the arid zone
	abundance of logs, litter and dead and alive Hollow Bearing Trees.	logs, litter and dead and alive Hollow Bearing Trees.		logs, litter and dead and alive Hollow Bearing Trees.
Habitat Linkages	Vegetation Zone provides some linkage with vegetation that will be retained on the Subject Land.	Vegetation Zone provides some linkage with vegetation that will be retained on the Subject Land.	Vegetation Zone provides some linkage with vegetation that will be retained on the Subject Land.	Vegetation Zone provides some linkage with vegetation that will be retained on the Subject Land.

LINEAR CORRIDOR Habitat/ Attribute Type	Vegetation Zone 1	Vegetation Zone 2	Vegetation Zone 3
	PCT 28-White Cypress Pine open woodland of sand plains, prior streams and dunes mainly of the semi-arid (warm) climate zone	PCT 58-Black Oak - Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion	PCT 143-Narrow-leaved Hopbush - Scrub Turpentine - Senna shrubland on semi-arid and arid sandplains and dunes.
Groundcover	Sparse groundcover comprising of native and exotic herbs and grasses – high disturbance by goats.	Low density chenopod groundcover with moderate – high disturbance by goats.	Sparse groundcover comprising of native and exotic herbs and grasses – high disturbance by goats.
Leaf litter	Low density leaf litter present.	Patches of moderate density casuarina needle and chenopod debris litter.	Low density leaf litter present.
Logs and debris	Logs were present throughout the vegetation zone.	Moderate density of woody debris present.	Low density of woody debris present.
Hollows	Low number (39) of mature trees with small hollows (< 10 cm) that may provide nesting habitat for small arboreal mammals and birds. Medium-sized (10-20 cm) hollows present in lower abundances (12) which may provide nesting habitat for larger arboreal mammals and birds e.g. possums, cockatoos.	Some mature trees (39) with small hollows (< 10 cm) that may provide nesting habitat for small arboreal mammals and birds. Medium-sized (10-20 cm) hollows present in lower abundances (12) which may provide nesting habitat for larger arboreal mammals and birds e.g. possums, cockatoos.	Absent
Nectar Sources	Absent	Absent	Absent
Sap and gum sources	Absent	Absent	Absent
Allocasuarinas	Absent	*Casuarina pauper* present in moderate densities.	Absent

LINEAR CORRIDOR Habitat/ Attribute Type	Vegetation Zone 1	Vegetation Zone 2	Vegetation Zone 3
	PCT 28-White Cypress Pine open woodland of sand plains, prior streams and dunes mainly of the semi-arid (warm) climate zone	PCT 58-Black Oak - Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion	PCT 143-Narrow-leaved Hopbush - Scrub Turpentine - Senna shrubland on semi-arid and arid sandplains and dunes.
Aquatic/ wetland habitats	Absent	Absent	Absent
Fruiting species	Absent	Absent	Largely absent with few fruiting shrubs
Forest bird habitat	Low to moderate quality bird habitat. Some nesting, forage and refuge habitat value provided by trees and shrubs. However, regrowth is largely absent due to browsing by feral goats.	Low to moderate quality bird habitat. Some nesting, forage and refuge habitat value provided by trees and shrubs. However, regrowth is largely absent due to browsing by feral goats.	Low quality forest bird habitat. Few scattered mature trees present. However, regrowth is largely absent due to browsing by feral goats.
Caves, cliffs, overhangs, culverts, bridges	Absent	Absent. Absence of roosts for obligate Microchiropteran bats.	Absent
Small terrestrial prey	Likely to be moderate prey abundance over most of the zone due to soil type (suitable for borrowing), presence of ground cover, shrub layer and canopy trees, as well as an abundance of logs, litter and dead and alive Hollow Bearing Trees.	Likely to be moderate prey abundance over most of the zone due to soil type (suitable for borrowing), presence of ground cover, understorey and canopy trees, as well as an abundance of logs, litter and dead and alive Hollow Bearing Trees.	Likely to be moderate prey abundance over most of the zone due to soil type (suitable for borrowing), presence of ground cover, shrub layer and canopy trees, as well as an abundance of logs, litter and dead and alive Hollow Bearing Trees.
Habitat Linkages	Vegetation Zone provides some linkage with vegetation that will be retained on the Subject Land.	Vegetation Zone provides some linkage with vegetation that will be retained on the Subject Land.	Vegetation Zone provides some linkage with vegetation that will be retained on the Subject Land.

LINEAR CORRIDOR Habitat/ Attribute Type	Vegetation Zone 4	Vegetation Zone 5	Vegetation Zone 6
	PCT 154-Pearl Bluebush low open shrubland of the arid and semi-arid plains	PCT 170-Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones	PCT 171-Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion
Groundcover	Moderate density chenopod ground cover.	Sparse chenopod groundcover moderately grazed by goats	Sparse spinifex groundcover etc..
Leaf litter	Low to absent litter cover	Low to absent litter cover	Low to absent litter cover

LINEAR CORRIDOR Habitat/ Attribute Type	Vegetation Zone 4	Vegetation Zone 5	Vegetation Zone 6
	PCT 154-Pearl Bluebush low open shrubland of the arid and semi-arid plains	PCT 170-Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones	PCT 171-Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion
Logs and debris	Low density woody debris from living and dead bluebush.	Fallen timber littered throughout the Vegetation Zone.	Fallen timber littered throughout the Vegetation Zone.
Hollows	Absent	Numerous mature trees (39) with small hollows (< 10 cm) that may provide nesting habitat for small arboreal mammals and birds. Medium-sized (10-20 cm) and large (> 20 cm) hollows present in lower abundances (12) which may provide nesting habitat for larger arboreal mammals and birds e.g. possums, cockatoos. No hollows were found >20 cm and >4 m above the ground.	Numerous mature trees (39) with small hollows (< 10 cm) that may provide nesting habitat for small arboreal mammals and birds. Medium-sized (10-20 cm) and large (> 20 cm) hollows present in lower abundances (12) which may provide nesting habitat for larger arboreal mammals and birds e.g. possums, cockatoos.
Nectar Sources	Absent	Mistletoe abundant and flowering. *Eucalyptus dumosa, E. gracilis, E. socialis, Alectryon oleifolius canescens* species present on the Subject Land and would flower throughout the year	Mistletoe abundant and flowering. *Eucalyptus socialis, E. Dumosa, E. gracilis* species present on the Subject Land and would flower throughout the year
Sap and gum sources	Absent	*Eucalyptus dumosa, E. oleosa, E. gracilis, E. socialis, E. leptophylla, Alectryon oleifolius canescens* species present on the Subject Land.	*Eucalyptus socialis, E. Dumosa, E. gracilis, E. costata, E. leptophylla, E. oleosa* species present on the Subject Land.
Allocasuarinas	Absent	*Casuarina pauper* present in low densities.	*Casuarina pauper* present in low densities.
Aquatic/ wetland habitats	Absent	Absent	Absent
Fruiting species	Absent	Largely absent with a few fruiting eucalypt species	Largely absent with a few fruiting eucalypt species
Forest bird habitat	Low quality bird habitat. Shrubs may provide some habitat.	Average to high quality bird habitat due to abundance of refuge, forage and nesting habitat.	Average to high quality bird habitat due to abundance of refuge, forage and nesting habitat.
Caves, cliffs, overhangs, culverts, bridges	Absent. Absence of roosts for obligate Microchiropteran bats.	Absent. Absence of roosts for obligate Microchiropteran bats.	Absent. Absence of roosts for obligate Microchiropteran bats.
Small terrestrial prey	Likely to be low-moderate terrestrial prey abundance over most of the site due to	Likely to be moderate prey abundance over most of the zone due to soil type (suitable for	Likely to be moderate prey abundance over most of the zone due to soil type (suitable for

LINEAR CORRIDOR Habitat/ Attribute Type	Vegetation Zone 4	Vegetation Zone 5	Vegetation Zone 6
	PCT 154-Pearl Bluebush low open shrubland of the arid and semi-arid plains	PCT 170-Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones	PCT 171-Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion
	scattered logs, low thick shrubs and grassy ground cover.	borrowing), presence of ground cover, shrub layer and canopy trees, as well as an abundance of logs, litter and dead and alive Hollow Bearing Trees.	borrowing), presence of ground cover, shrub layer and canopy trees, as well as an abundance of logs, litter and dead and alive Hollow Bearing Trees.
Habitat Linkages	Vegetation Zone provides some linkage with native vegetation that will be retained on the Subject Land.	Vegetation Zone provides some linkage with native vegetation to be retained on the Subject Land.	Vegetation Zone provides some linkage with native vegetation to be retained on the Subject Land.

A-8 MNES Significant Impacts Assessment Report

Biodiversity AUSTRALIA

SUSTAINABLE PARTNERSHIPS
DEDICATED TO ACHIEVING
ECOLOGICAL AND ECONOMICAL BALANCE

LEADING THE WAY
IN ENVIRONMENTAL
MANAGEMENT

MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE IMPACT ASSESSMENT

RW Corkery / Copi Mineral Sands, Wentworth NSW - June 2025

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Document Control Page

Version Control

Version	Purpose	Author	Reviewed / approved by	Date
Rev 0.1	Draft Report	Sandy Pimm	Dominic Barbagallo	31/03/2025
Rev 1.0	Draft Report	Nigel Cotsell, John Foster, Dusty McLean	Daniel Joyce	02/05/2025
Rev 2.0	Final Report	John Foster	Karl Robertson	22/05/2025
Rev 3.0	Final Report	John Foster	Karl Robertson	3/6/2025

Distribution Control

Copy	Purpose	Method	Issued to:	Name	Date
1	File Copy	Electronic/Email	Biodiversity Australia	Chantal Linares	3/06/2025
2	Client Review	Electronic/Email	RW Corkery	Rebecca Raynal	3/06/2025

Project Number: ENS6872

Our Document Reference: ENS6872-RPT-RWCorkery-CopiSands-0-MNES-Significance Assessment-MASTER-rev3

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Executive Summary

The Copi Mineral Sands Project (The Project) is a proposed open cut mineral sands mine. The Project will require the preparation, extraction and processing of heavy mineral ore to produce a heavy mineral concentrate. The Action includes construction, mining, primary processing, and rehabilitation of a single deposit located approximately 75 km northwest of Wentworth in NSW. The Project will extract a range of minerals containing titanium, zirconium, and rare earth elements (The Action), all of which are listed by the NSW and Commonwealth governments as Critical Minerals.

Biodiversity Australia (Bio Aus) has been engaged to review Matters of National Environmental Significance (MNES) listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) for the afore defined proposed Action. Biodiversity Australia has undertaken substantial survey and assessment to enable a determination as to whether The Project has *a real chance* (Save Our Strathbogie Forest Inc v Secretary to the Department of Energy, Environment and Climate Action [2024] FCA 317) of having a significant impact on any MNES entities.

This report is for R.W Corkery & Co Pty. Ltd (RWC) on behalf of RZ Resources Limited (the "Applicant"). The proposed mine and its associated infrastructure would be located within an area referred to as the Impact Site. The Impact Site contains the mineral extraction area referred to as the "Mine Site" and a haulage route referred to as the "Linear Corridor".

The Impact area – Mine Site would result in direct impacts to 3,692.92 hectares (ha), which comprises Native Vegetation that is consistent with all identified Plant Community Types (PCTs). The Impact Area – Linear Corridor, would result in direct impacts to 190.16 ha of Native Vegetation.

The design of The Project has evolved in an iterative manner over a six-year period from 2018 to 2025 with great importance being placed on avoidance where possible. This has involved consideration of the findings of the technical and environmental studies undertaken, feedback from the local and wider community, and responses from the Biodiversity, Conservation and Science Directorate and other New South Wales agencies.

Thirteen vegetation communities were identified within the Impact Site. Each of the communities was assessed for associations with TECs. Only one, the Mallee Bird Community of the Murray Darling Depression Bioregion which is associated with PCT 170 Chenopod sandplain mallee woodland/shrubland, was assessed as having potential to occur within the Impact Site. All MNES entities recorded in the Impact Site, and those with suitable habitat and considered likely to occur in the Impact Site were subject to detailed assessment to determine the significance, or otherwise, of the impact/s. These entities, which have more than remote chance of being at risk of sustaining a significant impact, have been the subject of a detailed impact assessment in line with the MNES Significant impact guidelines 1.1. These species are:

1. Mallee Bird Community TEC.
2. South-eastern Hooded Robin (*Melanodryas cucullata cucullata*).
3. Southern Whiteface (*Aphelocephala leucopsis*).
4. Pink Cockatoo (*Lophochroa leadbeateri leadbeateri*).
5. Corben's Long-eared Bat (*Nyctophilus corbeni*).

Flora species with potential to occur on the Impact Site and, having lower risk of having a non-remote chance of a significance impact, subject to a streamline MNES significance assessment are:

- A Saltbush *(Atriplex infrequens).*
- Winged Peppercress *(Lepidium monoplocoides).*
- Desert greenhood *(Pterostylis xerophila).*
- Menindee Nightshade *(Solanum karsense).*
- Slender Darling-pea *(Swainsona murrayana).*
- Yellow Swainson-pea *(Swainsona pyrophila).*

Fauna species with potential to occur within the Impact Site and, having lower risk of having a non-remote chance of significance impact, have been subject to a streamline MNES significance assessment are:

- Murray Mallee Striated Grasswren (*Amytornis striatus howei*).
- Malleefowl (*Leipoa ocellata*).
- Grey Falcon (*Falco hypoleucos*).

All other species returned from the Protected Matters Search Tool were considered as having essential habitat elements absent from the Impact Site, such that all requirements for the lifecycle of the species could not be met. They were not considered further.

Field surveys conducted by EnviroKey since June 2020 and by Bio Aus since November 2024 have recorded the following EPBC Act listed species within the Impact Site:

- Southern Whiteface (*Aphelocephala leucopsis*).
- Pink Cockatoo* (*Lophochroa leadbeateri*) (foraging only).
- South-Eastern-Hooded Robin (*Melanodryas cucullata*).

The Project design includes a range of measures intended to mitigate and manage impacts on Biodiversity Values commensurate to the level of impact proposed by The Action. These include staging of vegetation clearing, avoidance of retained areas of vegetation, and pre-clearing surveys of spinifex grass and Hollow Bearing Trees.

All of the aforementioned species were assessed for the likelihood that the Action would have a non-remote chance of a significant impact via the Severity Assessment Matrix framework included within the Department of Sustainability, Environment, Water, Population and Communities (DSEWPC) – 2013 Significant Impact Guideline 1.2. whilst it is acknowledged that the guideline 1.2 applies to actions on, or impacting upon, Commonwealth land, and actions by commonwealth agencies, it remains acutely appropriate in educating the balance of probabilities and ultimately the likelihood of a significant impact in relation to The Action. The Severity Assessment Matrix was used in conjunction with considerations of each species biology, distribution and sensitivity to the potential impacts of the Action, in the application of the Significant Impact Guidelines 1.1 (DEWHA 2013). From this assessment it has been confidently determined that no Matter of National Environmental Significance has more than a remote chance of incurring a Significant Impact and thus, referral to the Commonwealth Department of Climate Change, Energy, the Environment and Water is not considered necessary.

Abbreviations

Table 1: List of abbreviations used within the report

ALA	Atlas of Living Australia
AOO	Area of Occupancy
BAM	NSW Biodiversity Assessment Method 2020
BC Act	NSW Biodiversity Conservation Act 2016
Bio Aus	Biodiversity Australia
CE	Critically Endangered
CM	Centre meter
DAWE	Department of Agriculture, Water and the Environment
DBH	Diameter at Breast Height
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DotE	Department of the Environment
DSEWPC	Department of Sustainability, Environment, Water, Population and Communities
E	Endangered
EOO	Extent of Occurrence
EPBC Act	Environment Protection and Biodiversity Conservation Act
HA	Hectare
HBT	Hollow Bearing Tree
IBRA	Interim Biographic Regionalisation for Australia
KM	Kilometre
KTP	Key Threatening Process
LGA	Local Government Area
M	Million
MBC	Mallee Bird Community of the Murray Darling Depression Bioregion
MNES	Matters of National Environmental Significance
NSW	New South Wales
OEH	Office of Environment and Heritage
PCT	NSW Plant Community Type
PMST	Protected Matters Search Tool
SA	South Australia
TBDC	Threatened Species Database Collection
TSSC	Threatened Species Scientific Committee
TEC	Threatened Ecological Community
TPA	Tonnes per Annum
V	Vulnerable
WA	Western Australia

1. Introduction

The Copi Mineral Sands project (the Project) consists of the proposed development of an open-cut mineral sands mine (The Action) located approximately 75 km northwest of Wentworth, NSW (Figure 1). Biodiversity Australia (Bio Aus) has been engaged to assess the potential impacts associated with the Action on Matters of National Environmental Significance (MNES) listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and assess if the proposed Action will have a Significant Impact, representing a controlled Action, in accordance with the *Matters of National Environmental Significance Significant Impact Guidelines 1.1* (DoE 2013) (The Guidelines) Biodiversity Australia has undertaken significant survey effort and assessment to determine if a Significant Impact on MNES will occur as a result of the proposed Action.

Steps undertaken to complete the assessment were:

- Defining The Action extent and likely impacts,
- Search of MNES potentially occurring within Action are using the Protected Matters Search Tool (PMST) (**Appendix A-1**),
- Review of results from previous survey conducted by EnviroKey and Bio Aust between 2018 and 2025, and additional surveys targeting MNES entities assessed under the *New South Wales Biodiversity Conservation Act 2016* (BC Act) to have a 'moderate or 'high' likelihood of occurrence, between August 2024 and February 2025,
- Undertaking substantial levels of in-field investigation, in line with commonwealth and NSW Threatened species survey guidelines, as well as the BAM 2020 guidelines) to comprehensively capture and fully understand the biodiversity values of the Impact Site,
- A likelihood of occurrence assessment based on location and habitat constraints for all entities, and refinement of that assessment considering definitions of 'important populations' and 'habitat critical to the survival of the species, as well as local records of the entity (**Appendix A-2**), and
- An assessment of the significance of impacts from The Action upon all MNES entities which are known or likely to occur within the Impact Site based on survey records and/or the Potential Occurrence Assessment (POA).

After conducting thorough field surveys in line with EPBC Act threatened species survey methodologies, detailed significance assessments were undertaken for five (5) MNES entities (one (1) Threatened Ecological Community (TEC) and four (4) threatened species) considered to have a higher risk of having a non-remote chance of suffering a Significant Impact. Streamlined significance assessments were undertaken for five threatened flora species and four threatened fauna species considered to have a lower risk of there being a non-remote chance of a Significant Impact.

1.1 Definitions Used in the Report

This report uses key definitions and terms as per the MNES - Significant impact guidelines 1.1:

- **The Action:** A project, a development, an undertaking, an activity or a series of activities, or an alteration of any of these things, including but not limited to; construction, expansion, alteration or demolition of buildings, structures, infrastructure or facilities; industrial processes; mineral and petroleum resource exploration and extraction; storage or transport of hazardous materials;

waste disposal; earthworks; impoundment, extraction and diversion of water; agricultural activities; aquaculture; research activities; vegetation clearance; culling of animals; and dealings with land. The Action proposed specifically within the Copi Mineral Sands Project Impact Site is; the preparation of surface land for operations, vegetation clearance, construction of infrastructure and facilities, the extraction, storage and transport of mineral resources, extraction of water, altering of groundwater, rehabilitation and revegetation (MNES Significant Impact Guidelines 1.1. Introduction - Determining whether an action is likely to have a significant impact on a MNES).

- **Impact Site:** The site or area on which the proposed Action will have an impact. Sometimes also called a 'development envelope', or a project or development 'footprint'.
- **Less than a remote chance:** An extremely small possibility or likelihood
- **A remote chance:** A small possibility or likelihood
- **A real chance:** A genuine possibility or likelihood (Save Our Strathbogie Forest Inc v Secretary to the Department of Energy, Environment and Climate Action [2024] FCA 317)
- **Significant Impact**: Broadly, an impact that is important, notable or of consequence. The proponent must not take any action that has, will have or is likely to have a significant impact on a protected matter without first referring it for assessment (DCCEEW MNES - Glossary of terms)
- **Subject Land**: Land comprised of Lots 1907//DP763791, 1//DP1255308, 1940//DP763792 and 4068//DP766543 within the Impact Site – Mine Site area, and also Lots 4068//DP766543, 4117//DP766622, 3421//DP765710, 3422//DP765711, 3423//DP765712, 1908//DP763764, 1910//DP763766 and 3248//DP765453 within the Impact Site – Linear Corridor.

This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Subject Location	Biodiversity AUSTRALIA
	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:600000

Figure 1: Location of the Impact Site in the locality and region

2. Environmental Statutory Considerations

The following section provides an outline of environmental planning acts and legislations relevant to the proposed development of the Impact Site. Compliance with legislation and guidelines below is necessary for approval of the proposed development.

2.1 Environmental Protection and Biodiversity Conservation Act 1999

The EPBC Act is the Federal Government's key environmental legislative instrument, established in 1999 to safeguard Australia's unique natural environment and cultural heritage history. It is designed to control and regulate any actions that may result in a significant environmental impact by mandating a national assessment process. At its core, the EPBC Act encapsulates Australia's commitment to conserving biodiversity and ensuring ecologically sustainable development by striking a balance between economic growth and environmental protection. The EPBC Act protects flora and fauna and extends to heritage sites, internationally recognised wetlands, and areas of profound cultural significance. This framework ensures that environmental risks are managed from both a regulatory and a practical perspective, influencing the decisions of government agencies, developers, and other stakeholders who undertake actions with the potential to influence these protected matters.

2.1.1 Matters of National Environmental Significance

Under the EPBC Act, certain environmental elements are classified as MNES. These form the basis of federal review and protection mechanisms. The Act lists seven (7) key types of protected matters, including:

- World Heritage Properties:
  - Sites of outstanding universal value that merit preservation for future generations.
- National Heritage Places:
  - Areas recognised by the nation due to their significant historical, cultural, or environmental attributes.
- Ramsar Wetlands:
  - Wetlands of international importance designated under the Ramsar Convention.
- Threatened Species and Ecological Communities:
  - Species and ecosystems in jeopardy of extinction or significant degradation.
- Migratory Species:
  - Species that rely on transboundary habitats and require international conservation efforts.
- Nuclear Actions:
  - Actions related to uranium mining, reflecting the high risks associated with nuclear materials and activities.
- The Commonwealth Marine Environment:
  - Marine areas are protected due to their biodiversity and ecological roles.

The above ensures that any action potentially affecting the seven (7) diverse elements automatically triggers a careful federal scrutiny process. By defining these categories, the Act provides clear benchmarks and triggers for environmental assessments. It not only protects the "what" in terms of specific sites and species but also the "why" by maintaining the integrity of Australia's environmental assets for both national and global benefit.

2.1.2 Defining "Significant Impact"

According to the guidelines outlined in DOE 2013 *"a significant impact is described as an effect that is important, notable, or of consequence"*. This definition is inherently multidimensional. It requires considering the sensitivity, value, and quality of the environmental component being affected, along with detailed attributes of the impact itself. Key factors that determine whether an impact is significant include:

- Intensity of the Impact:
  - Actions that cause substantial changes to the physical or biological components of the environment.
- Duration and Persistence:
  - Whether the change is temporary or long-lasting, including irreversible damage.
- Geographic Extent:
  - The spatial scale of the impact, which can range from a localised event to widespread ecological disturbances.
- Frequency and Cumulative Effects:
  - The likelihood of repeated or cumulative impacts from multiple actions.

The guidelines note that a significant impact is where there is a "real or not remote chance or possibility" (Strathbogie) that adverse environmental consequences may occur. This concept is inherently risk-based and involves environmental risk assessments. Environmental factors are to be evaluated guided by questions from the guidelines to systematically consider each variable, ensuring that the potential harm is neither underestimated nor ignored within the broader economic or development pressures.

2.1.3 Assessment Process and Decision-Making Framework

When a proposed action is anticipated to have any potential effect on MNES, it is referred to the EPBC Act's assessment process. This process is a comprehensive review where the relevant documents and evidence provided by the project proponents are scrutinised. The assessment involves multiple stages:

- Referral:
  - Any entity proposing a development or action that might impact a protected matter must formally refer the proposal to the relevant authorities.
- Screening and Assessment:
  - Experts evaluate the proposal using the guidelines set out by the DOE, which lays out detailed questions regarding the scope, intensity, duration, and environmental context.
- Ministerial Decision:
  - Ultimately, the Environment Minister reviews the evidence and decides whether the action qualifies as a "controlled action" under the Act. Should the action be flagged as having a significant impact, further assessments, mitigation strategies, or even project modifications may be required.
- Approval and Monitoring:
  - Once approved, ongoing monitoring ensures that the projected impacts do not manifest in unexpected ways, and if they do, contingency plans are in place to address any environmental issues promptly.

This entire process reflects a commitment to transparency and precaution. It ensures that decisions are not made lightly and that environmental considerations are integrated into the planning and execution stages of potentially disruptive projects. The systematic approach encouraged by the guidelines helps guard against overt and subtle risks that might compromise critical environmental assets.

In a related context under section 139(2)(b) of the EPBC Act, the term "significant" has been taken to operate as a limitation to "*exclude impacts which are minor or negligible on a listed threatened species"* (*Northern Inland Council for the Environment Inc v Minister for the Environment (2013) 218 FCR 491 at [92] (Cowdroy J)*).

As Dowsett J observed in Krajniw v Brisbane City Council (No 2) [2011] FCA 563 at [10], the purpose of the EPBC Act "would not be achieved if any possibly adverse effect upon a species, however minor and however unlikely, was sufficient to engage either of ss 18 and 18A". Whether a proposed action is likely to have a significant impact under s 18 of the EPBC Act is a question of fact: (*Greentree at [192] (Sackville J); Australian Brumby Alliance at [230] (O'Bryan J)*). Accordingly, this assessment has relied on data-driven decision making to demonstrate and draw its conclusions.

The assessment of significance was achieved by staging the methodology activities into four (4) stages, shown in Figure 2.

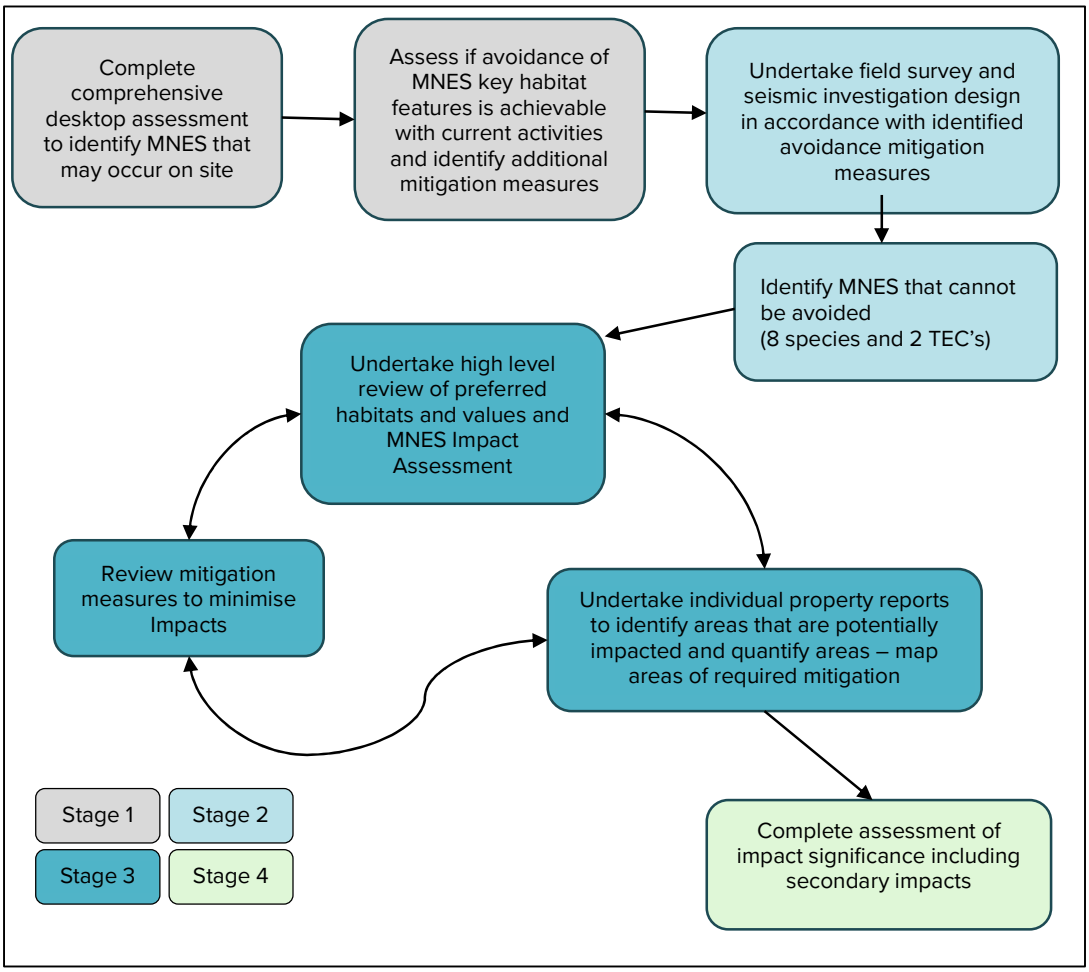


Figure 2: Impact Assessment Process

3. The Action

The Copi Mineral Sands Project is an open cut mineral sands mine. The Action is the extraction and processing of heavy mineral ore to produce a heavy mineral concentrate. The Action includes construction, mining, primary processing, and rehabilitation of a single deposit located approximately 75 km northwest of Wentworth in NSW. The Action will extract a range of minerals containing titanium, zirconium, and rare earth elements, all of which are listed by the NSW and Commonwealth governments as Critical Minerals. These minerals are vital for producing advanced electronics, telecommunications, defence infrastructure and medical devices and are necessary to help drive the transition towards renewable energy.

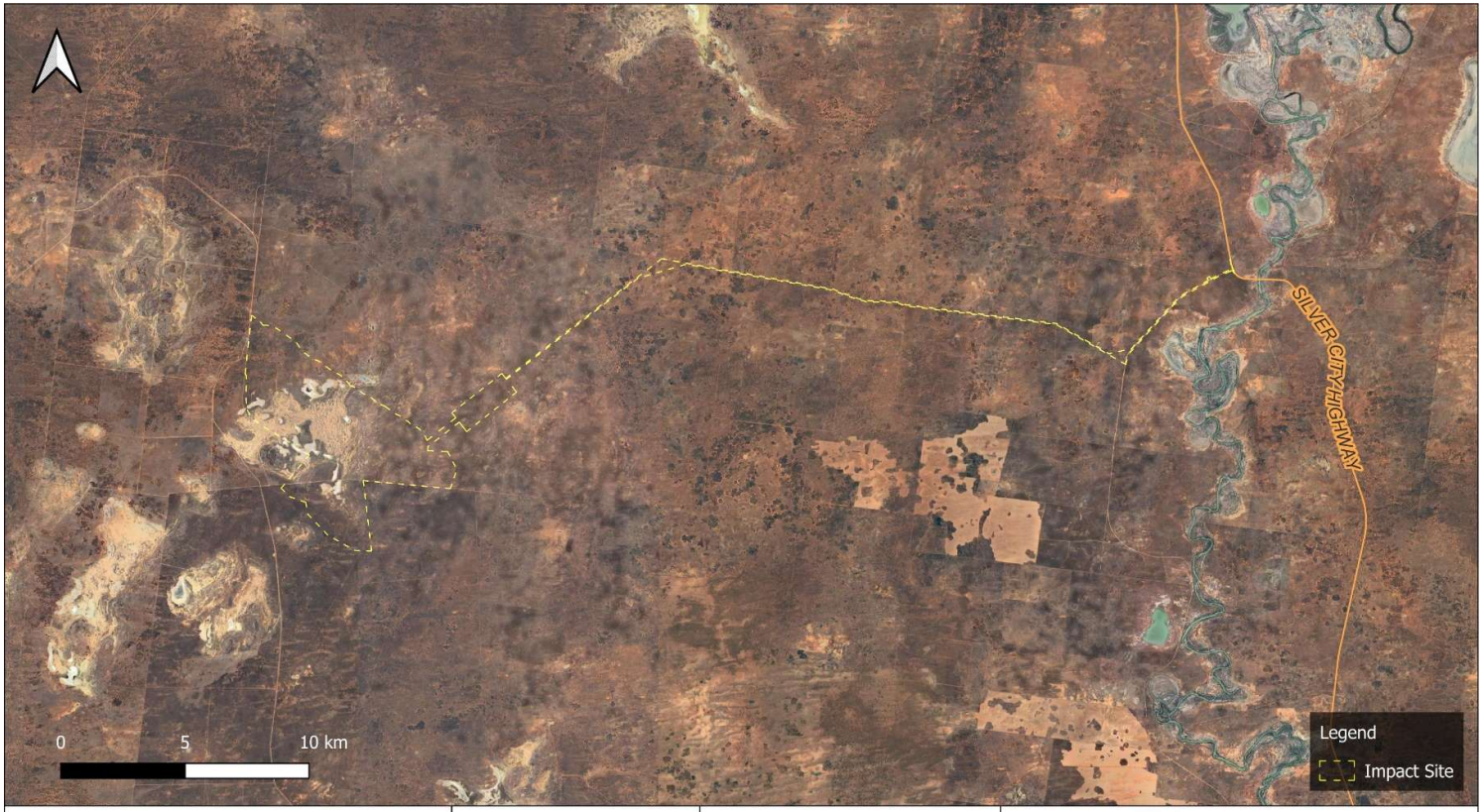
The Action includes the following components:

- Mining using a combination of traditional dry (excavate, load and haul) and wet (dredging) mining techniques to extract up to approximately 46.8 million (M) tonnes per annum (tpa) of overburden, 44.1 M tpa of interburden and 27.1 M tpa of ore.
- On-site processing to produce up to 475,000 tpa of mine products.
- Transportation of mine products in sealed containers from the Impact Site (Figure 3) to an existing rail facility in Broken Hill.
- Progressive re-establishment and rehabilitation of a final landform with ecosystem function.

The Project lifespan will be 26 years, comprising an initial 3-year construction period, followed by 18 years of mining operations and a further period of 5 years of rehabilitation.

The Action will result in the removal of 3,883.08 hectares (ha) of Native Vegetation from the Impact Site; 3,692.92 ha from the Mine Site area and 190.16 ha from the Linear Corridor. An additional 28.11 ha of roads, tracks and other cleared land within the Linear Corridor, and 108.30 ha from the Mine Site, will be cleared due to the proposed Action, resulting in a total of 4019.49 ha of land cleared. No further vegetation loss will be required through the operational phase of the development.

The explanation above provides a detailed definition of “The Action”.



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Impact Site	Biodiversity AUSTRALIA
	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:200000

Figure 3: Location and extent of the Impact Site

4. Severity of Action

An important step in determining the significance of an Action on an MNES entity and understanding the Severity of The Action in regard to the context of the population, is the balance of probabilities. This Assessment of Significance report has adopted the Severity Assessment Matrix framework included within the Department of Sustainability, Environment, Water, Population and Communities (DSEWPC) – 2013 Significant Impact Guideline 1.2. whilst it is acknowledged that the guideline 1.2 applies to actions on, or impacting upon, Commonwealth land, and actions by commonwealth agencies, it remains acutely appropriate in educating the balance of probabilities and ultimately the likelihood of a significant impact in relation to The Action. As per the guidelines, to judge the severity of potential impacts it is necessary to consider four key factors collectively, namely:

- Intensity
- Scale
- Duration
- Timing/frequency

The Significant Impact Guidelines 1.2 (DSEWPC, 2013) provides categories to assist in drawing conceptual distinctions between different levels of severity:

- **Severe**: Severe impacts generally have two or more of the following characteristics: permanent/irreversible; medium-large scale; moderate-high intensity.
- **Moderate**: Moderate impacts generally have two or more of the following characteristics: medium-long term; small-medium scale; moderate intensity.
- **Minor**: Minor impacts generally have two or more of the following characteristics: short term/reversible; small-scale/localised; low intensity.

The Action Severity Assessment Matrix shown in Table 2 below is based on the four key factors, and three severity categories established in The Significant Impact Guidelines 1.2 (DSEWPC, 2013). This matrix has been used to assist in defining the severity of The Action. As per the definitions established in the guidelines, the following four key factors are best described as:

Table 2: Severity Assessment Matrix

Severity Assessment Matrix		Severity		
		Minor	**Moderate**	**Severe**
Key Factors	Scale	small-scale	small-medium scale	medium-large scale
	Intensity	low intensity	moderate intensity	moderate-high intensity
	Duration	short term/reversible	medium-long term	permanent/irreversible
	Timing/frequency	single event	recurring moderate frequency	recurring high frequency

A definition of key factors as per The Significant Impact Guidelines 1.2 and an assessment of the proposed Actions against these definitions is provided in Table 3 below.

Table 3: Severity of Action - key factors assessment

Criteria	Assessment
Scale: refers to the extent or magnitude of an Action relevant to the environment, species or Impact Site being discussed, typically a large-scale action with widespread impacts is more likely to have a significant impact than a smaller-scale action with localised impacts.	**Medium-large scale** - The proposed Action will occur over an area of 3888 ha in which all vegetation will be progressively cleared resulting in the removal of all substantial habitat values.
Intensity: refers to the strength and concentration of the impacts stemming from an action. An example of an action with high intensity impacts is open cut mining which involves comprehensive modification of the entire environment. An example of an action with low intensity impacts is low density grazing of livestock on native pastures.	**High Intensity** –The Action will comprehensively modify the environment through vegetation clearing and landscape excavation/ dredging.
Duration: refers to the full period over which the impacts of an Action are felt. An example of permanent/irreversible impacts from an Action includes the pollution of radioactive material/forever chemicals into the environment. An example of a short term/reversible impact from an Action is the slashing of native pasture, as the pasture is able to recover to its condition before The Action within the short term.	**Medium-long term** - The impact will occur in sections over the life of the mine, expected to be 26 years, with progressive rehabilitation.
Timing and frequency: The timing of an Action refers to when The Action occurs relative to important seasonal factors. For example, is The Action impacting a sensitive species during the breeding season, or period of stress such as drought, flood, or post fire. The frequency of an action refers to the period between Action events, for example weekly weed control has a high frequency, yearly fire management has a low frequency and clearing of a patch of vegetation is a singular event.	**Single event per area, progressing across The Site** - Each area will be subject to clearing once. The Project has not factored in periods of drought, flood or fire.

An assessment of The Action, utilising the matrix developed from the Significant Impact Guidelines 1.2, Is presented in Table 4: Matrix Assessment of action severity Considering the intensity, duration, scale and timing of the proposed Actions, the Actions align most closely with the 'Moderate Severity' category across all four key factors. The proposed Actions are characterised by their moderate-high intensity, medium-large scale and medium-long term, but reversible nature through rehabilitation.

Table 4: Matrix Assessment of action severity

Severity Assessment Matrix		Severity		
		Minor	**Moderate**	**Severe**
Key Factors	Duration	short term/reversible	✓ medium-long term	permanent/irreversible
	Intensity	low intensity	moderate intensity	✓ moderate-high intensity
	Scale	small-scale	✓ small-medium scale	medium-large scale
	Timing/frequency	✓ single event	recurring moderate frequency	recurring high frequency

5. Potential Occurrence Assessment

Results of the EPBC PMST (DCCEEW, 2022a) search detail:

Matters of National Significance	Count
World Heritage Properties	0
National Heritage Places	0
Wetlands of International Importance (Ramsar Wetlands)	3
Great Barrier Reef Marine Pare	0
Commonwealth Marine Areas	0
Listed Threatened Ecological Communities	3
Listed Threatened Species	38
Listed Migratory Species	9

- three (3) Ramsar Wetlands,
- three (3) TECs,
- 38 threatened species, and
- nine (9) migratory species

have the potential to occur within the Impact Site The identification of suitable habitat for MNES entities indicates there is potential for the occurrence of MNES entities within both search feature and buffer areas. A Likelihood of occurrence assessment was undertaken for each of these species (apart from listed fish species since there is no fresh water in the Impact Site) and is contained in **Appendix A-2**.

All three Ramsar wetlands are located outside the Impact Site and are not directly or indirectly impacted by the Action. All three Ramsar wetlands are located within the PMST search buffer area only; with Banrock station wetland complex located 50-100 km downstream, Riverland situated 10-20 km downstream and The Coorong, and Lakes Alexandrina and Albert wetland situated 200-300 km downstream.

All MNES entities recorded or predicted to occur within the Study Area (20 km buffer around the Impact Site) were evaluated for their potential to occur within Impact Site. This was based on suitable habitat features occurring within the search feature area. An indicative, categorical scale was applied to indicate the likelihood of each MNES entity to potentially occur in the habitat within the Impact Site as follows:

- **Unlikely** (<1% probability) - no potentially suitable habitat; too disturbed; or habitat is very poor. No or few records in region or records/Site very isolated, e.g., by pastoral land, urbanisation, etc.
- **Low** (1-25%) - few minor areas of potential habitat; highly modified Site/habitat; or few habitat parameters present, but others absent or relatively insignificant (sub-optimum habitat). Usually very few records in locality.
- **Fair** (25-50%) - some significant areas of potential habitat, but some habitat parameters limited. Potential for occasional foraging e.g., from nearby more optimal areas or known habitat. Records at least within 10-15 km radius of Site.

- **Moderate** (50-75%) - quite good potentially suitable habitat on and adjacent to the Site, and/or good quality and abundance of some vital habitat parameters. Records within <10 km, or adjacent to the Site, or adjacent to high quality habitat where species are likely to occur.
- **High** (>75%) - very good to optimum habitat occurring on or adjacent to the Site (support breeding pair or population). Recorded within 5-10 km of Site in same or similar habitat.

Species with a 'moderate' or 'high' potential to occur were targeted during field assessments. A summary of those species with a likelihood of occurrence result in the 'moderate' or 'high' categories were subject to detailed assessment against the Significant Impact criteria.

6. Targeted threatened Species Surveys

6.1 Additional Survey Effort

As a result of an onsite meeting, document reviews and discussions with referral assessment staff at the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW), the project decision maker requested Bio Aus undertake additional survey between August 2024 and March 2025. These additional surveys were designed to collect data for areas and species within the Impact Site which had not previously been covered or where data was older than the 5 years.

The additional survey details are as follows

- Completed over 5,500 x 40 m diameter targeted threatened flora transect plots as part of a two-phase 100 m grid-based systematic threatened flora survey effort for large-areas across the Impact Site in line with BAM 2020.
- Added an additional 80 BAM 2020 compliant Vegetation Integrity plots and recorded detailed Rapid Data Points for Hollow Bearing Trees within plots.
- Undertook a gap analysis to determine the accuracy and structural condition of the existing vegetation communities and applied the NSW BAM 2020 methods for identifying Plant Community Types (PCT),mapping vegetation and sourced soil, contour and topography maps to further refine boundaries to meet BAM 2020 standards.
- Refined habitat constraints and associated PCTs for threatened species returned in updated PMST and gained DCCEEW's agreement with our habitat definitions
- Undertook EPBC and BC Act compliant targeted threatened species survey transects using species specific methodologies, for raptors (White-bellied Sea Eagle, Black-breasted Buzzard, Square-tailed Kite, Little Eagle, Masked Owl) and Pink Cockatoo, including large area targeted call playback methodology within suitable habitat.
- Undertook EPBC Act compliant targeted 'mallee-specialist' and 'mallee-dependant' bird surveys within mallee communities meeting the patch size definition for the TEC *Mallee Bird Community of the Murray Darling Basin Bioregion* (MBC or Mallee Bird Community).
- Completed EPBC and BC Act compliant habitat assessments across the entire Impact Site, including vegetation structure, condition and floristics, Hydrology, landscape feature assessments, and targeted Hollow Bearing Tree searches (Recorded hollow dimensions and mapped Hollow Bearing Trees on site).
- Conducted EPBC and BC Act compliant active herpetological surveys, using species specific methodologies, targeting Crowned Geckos (*Lucasium stenodactylum*) including nocturnal spotlight, physical habitat searches, and Elliot and pitfall trapping.
- Conducted concurrent Elliot and pitfall trapping surveys for both Desert Mouse (*Pseudomys desertor*) and Crowned Gecko utilising specific threatened species survey methodologies in suitable habitat.
- Completed EPBC Act compliant bird census surveys targeting the Eastern Mallee Bird TEC and other threatened bird species in suitable habitat, consisting of 30-minute area searches of areas covering 2 ha.

- Deployed Song Meter acoustic recording devices as part of the targeted threatened frog surveys, within potential habitat for the Painted Burrowing Frog (*Neobatrachus pictus*).
- Completed targeted BC Act compliant nocturnal spotlight surveys for Southern Hairy-nosed Wombat (*Lasiorhinus latifrons)* burrows/warrens, scats, and individuals, using high-power hand-held torches and thermal binoculars.
- Completed additional EPBC Act compliant targeted threatened microbat surveys utilising arrays of ultrasonic recorders.
- Refined the PCT boundaries, boundaries (Table 5), mapping and added a secondary condition states to three mapped PCTs.

Table 5: Plant Community Types associated with Copi Sands

PCT ID	Area (ha)	PCT name
28	0.77	White Cypress Pine open woodland of sand plains, prior streams and dunes mainly of the semi-arid (warm) climate zone
58	238.42	Black Oak – Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion
64	641.13	Samphire - Water Weed - Sea-Heath shrubland saline wetland of depressions of the arid and semi-arid
143	17.52	Narrow-leafed Hopbush – Scrub Turpentine – Senna shrubland on semi-arid and arid sandplains and dunes
152	250.43	Lunette chenopod shrubland mainly of the Murray Darling Depression Bioregion
154	1669.80	Pearl Bluebush low open shrubland of the arid and semi-arid plains
157	495.38	Bladder Saltbush shrubland on alluvial plains in the semi-arid (warm) zone including Riverina Bioregion
170	15.59	Chenopod sandplain mallee woodland/shrubland
171	12.11	Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion
215	5.91	Woollybutt Grass open grassland on red earths of the inland plains
221	395.14	Black Oak – Pearl Bluebush open woodland of the sandplains of the semi-arid warm and arid climate zones
253	139.72	Gypseous shrubland on rises in the semi-arid and arid plains
254	1.16	Black Oak - Bladder Saltbush on light clays in the arid zone
Total	**3883.08**	

6.2 Summary of Total Survey effort

6.2.1 Flora Species Surveys

A targeted survey for threatened flora species was undertaken over the Impact Site between 11th November and 30th November 2024.

The survey method for the target species followed the *Surveying Threatened Plants and Their Habitats* and the *NSW Survey guide for the Biodiversity Assessment Method 2020* consisting of botanists walking over large areas of suitable habitat using a two-phase grid-based systematic survey approach. Survey locations were positioned on a 100 m grid intersect, facilitating planning and enabling rapid assessment across larger areas.

6.2.2 Fauna Species Surveys

All threatened fauna species were surveyed in accordance with recommended survey guidelines and during recommended survey periods as detailed in the BioNet TBDC, specific threatened species survey guidelines, and other resources such as conservation advice and species action plan and recovery plan.

6.2.3 Complimentary Opportunistic fauna Surveys

Opportunistic fauna surveys, complementary to the method-specific targeted surveys were conducted on foot across the Impact Site – Mine Site by qualified fauna ecologists experienced in bird identification and equipped with binoculars and fauna identification resources. Staff traversed the areas between Threatened Flora plots whilst searching for individuals and signs of wildlife. Additional surveys were conducted along tracks outside the Impact Site where surveyors paid particular attention to soaring birds, stick nests and burrows. All other species encountered incidentally were also recorded. The complementary opportunistic fauna surveys covered approximately 1958.70 km.

6.2.4 Habitat Constraints, Evaluations and surveys

Desktop assessments and field surveys within the Impact Site included assessment of habitat constraints and microhabitats for fauna Species Credit Species. This included desktop assessment of the proximity of the Impact Site to features such as caves, wetlands and waterways and field inspection of microhabitats including leaf litter, stick nests and Hollow Bearing Trees etc. Habitat evaluation was the main survey method employed to assess the suitability habitats for threatened species observed in the Assessment Area, or in broadly similar habitats in the region. Habitats on and adjacent to the Impact Site were defined and assessed.

6.2.5 Active Herpetological Surveys

Targeted surveys involved nocturnal spotlight, physical habitat searches, and Elliot and pitfall trapping. The nocturnal spotlight surveys were conducted in suitable habitats within the Impact Site – Mine Site. The surveys were conducted by scanning for eye-shine with hand-held torches either on foot as a random

meander or in a slow-moving vehicle. All observations of eye shine were investigated, and the species responsible was identified.

6.2.6 Diurnal Bird Surveys

Diurnal bird census surveys targeting the Eastern Mallee Bird TEC and other threatened bird species were conducted in suitable habitat within and adjacent to the Impact Site. The surveys consisted of a 30-minute area search of an area covering 2 ha. During each survey, observers identified and recorded all bird species seen and heard. Surveys were conducted in the early morning (dawn) or late afternoon (dusk) when bird activity was highest. EnviroKey ecologists conducted surveys to determine the presence and usage of the Impact Site by diurnal birds in either the early morning or late afternoon to coincide with peak bird activity. These surveys were completed at 243 locations.

Combined foot and vehicle surveys were conducted for birds of prey within the Impact Site. The surveys commenced during the heat of the day when it was expected that conditions for thermal soaring would be optimal. Observers surveyed the sky for soaring individuals and scanned their surroundings for individuals perched on trees. Additionally, observers searched for large stick nests in areas with suitable habitat for nest construction.

EnviroKey ecologists used song meter SM4 acoustic recorders during 2022 field surveys to record bird calls. A song meter was activated at four locations (1 within the Impact Site and 3 within the broader Subject Land) for a total of 3 full days, giving a total of 12 recording days.

6.2.7 Hollow bearing Tree Search

Data on Hollow Bearing Trees and tree hollows were recorded opportunistically while conducting diurnal bird survey and nocturnal spotlighting surveys within and adjacent to the Impact Site. Where tree hollows were located, the number, size, and height above ground of hollows, as well as the Diameter at Breast Height (DBH) and species of the trees in which hollows were located were recorded.

6.2.8 Nocturnal Spotlight Surveys

Targeted nocturnal spotlight surveys were conducted within the Impact Site. In areas of suitable habitat observers searched for burrows/warrens, scats, and individuals, using high-power hand-held torches and thermal binoculars. Each search spanned a minimum of 60 person minutes and was replicated in the same area on the following night.

6.2.9 Nocturnal Call playback

Nocturnal call playbacks were undertaken within the Impact Site. where observers surveyed for the Masked Owl in suitable habitat by spotlighting with hand-held torches and listening for the species' calls for a period of 10 minutes. If no sightings or calls were registered during this time, the observers broadcast a recording of the Masked Owl's call over a speaker for 15 seconds. followed by a wait period of 30

seconds, during which time the observers again searched for the masked owl and listened for its calls. This process was repeated 6 times.

6.2.10 Elliot and Pitfall Trapping

Concurrent Elliot and pitfall trapping surveys were undertaken within the Impact Site. Three Elliot and pitfall trap arrays were established in suitable habitat, two within the Mine Site area and one along the Linear Corridor area. The pitfall arrays consisted of a 30 m drift fence with 7 buckets distributed along its length. Ten 'A' sized Elliot traps were set in the area surrounding each pitfall array, each trap baited with a mix of peanut butter, honey, and oats.

6.2.11 Microbat Call Recording and Analysis

6.2.12 Acoustic Recording Surveys

The details of all targeted threatened species surveys conducted within the Impact Site is provided in **Appendix A-3**.

7. Refinement of Potential Impact entities

All MNES entities recorded in the Impact Site, and those with suitable habitat and considered likely to occur (**Appendix A-2**) in the Impact Site were subject to detailed assessment to determine the significance of the impact. These entities are:

- Mallee Bird Community TEC.
- South-eastern Hooded Robin (*Melanodryas cucullata cucullata*).
- Southern Whiteface (*Aphelocephala leucopsis*).
- Pink Cockatoo (*Lophochroa leadbeateri leadbeateri*).
- Corben's Long-eared Bat (*Nyctophilus corbeni*).

Flora species with potential to occur on site and subject to a streamline significance assessment are:

- A Saltbush *(Atriplex infrequens).*
- Winged Peppercress *(Lepidium monoplocoides).*
- Desert Greenhood *(Pterostylis xerophila).*
- Menindee Nightshade *(Solanum karsense).*
- Slender Darling-pea *(Swainsona murrayana).*
- Yellow Swainson-pea *(Swainsona pyrophila).*

Fauna species with potential to occur on site and subject to a streamline significance assessment are:

- Murray Mallee Striated Grasswren (*Amytornis striatus howei*).
- Malleefowl (*Leipoa ocellata*).
- Grey Falcon (*Falco hypoleucos*).

All other MNES entities returned from the PMST (**A-1**) were considered to have essential habitat elements missing from the Impact Site (**Appendix A-2**), such that all requirements for the lifecycle of the species could not be met. They were not considered further.

8. Entities With a Higher Risk of a Real Chance of Significant Impact

8.1 Mallee Bird Community TEC

8.1.1 Conservation status

The Mallee Bird Community is listed as an Endangered TEC under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act). This TEC is a type of fauna community found in the Murray Darling Depression bioregion. It is an assemblage of bird species that are dependent on the mallee vegetation that characterises this bioregion (DAWC 2021).

The main factors that make the TEC eligible for listing in the Endangered category are:

- Severe loss of a functionally important species over much of the landscape.
- Severe loss of ecological integrity from the combined actions of several threats.
- A severe rate of continuing detrimental change shown by many members of the ecological community.

8.1.2 TEC Range and Distribution

Mallee ecosystems occur in the drier parts of Australia, south of the arid zone in Western Australia (WA), South Australia (SA), New South Wales (NSW) and Victoria (Yates et al. 2017; Keith et al. 2020). Within south-eastern Australia, mallee is generally associated with unconsolidated aeolian sands in low rainfall zones, typically within the 200-350 mm annual rainfall isohyets (DAWE, 2021).

The Mallee Bird Community TEC is an assemblage of 20 bird species that rely on mallee habitats and is defined as a TEC by bird species richness within these habitats.

The indicative extent of the community and its likely current occurrence is illustrated in Figure 4.

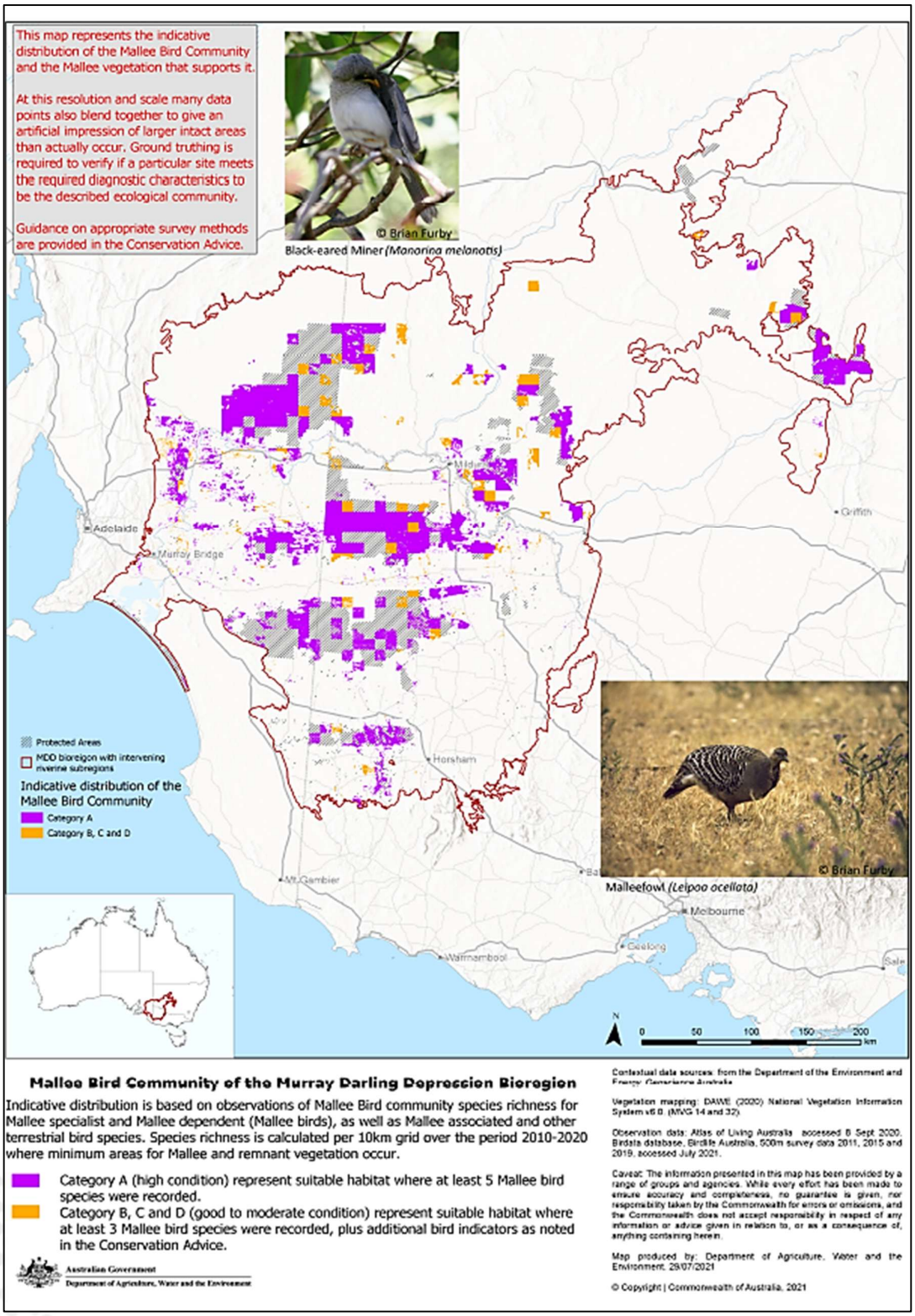


Figure 4: Geographic distribution of the Mallee Bird Community

8.1.3 Key Diagnostic Characteristics

The key diagnostic attributes for the Mallee Bird Community (DAWE 2021) are as follows:

- Site location – found in the Murray Darling Depression Interim Biogeographic Regionalisation for Australia (IBRA) bioregion, and parts of the Riverina and the Darling Riverine Plains bioregions. The Impact Site is within the Murray Darling Depression and South Olary Plain subregion.
- Mallee habitats must be present on site.
- Vegetation patches must consist of at least 10 ha of native vegetation with at least 5 ha dominated by mallee.
- At least three (3) terrestrial bird species from the list of MBC diagnostic birds must be present (any mix of mallee specialists or mallee dependents) (Table 6).

Table 6: MBC diagnostic bird species

Common name	Species name	Family	EPBC status	NSW Status
Mallee specialists				
Black-eared Miner	*Manorina melanotis*	Meliphagidae	E	CE
Chestnut Quail-thrush	*Cinclosoma castanotum*	Cinclosomatidae		V
Mallee Emu-wren	*Stipiturus mallee*	Maluridae	E	
Malleefowl	*Leipoa ocellata*	Megapodiidae	V	E
Red-lored Whistler	*Pachycephala rufogularis*	Pachycephalidae	V	CE
Scarlet-chested Parrot	*Neophema splendida*	Psittacidae		V
Striated Grasswren	*Amytornis striatus*	Maluridae		V
Mallee Western Whipbird	*Psophodes nigrogularis*	Psophodidae	V	
Mallee dependents				
Crested Bellbird	*Oreoica gutturalis*	Oreoicidae		
Grey-fronted Honeyeater	*Ptilotula plumula*	Meliphagidae		
Jacky Winter	*Microeca fascinans*	Petroicidae		
Purple-gaped Honeyeater	*Lichenostomus cratitius*	Meliphagidae		V
Regent Parrot	*Polytelis anthopeplus*	Psittacidae	V	E
Shy Heathwren	*Calamanthus cautus*	Acanthizidae		V
Southern Scrub-robin	*Drymodes brunneopygia*	Petroicidae		V
Splendid Fairy-wren	*Malurus splendens*	Maluridae		
Spotted Pardalote	*Pardalotus punctatus*	Pardalotidae		
White-eared Honeyeater	*Nesoptilotis leucotis*	Meliphagidae		

Common name	Species name	Family	EPBC status	NSW Status
White-fronted Honeyeater	*Purnella albifrons*	Meliphagidae		
Yellow-plumed Honeyeater	*Ptilotula ornata*	Meliphagidae		

Table sourced from the Approved Conservation Advice for the Mallee Bird Community of the Murray Darling Depression Bioregion (DCCEEW 2021)

- If the above criteria are satisfied, then four conditions are categorised as follows:
  - Category A - At least 5 MBC species, any mix of mallee specialist and dependent species.
  - Category B – 3 to 4 MBC species including at least one mallee specialist species.
  - Category C - 3 to 4 MBC species plus at least 5 mallee associated species.
  - Category D - 3 to 4 MBC species plus at least 20 or more terrestrial bird species.

8.1.4 Presence within the Impact Site

Presence of Mallee

The Impact Site contains two Plant Community Types that conform to the definition of 'mallee'. These are:

- PCT 170 Chenopod sandplain mallee woodland/shrubland.
- PCT 171 Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion.

Suitable MBC habitat

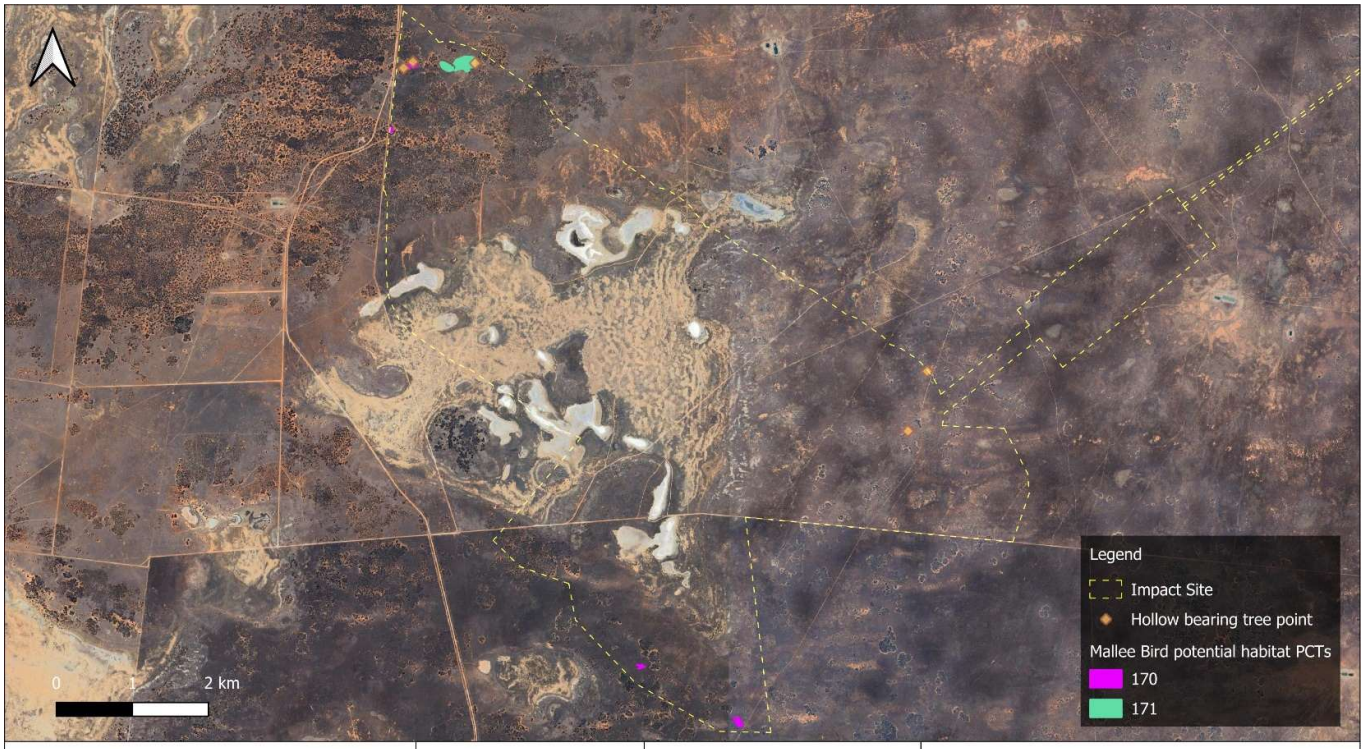
Bio Aus defined 'suitable habitat' for the Mallee Bird Community TEC according to the EPBC Conservation advice (DAWE 2021) as follows:

- Vegetation community consistent with Mallee PCTs 170 and 171;
- Native vegetation (50% or more native crown cover and 50% or more native perennial cover less than 2 m) patch is at least 10 ha with at least 5 ha of mallee;
- Tree canopy crown cover is between 5% and 70%;
- Mallee eucalypt trees are the dominant tree canopy type present; and
- At least three specialist or dependent bird species (Table 6) recorded from survey.

Using Geographic Information Systems analysis to determine where these two mallee PCTs existed as patches of at least 5 ha within larger patches of native vegetation of at least ten (10) ha, Bio Aus found that none of the areas of the mallee PCTs within the Impact Site itself complied with the patch size (Figure 5). However, The Project requires a new road to be built from Silver City Highway to the Mine Site area, and vegetation along this Linear Corridor met the patch size criteria (Figure 6).

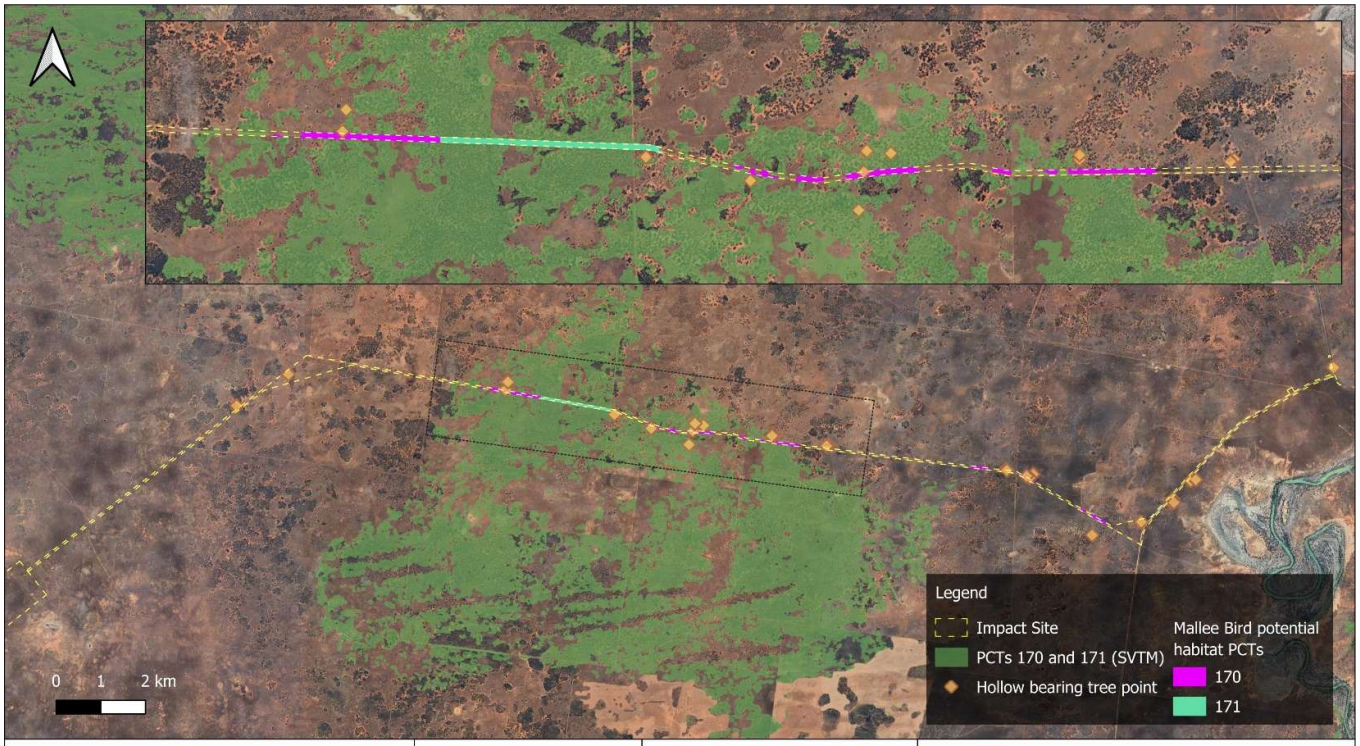
Table 7: Mallee communities in Impact Site

PCT	Total Area on Mine Site and Linear Corridor	Total Area meeting MBC patch size criteria
170	15.60 ha	10.17 ha
171	12.11 ha	6.56 ha
Total	**27.71 ha**	**16.74 ha**



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Mallee Communities within the Mine Site	Biodiversity AUSTRALIA
	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:60000

Figure 5: Mallee Communities within the Impact Site - Mine Site area



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	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872 / Spatial Reference: GDA2020 / MGA zone 54 / Scale: 1:102000

Figure 6: Mallee Communities within the Impact Site - Linear Corridor

8.1.5 Bird survey effort

To determine whether the Mallee Bird Community was present, extensive bird surveys were conducted in accordance with the listing guidelines (DAWE 2021). Survey included:

- 20 min dawn and dusk diurnal bird surveys for sightings and vocalisation totalling 4,860 minutes (81 hours) at 243 locations between January 2018 and February 2025.
- A total of 12 recording days using call playback for Striated Grasswren, Red-lored Whistler and Black-eared Miner (at the end of each survey above).
- A song meter activated in 39 sites between March 2018 and March 2022 for 3.5 hours per day (dawn and dusk), a total of 42 hours in 2022.
- Camera traps deployed for 87 days/nights.
- Five days of 500 m dawn and dusk area surveys from 25 to 29 November 2024.
- A general bird of prey survey as well as Nest and Area Searches on foot and from vehicle from 4-19 December 2024.
- Targeted morning searches around water sources and hollows from 4-19 December 2024.
- Opportunistic observations undertaken during all site visits, which included threatened flora surveys using a 100 m grid over the whole Impact Site.
- Targeted dawn searches along the Linear Corridor from 5 February to 12 February 2025 at sites representative of the broader patch in terms of fire-age, soil type and understorey type. Three (3) survey points were selected per patch >5 ha and survey was undertaken for 30 minutes over 2 ha, as well as 500 metre area searches > 30 minutes duration per site. Eight repeat surveys were conducted.

8.1.6 Bird survey results

Two bird species from the Mallee Bird Community were recorded in mallee on and adjacent to the Linear Corridor where vegetation meets the patch size criteria. These are:

Crested Bellbird (*Oreoica gutturalis*)

Jacky Winter (*Microeca fascinans*)

Within and adjacent to the Mine Site, field surveys identified five mallee dependent species (as listed below) and reported as 'occurring in vegetation communities within the Impact Site that have overstory species' (EnviroKey, 2024). Birds recorded are:

- Crested Bellbird (*Oreoica gutturalis*).
- Grey-fronted Honeyeater (*Ptilotula plumula*).
- Jacky Winter (*Microeca fascinans*).
- Splendid Fairy-wren (*Malurus splendens*).
- Yellow-plumed Honeyeater (*Ptilotula ornata*).

One mallee specialist, the Chestnut Quail-thrush (*Cinclosoma castanotum*) was recorded outside The impact Site (a single bird on a single occasion) (Figure 7).

Four mallee-associated species were also recorded being Blue Bonnet (*Northiella haematogaster*), Pink Cockatoo (*Lophochroa leadbeateri*) and Weebill (*Smicrornis brevirostris*) in the Linear Corridor area and Spiny-cheeked Honeyeater (*Acanthagenys rufogularis*) in the Mine Site however, these are not diagnostic species in the absence of at least three (3) MBC listed birds.

Further analysis was undertaken to determine whether additional mallee specialist or mallee dependent species had been recorded within the Impact Site as listed on the Atlas of Living Australia (ALA) or NSW BioNet species records. The results (Figure 7) indicate only two species within the area of mallee habitat with suitable patch size were recorded, they included the Crested Bellbird and Jacky Winter. The broad extent of potential foraging and breeding habitat (associated PCTs 170 & 171) for the Mallee Bird Community is illustrated in Figure 8 and is shown in context of the broader landscape, surrounding the Impact Site at a radius of 50 km.

This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Mallee specialist and Mallee dependent bird records within 20km of the Impact Site	Biodiversity AUSTRALIA
	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:320000

Figure 7: Mallee specialist and mallee dependent bird records within 20 km of the Impact Site

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Project Manager: NC	Figure Name: Potential habitat (associated PCTs) for Mallee Bird Community within 50km of the Impact Site	Biodiversity AUSTRALIA	
Drawn by: NE	Location: Warwick Station		
Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:750000

Figure 8: Potential habitat (associated PCTs) for Mallee Bird Community within 50 km of the Impact Site

8.1.7 Conclusion

The Impact Site contains two Mallee communities providing potential habitat for the Mallee Bird Community:

- PCT 170 Chenopod sandplain mallee woodland/shrubland.
- PCT 171 Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion.

Applying the patch size criteria, only vegetation patches along the Linear Corridor area met the criteria, with 10.17 ha of PCT 170 and 6.56 ha of PCT 171. Loss of this mallee vegetation will occur from the Linear Corridor construction, though this represents less than 0.21% of mallee within a 20 km radius of the Impact Site. Further, the Mallee community within much of the Impact Site has been heavily degraded as a result of historic and ongoing grazing and damage arising from feral goats and sheep, as well as the absence of fire activity.

The Conservation Advice (DAWE 2021) states the TEC is only present when at least three (3) terrestrial bird species from the list of MBC diagnostic birds are present. Extensive bird surveys conducted in these areas recorded only two diagnostic species. Based on the information above, the *Mallee Bird Community of the Murray Darling Depression bioregion* TEC is not considered to be present within the Impact Site. Therefore, The Action will have less than a remote chance of causing a significant impact on the TEC, and referral to the Commonwealth Minister is not warranted.

8.2 South-eastern Hooded Robin (*Melanodryas cucullata cucullata*)

8.2.1 Conservation status

The South-eastern Hooded Robin is listed as Endangered under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act). The main factor that makes the subspecies eligible for listing in the Endangered category is that the population has declined by >50% over the last ten years (one generation 3.0 years) (Ford et al. 2021). From 2000–2018, reporting rates from surveys and searches declined by 65% and 63% respectively (DCCEEW, 2023). Both the EOO and AOO estimates for the subspecies have contracting trends (Ford et al. 2021).

8.2.2 Species Range and Distribution

The Hooded Robin is widespread, found across Australia, except for the driest deserts and the wetter coastal areas - northern and eastern coastal Queensland and Tasmania. However, it is common in few places and rarely found on the coast (OEH 2023). The south-eastern form (subspecies *cucullata*) is found from Brisbane to Adelaide and throughout much of inland NSW, with the exception of the extreme northwest, where it is replaced by subspecies *picata*. Two other subspecies occur outside NSW. The south-eastern subspecies is now absent from many formerly occupied sites, particularly in the wetter areas of the south and east (Barrett et al. 1994; Paton et al. 1994; Ford et al. 2009).

The distribution of the South-eastern Hooded Robin is presented in Figure 9.

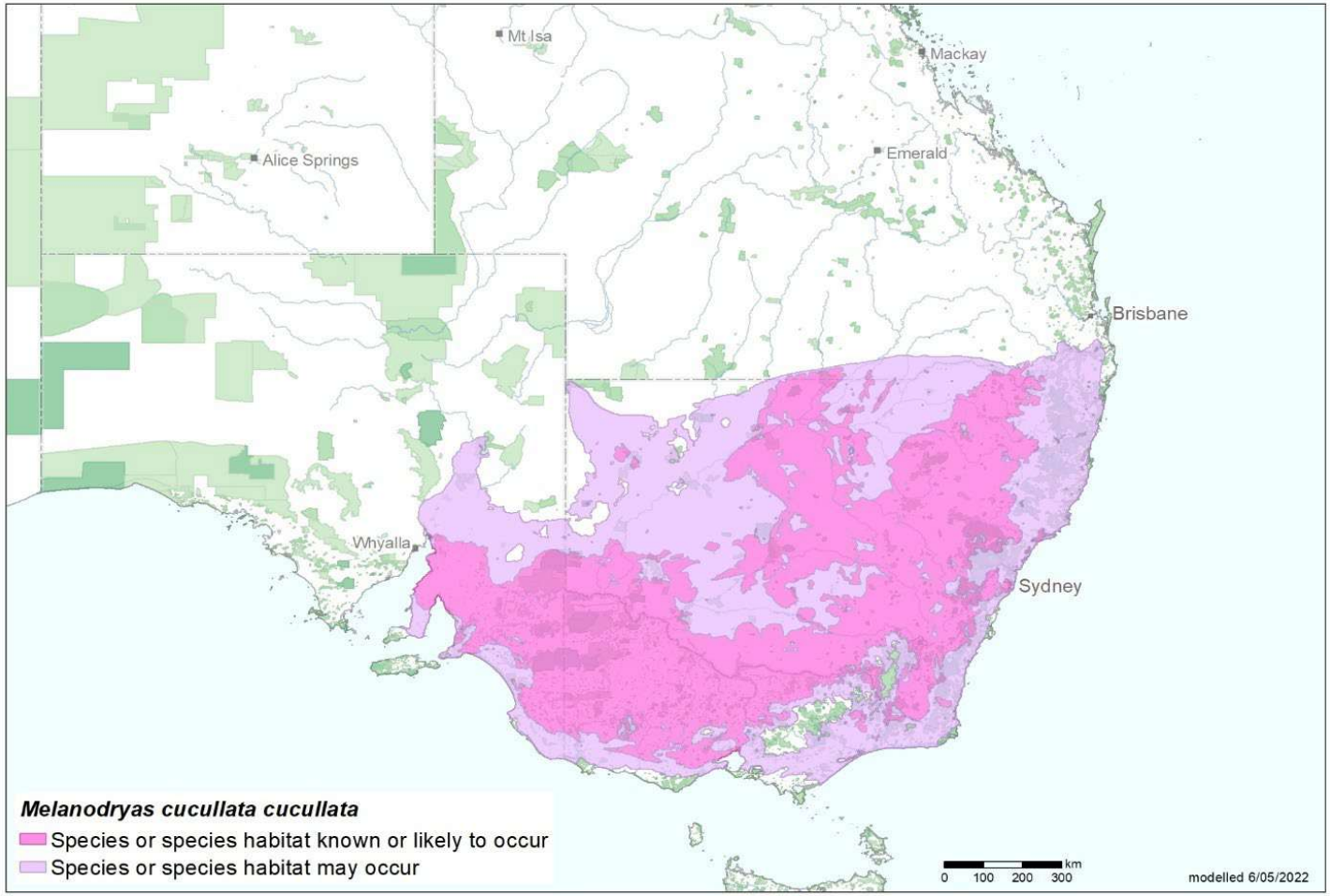


Figure 9: South-eastern Hooded Robin range and distribution from Conservation Advice (Comm DCCEEW 2023)

8.2.3 Presence within the Impact Site

Desktop results

The Impact Site is within the known distribution of the species. A search of available species records identified two (2) records within The Impact Site and 35 records within 50 km of The Impact Site (Atlas of Living Australia (ALA) and BioNet 2025). BioNet records within the last ten years indicate native vegetation connectivity to records within 20 km of the Site.

Field results

Extensive bird surveys were conducted between 2018 and 2025, including survey in accordance with the *Survey guidelines for Australia threatened birds – EPBC Act survey guidelines 6.2* (Survey Guidelines) (Department of the Environment, Water, Heritage and the Arts, 2010).

The Hooded Robin was recorded on several occasions during the field surveys, with the common theme being that these observations were at edges of treed or tall shrub plant communities (i.e. not bluebush/saltbush dominated communities) where they adjoined open areas.

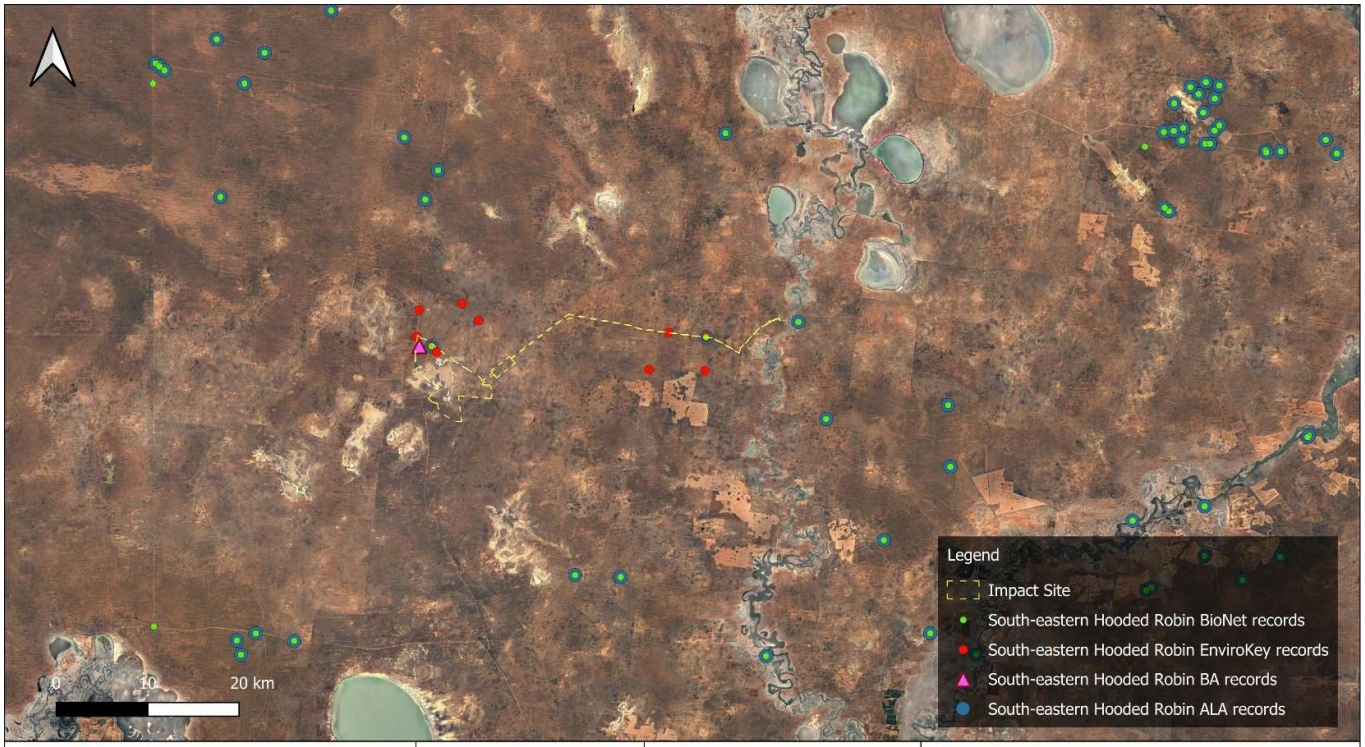
Records of Hooded Robin within the locality are presented in Figure 10.

Potential habitat

Potential habitat for the species within the Impact Site is associated with the following Plant Community Types (OEH 2025):

- PCT 58: Black Oak – Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion.
- PCT 170 - Chenopod sandplain mallee woodland/shrubland.
- PCT 171: Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion
- PCT 221: Black Oak – Pearl Bluebush open woodland of the sandplains of the semi-arid warm and arid climate zones.
- PCT 254: Black Oak - Bladder Saltbush on light clays in the arid zone.

Potential habitat for Hooded Robin within the Impact Site Mine Site area is presented in Figure 11, and within the Linear Corridor is presented in Figure 12.



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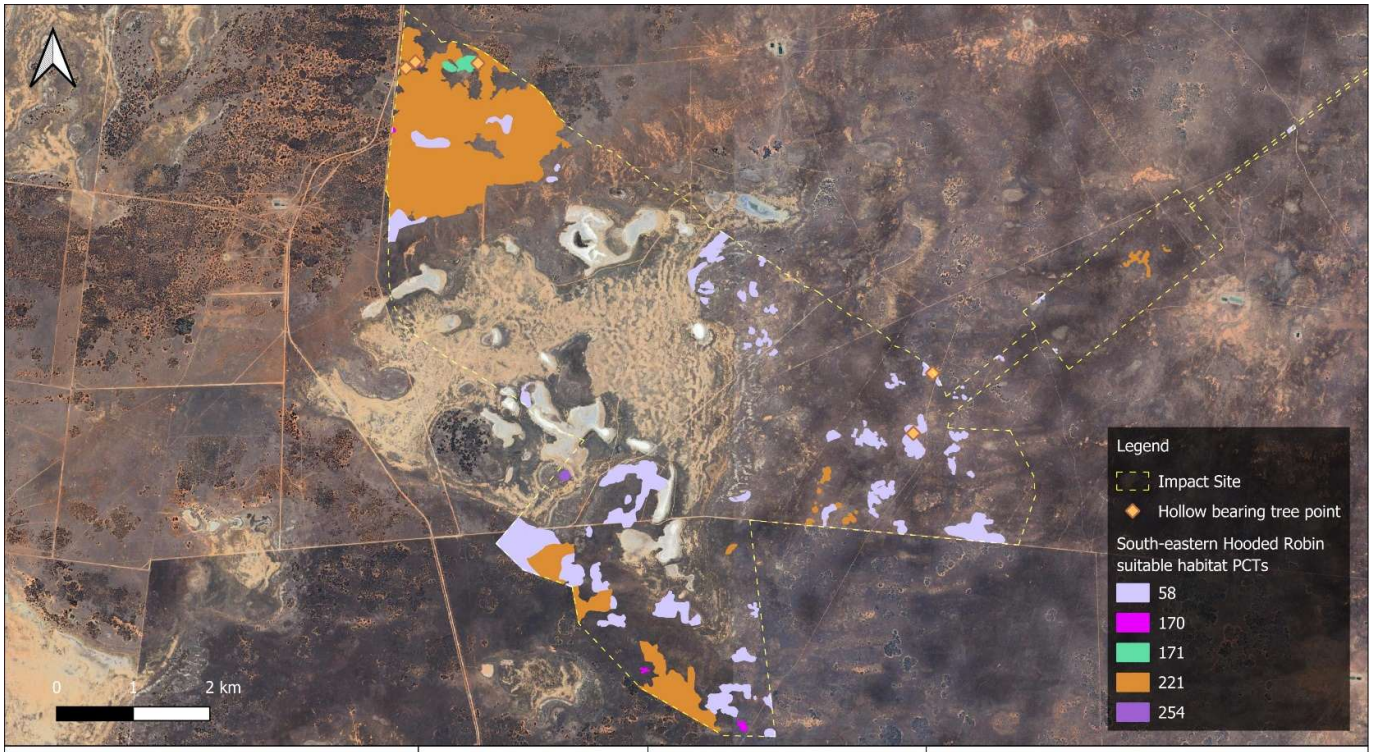
	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:500000

Figure 10: South-eastern Hooded Robin records in the locality



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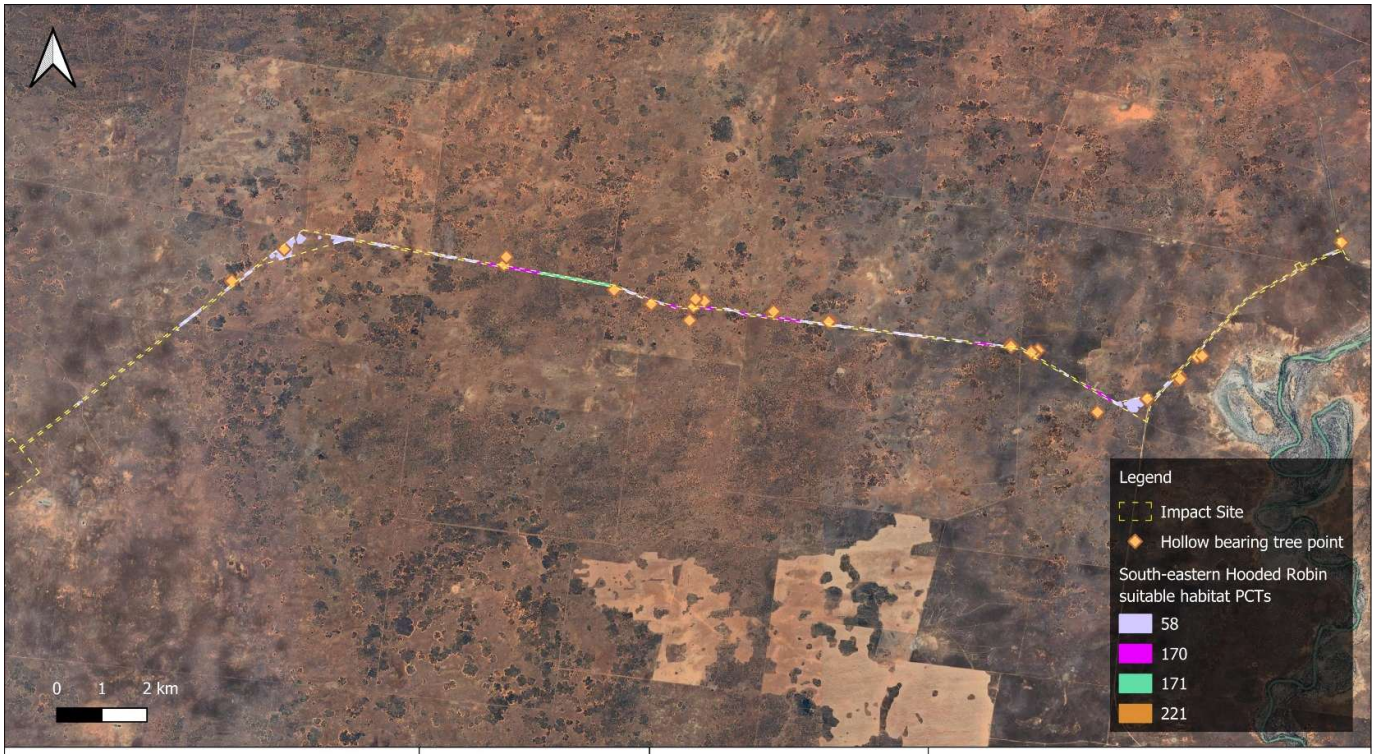
	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872 / Spatial Reference: GDA2020 / MGA zone 54 / Scale: 1:60000

Figure 11: Potential Hooded Robin habitat on the Mine Site



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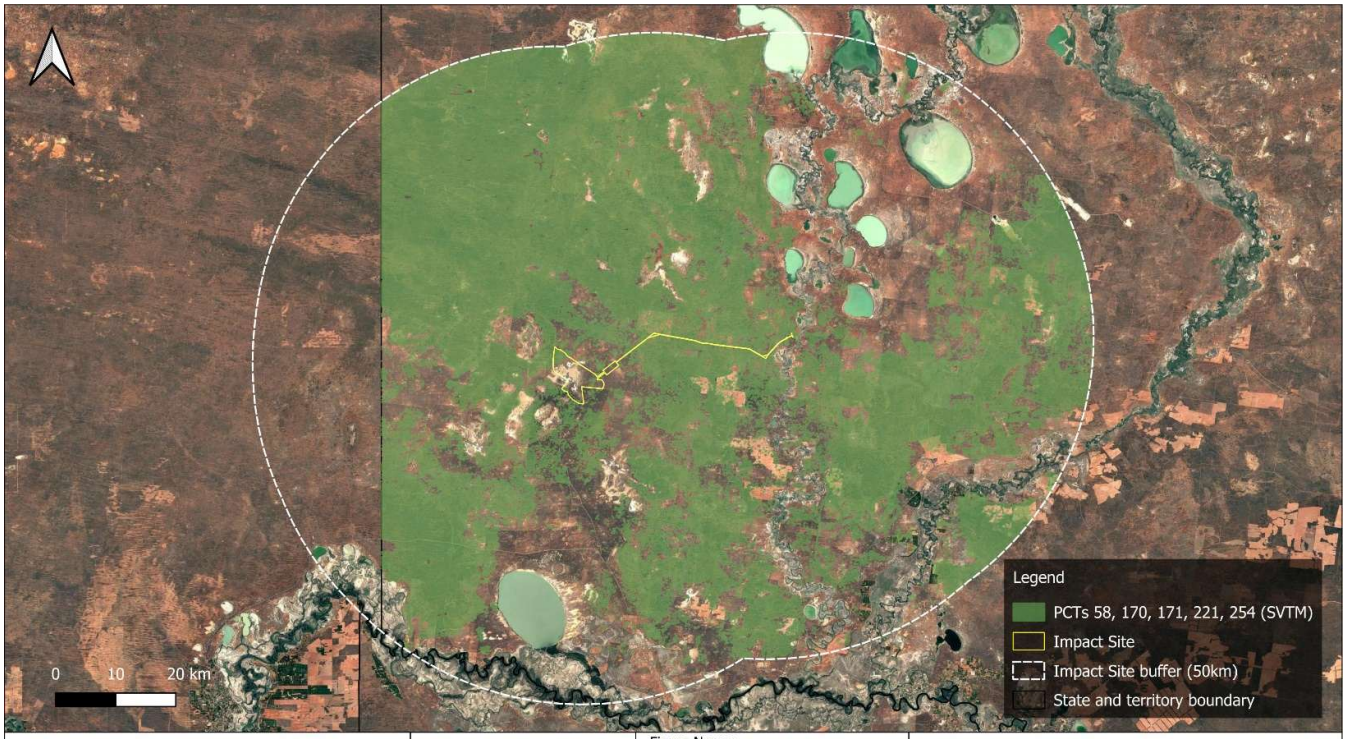
	Drawn by: NE	Location: Warwick Station		
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:102000

Figure 12: Potential South-eastern Hooded Robin habitat along the Linear Corridor



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	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:750000

Figure 13: Potential habitat (associated PCTs) for South-eastern Hooded Robin within 50 km of the Impact Site

8.2.4 Habitat requirements

The species occupies a variety of habitats including dry eucalypt and acacia woodlands and shrublands with an open understorey and grassy areas (DCCEEW, 2023). They generally avoid woodlands with tall trees or dense tree cover (Garnett and Baker, 2020d). Structurally diverse habitats are necessary (DCCEEW, 2023). While they can occur in patches as small as 2.9 ha (Montague-Drake et al. 2009), in agricultural landscapes they prefer larger patches greater than 10 ha (Watson et al. 2000).

Priday (2009) found a positive association between the presence of the Hooded Robin and the edges of open vegetation dominated by ungrazed or lightly grazed grassy ground cover in which species of native perennial tussock-grass predominate, adjoining timbered native vegetation cover, on moderately deep to deep soils.

Birds tend to forage on insects and small lizards taken from the ground (Antos et al. 2008). They hunt for invertebrates by 'perch and pounce' in grassy clearings where rocks and fallen timber litter the ground (Sullivan 1993). Fitri and Ford (2003) found Hooded Robins foraged mainly by pouncing or gleaning on the ground for invertebrates, with an increase of gleaning in winter. Less frequently they hawked for flying insects and gleaned or snatched prey from bark, both of which were more common in summer and autumn. Although branches were the most frequent perches from which foraging was initiated, Robins also foraged from trunks, stumps and logs and an array of artificial structures.

Perches were typically close to the ground, though hawking, gleaning and snatching were usually carried out 3-8 metres above the ground. A heterogeneous ground layer is required (Antos et al, 2008) and dead timber, standing and fallen, is highlighted as important components of habitat for the species (Reid, 1999).

Breeding for the species generally occurs between July and November, often rearing several broods (DCCEEW 2023). Birds form monogamous pairs and tend to breed in the same breeding site. The female incubates the eggs (typical clutch size is 2-3) and both parents defend the nest. Birds usually return to the same breeding site where they typically rear several broods each season. Nests comprise small, neat cups of bark and grasses bound with webs (Fitri & Ford, 2003), and are situated in a tree fork or crevice, from less than 1 m to 5 m above the ground. Territories range from around 10 ha during the breeding season to 30 ha in the non-breeding season (OEH 2023).

8.2.5 Habitat critical to the survival of the species

The EPBC Act provides for the maintenance of a register of critical habitat. That is, habitat that is identified by the minister as being critical to the survival of a listed threatened species or ecological community. No habitat critical to the survival of the species is listed in the species' Conservation Advice - Threatened Species Scientific Committee (TSSC 2016) or listed on the Register of Critical Habitat maintained by the minister under the EPBC Act.

The *Environment Protection and Biodiversity Conservation Act 1999* (and Regulations) refer to habitat of threatened species and ecological communities and listed migratory species as *habitat*, *important habitat*, *critical habitat*, *habitat critical to the survival of a species*, and *expected habitat*. This ambiguity in terminology causes confusion for stakeholders, proponents, and decision makers, and has potentially diminished environmental outcomes for listed species and ecological communities as MNES. As such, it is of critical importance that the term Habitat Critical to the Survival of the Species is clearly defined, as it relates to the Hooded Robin.

Habitat Critical to the Survival of the species is defined in the MNES Significant Impact Guidelines 1.1, it refers to areas that are necessary:

- For activities such as foraging, breeding, roosting, or dispersal,
- For the long-term maintenance of the species or ecological community (including the maintenance of species essential to the survival of the species or ecological community, such as pollinators),
- To maintain genetic diversity and long-term evolutionary development, or
- For the reintroduction of populations or recovery of the species or ecological community.

This definition is further supported by LEX77012 of the Conservation Planning Reform – Definition and Description of Habitat for Listed Threatened Species, Ecological Communities and Migratory Species, proposed definitions for Critical Habitat – *spatially defined subset of habitat for which there is high confidence that it is irreplaceable to the persistence of a listed threatened species, ecological community or migratory species in the wild.*

Habitat critical to the survival of the Hooded Robin (south-eastern) as listed in the species Conservation Advice (DCCEEW 2023) includes areas of:

- Dry eucalypt and acacia woodlands and shrublands remnants with an open understorey, some grassy areas and a complex ground layer, often in or near clearings or open areas.
- Structurally diverse habitats featuring: mature eucalypts, saplings, some small shrubs and a ground layer of moderately tall native grasses.
- Standing dead or live trees and tree stumps are also essential for nesting, roosting and foraging.
- Moderately deep to deep soils, rocks and fallen timber which provides essential foraging habitat.

Bio Aus have defined critical habitat for the species in the Impact Site as:

Foraging habitat

Treed communities - PCTs 58, 170, 171, 221 and 254 in moderate to good condition (not significantly impacted by goats) where they:

- Contain mature eucalypts (>10% cover) and saplings (>10% cover) and shrubs (<2 m height and > 10% cover) and grasses (>0.5 m height and >20% cover).
- Have an open understorey (height 1-2 m and cover <30%).
- Have a complex understorey (fallen timber > 10% cover).
- The patch is adjacent open areas (<10% total cover).

Breeding habitat

- The above with standing dead trees and/or tree stumps, or
- Live trees with a tree fork or crevice, from less than 1 m to 5 m above the ground.

Habitat containing all the above features is absent from the Impact Site due largely to impacts arising from agriculture and feral goats.

Figure 13 illustrates the broad extent of potential foraging and breeding habitat (associated PCTs 58, 170, 171, 221 and 254) for the South-eastern Hooded Robin in the context of the broader landscape, surrounding the Impact Site at a radius of 50 km.

Photograph Plate 1: Plant community Types in the Impact Site

PCT 58

PCT 170

PCT 171

PCT 221

PCT 254

8.2.6 Key threats

Historical habitat clearance that destroyed native vegetation has left a legacy of fragmentation and degradation (Ford 2011), where nest predation is too high to compensate for adult mortality (Ford et al. 2009), and they have to compete with noisy miners (*Manorina melanocephala*) (Maron & Lill 2005). Other possible threats are likely to be by-products of fragmentation.

Key threats to the species arise from:

- Ongoing impacts of habitat fragmentation and land clearing for agriculture.
- Habitat degradation caused by livestock grazing or rabbit and deer grazing.
- Invasive weeds.
- Firewood collection.
- Increased likelihood of extreme events (i.e., wildfire, heatwave, and drought).
- Noisy miner territorial competition.
- Inappropriate fire regimes.
- Cat and fox predation.

8.2.7 The Action

The PCTs with which South-eastern Hooded Robin is associated would be cleared, with areas of each associated PCT contained below.

Table 8: PCTs associated with South-eastern Hooded Robin to be cleared

PCT	Area (ha)	PCT name
58	238.42	Black Oak – Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion
170	15.6	Chenopod sandplain mallee woodland/shrubland
171	12.11	Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion
221	395.14	Black Oak – Pearl Bluebush open woodland of the sandplains of the semi-arid warm and arid climate zones
254	1.16	Black Oak - Bladder Saltbush on light clays in the arid zone
Total	**662.43**	

The vegetation to be affected provides forage and refuge habitat, with parts of the Impact Site also providing suitable roosting and nesting habitat for the species. Clearing will be undertaken progressively and the Mine Site rehabilitated following mineral sand extraction.

8.2.8 Mitigation Measures

8.2.8.1 Pre-clearing Survey and Clearing Supervision

The clearing extent is to be inspected for fauna by a suitably qualified or experienced person immediately prior to commencement of any vegetation removal involving machinery and/or tree-felling. This is to occur each morning if clearing spans over multiple days/weeks. Pre-clearing checks would include searches of

habitat and searches for bird nests. If possible, any detected fauna is to be relocated off-site to nearby suitable areas (preferably within their natural home range) prior to clearing.

During the pre-inspection, any habitat features detected (e.g. hollows, logs, nests) are to be clearly marked with flagging tape to allow easy identification during clearing.

A suitably qualified or experienced person is to be present on site to supervise all clearing works to retrieve any fauna detected during works and undertake appropriate action (e.g. humanely euthanise severely injured animals and/or relocate uninjured animals where possible). A suitably qualified fauna spotter must also be present during de-watering of any temporary water bodies on the Site to rescue and relocate any potential stranded aquatic fauna species.

A report detailing the results of the clearing monitoring is to be provided to the consent authority within 14 days of works completion.

8.2.9 Significant Impact Assessment

An assessment of impacts of The Action on the Hooded Robin has been undertaken using the endangered criteria listed in the Significant Impact Guidelines 1.1 (DotE, 2013). The assessment is provided in Table 9.

Table 9: Significant Impact Assessment – Hooded Robin

Criteria	Assessment
An action is likely to have a significant impact on an endangered species if there is a real chance or possibility that it will:	
Lead to a long-term decrease in the size of a population.	**Less than remote chance** Field surveys have confirmed that a population is present within the Impact Site. While the exact extent of that population is unknown, previous work confirms that the total number of populations across their range is greater than 10 and that there are already fragmented populations across this range. The total number of mature individuals is estimated to be 68,000 (36,000–113,000), however the reliability of this estimate is low (DCCEEW, 2023). The Action will remove a total of approximately 662 ha of potential habitat for the species based on associated vegetation types. Areas that satisfy all of the species 'critical habitat' requirements suitable for all lifecycle phases are absent. Review of the NSW State vegetation type mapping and satellite imagery shows that the locality contains large tracts of native vegetation, with an analysis of only two mallee vegetation communities (known habitat for this species) confirming that the mapped extent within a 20 km buffer of the Impact Site contains about 59,284 hectares. Given the species territories range from around 10 ha during the breeding season to 30 ha in the non-breeding season (OEH 2023), that the species has a short generation time (3 years) and that multiple breeding events per season are recorded, The Action will have a short-term impact on birds currently relying on the Site but will have a less than remote chance to lead to a long-term decrease in population.
Reduce the Area of Occupancy of the species.	**A real chance** The current AOO is estimated to be 30,000 km^2 (16,000–50,000 km2) or about 3,000,000 hectares. The Action would result in direct impacts to a total of 662 ha of potential habitat, which equates to about 0.02% of the AOO. While The Action would reduce the AOO for local individuals, it is a less than remote chance that The Action would lead to a long-term decrease in the Area of Occupancy (AOO) of the species.
Fragment an existing population into two or more populations.	**Less than remote chance** The population is highly mobile and already considered to be = fragmented across its range. While the path of the Action within the Impact Site is generally linear, the development of the Impact Site would not occur all at once. The mining process would be undertaken over many years, meaning that the clearing (and subsequent rehabilitation of areas) would also take place over many years, confirming that direct impacts would be gradual. Given this mosaic approach of the Action, it would not cause a significant barrier for the species, and it is likely that the Hooded Robin will be able to continue to move across and between habitats given that they are noted to move across roads and cleared areas (as noted onsite with individuals moving across Nulla Road).
Adversely affect habitat critical to the survival of a species.	**A remote chance** Habitats considered critical to the survival of the species include woodlands and shrublands with an open understory and a complex and structurally diverse ground layer, which includes tussocks of native grasses within open areas. Habitat with all these features is absent within the Impact Site, largely due to impacts from agriculture and feral goats. The Action will directly impact approximately 662 ha of habitat suitable for foraging. However, these habitats are not limited to the Impact Site and are widespread across the locality and the region, so there will be significant areas (~99%) of Hooded Robin habitat beyond the Impact Site not directly impacted by The Action that can act as refuge for the

Criteria	Assessment
An action is likely to have a significant impact on an endangered species if there is a real chance or possibility that it will:	
	species. In addition, clearing will be undertaken progressively as the mine proceeds and rehabilitated progressively. Some habitat known to be used by the species will be impacted.
Disrupt the breeding cycle of a population.	**Less than remote chance** The species breeds seasonally, defending territories of ~10 ha, with pairs often returning to the same roost site. Loss of habitat may disrupt breeding for individuals of the population but is a less than remote chance to affect the population as a whole.
Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.	**Less than remote chance** The Action will destroy approximately 662 ha of potential habitat for the species, most of which is degraded - constitutes 0.92% of the overall Subject Land, in which 68,330 ha will be retained. Areas with trees often lack a shrub layer and/or a grass layer and/or logs. Due to the extent of alternate habitat in the locality, the widespread population extent and reasonably high population numbers, The Action has a less than remote chance to cause a decline in the species as a whole.
Result in invasive species that are harmful to an endangered species becoming established in the endangered species' habitat.	**Less than remote chance** Invasive weeds and predation by feral cats are known threats to the species. There are a number of invasive species already present including feral goats, foxes, cats, rabbits and pigs so The Action would not result in the introduction of invasive fauna species not already present. However, it will implement a control program to assist in managing populations of these species. Standard biological hygiene controls will be adopted throughout the Impact Site and weeds controlled within restoration areas.
Introduce disease that may cause the species to decline.	**Less than remote chance** Disease is not listed as a key threat in the species' Conservation Advice (TSSC, 2015). Regardless, standard biological hygiene controls will be adopted throughout the Impact Site. As such, the potential to introduce disease that may cause the species to decline is considered low.
Interfere with the recovery of the species.	**Less than remote chance** The Action is moderate in severity occurring progressively over a medium period of time and impacting less than 3% of the species habitat within the locality. It is a less than remote chance to interfere with the recovery of the species.

7.2.10 Conclusion

South-eastern Hooded Robin was recorded in the Impact Site on multiple occasions between 2018 and 2025. Plant Community Types associated with the species and present within the Impact Site include PCTs 58, 170, 171, 254 and 221. The total area proposed to be cleared that could be occupied by these species is approximately 662 ha.

Habitat critical to the survival of the species as listed in the species Conservation Advice (DCCEEW 2023) includes areas of:

- Dry eucalypt and acacia woodlands and shrublands remnants with an open understorey, some grassy areas and a complex ground layer, often in or near clearings or open areas.
- Structurally diverse habitats featuring mature eucalypts, saplings, some small shrubs and a ground layer of moderately tall native grasses.
- Standing dead or live trees and tree stumps are also essential for nesting, roosting and foraging.
- Moderately deep to deep soils, rocks and fallen timber which provides essential foraging habitat.

None of the habitat on site meets all of the above criteria, primarily due to the loss of native grasses and ground layer complexity due to impacts arising from agriculture, feral goats and sheep.

The land surrounding the Impact Site at the Mine Site and along the Linear Corridor contains large swathes of PCTs 58, 170, 171, 254 and 221, which are in the same condition or similar to that proposed for removal. The removal of 662 ha of vegetation constitutes 0.92% of the overall Subject Land, in which 68,330 ha will be retained. Therefore, the vegetation to be removed within the Impact Site is a relatively minor proportion and not considered habitat critical to the survival of the South-eastern Hooded Robin.

Based on the information above, the impacts of The Action on South-eastern Hooded Robin habitat are not considered to be significant under the EPBC guidelines.

8.3 Southern Whiteface (*Aphelocephala leucopsis*)

8.3.1 Conservation status

The Southern Whiteface is listed as Vulnerable under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the NSW *Biodiversity Conservation Act 2016*. The main factor that makes the species eligible for listing in the Vulnerable category is that the population has declined substantially by an estimated 30 to 50% every ten years (one generation span is 2.9 years) since 1999, with no indication that the decline is slowing (Ehmke et al. 2021). Evidence for loss is now strong and is based largely on reporting rate data (Ehmke et al. 2021).

8.3.2 Species Range and Distribution

The Southern Whiteface occurs across most of mainland Australia south of the tropics, from the north-eastern edge of the Western Australian wheatbelt, east to the Great Dividing Range (Schodde & Mason 1999). There is a broad hybrid zone between the two subspecies extending north from the western edge of the Nullarbor Plain. The northern boundary extends to about Carnarvon in the west, to the southern Northern Territory in central Australia, but is slightly further south in Queensland where the species is largely confined to the south-west of the Mitchell Grass Downs and along the southern state border (Schodde & Mason 1999).

Two subspecies are recognised: *A. l. leucopsis* (South-eastern Southern Whiteface), the dominant subspecies found throughout south-eastern and central Australia; and *A. l. castaneiventris* (South-western Southern Whiteface) found in central and southern of Western Australia (DCCEEW, 2023). The South-eastern Southern Whiteface is known or likely to occur over most of NSW apart from the coastal belt and is the subject of this report.

The distribution of the Southern Whiteface is presented in Figure 14.

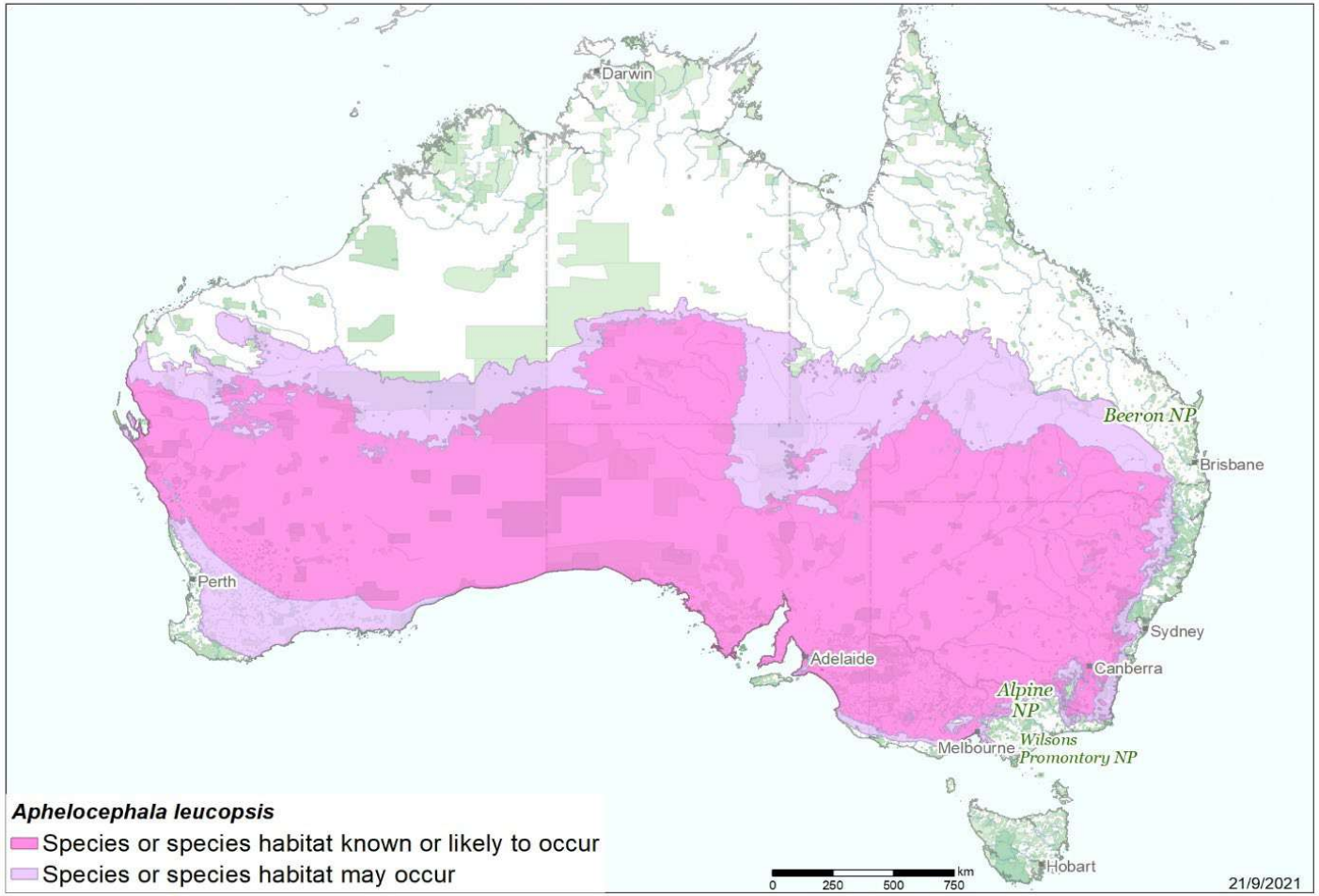


Figure 14: Southern Whiteface range and distribution

8.3.3 Presence within the Impact Site

Desktop results

The Impact Site is within the known distribution of the species. A search of available species records identified 27 records within 10 km of The Impact Site (Atlas of Living Australia (ALA) and NSW BioNet Atlas 2025). BioNet records within the last ten years indicate native vegetation connectivity to records within 20 km of the Site.

Field results

Extensive bird surveys were conducted between 2018 and 2025, including survey in accordance with the *Survey guidelines for Australia threatened birds – EPBC Act survey guidelines 6.2* (Survey Guidelines) (DEWHA, 2010).

The Southern Whiteface was recorded in the Impact Site on several occasions during the field surveys.

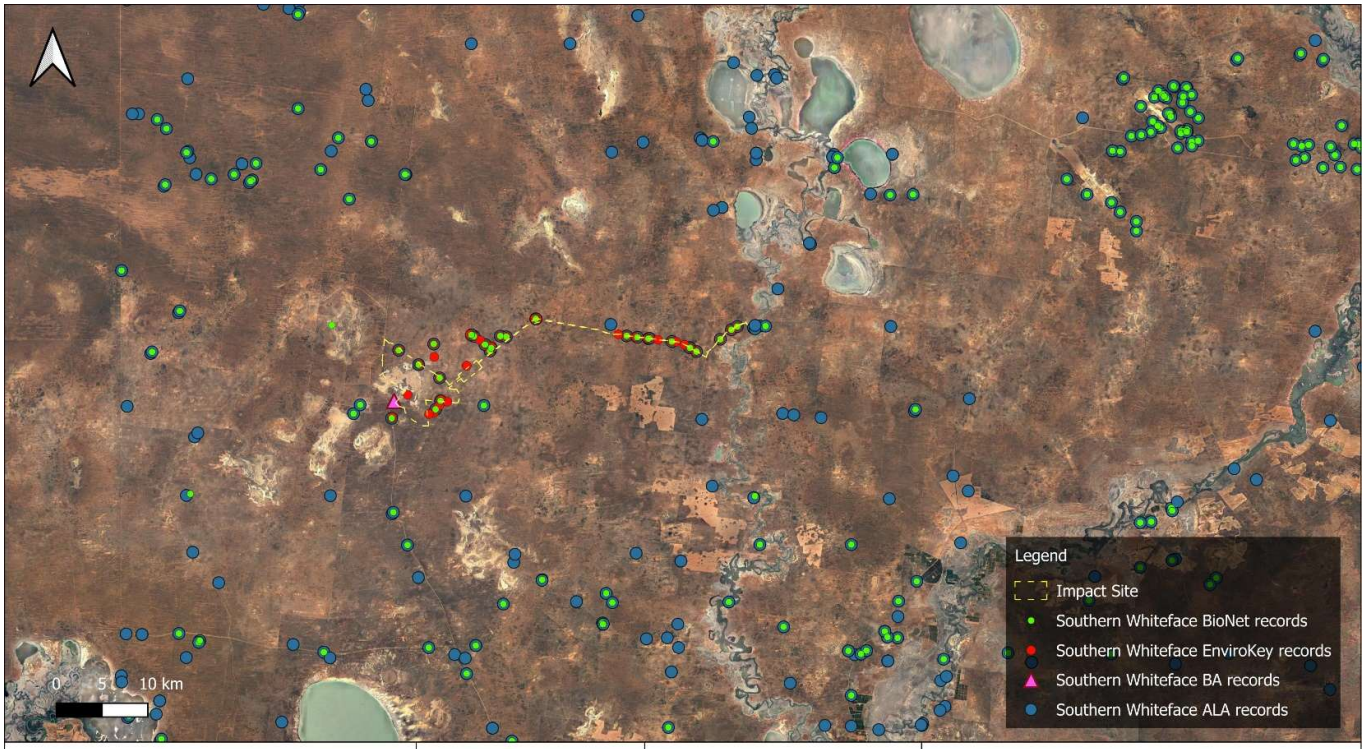
Records of Southern Whiteface within the region are presented in Figure 15.

Potential habitat

Potential habitat for the species within the Impact Site is associated with the following Plant Community Types (PCT) (OEH 2025):

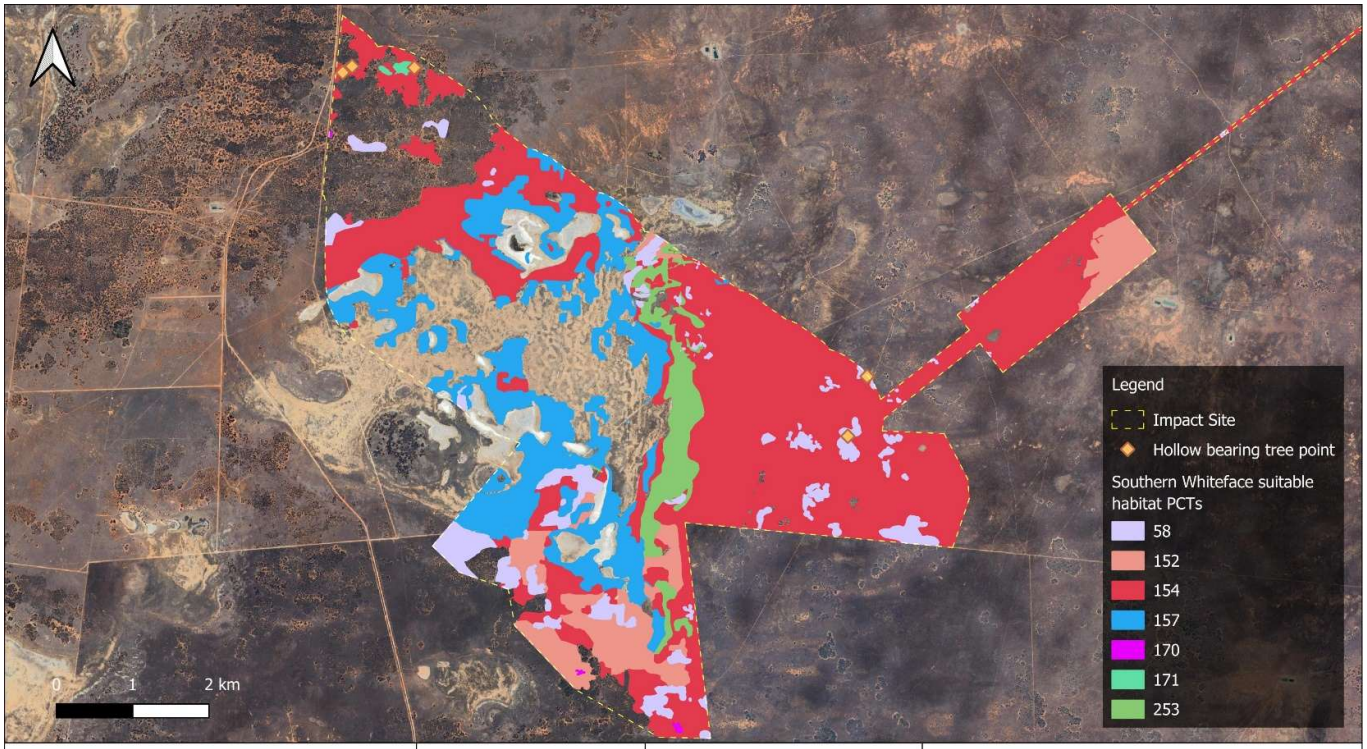
- PCT 28 - White Cypress Pine open woodland of sand plains, prior streams and dunes mainly of the semi-arid (warm) climate zone.
- PCT 58: Black Oak – Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion.
- PCT 143 - Narrow-leafed Hopbush – Scrub Turpentine – Senna shrubland on semi-arid and arid sandplains and dunes.
- PCT 152 - Lunette chenopod shrubland mainly of the Murray Darling Depression Bioregion.
- PCT 154 - Pearl Bluebush low open shrubland of the arid and semi-arid plains.
- PCT 157 - Bladder Saltbush shrubland on alluvial plains in the semi-arid (warm) zone including Riverina Bioregion,
- PCT 170 - Chenopod sandplain Mallee woodland/shrubland,
- PCT 171 - Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion.
- PCT 215 - Woollybutt Grass open grassland on red earths of the inland plains.
- PCT 253 - Gypseous shrubland on rises in the semi-arid and arid plains.

Potential habitat for the Southern Whiteface within the Impact Site Mine Site is presented in Figure 16 and within the Linear Corridor in Figure 17.



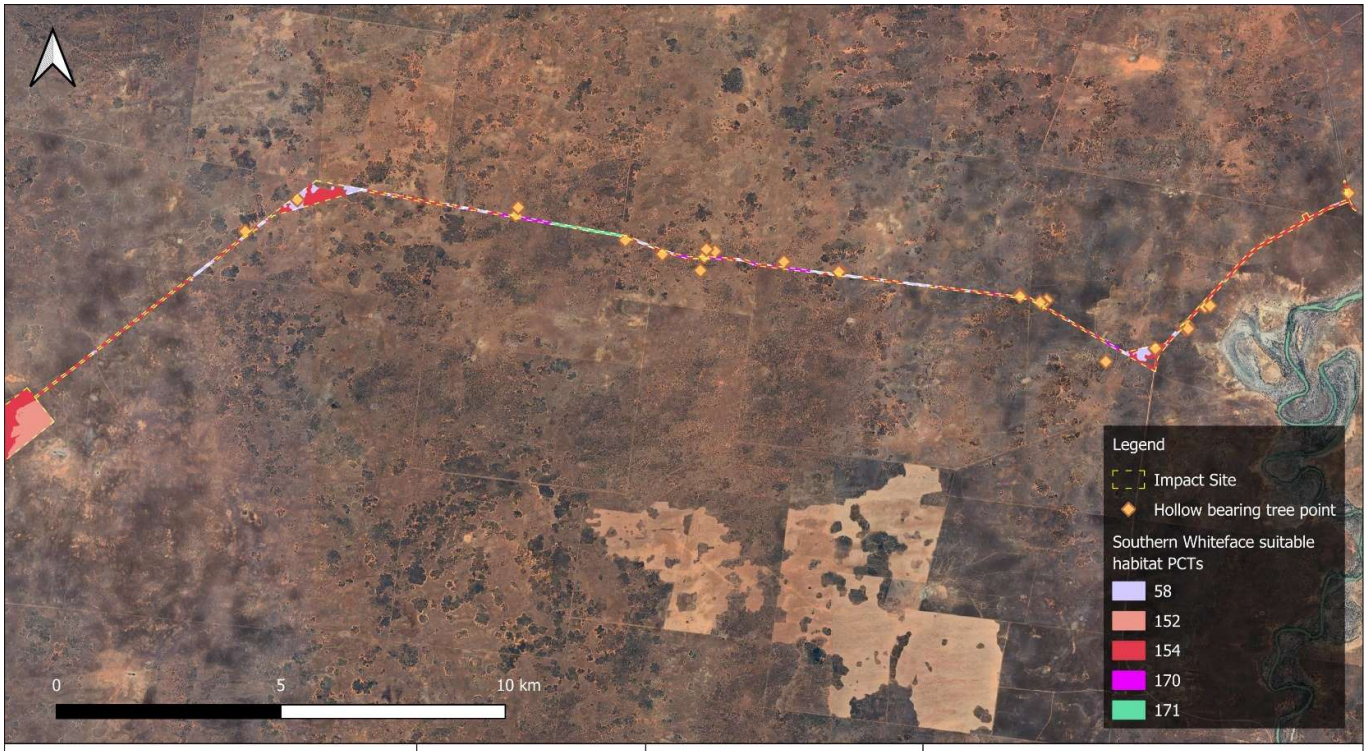
This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Southern Whiteface records in the locality	Biodiversity AUSTRALIA
	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:500000

Figure 15: Regional Southern Whiteface records



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Potential Southern Whiteface habitat within the Mine Site	Biodiversity AUSTRALIA
	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:60000

Figure 16: Potential Southern Whiteface habitat on the Mine Site



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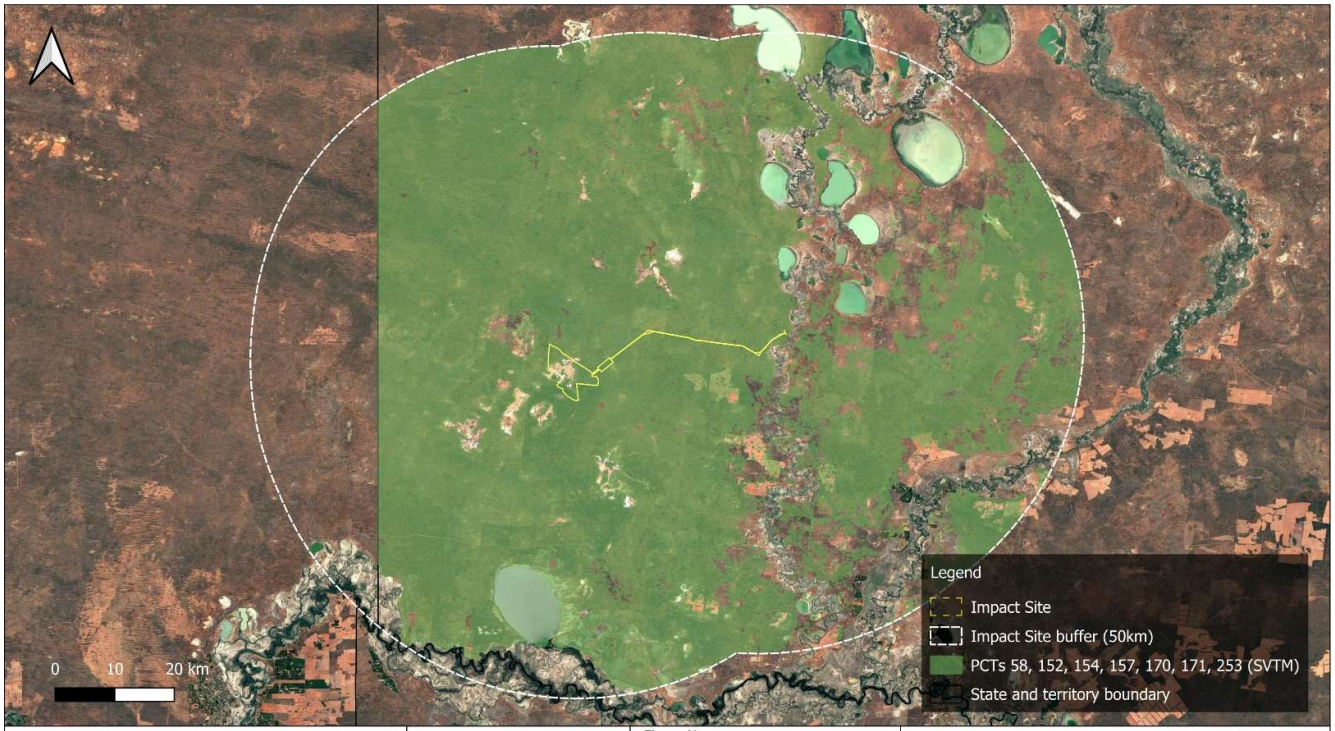
	Drawn by: NE	Location: Warwick Station		
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:102000

Figure 17: Potential Southern Whiteface habitat along the Linear Corridor



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Potential habitat (associated PCTs) for Southern Whiteface within 50km of the Impact Site	Biodiversity AUSTRALIA
	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:750000

Figure 18: Potential habitat (associated PCTs) for Southern Whiteface within 50km of the Impact Site

8.3.4 Important population

There are no important populations identified in the Conservation Advice for the Southern Whiteface (DCCEEW, 2023) or the *Action Plan for Australian Birds* (Garnett and Baker, 2020), and no Recovery Plan has been completed for the species. The MNES Significant Impact Guidelines 1.1 (DOtE, 2013) state: An 'important population' is a population that is necessary for a species' long-term survival and recovery.

This may include populations identified as such in recovery plans, and/or that are:

- Key source populations either for breeding or dispersal,
- Populations that are necessary for maintaining genetic diversity, and/or
- Populations that are near the limit of the species range.

There is no evidence to suggest that an "important population" occurs within the Impact Site. The Impact Site is not at or near the limit of the species range, the region is not identified as a key source population, and the population is not considered to be severely fragmented, genetically distinct or have limitations to dispersal. Indeed, the Action Plan (Garnett and Baker 2021) states that there are no impediments to dispersion across the species large range.

The overall population size is estimated to be about 477,000 individuals (DCCEEW, 2023). Southern Whiteface records are relatively widespread across the locality and the Impact Site is part of a much larger continuous area of habitat in the region, given the extent of native vegetation identified on the NSW SVTM.

8.3.5 Habitat requirements

Southern Whitefaces inhabit open woodlands and shrublands dominated by acacias or eucalypts with an understorey of grasses or shrubs or both (DCCEEW, 2023). They forage mostly on the ground eating insects, spiders and seeds found in leaf litter. Few trees and herbaceous litter cover is important for foraging and Hollow Bearing Trees are important for roosting and nesting (EPSDD, 2025). The species tends to be sedentary, but during drought years, individuals may move into wetter areas outside their normal range (Higgins et al., 2001).

Breeding takes place from July to October throughout most of the species' range; however, the timing of breeding can be affected by rainfall in arid regions (Higgins & Peter 2002). Birds may breed outside of their usual season following sufficient rainfall or may not breed at all during drought. The species builds large bulky domed nest of grass, bark and roots, usually in a hollow or crevice, although sometimes in low bushes (Higgins & Peter 2002). A clutch size of 3–4 eggs is typical. The length of the incubation period is unknown, but young fledge between 14–19 days after hatching (Higgins & Peter 2002). The generation length is estimated at 2.8 years (Bird et al. 2020).

8.3.6 Habitat critical to the survival of the species

The EPBC Act provides for the maintenance of a register of critical habitat. That is, habitat that is identified by the minister as being critical to the survival of a listed threatened species or ecological community. No habitat critical to the survival of the species is listed in the species' Conservation Advice (TSSC, 2016) or listed on the Register of Critical Habitat maintained by the minister under the EPBC Act.

The *Environment Protection and Biodiversity Conservation Act 1999* (and Regulations) refer to habitat of threatened species and ecological communities and listed migratory species as *habitat*, *important habitat*, *critical habitat*, *habitat critical to the survival of a species*, and *expected habitat*. This ambiguity in terminology causes confusion for stakeholders, proponents, and decision makers, and has potentially diminished environmental outcomes for listed species and ecological communities as MNES. As such, it is of critical importance that the term Habitat Critical to the Survival of the Species is clearly defined, as it relates to the Southern Whiteface.

Habitat Critical to the Survival of the Species is defined in the MNES Significant Impact Guidelines 1.1, it refers to areas that are necessary:

- For activities such as foraging, breeding, roosting, or dispersal,
- For the long-term maintenance of the species or ecological community (including the maintenance of species essential to the survival of the species or ecological community, such as pollinators),
- To maintain genetic diversity and long-term evolutionary development, or
- For the reintroduction of populations or recovery of the species or ecological community.

This definition is further supported by LEX77012 of the Conservation Planning Reform – Definition and Description of Habitat for Listed Threatened Species, Ecological Communities and Migratory Species, proposed definitions for Critical Habitat – *spatially defined subset of habitat for which there is high confidence that it is irreplaceable to the persistence of a listed threatened species, ecological community or migratory species in the wild.*

Habitat critical to the survival of the Southern Whiteface (South-eastern) as listed in the species Conservation Advice (DCCEEW 2023) includes areas of:

- Relatively undisturbed open woodlands and shrublands with an understorey of grasses or shrubs, or both.
- Habitat with low tree densities and an herbaceous understory litter cover which provides essential foraging habitat.
- Living and dead trees with hollows and crevices which are essential for roosting and nesting.

Bio Aus have defined critical habitat for the species in the Impact Site as:

Foraging habitat:

Tree and shrub communities - PCTs 28, 58, 143, 152, 154, 157, 170, 171, 215 and 253 in moderate to good condition (not badly impacted by goats) where they:

- have a tree cover <30%.
- a shrub cover >30% and/or native grass cover >30%.
- an herbaceous understorey litter cover >30%.

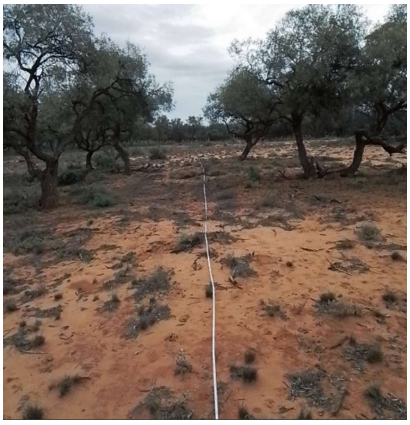
Breeding habitat

- The above with living or dead Hollow Bearing Trees or tree crevices which are essential for roosting and nesting.

Habitat containing all the above features is absent from the Impact Site due largely to disturbance impacts arising from agriculture and feral goats. Where trees are present, shrubs and grasses are largely absent. Where shrubs or grasses are present, litter cover is largely absent.

Figure 18 illustrates the broad extent of potential foraging and breeding habitat (associated PCTs 28, 58, 143, 152, 154, 157, 170, 171, 221 and 253) for the Southern Whiteface in the context of the broader landscape, surrounding the Impact Site at a radius of 50 km.

Photograph Plate 2: Plant community Types in the Impact Site.

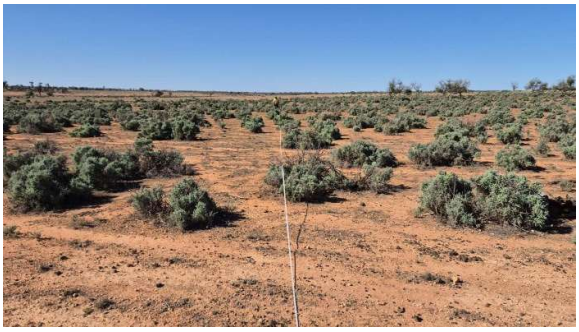


PCT 28

PCT 58

PCT 143

PCT 152



PCT 154

PCT 157

PCT 170

PCT 171

PCT 215

PCT 253

8.3.7 Key threats

Habitat loss and fragmentation is likely the cause of the species decline, especially in the parts of the species' range where there has been complete removal of habitat for intensive agriculture (Ehmke et al. 2021). Droughts may have local impacts (Ellis & Taylor 2014) and are likely to become more frequent and severe (Evans et al. 2017).

Key threats to the species arise from:

- Habitat loss caused by clearing for agriculture.
- Habitat degradation caused by livestock grazing or feral pest grazing.
- Increased frequency or length of droughts.
- Increased likelihood of extreme events (i.e., wildfire, heatwave, and drought).

EES (2024) list the following detail regarding threats to the species:

- Degradation of ground-level vegetation and loss of standing dead timber due to agricultural intensification and inappropriate grazing regimes resulting in loss of foraging and nesting habitat.
- Clearing of woody vegetation for agriculture leading to loss of available nesting sites and reduction in recruitment of future hollows.
- Loss of standing dead timber and fallen woody debris due to firewood collection, fire management and land management causing simplification of habitat.
- Aggressive exclusion from forest and woodland habitat by over-abundant noisy miners (*Manorina melanocephala*).

8.3.8 The Action

The PCTs with which the Southern Whiteface is associated would be cleared, with areas of each associated PCT contained below.

Table 10: PCTs associated with Southern Whiteface to be cleared

PCT	Area (ha)	PCT name
28	0.77	White Cypress Pine open woodland of sand plains, prior streams and dunes mainly of the semi-arid (warm) climate zone
58	238.42	Black Oak – Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion
143	17.52	Narrow-leafed Hopbush – Scrub Turpentine – Senna shrubland on semi-arid and arid sandplains and dunes
152	250.43	Lunette chenopod shrubland mainly of the Murray Darling Depression Bioregion
154	1669.79	Pearl Bluebush low open shrubland of the arid and semi-arid plains
157	495.28	Bladder Saltbush shrubland on alluvial plains in the semi-arid (warm) zone including Riverina Bioregion
170	15.60	Chenopod sandplain mallee woodland/shrubland
171	12.11	Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion
215	5.91	Woollybutt Grass open grassland on red earths of the inland plains
253	139.72	Gypseous shrubland on rises in the semi-arid and arid plains
Total	**2845.55**	

The vegetation to be affected provides forage and refuge habitat, with parts of the site also providing suitable roosting and nesting habitat for the species. Clearing will be undertaken progressively and the Mine Site rehabilitated following mineral sand extraction.

8.3.9 Mitigation Measures

Pre-clearing Survey and Clearing Supervision

The clearing extent is to be inspected for fauna by a suitably qualified or experienced person immediately prior to commencement of any vegetation removal involving machinery and/or tree-felling. This is to occur each morning if clearing spans over multiple days/weeks. Pre-clearing checks would include searches of habitat and searches for bird nests. If possible, any detected fauna is to be relocated off-site to nearby suitable areas (preferably within their natural home range) prior to clearing.

During the pre-inspection, any habitat features detected (e.g. hollows, logs, nests) are to be clearly marked with flagging tape to allow easy identification during clearing.

A suitably qualified or experienced person is to be present on site to supervise all clearing works to retrieve any fauna detected during works and undertake appropriate action (e.g. humanely euthanise severely injured animals and/or relocate uninjured animals where possible). An ecologist must also be present during de-watering of any temporary water bodies on the Site to rescue and relocate any potential stranded aquatic fauna species.

A report detailing the results of the clearing monitoring is to be provided to the consent authority within 14 days of works completion.

8.3.10 Significant Impact Assessment

An assessment of impacts of The Action on the Southern Whiteface has been undertaken using the endangered criteria listed in the Significant Impact Guidelines 1.1 (DotE, 2013). The assessment is provided in Table 11.

Table 11: Significant Impact Assessment - Southern Whiteface

Criteria	Assessment
An action is likely to have a significant impact on an endangered species if there is a real chance or possibility that it will:	
Lead to a long-term decrease in the size of an important population of a species.	**Less than a remote chance** Field surveys have confirmed that a population is present within The Impact Site; however, there is no evidence to suggest the population recorded at the site represents an important population as the Impact Site is not at or near the limit of the species range, the region is not identified as a key source population, and the population is not considered to be severely fragmented or have limitations to dispersal. The total number of mature individuals is estimated to be 410,000 (range 200,000–820,000) *A. l. leucopsis* individuals. The loss of 2846 ha of potential habitat will have a short-term impact on birds currently relying on the Site but is a less than remote chance to lead to a long-term decrease in the size of an important population. The loss constitutes 3.93% of the overall Subject Land, in which 68,330 ha will be retained.
Reduce the Area of Occupancy of an important population.	**Less than a remote chance** The extent of occurrence (EOO) for the species is estimated to be 4,910,000 km^2 (Australian Government 2021) with a stable trend (Ehmke et al. 2021), however the AOO is contracting and is estimated to be 70,000 km^2 or 7 million hectares (range 34,400–140,000 km^2) (Ehmke et al. 2021). The Action would result in direct impacts to a total of 2846 ha of potential habitat, which equates to about 0.04% of the AOO. While The Action may reduce the AOO for local individuals, there is a less than remote chance that The Action would lead to a long-term decrease in the AOO of an important population.
Fragment an existing important population into two or more populations.	**Less than a remote chance** The species is highly mobile, and the population is not considered to be severely fragmented or have limitations to dispersal (DCCEEW, 2023a, Garnett and Baker, 2020e). The mining process would be undertaken over many years, meaning that the clearing (and subsequent rehabilitation of areas) would also take place over many years, so that direct impacts to vegetation would be gradual. Given this mosaic, it is likely that the Southern Whiteface will be able to continue to move across and between habitats, and the extent of native vegetation remaining in the locality is large. Given the species ability to fly, The Action has a less than remote chance of fragmenting a population into two or more populations.
Adversely affect habitat critical to the survival of a species.	**Less than a remote chance** Habitat critical to the survival of the species is defined as *relatively undisturbed* open woodlands and shrublands with an understorey of grasses or shrubs or both and an herbaceous understorey litter cover and living and dead trees with hollows and crevices. Habitats on site are degraded through overgrazing by sheep and feral goats and are not considered to meet the criteria recognised as 'habitat critical to the survival of the species'. Hollow Bearing Trees are scarce.
Disrupt the breeding cycle of an important population.	**Less than a remote chance** Breeding takes place from July to October throughout most of the species' range and birds build large bulky domed nest of grass, bark and roots, usually in a hollow or crevice, although sometimes in low bushes (Higgins & Peter 2002). Nesting is often observed to involve pairs, but there have also been multiple occurrences of co-operative breeding recorded, with up to four adults participating in chick rearing (Higgins & Peter 2002). There is no indication in the literature that birds return to the same place to nest.

Criteria	Assessment
An action is likely to have a significant impact on an endangered species if there is a real chance or possibility that it will:	
	Loss of habitat may disrupt breeding for individuals of the population but is a less than remote chance of affecting any important population.
Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.	**Less than a remote chance** The Action will destroy approximately 2846 ha of potential habitat for the species, most of which is degraded and lacks one or more features of 'critical habitat'. Where trees are present, shrubs and grasses are largely absent. Where shrubs or grasses are present, litter cover is largely absent and suitable trees for nesting are absent. Due to the extent of alternate habitat in the locality, the widespread population extent and reasonably high population numbers, The Action has a less than remote chance to cause a decline in the species as a whole.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	**Less than a remote chance** There are a number of invasive species already present including feral goats, foxes, cats, rabbits and pigs so The Action would not result in the introduction of invasive fauna species not already present. However, it will implement a control program to assist in managing populations of these species. Standard biological hygiene controls will be adopted throughout the Impact Site and weeds controlled within restoration areas.
Introduce disease that may cause the species to decline	**Less than a remote chance** Disease is not listed as a key threat in the species' Conservation Advice (TSSC, 2015). Regardless, standard biological hygiene controls will be adopted throughout the Impact Site. As such, the potential to introduce disease that may cause the species to decline is considered low.
Interfere substantially with the recovery of the species.	**Less than a remote chance** The Action is moderate in severity occurring progressively over a medium period of time and impacting less than 1% of the species habitat within the locality. It has a less than remote chance to interfere with the recovery of the species.

8.3.11 Conclusion

The Southern Whiteface was recorded in the Impact Site on multiple occasions between 2018 and 2025. Plant Community Types associated with the species and present within the Impact Site include PCTs 28. 58, 143, 152, 154, 157, 170, 171, 215 and 253. The total area proposed to be cleared that could be occupied by these species is approximately 2846 ha.

The Impact Site is not at or near the limit of the species range, the region is not identified as a key source population, and the population is not considered to be severely fragmented, genetically distinct or have limitations to dispersal, therefore the population in the Impact Site is not considered to represent an important population.

Habitat critical to the survival of the species as listed in the species Conservation advice (DCCEEW 2023) includes areas of:

- Relatively undisturbed open woodlands and shrublands with an understorey of grasses or shrubs, or both.
- Habitat with low tree densities and an herbaceous understory litter cover which provides essential foraging habitat.
- Living and dead trees with hollows and crevices which are essential for roosting and nesting.

None of the habitat in the Impact Site meets all the above criteria; primarily due to habitat degradation leading to the loss of trees, shrubs or native grasses and herbaceous ground litter, arising from impacts of agriculture and feral goats.

The land surrounding the Impact Site at the Mine Site and along the Linear Corridor contains large swathes of PCTs 28. 58, 143, 152, 154, 157, 170, 171, 215 and 253, which are in the same condition or similar to that proposed for removal. The removal of the 2846 ha of vegetation constitutes 3.93% of the overall Subject Land, in which 68,330 ha will be retained. Therefore, the vegetation to be removed within the Impact Site is a relatively minor proportion and not considered to be habitat critical to the survival of the Southern Whiteface.

Based on the above, the Impact on the Southern Whiteface by The Action is not considered significant under the EPBC guidelines.

8.4 Pink Cockatoo (*Lophochroa leadbeateri leadbeateri*)

8.4.1 Conservation status

The Pink Cockatoo is listed as Endangered under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) *Lophochroa leadbeateri leadbeateri* is a subspecies of the Pink Cockatoo, with the other subspecies *L.l. mollis* occurring in central and Western Australia.

The severe reduction in Pink Cockatoo population numbers is the main factor that makes the species eligible for listing in the Endangered category. The population of the Pink Cockatoo was estimated (with low reliability) to be 15,000 mature individuals in 2011, based on the Area of Occupancy (AOO) and a density of 1 pair per 30 km^2 (Garnett et al. 2011). There are no more recent estimates (DCCEEW, 2023). This estimate in comparison to the estimated 50,000 mature individuals in 2000 (Garnett & Crowley 2000), represents a decrease of 67% in mature individuals within one generation, though the reliability of estimation of population size has always been low (Garnett & Crowley 2000; Garnett et al. 2011; Hurley & Garnett 2021). Based on the average reporting rates from a range of surveys in the subspecies' 10 core bioregions between 1977 and 2019, an average of 54% decline over three generations is estimated (DCCEEW, 2023).

8.4.2 Species Range and Distribution

The Pink Cockatoo occurs in the Murray-Darling, Eyre and Bulloo River basins. Its distribution, shown in Figure 19, ranges from Isisford and Roma, QLD in the north, through to western New South Wales, northwest Victoria and eastern South Australia (Ewart et al., 2021, Val et al., 2012, Shelly, 2000, Rowley and Chapman, 1991, Sass, 2022, DCCEEW, 2023b, Garnett and Baker, 2020c).

The species is normally found in pairs or small groups, though flocks of hundreds may be found where food is abundant (OEH, 2023).

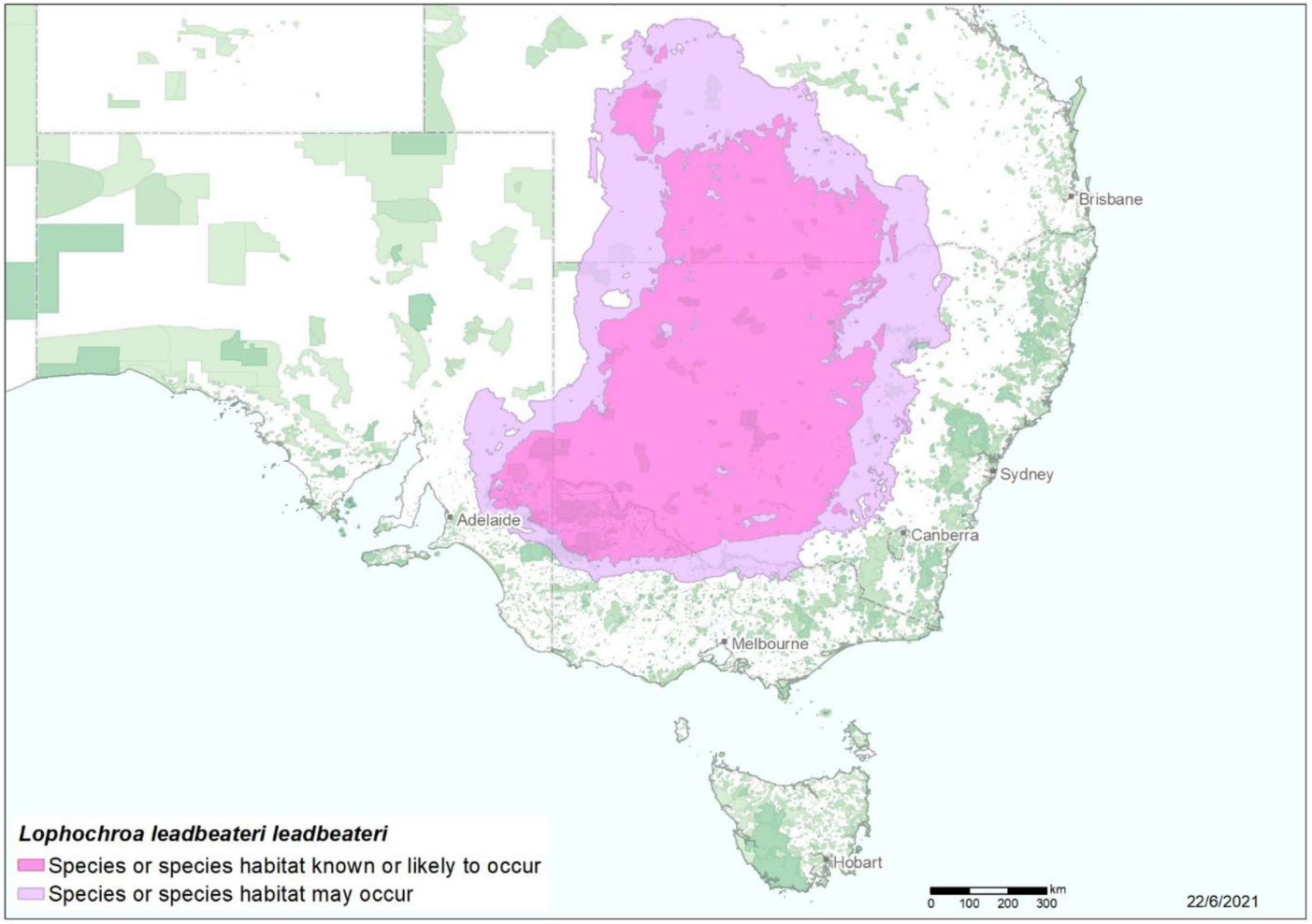


Figure 19: Known and modelled distribution of the Pink Cockatoo (DCCEEW, 2023)

8.4.3 Habitat requirements

The Pink Cockatoo occurs in arid and semi-arid woodlands dominated by mulga (*Acacia aneura*), mallee and box eucalypts, cypress pine (*Callitris gracilis*) or belah (*Casuarina cristata*) communities (Garnett and Baker, 2020c). Within these vegetation types, the species' main requirements are to be always within easy reach of fresh surface water, and trees with suitable nesting hollows (Higgins 1999; OEH 2017).

The species feeds mostly on the ground, especially on the seeds of native and exotic melons and on the seeds of species of saltbush, wattles and cypress pines (OEH 2024). The species diet consists of seeds of native shrubs and trees, and sometimes roots, bulbs, insect larvae and seeds of crops and weeds (Higgins 1999; Moonlit Sanctuary 2020). They are often found feeding on the ground or near water sources (Moonlit Sanctuary 2020). They are normally found in pairs or small groups, though flocks of hundreds may be found where food is abundant (OEH 2017). The Pink Cockatoo prefers to feed in or close to wooded areas, and they also use wooded areas for travel between feeding areas and nesting or roosting sites. In fragmented landscapes, the birds tend to travel along vegetated corridors to move between nesting and feeding sites, including roadside remnants (DSE 2004).

Nesting occurs in tree hollows throughout the second half of the year (OEH, 2023) and hollows greater than 10 cm in size are preferred (Threatened Species Database Collection (TBDC), retrieved from BioNet Atlas). Nesting hollows are usually well-spaced, with nests at least 1 km apart and no more than one breeding pair every 30 square kilometres (OEH, 2023, Hurley 2006). Breeding pairs usually renest in the same area each season and stay together throughout the year. The clutch size is usually three or four eggs, laid in August or September (DCEEW, 2023).

8.4.4 Presence within the Impact Site

Desktop results

Figure 20 shows the results of a systematic 10 km grid survey with numerous records of Pink Cockatoo in the region surrounding the Impact Site. Fourteen records are listed on NSW BioNet for the species within 10 km of the Impact Site.

Given the lakes located within the Impact Site are too salty to provide drinking water, satellite photography of the surrounding land, showing farm dams, (seemingly non-ephemeral) was examined to determine the distance from non-saline water sources to associated PCTs within the Impact Site. None of the relevant PCTs for this species were found to be within 500 m of a permanent non-saline water source.

Field results

Pink Cockatoos have been recorded in the Impact Site and adjacent land, primarily in the northeastern corner of the Mine Site and along the Linear Corridor (Figure 20). Mapping and examination of live and dead Hollow Bearing Trees was undertaken in early February. Although a total of 40 tree hollows greater than 10 cm in diameter (suitable breeding habitat) were located from 26 Hollow Bearing Trees during targeted surveys, no breeding activity was observed. However, the Hollow Bearing Tree search occurred in February 2025, outside the optimum nesting period (August to November).

Previous surveys undertaken between January 2018 and October 2023 recorded the species on multiple occasions. On 40 out of 42 of these targeted surveys, a single or pair of birds were recorded. It is uncertain if these were the same birds or different birds given their ability to move over large distances. However, in January 2024 at the Warwick station homestead (see red cross on Figure 20), a pair and a single begging young bird was recorded. These birds stayed within the precinct of the homestead and

shearing shed and regularly drank from a local water source. In March 2022 to the south of the Linear Corridor, a flock of about 40 Pink Cockatoo were observed south of the Impact Site. This flock were observed feeding within Western Rosewood (*Alectryon oleifolius* (equating to PCT 58 in the Impact Site)) but eventually moved east and dispersed.

Potential habitat

The Pink Cockatoo is associated with all PCTs on The Impact Site apart from PCT 64 and PCT 157. Potential habitat for the species equates to treed communities, being PCTs 58, 170, 171, 221, 253, 254. Potential habitat for the Pink Cockatoo within the Mine Site is presented in Figure 21. Potential habitat for the species along the Linear Corridor is presented in Figure 22.

Suitable habitat

Bio Aus have defined 'suitable habitat' for the Pink Cockatoo in the Impact Site as follows:

Foraging habitat:

Treed communities, equating to PCTs 58, 170, 171, 221, 253, 254 on site where they are:

- Within 500 m of permanent fresh water.
- Within patches of at least 5ha of intact native vegetation and corridors.

Nesting habitat:

Hollows greater than 10 cm in diameter (TBDC, retrieved from BioNet Atlas).

8.4.5 Habitat critical to the survival of the species

The EPBC Act provides for the maintenance of a register of critical habitat. That is, habitat that is identified by the minister as being critical to the survival of a listed threatened species or ecological community. No habitat critical to the survival of the species is listed in the species' Conservation Advice (TSSC, 2016) or listed on the Register of Critical Habitat maintained by the minister under the EPBC Act.

The *Environment Protection and Biodiversity Conservation Act 1999* (and Regulations) refer to habitat of threatened species and ecological communities and listed migratory species as *habitat*, *important habitat*, *critical habitat*, *habitat critical to the survival of a species*, and *expected habitat*. This ambiguity in terminology causes confusion for stakeholders, proponents, and decision makers, and has potentially diminished environmental outcomes for listed species and ecological communities as MNES. As such, it is of critical importance that the term habitat critical to the survival of the Species is clearly defined, as it relates to the Pink Cockatoo.

Habitat critical to the survival of the Species is defined in the MNES Significant Impact Guidelines 1.1, it refers to areas that are necessary:

- For activities such as foraging, breeding, roosting, or dispersal,
- For the long-term maintenance of the species or ecological community (including the maintenance of species essential to the survival of the species or ecological community, such as pollinators),
- To maintain genetic diversity and long-term evolutionary development, or
- For the reintroduction of populations or recovery of the species or ecological community.

This definition is further supported by LEX77012 of the Conservation Planning Reform – Definition and Description of Habitat for Listed Threatened Species, Ecological Communities and Migratory Species, proposed definitions for Critical Habitat – *spatially defined subset of habitat for which there is high confidence that it is irreplaceable to the persistence of a listed threatened species, ecological community or migratory species in the wild.*

The species Conservation Advice (DCCEEW, 2023) states that habitat critical to the survival of the Pink Cockatoo consist of:

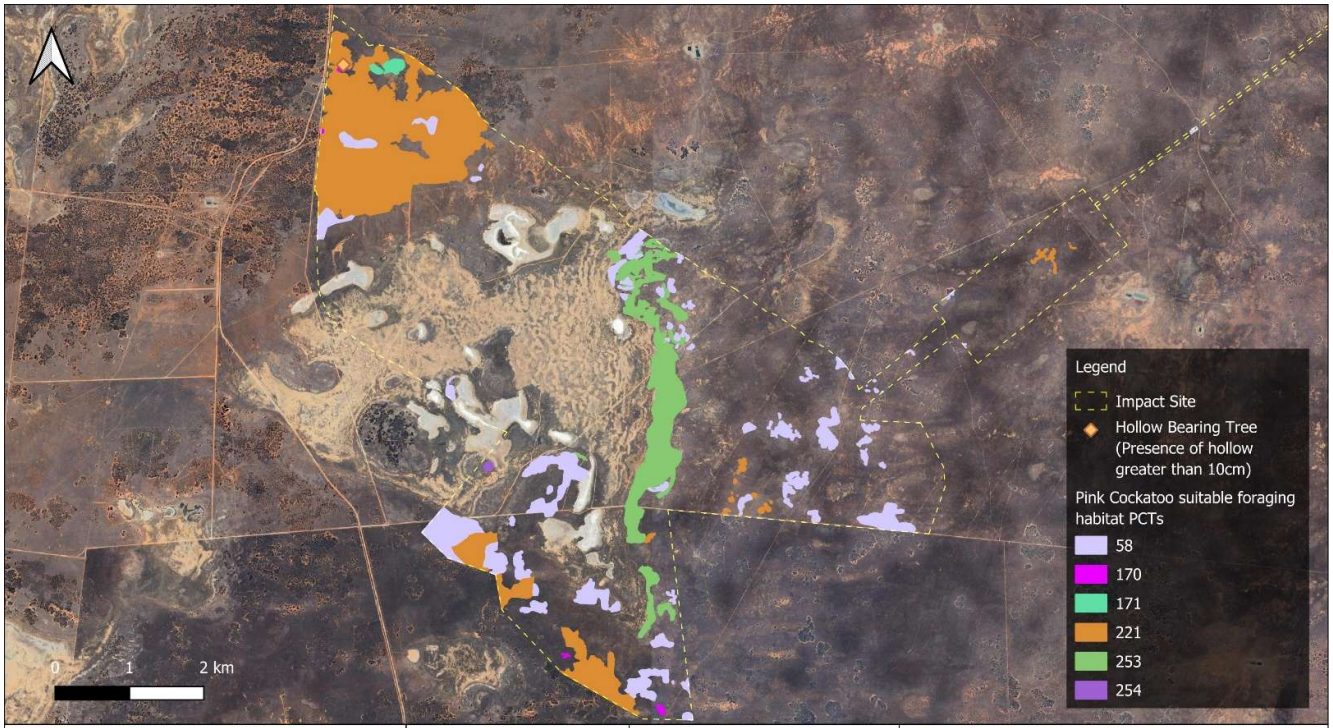
- Arid and semi-arid woodlands dominated by mulga (*Acacia aneura*), mallee and box eucalypts, slender cypress pine (*Callitris gracilis*) or belah (*Casuarina cristata*).
- Known habitat containing suitable attributes, including potential habitat for the subspecies (see Figure 21 and Figure 22), especially where there are large mature trees with suitable hollows.
- Surrounding matrix of these areas for the role of providing movement corridors for dispersal across the landscape.

Figure 23 illustrates the broad extent of potential foraging and breeding habitat (associated PCTs 58, 170, 171, 221, 253 and 254) for the Pink Cockatoo in the context of the broader landscape, surrounding the Impact Site at a radius of 50 km.

8.4.6 Key threats

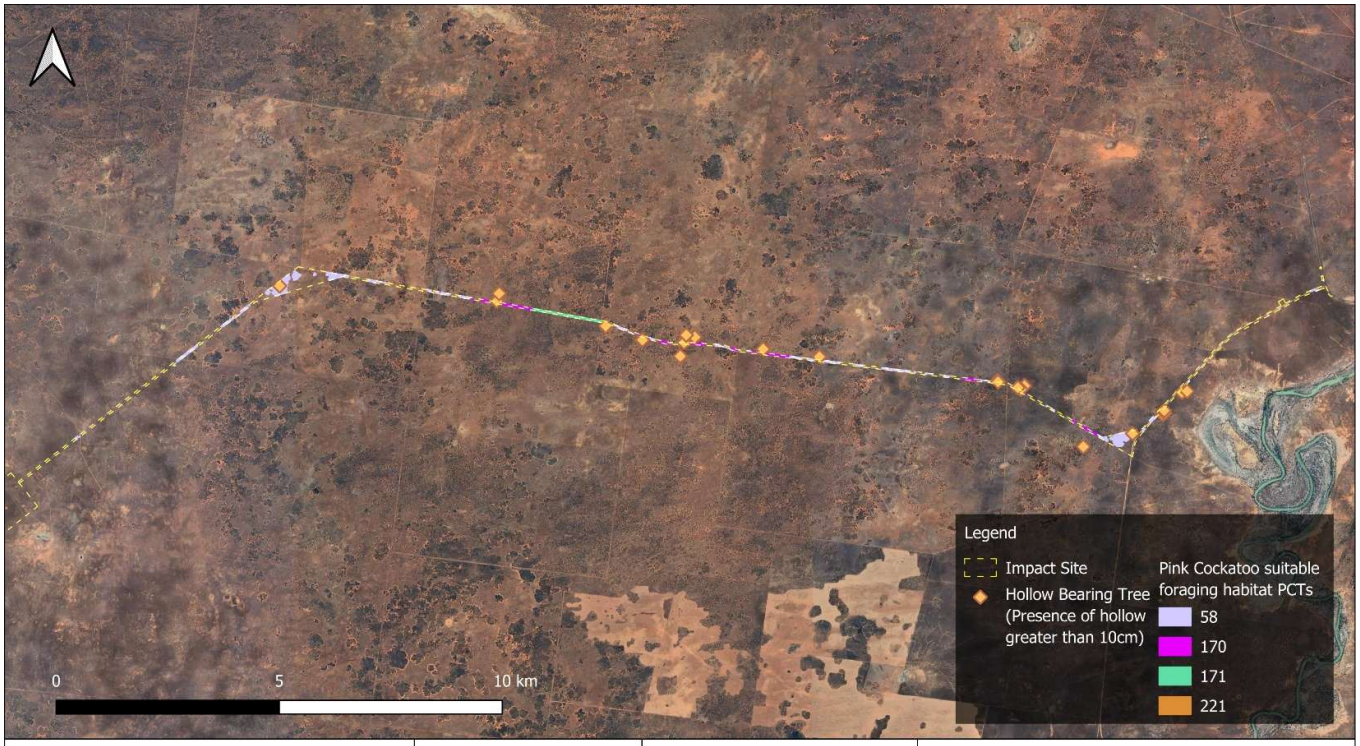
The main threat causing the decline of the subspecies is habitat loss and degradation. A major aspect of habitat loss is the loss of large Hollow Bearing Trees which provide nest sites. There has also been a lack of regeneration due to grazing by invasive species (DSE 2004). Clearing of native vegetation, grazing, inappropriate fire regimes, competition for hollows, extreme weather events, vehicle strike, bird and egg collection and Psittacine Beak and Feather Disease (PBFD) also threaten the species (DCCEEW, 2023).

Figure 20: Map redacted due to sensitive threatened species information



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Suitable habitat for the Pink Cockatoo within the Mine Site	Biodiversity AUSTRALIA
	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:60000

Figure 21: Suitable habitat for the Pink Cockatoo within the Mine Site



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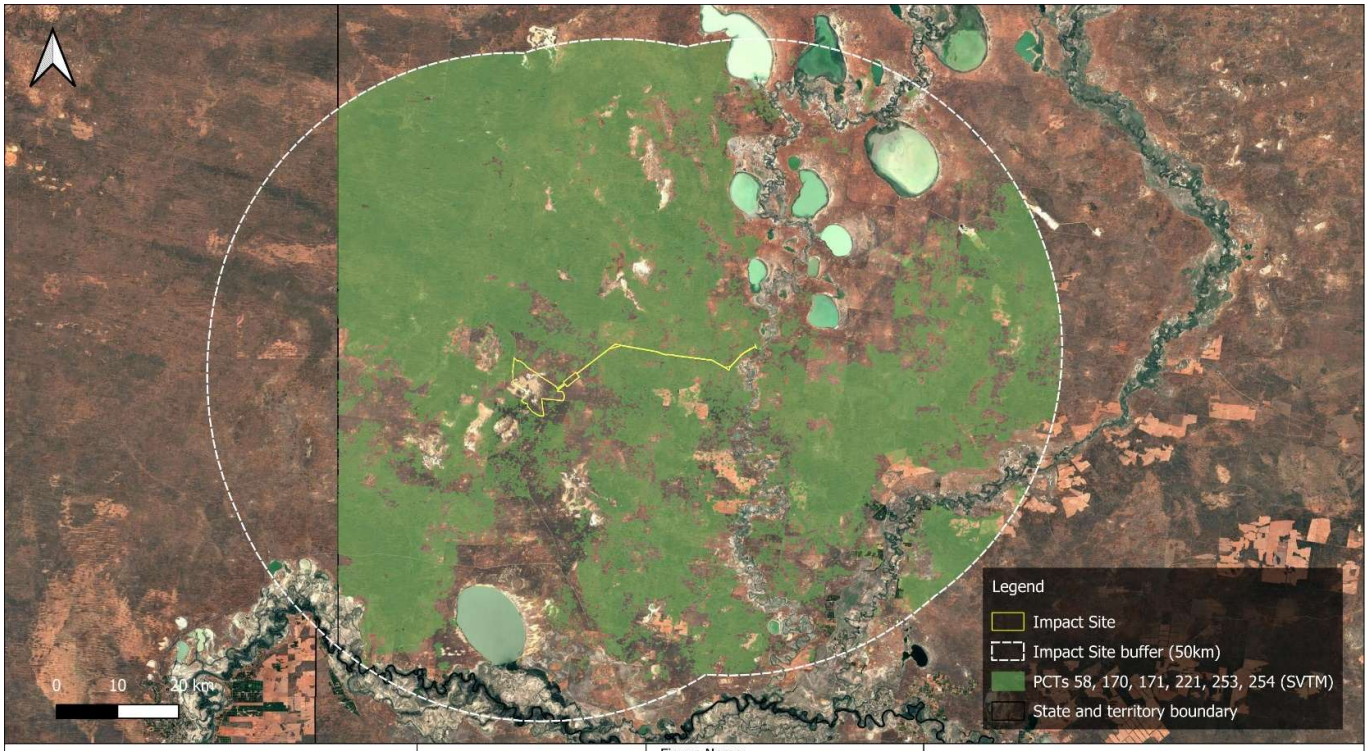
	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872 / Spatial Reference: GDA2020 / MGA zone 54 / Scale: 1:102000

Figure 22: Suitable habitat for the Pink Cockatoo along the Linear Corridor



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	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:750000

Figure 23: Potential habitat (associated PCTs) for Pink Cockatoo within 50 km of the Impact Site

8.4.7 The Action

The PCTs with which Pink Cockatoo is associated would be cleared, with areas of each associated PCT contained below.

Table 12: PCTs associated with Pink Cockatoo to be cleared

PCT	Area (ha)	PCT name
58	238.42	Black Oak – Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion
170	15.6	Chenopod sandplain Mallee woodland/shrubland
171	12.11	Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion
221	395.14	Black Oak – Pearl Bluebush open woodland of the sandplains of the semi-arid warm and arid climate zones
253	139.72	Gypseous shrubland on rises in the semi-arid and arid plains
254	1.16	Black Oak - Bladder Saltbush on light clays in the arid zone
Total	**802.15**	

The vegetation to be affected provides forage and roosting habitat for the species. At least 9 of the Hollow Bearing Trees identified within the Impact Site have the potential to provide nesting habitat for the species and will be removed - five (5) from within the Impact Site - Mine Site area and four (4) from the Linear Corridor). Those from within the Mine Site area possess a total of 8 hollows, of which 6 were greater than or equal to 10 cm in diameter and 1 hollow was greater than or equal to 20 cm in diameter.

8.4.8 Mitigation Measures

8.4.8.1 Pre-clearing Survey and Clearing Supervision

The clearing extent is to be inspected for fauna by a suitably qualified or experienced person immediately prior to commencement of any vegetation removal involving machinery and/or tree-felling. This is to occur each morning if clearing spans over multiple days/weeks. During the pre-inspection, any habitat features detected (e.g. hollows, logs, nests) are to be clearly marked with flagging tape to allow easy identification during clearing. A suitably qualified or experienced person is to be present on site to supervise all clearing work.

8.4.8.2 Hollow Bearing Tree Removal Protocol

Hollow Bearing Trees are to be felled in a manner that will minimise the risk of injury/mortality of denning/roosting fauna within the limitation of Work Health and Safety (WHS) Guidelines. This is suggested to be achieved by the following general procedure:

The Hollow Bearing Trees are to be gently bumped several times prior to removal to encourage any fauna present to vacate. Trees are to be felled in a manner that minimises injury to fauna. This includes gently pushing or 'soft felling' with an excavator or gradual cut down by an arborist

A suitably qualified or experienced person is to be present during felling and sectioning of the hollow-bearing tree (at the proponent's cost) in case of animal injury. Hollows are to be inspected for fauna once the tree is deposited. All uninjured animals are to be released in the retained habitat on site.

Upon completion of this exercise, a brief written report (with photos) detailing the above is to be submitted within 14 days of the removal of the Hollow Bearing Trees.

8.4.9 Significant Impact Assessment

A Significant Impact Assessment for the Pink Cockatoo has been undertaken using the vulnerable criteria listed in the *Significant Impact Guidelines 1.1* (DotE, 2013). The assessment is provided in Table 13.

Table 13: Significant Impact Assessment - Pink Cockatoo

Criteria	Assessment
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:	
Lead to a long-term decrease in the size of a population.	**A less than remote chance** The Action would remove approximately 802 ha of potential habitat, though this is from within a locality containing large tracts of native vegetation, which would remain unaffected. Field surveys have confirmed that a population of Pink Cockatoo is present within the Impact Site. While the exact size of the population is unknown, the estimated density is one per 3,000 hectares (OEH, 2023). On this basis, the Impact Site as a whole could support one to two pairs. To date, single and pairs of Pink Cockatoo have been recorded across The Impact Site and surrounds, with a larger flock to the east of the Mine Site. It is likely that multiple pairs forage at the Site. During the extensive field surveys across multiple years and seasons, the observation in January 2024 is the only one containing a begging young bird (indicating breeding activity). Trees containing suitable hollows are scarce within the Impact Site. Suitable hollows have been mapped and five will be lost from the Mine Site as well as four from the Linear Corridor (in an area with 23 mapped). Should a HBT that is returned to by a pair year after year be removed, breeding success for that pair could be affected. However, since permanent freshwater is a limiting factor, it is considered a less than remote chance that the Impact Site represents important breeding habitat, and it is therefore a less than remote chance that The Action will lead to a long-term decrease in population size.
Reduce the area of occupancy of the species.	**A real chance** The current AOO is estimated to be 225,000 km2 (150,000-300,000 km2) (Ford et al. 2021) or about 3,000,000 hectares. The Action would result in direct impacts to approximately 802 ha of potential habitat, known to be used for forage resource. This equates to approximately 0.03% of the AOO. Forage habitats are extensive across the locality, evidenced by ALA records of the species (Figure 20) and while some known habitats would be removed, they are degraded by feral herbivores such as goats and sheep. Removal from agricultural activity and improved pest control will enable regeneration of areas outside the Impact Site and rehabilitation of the Mine Site will occur upon cessation of mining. Overall, The Action will result in a slight reduction of the AOO for a limited period until restoration.
Fragment an existing population into two or more populations.	**A less than remote chance** The Linear Corridor increases risk of road strike on the species but is a less than remote chance to fragment any existing population in two or more populations since Pink Cockatoo occupy large areas of habitat (>30 km^2) and The Action occurs largely as a long, linear shape. Given this mosaic, Pink Cockatoo will be able to continue to move amongst the surrounding matrix of retained vegetation.
Adversely affect habitat critical to the survival of a species.	**A less than remote chance** The Site contains vegetation types associated with the species and tree hollows suitable for breeding, both factors considered critical to the survival of the species. However, no permanent fresh water source occurs within 500 m of any of the potential habitat, therefore, the Site cannot be considered to contain all required elements critical to the survival of the species.

Criteria	Assessment
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:	
Disrupt the breeding cycle of a population.	**A real chance** Pink Cockatoo adults pair for life and may return to the same nest year after year. Mating pairs are very territorial, needing to nest at least one kilometre or more from other pairs and having an average of 30 km^2 home range (AAV 2025). The species has an average of 2-3 eggs in a clutch and both parents contribute to the incubation and rearing of the chicks (Moonlit Sanctuary 2025). The incubation period is 23 to 30 days, with the young remaining in the nest for a period of 6 to 8 weeks before fledging. The fledglings continue to be fed, mostly by the male, for 8 more weeks. The young and their parents form small, family groups, staying together for some time after the chicks have reached independence. Young birds become reproductively mature between 3 and 4 years of age (Animalia - *Major Mitchells Cockatoo*, 2025). Loss of Hollow Bearing Trees is a threat to the species and reduces available nesting sites essential for breeding. Removal of nine trees with hollows suitable for breeding could disrupt the breeding cycle of a pair if that pair relied on one of the particular hollows to breed. This is not considered likely given the lack of nearby access to permanent fresh water.
Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.	**A less than remote chance** The Action would remove known forage habitat for the species and therefore cause disruption to Pink Cockatoos using the Site. However, the species is regarded as nomadic (Birdlife, 2025), moving to take advantage of seasonal fruiting and therefore has a less than remote chance to rely permanently on the forage resources at the Site. The Action has a less than remote chance to reduce habitat availability such that the species is likely to decline.
Result in invasive species that are harmful to an endangered species becoming established in the endangered species' habitat.	**A less than remote chance** There are a number of invasive species already present in the Impact Site including feral goats, foxes, cats, rabbits and pigs, therefore, The Action would not result in these species becoming established. Invasive species are not listed as key threat to the species.
Introduce disease that may cause the species to decline.	**A less than remote chance** Psittacine Beak and Feather Disease is a potentially fatal disease caused by psittacine circovirus and is a threat to the species. However, it typically transfers between adults, nestlings and contaminated nest hollows (DEE 2016). The proposed Action is a less than remote chance to introduce disease to the species.
Interfere with the recovery of the species.	**A less than remote chance** The Pink Cockatoo is regarded as nomadic (Birdlife, 2025), moving to take advantage of seasonal fruiting. Birds have an average of 30 km^2 home range and dislike nesting in proximity to other breeding pairs. The Action will result in the loss of approximately 802 ha of forage habitat as well as nine Hollow Bearing Trees. The Action will cause an impact on the species habitat in the local area, and the loss of nine suitable Hollow Bearing Trees increases the level of threat to the species by reducing potential breeding habitat. However, given the distance to permanent fresh water, it is a less than remote chance that The Action would interfere with the recovery of the Pink Cockatoo.

8.4.10 Conclusion

Key findings:

- The Impact Site is within the known distribution of the Pink Cockatoo and the species has been recorded within the Impact Site on multiple occasions.
- Habitat critical to the survival of the species is present on the site in terms of vegetation types associated with the species and 34 trees bearing hollows greater than 10 cm in diameter; however, the lack of fresh water is likely to limit reliance on the Impact Site for nesting.
- The Action would remove approximately 802 ha of potential habitat from a locality where forage habitat is not scarce and the habitat on site is heavily impacted by goats.
- The Action would remove nine Hollow Bearing Trees suitable for Pink Cockatoo breeding: five from the Mine Site (where Hollow Bearing Trees are scarce) and four from the Linear Corridor (where 23 were recorded). The Linear Corridor would also introduce a threat from traffic strike.
- No breeding activity has been recorded within the Impact Site during multiple surveys over eight years.
- The proposed Action is considered moderate based on it being considered:
    - Medium term / reversible – suitable habitat will be restored upon cessation of mining.

Based on the above information and in Table 13 Significant impact assessment, the Impact caused by The Action to the Pink Cockatoo and its habitat has a less than remote chance of being significant under the EPBC guidelines.

In summary: land surrounding the Impact Site at the Mine Site and along the Linear Corridor contains large swathes of native vegetation, which is in the same condition or similar, and contains habitat (such as Hollow Bearing Tree density) of equal or higher value to that proposed for removal. The removal of 802 ha of potential habitat constitutes 1.1% of the overall Subject Land, in which 68,330 ha will be retained. Therefore, the vegetation to be removed within the Impact Site is a relatively minor proportion and not considered to be habitat critical to the survival of the Pink Cockatoo.

8.5 Corben's Long-eared Bat (*Nyctophilus corbeni*)

8.5.1 Conservation status

Until recently the Corben's Long-eared bat was included as a distinct form of the greater Long-eared bat (*Nyctophilus timoriensis*) complex and was listed as such under the EPBC Act. In 2009 it was formally described as a separate species, *Nyctophilus corbeni* (South-eastern Long-eared Bat or Corben's Long-eared Bat), by Parnaby (2009).

Based on evidence presented in the Action Plan for Australian Bats, the TSSC (2015) determined that the Corben's Long-eared Bat is eligible for listing as Vulnerable under the EPBC Act. The main factor that makes the Corben's Long-eared Bat eligible for listing in the Vulnerable category is that it has undergone, is suspected to have undergone or is likely to undergo in the immediate future a substantial reduction in numbers (TSSC, 2015).

8.5.2 Species Range and Distribution

The Greater Long-eared Bat was originally considered to be found across temperate southern Australia; however, this is most likely incorrect due to the separation of the taxon into three different species; therefore, the historic distribution of Corben's Long-eared Bat is unclear (Duncan et al., 1999; Parnaby 2009).

Corben's Long-eared Bat is found in southern central Queensland, central western New South Wales, north-western Victoria and eastern South Australia, where it is patchily distributed, with most of its range in the Murray Darling Basin (Duncan et al., 1999; Turbill and Ellis 2006). Most records are from inland of the Great Dividing Range (Parnaby, 2009). The species is uncommon within this distribution and is rarely recorded (Department of the Environment 2013), except in some areas including the Nandewar and Brigalow Belt South bioregions in New South Wales and Queensland (Figure 24 and Figure 25).

The species occurs throughout much of inland New South Wales with at least 50% of the species' known distribution occurring in this state (Parnaby et al., 2011). New South Wales Office of Environment and Heritage (NSW OEH) (2012) state that the Pilliga scrub region is a distinct stronghold for this species.

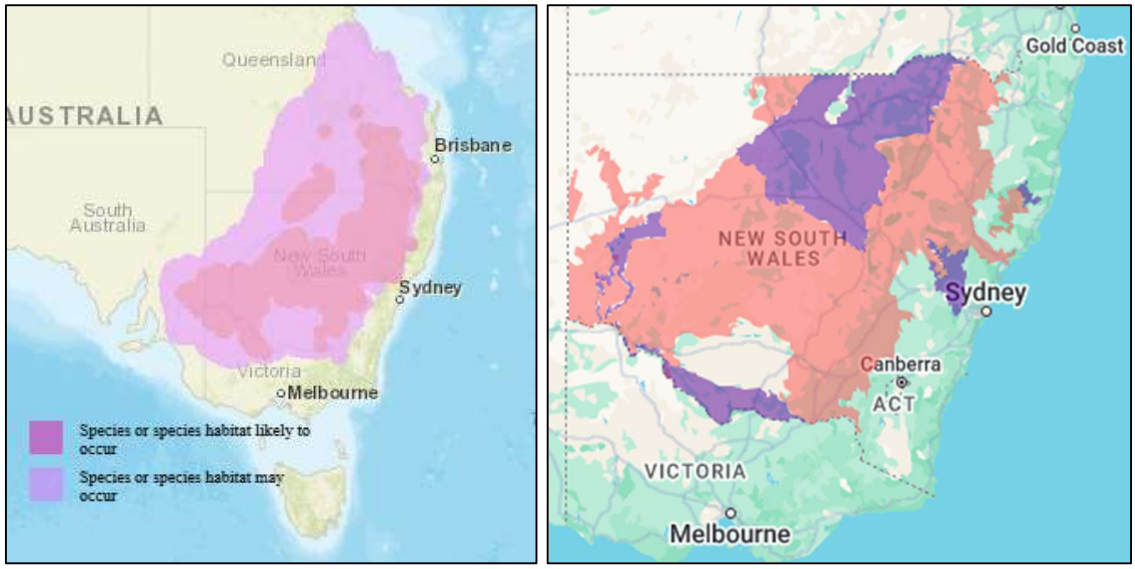


Figure 24: Indicative distribution of Corben's Long-eared bat based in Australia (left) and NSW (right) (DCCEEW, 2025)

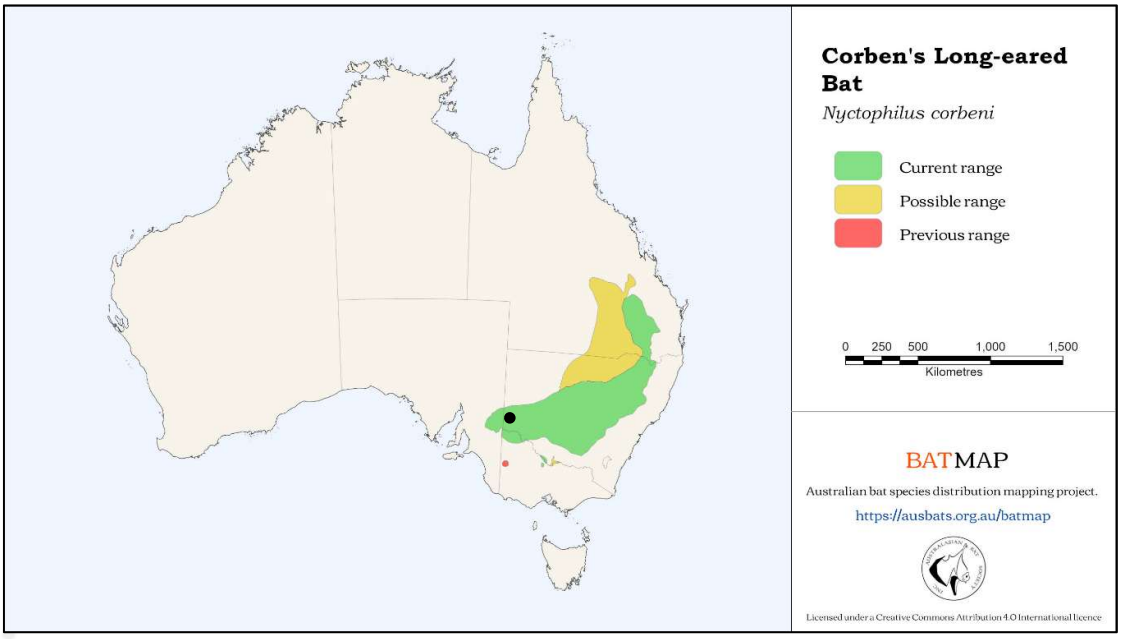


Figure 25: *Nyctophilus corbeni* range with approximate location of The Impact Site shown as black dot

8.5.3 Habitat requirements

Corben's Long-eared Bat is found in a wide range of inland woodland vegetation types. These include box / ironbark / cypress pine woodlands, Buloke woodlands, Brigalow woodland, Belah woodland, smooth-barked apple woodland, river red gum forest, black box woodland, and various types of tree Mallee (Duncan et al., 1999; Schulz and Lumsden 2010; Woinarski et al., 2014)

In Queensland and New South Wales, it inhabits a variety of vegetation types, but it is distinctly more common in box / ironbark / cypress-pine vegetation that occurs in a north-south belt along the western slopes and plains of New South Wales and southern Queensland (NSW OEH 2012). In Victoria most records are from *Eucalyptus gracilis* Mallee, Buloke and Black Box Woodlands (Lumsden 1994) while in South Australia it is confined to tall mallee shrublands (Duncan et al., 1999).

The species is more abundant in extensive stands of vegetation in comparison to smaller woodland patches (Turbill and Ellis 2006), suggesting its home range is probably large (Lumsden et al., 2008). It appears that old-growth vegetation is a critical habitat component in the Victorian distribution (Lumsden et al., 2008). The species has also been found to be much more abundant in habitats that have a distinct tree canopy and a dense, cluttered understorey layer (Turbill and Ellis, 2006).

The Corben's Long-eared Bat is an insectivorous bat that hunts by taking flying prey or by foliage-gleaning in flight or by foraging on the ground. Foraging appears to be concentrated around patches of trees in the landscape, with many individuals from different species of bat sharing the same foraging area (Department of the Environment, 2013).

Studies have found that the Corben's Long-eared Bat roosts solitarily, mainly in dead trees or dead spouts of live trees (TSSC 2015). In studies of roosting behaviour in Victoria, most bats were found roosting individually in mallee eucalypts in areas of long-unburnt Mallee, with some under bark or in fissures of dead Buloke (*Allocasuarina leuhmannii*) or Belah (*Casuarina cristata*) trees (Lumsden et al., 2008). A study in New South Wales found maternity colonies, consisting of 10-20 individuals, roosting in dead trees including ironbarks, cypress and buloke (Schulz and Lumsden 2010). It appears that most roost sites are used just for a single day and large distances are travelled at night, with consecutive roost sites generally within four km (Lumsden et al., 2008).

Parnaby et al (2011), studying issues influencing the management of hollow-dependent bats in the Pilliga forests of inland NSW, concluded that the protection of remaining Hollow Bearing Trees is the only effective option for managing the hollow-dependent bats in the Pilliga. They predicted that local extinctions of a range of hollow-using bat species will occur without active management and monitoring to protect the remaining Hollow Bearing Trees, and the intermediate-aged, hollow-recruit trees, from logging and fire.

There is little available information on the species' reproductive biology. Breeding is likely to be seasonal, with pregnant and lactating females having been trapped in Queensland and New South Wales in November (Schulz and Lumsden 2010).

8.5.4 Presence within the Impact Site

Desktop results

The Impact Site is within the known distribution of the species; however, Corben's Long-eared Bat has not been historically recorded within the Impact Site (ALA 2025; BioNet Atlas 2025), nor within 10 km of the Impact Site. The nearest record of Corben's Long-eared Bat was recorded in December 1999 and is

located on the Murray River near the Victorian border, approximately 23 km southwest of Wentworth, and 65 km southeast of the Impact Site.

Records for Corben's Long-eared Bat in the locality are presented in Figure 26.

Field results

Anabat surveys were conducted in January and February 2025 within the Mine Site and along the Linear Corridor. The total dataset included 28,687 acoustic sequence files, with ninety-two (92) calls attributable to *Nyctophilus* species. *Nyctophilus* species cannot be reliably differentiated using call characteristics, so detected calls could belong to either or both of *N. geoffroyi* (Lesser Long-eared Bat) or the target species *N. corbeni* (Corben's Long-eared Bat). The only acceptable method to confirm the presence of *N. corbeni* is to undertake a trapping program (see Reardon 2010). Due to The project timelines and extensive area, Corben's Long-eared Bat has been assumed as present in Impact Site.

Suitable habitat

Suitable habitat for the species within the Impact Site is associated with a wide range of inland woodlands, more commonly in box / ironbark / cypress-pine vegetation. Plant Community Types associated with the species within Impact Site (OEH 2025) are:

- PCT 58: Black Oak – Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion.
- PCT 170 - Chenopod sandplain Mallee woodland/shrubland.
- PCT 171: Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion.
- PCT 221: Black Oak – Pearl Bluebush open woodland of the sandplains of the semi-arid warm and arid climate zones.

Suitable habitat for the Corben's Long-eared Bat within the Impact Site is present in Figure 27 and Figure 28.

Roosting habitat has been defined by mapping Hollow Bearing Trees throughout the Site and is presented in Figure 27.

The broad extent of potential foraging and breeding habitat (associated PCTs 58, 170, 171, 221, 253 and 254) is illustrated in Figure 29 for Corben's Long-eared Bat in the context of the broader landscape, surrounding the Impact Site at a radius of 50 km.

8.5.5 Important population

No important populations of Corben's Long-eared Bat have been listed in the species' Conservation Advice (TSSC, 2015). There is little information currently available regarding population numbers and population structure for the Corben's Long-eared Bat. Currently all population information is based on trapping results and no detailed demographic studies have been conducted (Schulz and Lumsden 2010). The Advice identifies a research priority to 'identify important populations based on both the genetic qualities of the species across its range and by high densities as indicated by high records of incidence'.

Using this basis, NSW OEH (2012) state that the Pilliga scrub region is a distinct stronghold for this species. Turbill and Ellis (2006) studied the distribution and abundance of Corben's Long-eared Bat throughout south-eastern Australia and found 'no captures from the Darling Riverine Plains Bioregion', and 'that the large vegetation remnants of Goonoo, Pilliga West and Pilliga East study areas are a distinct stronghold

in the distribution of the Corben's Long-eared Bat'. It is inferred from this information that the Piliga scrub region contains an important (sub) population.

The Significant Impact Guidelines 1.1 (DotE, 2013) outline an 'important population' as a population that is necessary for a species' long-term survival and recovery. This may include populations identified as such in recovery plans, and/or that are:

- Key source populations either for breeding or dispersal,
- Populations that are necessary for maintaining genetic diversity, and/or
- Populations that are near the limit of the species range.

As the species has been assumed to present, any population could represent an important population as the Impact Site could provide genetic diversity or be a key source for dispersal and / or breeding.

8.5.6 Habitat critical to the survival of the species

No Critical Habitat as defined under section 207A of the EPBC Act has been identified or included in the Register of Critical Habitat. Furthermore, no habitat critical to the survival of the species is listed in the species' Conservation Advice. Nevertheless, the species is dependent on tree hollows for roosting (Lenteni et al 2024), who found roosts (from a newly discovered population in Victoria on the Murray River) to be a mix of small-diameter (19.5–36 cm Diameter at Breast Height (DBH)), typically multi-stemmed, live, dying and dead Eucalyptus species, and concluded that while day roosts did not appear to be limiting for this species in this location, further research is needed to understand what trees are being used as maternity roosts (which may be more specialized). Maternity roosts are considered to represent habitat critical to the survival of the species, but their characteristics are not well understood.

8.5.7 Key threats

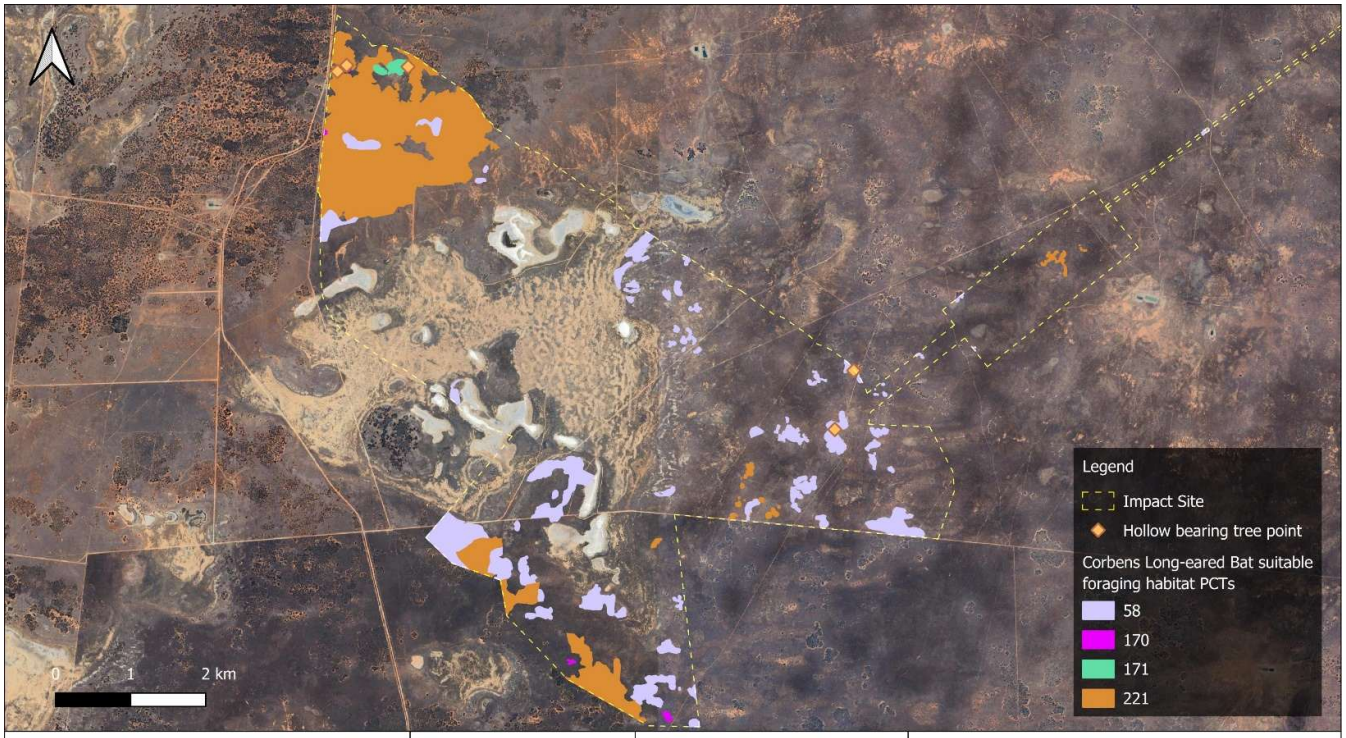
Due to the lack of data available to assess the population decline of Corben's Long-eared Bat, providing a detailed assessment of the current threats to the survival of this species is difficult. However, it is likely that AOO is declining due to habitat loss, particularly in New South Wales and Queensland, and to habitat degradation associated with altered fire regimes, timber extraction, mining and other factors (Woinarski et al., 2014). Habitat loss and fragmentation are considered here as known threats, with potential threats discussed following these known threats.

- Habitat loss and fragmentation - Extensive clearing of woodland and mallee vegetation is likely to have been a major factor in the decline of the Corben's Long-eared Bat. Agriculture has been the greatest cause of land clearing in the mallee and woodland habitats, however increasingly extractive industries are targeting the remaining areas (Schulz and Lumsden, 2010). Habitat loss threatens the species by reducing habitat availability, such as important roosting sites (Schulz and Lumsden 2010). Given the species' requirements for large areas of land, smaller fragments may not provide viable habitat for the species (Woinarski et al., 2014), leaving bats more vulnerable to local extinction and reductions in fitness (Schulz and Lumsden, 2010). Fragmentation of habitat may also exacerbate other threats to the species.
- Fire - Bushfires are suspected to be a threat in the remaining uncleared areas of the Corben's Long-eared Bat's habitat (Duncan et al., 1999). Bushfires pose a threat to the conservation of the species by both causing direct mortality during bushfire events and through the loss of foraging habitat and roosting sites, which take a long time to develop (Schulz and Lumsden 2010).

- Reduction in hollow availability -The availability of suitable roosting habitats is essential for the conservation of the Corben's Long-eared Bat. This species mainly roosts in tree hollows and so a reduction in hollow availability would likely put pressure on the species (Schulz and Lumsden, 2010). The loss of hollows is a threat on its own to the species; however, habitat loss also leads to increased competition for remaining hollows from other animals (Reardon, 2012).
- Exposure to agrichemicals - As an insectivorous species and a species that occurs in habitat in, or adjacent to, agricultural areas, the Corben's Long-eared Bat may be susceptible to exposure from insecticides. This can occur by direct application or spray drift in agricultural areas, or through bio-accumulation of some chemicals through the ingestion of prey that has been exposed to agrichemicals (Schulz and Lumsden, 2010).
- Grazing - Grazing in the habitat of the Corben's Long-eared Bat is a suspected threat in the uncleared areas of habitat (Duncan et al., 1999) as it may reduce foraging habitat through the removal of shrubs and by limiting regeneration, as well as potentially causing significant changes to the structure and diversity of such habitats (Schulz and Lumsden, 2010). The relative impact of grazing as a threat to the species is unknown however and requires further investigation.
- Predation by feral animals - Predation of Corben's Long-eared Bat by introduced species, such as the feral cat or red fox, has not been demonstrated (Woinarski et al., 2014) and therefore the risk to the species is unknown.

This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Corben's Long-eared Bat records in the locality	Biodiversity AUSTRALIA
	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:700000

Figure 26: Corben's Long-eared Bat records in locality



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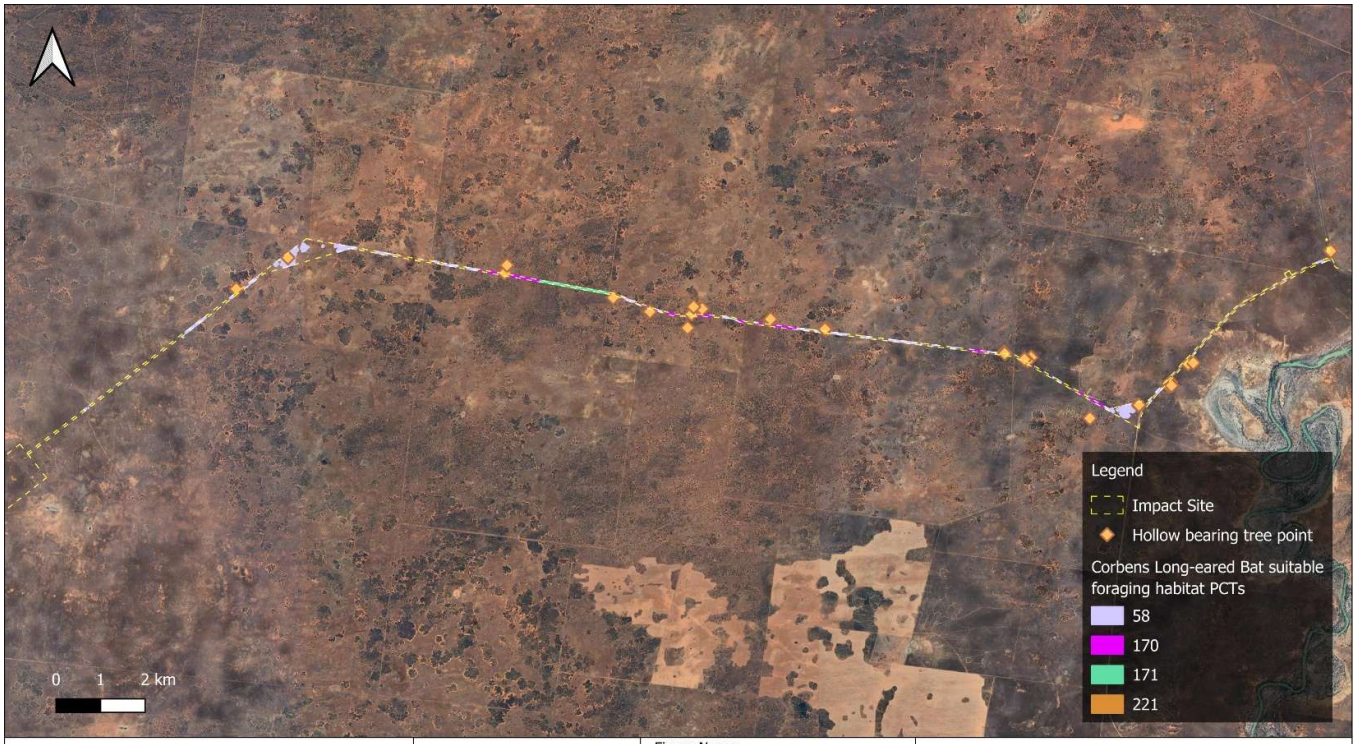
	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:60000

Figure 27: Suitable foraging habitat for Corben's Long-eared Bat within the Mine Site



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	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:102000

Figure 28: Suitable foraging and roosting habitat for Corben's Long-eared Bat within the Linear Corridor

This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Potential habitat (associated PCTs) for Corben's Long-eared Bat within 50km of the Impact Site	Biodiversity AUSTRALIA
	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:750000

Figure 29: Potential habitat (associated PCTs) for Corben's Long-eared Bat within 50 km of the Impact Site

8.5.8 The Action

The PCTs with which Corben's Long-eared Bat is associated would be cleared, with areas of each associated PCT contained below.

Table 14: PCTs associated with Corbens Long-eared Bat to be cleared

PCT	Area (ha)	PCT name
58	238.42	Black Oak – Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion
170	15.60	Chenopod sandplain Mallee woodland/shrubland
171	12.11	Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion
221	395.14	Black Oak – Pearl Bluebush open woodland of the sandplains of the semi-arid warm and arid climate zones
Total	**661.27**	

The vegetation to be affected provides forage, refuge, and roosting habitat for the species. At least 9 of the Hollow Bearing Trees identified within the Impact Site have the potential to provide nesting/denning habitat for hollow-obligate fauna species and will be removed (five (5) from within the mine site area and four (4) from the linear corridor). Those from within the mine site area possess a total of 8 hollows, of which 6 were greater than or equal to 10 cm in diameter and one hollow was greater than or equal to 20 cm in diameter. Clearing will be undertaken progressively and the Impact Site rehabilitated following mineral sand extraction.

8.5.9 Mitigation Measures

8.5.9.1 Pre-clearing Survey and Clearing Supervision

The clearing extent is to be inspected for fauna by a suitably qualified or experienced person immediately prior to commencement of any vegetation removal involving machinery and/or tree-felling. This is to occur each morning if clearing spans over multiple days/weeks. Pre-clearing checks would include searches of habitat (e.g. lifting and destructive searches of logs) and searches for bird nests. If possible, any detected fauna is to be relocated off-site to nearby suitable areas (preferably within their natural home range) prior to clearing.

During the pre-inspection, any habitat features detected (e.g. hollows, logs, nests) are to be clearly marked with flagging tape to allow easy identification during clearing.

A suitably qualified or experienced person is to be present on site to supervise all clearing works to retrieve any fauna detected during works and undertake appropriate action (e.g. humanely euthanise severely injured animals and/or relocate uninjured animals where possible). The fauna spotter must also be present during de-watering of any temporary water bodies on the Site to rescue and relocate any potential stranded aquatic fauna species.

A report detailing the results of the clearing monitoring is to be provided to the consent authority within 14 days of works completion.

8.5.9.2 Hollow Bearing Tree Removal Protocol

Hollow Bearing Trees are to be felled in a manner that will minimise the risk of injury/mortality of denning/roosting fauna within the limitation of WHS Guidelines. This is suggested to be achieved by the following general procedure:

- The Hollow Bearing Trees are to be gently bumped several times prior to removal to encourage any fauna present to vacate.
- Trees are to be felled in a manner that minimises injury to fauna. This includes gently pushing or 'soft felling' with an excavator or gradual cut down by an arborist.
- A qualified ecologist is to be present during felling and sectioning of the Hollow Bearing Tree (at the proponent's cost) in case of animal injury. Hollows are to be inspected for fauna once the tree is deposited. All uninjured animals are to be released in the retained habitat on site.
- If the hollow is determined to be occupied and fauna do not require assistance (e.g. roosting bats), the entrance is to be blocked, and the log placed in a shaded and protected area on the edge of the site. The obstacle is to be removed just prior to dusk to allow passive escape of the fauna within. The log may then be removed if required.
- Upon completion of this exercise, a brief written report (with photos) detailing the above is to be submitted to Council within 14 days of the removal of the Hollow Bearing Trees.

8.5.10 Significant Impact Assessment

A Significant Impact Assessment for the Corben's Long-eared Bat has been undertaken using the vulnerable criteria listed in the *Significant Impact Guidelines 1.1* (DotE, 2013). The assessment is provided in Table 15.

Table 15: Significant Impact Assessment - Corben's long-eared Bat

Criteria	Assessment
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:	
Lead to a long-term decrease in the size of an important population of a species.	**A less than remote chance** No important populations have been identified in the species' Conservation Advice (TSSC, 2015), though the Piliga Scrub is recognised as the district stronghold for the species in the Murray Darling Basin (OEH 2017). Plant Community Types 58, 170, 171 and 221 are present in the Impact Site, are known to be utilised as habitat for the species (see Section 8.5.5) and will be lost from the Mine Site. Although the species has been known to utilise all these habitats, it is distinctly more common in box / ironbark / cypress-pine vegetation that occurs in a north-south belt along the western slopes and plains of New South Wales and southern Queensland (NSW OEH 2012). This means the mallee communities PCT 170 and PCT 171 are likely to be most utilised by the species in the Impact Site and together comprise a lesser area of 27.7 ha. While The Action represents a moderate impact on potential Corben's Long-eared Bat habitat and will occur over the medium to long term (26 years): • The species is more abundant in extensive stands of vegetation in comparison to smaller woodland patches (Turbill and Ellis 2006), therefore its home range is probably large (Lumsden et al., 2008). • It appears that old-growth vegetation is a critical habitat component (Lumsden et al., 2008) and Hollow Bearing Trees for roosting and breeding activity are scarce in the Mine Site, though less scarce along the Linear Corridor (23 recorded) • The species has been found to be much more abundant in habitats that have a distinct tree canopy and a dense, cluttered understorey layer (Turbill and Ellis, 2006), while the understorey layer in much of the Site has been significantly impacted by feral goats and is often missing. • No records of the species are found on BioNet or ALA within 50 km of Impact Site. The proposed action is a less than remote chance to lead to a long-term decrease in the size of an important population of the Corben's Long-eared Bat.
Reduce the area of occupancy of an important population	**A real chance** The Impact Site is within the known distribution of the species habitat, though known locations within the distribution are scattered and few. The Extent of Occurrence of the species is large, coinciding generally with Murray-Darling Basin. No estimates of the AOO for the Corben's Long-eared Bat are provided in the species' Conservation Advice or on the SPRAT Profile and no definition of important population is given for the species. Areas of suitable habitat for the species coincide with vegetation which will be cleared; however, the species use of these habitats is unknown. The Action represents a moderate impact on potential Corben's Long-eared Bat habitat, is medium term and reversible in the longer term, but could reduce the AOO for the local population (if present) through habitat removal.
Fragment an existing important population into two or more populations	**A less than remote chance** Important populations have not been defined for the species. The overall Corben's Long-eared Bat population is considered fragmented, as it occurs in isolated subpopulations caused by agricultural practices (DAWE, 2021). If a population occurs within the Impact Site, it is likely that individuals use large home ranges and are not limited to the Impact Site. Habitat loss threatens the species by reducing habitat availability, such as important

Criteria	Assessment
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:	
	roosting sites (Schulz and Lumsden 2010). Given the species' requirements for large areas of land, smaller fragments may not provide viable habitat for the species (Woinarski et al., 2014), leaving bats more vulnerable to local extinction and reductions in fitness (Schulz and Lumsden 2010). Large tracts of native vegetation surround The Impact Site so, although The Action will cause habitat fragmentation, it is a less than remote chance to fragment a population into two or more subpopulations.
Adversely affect habitat critical to the survival of a species.	**A real chance** Habitat critical to the survival of the species has not been defined, however, as presented in Section 8.4.5, habitat where the species has been most frequently recorded represents box / ironbark / cypress-pine vegetation with a diverse understorey (a condition which is largely absent from the Impact Site) and Hollow Bearing Trees. Studies have found that Corben's Long-eared Bat roosts solitarily, mainly in dead trees or dead spouts of live trees. It appears that most roost sites are used just for a single day and large distances are travelled at night, with consecutive roost sites generally within four km (Lumsden et al., 2008). Hollows may be considered critical habitat, and nine Hollow Bearing Trees are proposed for removal (five (5) within the Mine Site and four (4) from the 23 available adjacent suitable habitat along the Linear Corridor).
Disrupt the breeding cycle of an important population.	**A real chance** There is little available information on the species' reproductive biology. Breeding is likely to be seasonal, with pregnant and lactating females having been trapped in Queensland and New South Wales in November (Schulz and Lumsden 2010). A study in New South Wales found maternity colonies, consisting of 10-20 individuals, roosting in dead trees including ironbarks, cypress and buloke (Schulz and Lumsden 2010). While the species has not been recorded within 50 km of the Impact Site and the likelihood of a breeding population being present is considered low, mitigation measures include timing of Hollow Bearing Tree removal outside the Spring/ Summer period and felling in a manner that will minimise the risk of injury/mortality of denning/roosting fauna. This includes gently pushing or 'soft felling' with an excavator or gradual cut down by an arborist. A qualified ecologist is to be present during felling and sectioning of the Hollow Bearing Tree (at the proponent's cost) in case of animal injury. Hollows are to be inspected for fauna once the tree is deposited. All uninjured animals are to be released in the retained habitat on site.
Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.	**A real chance** Extensive clearing of woodland and mallee vegetation is likely to have been a major factor in the decline of Corben's Long-eared Bat (TSSC, 2015). Given the species' requirements for large areas of land, smaller fragments may not provide viable habitat for the species (Woinarski et al., 2014), leaving bats more vulnerable to local extinction and reductions in fitness (Schulz and Lumsden 2010). This species mainly roosts in tree hollows and so a reduction in hollow availability (though few) could put pressure on the species. Given the large home range of the species, the loss of habitat proposed is a less than remote chance to decrease the availability of habitat such that the species is likely to decline.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat.	**A less than remote chance** Predation of Corben's Long-eared Bat by introduced species, such as the feral cat or red fox, has not been demonstrated (Woinarski et al., 2014) and therefore the risk to the species is unknown. While new vehicle access points /roads could provide a pathway to improve access by feral animals, the Impact Site's surrounds are generally open and provide little impediment to feral animal access at present. So, the risk would not be substantially increased. Mitigation measures to be used include trapping and baiting programs in conjunction with the local land authority. Due to the widespread occupation by feral cats and foxes, The Action has a less than remote chance to result in an invasive species that is harmful to the Corben's Long-eared Bat becoming established in the species' habitat.

Criteria	Assessment
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:	
Introduce disease that may cause the species to decline.	**A less than remote chance** The proposed works have a less than remote chance to result in the introduction of a disease that could cause the Corben's Long-eared Bat to decline. Disease is not listed a key threat to the Corben's Long-eared Bat in the species' Conservation Advice (TSSC, 2015) and the likelihood of disease transmission is considered low. Furthermore, as outlined in Section 8.2.7, the proposed works are a less than remote chance to involve direct interactions with the species that could result in the transmission of disease. Standard hygiene protocols will be adopted to protect vehicles and machinery, as such, the risk is considered low.
Interfere substantially with the recovery of the species.	**A less than remote chance** Studies listed above indicate the species is expected to utilise large home ranges and move roost sites frequently, making it less reliant on any one area for all components of its' lifecycle. Large areas of native vegetation surround the Impact Site, including extensive mallee communities which include old-growth trees. The Action will remove potential forage habitat in low to moderate condition, as well as limited Hollow Bearing Trees. The proposed works are a less than remote chance to interfere substantially with the recovery of the Corben's Long-eared Bat.

8.5.11 Conclusion

The current literature states:

- The Impact Site is within the known distribution of the Corben's Long-eared Bat. The species has not been definitively recorded within the Impact Site but it is assumed present in the absence of a broader detailed survey, since Anabat survey recorded a *Nyctophilus* species at the Site. Nyctophilus species cannot be reliably differentiated using call characteristics, so detected calls could belong to either or both of *N. geoffroyi* (Lesser Long-eared Bat, not listed as a threated species) or the target species *N. corbeni* (Corben's Long-eared Bat) (Balance Environmental 2025).
- No BioNet or ALA records for the species occur within 50 km of the Impact Site; however suitable habitat occurs within the Impact Site.
- No important populations of the Corben's Long-eared Bat have been listed in the species' Conservation Advice (TSSC, 2015). Using the precautionary principle, any population found within the site could be regarded as an important population when using the *Significant Impact Guidelines 1.1* (DEWHA, 2013).
- Habitat critical to the survival of the species has not been defined, however the species is known from four Plant Community Types which are present in the Impact Site (Figure 27 and Figure 28), along with Hollow Bearing Trees (considered essential breeding habitat), with some or both proposed for progressive removal.
- The species is considered to have large home ranges, and most roost sites are used for a single day only. Large distances are travelled at night, with consecutive roost sites generally within 4 km (TSSC 2015). This appears to indicate lesser reliance on any one habitat area in a mosaic of large tracts of native vegetation, as occurs in the region.
- The Proposed Action is considered of moderate severity based on it being considered:
    - Moderate-high impact through vegetation clearing as a single event in any one area and medium-long term (26 years) but reversible with progressive habitat rehabilitation following cessation of mining.

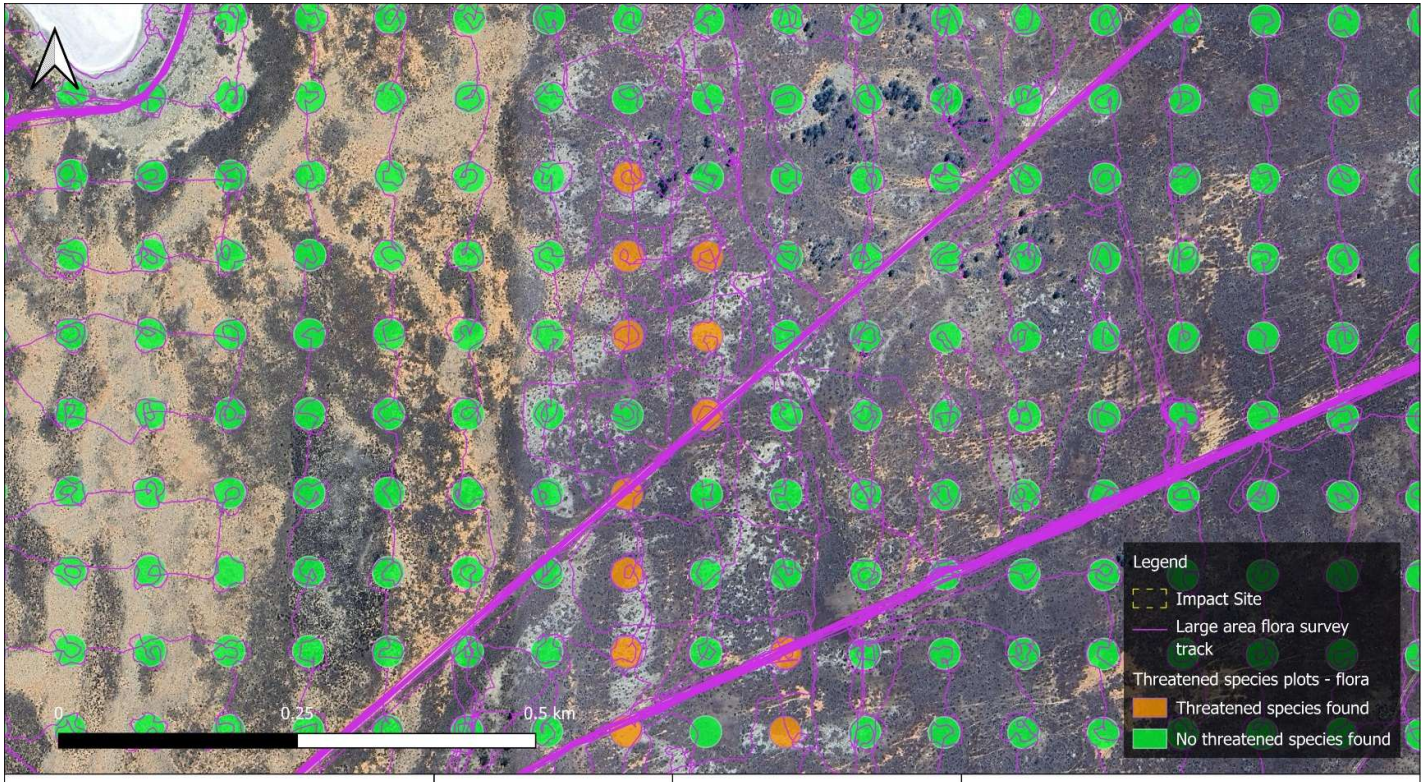
Based on the above the Impact caused by The Action to the Corben's Long-eared Bat and its habitat is not considered a significant impact under the EPBC guidelines.

9. Entities With a Lower Risk of a Real Chance of Significance Assessments

9.1 Flora species with potential to occur on site and targeted during detailed survey

Targeted threatened flora survey was undertaken as follows:

- Between 2019 and 2023, a total of 166.35 km of walking transects and intensive area searches around VI plots compliant with NSW BioBanking Assessment Methodology (BBAM 2010 to 2022) and BAM 2020, totalling 206.50 ha.
- In November 2024, a 100 m grid pattern was overlaid over the entire Impact Site (e.g. Figure 30), including the Linear Corridor and radial searches conducted at each grid intersection in line with the EPBC Act large Area Threatened Flora survey guidelines.
- A total of 101 VI plots completed in line with BAM 2020 prior to 2024, plus 80 VI plots in 2024, totalling 181 plots.



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Example of threatened flora survey tracks across the 100m grid system	Biodiversity AUSTRALIA	
	Drawn by: NE	Location: Warwick Station		
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:5000

Figure 30: Example of threatened flora survey tracks across the 100 m grid system

A Saltbush (*Atriplex infrequens*)

EPBC Act Status: Vulnerable

Distribution

Atriplex infrequens occurs in western NSW, within the northern and southern far western plains regions. It is not known to occur within a conservation reserve (Briggs & Leigh, 1996) and has been recorded from the drier regions of the Bourke District, such as Lake Parnamaroo in 1860; Delalah Downs, undated; and Tarcoola in 1920; and from the Murray-Darling Depression (Wilson, 1984; Morton et al., 1995; Ayers et al., 1996). This species occurs within the Lower Murray Darling and Western (NSW) Natural Resource Management Regions. In NSW the species is confined to the far western plains. North western records recorded from east of Tibooburra, south east of Brewarrina and near Wilcannia with isolated collections from the Pooncarie area in the south.

Threats

The main identified threats to A. *infrequens* are broad-scale habitat clearing (modification and loss of essential habitat, including relatively undisturbed and ungrazed drainage lines and flats); increasing fragmentation and loss of remnants; disturbances from rabbits (*Oryctolagus cuniculus*); and overgrazing by stock and native herbivores (ANRA, 2007a & 2007b; DECC, 2008).

The main potential threats to A. *infrequens* include habitat loss; changed fire regimes; fragmentation; and overgrazing and invasions by the weed Prosopis spp. are occurring in some places (Morton et al., 1995; ANRA, 2007a & 2007b; DECC, 2008). Fire should not occur more than once every 10 years and there should be no slashing, trittering, or tree removal (NSW RFS, 2004).

Survey Results

There is one NSW BioNet record within 10 km of the Subject Site. The species was not found in 5,500 threatened flora surveys undertaken across a 100 m grid of over the whole of the Impact Site (survey undertaken after significant rainfall) nor in any of the more than 80 VI plots undertaken by Bio Aus.

Significant Impact Criteria

Table 16: Significant impact assessment – *Atriplex infrequens*

Significant Impact Criteria	Details	Resulting Impact
a) Lead to a long-term decrease in the size of an important population of a species.	No *Atriplex infrequens* grass was identified within the Subject Site, thus is a less than remote chance the proposed action will lead to any long-term decreases in the size of an important population of a species.	**No significant impact**
b) Reduce the area of occupancy of an important population.	No *Atriplex infrequens* grass was identified within the Subject Site therefore the proposed action will not reduce the AOO of the population.	**No significant impact**
c) Fragment an existing important population into two or more populations	No *Atriplex infrequens* grass was identified within the Subject Site therefore the proposed action will not result in fragmentation of an existing population.	**No significant impact**
d) Adversely affect habitat critical to the survival of a species.	No *Atriplex infrequens* grass was identified within the Subject Site therefore the proposed action is a less than remote chance to have a significant impact on critical habitat.	**No significant impact**

Significant Impact Criteria	Details	Resulting Impact
e) Disrupt the breeding cycle of an important population.	No *Atriplex infrequens* grass was identified within the Subject Site therefore the proposed action is not anticipated to disrupt the breeding cycle of the species.	**No significant impact**
f) Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the Species is likely to decline.	No *Atriplex infrequens* grass was identified within the Subject Site. Thus, the removal of vegetation within the subject site is not considered to result in species decline.	**No significant impact**
g) Result in invasive species that are harmful (by competition, modification of habitat, or predation) to a vulnerable species, becoming established in the vulnerable species' habitat.	The proponent will exercise its Biosecurity obligations to prevent weed spread. No new species that affects *Atriplex infrequens* is likely to be introduced as a direct result of the proposal.	**No significant impact**
h) Introduce a disease that may cause a species to decline.	No diseases that affect the *Atriplex infrequens* are likely to be introduced as a direct or indirect result of the proposed action.	**No significant impact**
i) Interferes substantially with the recovery of the species.	The proposal is not anticipated to interfere with the recovery of the species.	**No significant impact**

The above assessment has determined that the proposed Action does not significantly impact *Atriplex infrequens*. Referral to the Department of Conservation, Climate Change, Environment, Energy and Water (DCCEEW) is not required for this Species.

Winged Peppercress (*Lepidium monoplocoides*)

EPBC Act Status: Endangered

Distribution

Winged peppercress is widespread in the semi-arid western plains regions of NSW. Collected from widely scattered localities, with large numbers of historical records but few recent collections. There is a single collection from Broken Hill and only two collections since 1915, the most recent being 1950. Also previously recorded from Bourke, Cobar, Urana, Lake Cargelligo, Balranald, Wanganella and Deniliquin. Recorded more recently from the Hay Plain, south-eastern Riverina, and from near Pooncarie.

The species occurs in open, sparsely vegetated sites in a range of habitats on heavy clay or clay-loam soils, usually on sites that are seasonally flooded or prone to waterlogging, in arid to semi-arid areas with an average rainfall range of 200–450 mm per year. Vegetation communities in which the species occurs include grasslands, wetlands and floodplain woodlands dominated by Eucalyptus coolabah and *Eucalyptus largiflorens*, and chenopod shrublands dominated by *Atriplex, Maireana* and/or *Nitraria* species. It has also been recorded from samphire communities dominated by *Halosarcia* species and temperate woodlands with *Eucalyptus microcarpa* and *Allocasuarina luehmannii* on the southern margins of its range. The Winged Peppercress occurs in association with a wide range of herbs and grasses including Austrodanthonia species, Austrostipa species, *Rumex brownii* and *Spergularia rubra*. Locations where the species occurs tend to be ephemeral, and it may be an opportunistic species able to take advantage of seasonally available habitat

Threats

- Altered hydrology: The Winged Peppercress grows at sites that are seasonally wet, either through periodic flooding or where rainfall runoff collects, and a regular wetting and drying regime is probably required to maintain an open habitat and facilitate seed germination. Many shallow freshwater marshes have been drained, while other sites have prolonged inundation through irrigation supply and runoff, reducing the availability of suitable habitat for the species.
- Increasing salinity: The elevated levels of saline groundwater and the steady spread of saline effected areas, especially in northern Victoria, are likely to be a threat to some populations of Winged Peppercress.
- Weed invasion: Almost all sites are at risk from weed invasion, including from exotic annual grass species including Vulpia, Bromus, Lolium and Avena species, with Patterson's Curse, Horehound and African Boxthorn being problems at a few Sites.
- Grazing: The Winged Peppercress is highly palatable and as a result is very susceptible to grazing. Populations on private land, Department of Defence land and roadsides are at risk from domestic stock (roadside populations are on travelling stock routes), while high densities of kangaroos and rabbits pose a threat to populations in parks and reserves. Wild pigs may be a threat to some populations in NSW. Grazing may threaten the species by reducing the amount of seed produced by individuals through defoliation, prior to critical periods of flowering and seed production.
- Physical damage: Several sites where Winged Peppercress occurs are close to vehicle tracks, and off-road vehicle movement has caused some damage to sites and drainage lines leading to sites. Road works are a major risk to roadside populations, and livestock can cause damage, especially when the soil is wet, through trampling and pugging of sites. Future development on the Department of Defence land may result in habitat degradation or loss.
- Drought and climate change: Virtually the entire range of the Winged Peppercress has suffered extensive drought for over a decade now, and it is not known how long seed can remain viable in the

soil between wetting periods. Climate change is likely to be a major medium to long term threat, with the predicted increased temperatures, decreased rainfall and increased evaporation rates further reducing the availability of seasonally wet habitats favoured by the species.

Survey Results

There are no NSW BioNet records within 10 km of the Subject Site. The species was not found in 5,500 threatened flora surveys undertaken across a 100 m grid of over whole of the Impact Site nor in any of the more than 80 VI plots undertaken by Bio Aus.

Significant Impact Criteria

Table 17: Significant impact assessment – *Lepidium monoplocoides*

Significant Impact Criteria	Details	Resulting Impact
a) Lead to a long-term decrease in the size of a population.	No *Lepidium monoplocoides* was identified within the Subject Site, thus is a less than remote chance the proposed action will lead to any long-term decreases in the size of an important population of a species.	**No significant impact**
b) Reduce the area of occupancy of the species.	No *Lepidium monoplocoides* was identified within the Subject Site therefore the proposed action will not reduce the AOO of the population.	**No significant impact**
c) Fragment an existing population into two or more populations.	No *Lepidium monoplocoides* was identified within the Subject Site therefore the proposed action will not result in fragmentation of an existing population.	**No significant impact**
d) Adversely affect habitat critical to the survival of a species.	No *Lepidium monoplocoides* was identified within the Subject Site therefore the proposed action is a less than remote chance to have a significant impact on critical habitat.	**No significant impact**
e) Disrupt the breeding cycle of a population.	No *Lepidium monoplocoides* was identified within the Subject Site therefore the proposed action is not anticipated to disrupt the breeding cycle of the species.	**No significant impact**
f) Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the Species is likely to decline.	No *Lepidium monoplocoides* was identified within the Subject Site. Thus, the removal of vegetation within the Subject Site is not considered to result in species decline.	**No significant impact**
g) Result in invasive species that are harmful to an endangered species becoming established in the endangered species' habitat.	The proponent will exercise its Biosecurity obligations to prevent weed spread. No new species that affects *Lepidium monoplocoides* is likely to be introduced as a direct result of the proposal.	**No significant impact**
h) Introduce a disease that may cause a species to decline.	No diseases that affect the *Lepidium monoplocoides* are likely to be introduced as a direct or indirect result of the proposed Action.	**No significant impact**
i) Interfere with the recovery of the species	The proposal is not anticipated to interfere with the recovery of the species.	**No significant impact**

The above assessment has determined that the proposed Action does not significantly impact *Lepidium monoplocoides*. Referral to the Department of Conservation, Climate Change, Environment, Energy and Water (DCCEEW) is not required for this Species.

Desert Greenhood (*Pterostylis xerophila*)

EPBC Act Status: Vulnerable

Distribution

The Desert Greenhood is endemic to inland south-eastern Australia, in the Murray-Darling Depression, Eyre-York Block, Gawler and Great Victoria Desert IBRA bioregions. The National Recovery Plan for *Pterostylis xerophila* (Duncan 2010) listed eight known wild subpopulations that contained only 150 plants in total, located in Vic. and SA (Duncan 2010). The species distribution in NSW is modelled to extend from west of Broken Hill south to Mildura and beyond, generally within the Murray Darling Basin.

Little is known of the precise habitat requirements of P. xerophila. In South Australia, P. xerophila occurs in dry woodland on fertile red loamy soils (Bates & Weber 1990), on or around granite or quartzite rock outcrops (Jessop & Toelken 1986).

Threats

Virtually nothing is known of the previous distribution or abundance of the Desert Greenhood, so it is not possible to determine if there has been any decline in range and/or abundance. Historically, there has been substantial loss of mallee habitat, especially in South Australia, which may have had an impact on the distribution and abundance of *P. xerophila*.

Little is known of the extent or impact of current threats to populations, although several threats are evident. These include:

- Grazing by native and/or introduced herbivores may be a threat at all sites. Feral goats and rabbits are present at most sites, and grazing by kangaroos may also be a problem. Heavy grazing by rabbits and goats can also cause severe habitat degradation.
- Weed invasion, especially Paterson's Curse *Echium plantagineum* and Ward's Weed *Carrichtera annua* are a minor problem at some sites in the Gawler Ranges National Park (D. Bickerton DEH DA, pers. comm.).
- Disturbance: Accidental destruction by vehicle movement and trampling by people is a potential threat at sites where plants occur close to tracks and/or roadsides; one site in Murray-Sunset National Park is at high risk.
- Fire: The use of prescribed burning for fuel management or asset protection (or wildfires early in the season) during the growing/flowering/seeding period of P. xerophila (June to December) is likely to be detrimental to this species. Prescribed burning at P. xerophila sites should be avoided when plants are actively growing and flowering.
- Climate change probably poses the most significant long-term threat to the Desert Greenhood. Many of the rufa group *Pterostylis* species are adapted to dry conditions. However, with the predicted decrease in rainfall and increase in temperatures and evaporation rates resulting from climate change, environmental conditions for *P. xerophila* are likely to become even more marginal, with a reduction in opportunities for flowering, pollination, seed production and recruitment of plants to the adult population, as well as increasing mortality of existing plants. The frequency of wildfires may also increase with climate change.

Survey Results

There are no NSW BioNet record within 10 km of the Subject Site. The species was not found in 5,500 threatened flora surveys undertaken across a 100 m grid of over whole of the Impact Site nor in any of the more than 80 VI plots undertaken by Bio Aus.

Significant Impact Criteria

Table 18: Significant impact assessment – *Pterostylis xerophila*

Significant Impact Criteria	Details	Resulting Impact
a) Lead to a long-term decrease in the size of an important population of a species.	No *Pterostylis xerophila* were identified within the Subject Site, thus is a less than remote chance the proposed action will lead to any long-term decreases in the size of an important population of a species.	**No significant impact**
b) Reduce the area of occupancy of an important population.	No *Pterostylis xerophila* were identified within the Subject Site therefore the proposed action will not reduce the AOO of the population.	**No significant impact**
c) Fragment an existing important population into two or more populations.	No *Pterostylis xerophila* were identified within the Subject Site therefore the proposed action will not result in fragmentation of an existing population.	**No significant impact**
d) Adversely affect habitat critical to the survival of a species.	No *Pterostylis xerophila* grass were identified within the Subject Site therefore the proposed action is a less than remote chance to have a significant impact on critical habitat.	**No significant impact**
e) Disrupt the breeding cycle of an important population.	No *Pterostylis xerophila* grass were identified within the Subject Site therefore the proposed action is not anticipated to disrupt the breeding cycle of the species.	**No significant impact**
f) Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the Species is likely to decline.	No *Pterostylis xerophila* grass were identified within the Subject Site. Thus, the removal of vegetation within the subject site is not considered to result in species decline.	**No significant impact**
g) Result in invasive species that are harmful (by competition, modification of habitat, or predation) to a vulnerable species, becoming established in the vulnerable species' habitat.	The proponent will exercise its Biosecurity obligations to prevent weed spread. No new species that affects *Pterostylis xerophila* is likely to be introduced as a direct result of the proposal.	**No significant impact**
h) Introduce a disease that may cause a species to decline.	No diseases that affect the *Pterostylis xerophila* are likely to be introduced as a direct or indirect result of the proposed action.	**No significant impact**
i) Interferes substantially with the recovery of the species.	The proposal is not anticipated to interfere with the recovery of the species.	**No significant impact**

The above assessment has determined that the proposed Action does not significantly impact *Atriplex infrequens*. Referral to the Department of Climate Change, Energy, the Environment and Water (DCCEEW) is not required for this species.

Menindee Nightshade (*Solanum karsense*)

EPBC Act Status: Vulnerable

Distribution

Menindee Nightshade is a species of *Solanum* endemic to NSW, restricted to the far south-western plains, extending up the Darling River to the Menindee and Wilcannia districts. Mainly restricted to the area between the Darling and Lachlan Rivers. Localities include Kars Station, Lake Tandou, Lake Cawndilla, Oxley area, between Broken Hill and Menindee, and the Darling River. It has been recorded from Kinchega National Park and Nearie Lake Nature Reserve. Areas in which this species occurs can be generally defined as habitat connected to the Darling and Lachlan Rivers and their tributaries (NSW SC, 2000). Locations have also been recorded outside of river systems as the result of good rainfall, livestock introduction or other disturbance (NSW SC, 2000).

Grows in occasionally flooded depressions with heavy soil, including level river floodplains of grey clay with Black Box and Old Man Saltbush, and open treeless plains with solonized brown soils. Habitats are generally lake beds or floodplains of heavy grey clays with a highly self-mulching surface. Also found on sandy floodplains and ridges and in calcareous soils, red sands, red-brown earths and loamy soils.

Threats

The main identified threat to Menindee Nightshade is that much of the original dry lake habitat has been modified, due to lake bed cropping. This species still occupies the margins of suitable habitat, and due to its capacity to tolerate disturbance is regarded by some as a weed (DECC, 2005a). The main potential threats to Menindee Nightshade include its susceptibility to grazing by a combination of stock, rabbits (*Oryctolagus cuniculus*), kangaroos (*Macropus* spp.), and goats (*Capra hircus*). Kangaroos have increased in number because of the watering facilities developed by the grazing industry. Other potential threats are changes in hydrology, salinity, ephemeral weeds and continued lake-bed cropping (DEWHA, 2008).

Threats include:

- Habitat loss.
- Trampling, browsing or grazing.

Survey Results

There are six NSW BioNet records within 10 km of the Subject Site. The species was not found in 5,500 threatened flora surveys undertaken across a 100 m grid of over whole of the Impact Site nor in any of the more than 80 VI plots undertaken by Bio Aus.

Significant Impact Criteria

Table 19: Significant impact assessment – *Solanum karsense*

Significant Impact Criteria	Details	Resulting Impact
a) Lead to a long-term decrease in the size of an important population of a species.	No *Solanum karsense* were identified within the Subject Site, thus is a less than remote chance the proposed action will lead to any long-term decreases in the size of an important population of a species.	**No significant impact**

Significant Impact Criteria	Details	Resulting Impact
b) Reduce the area of occupancy of an important population.	No *Solanum karsense* were identified within the Subject Site therefore the proposed action will not reduce the AOO of the population.	**No significant impact**
c) Fragment an existing important population into two or more populations.	No *Solanum karsense* were identified within the Subject Site therefore the proposed action will not result in fragmentation of an existing population.	**No significant impact**
d) Adversely affect habitat critical to the survival of a species.	No *Solanum karsense* grass were identified within the Subject Site therefore the proposed action is a less than remote chance to have a significant impact on critical habitat.	**No significant impact**
e) Disrupt the breeding cycle of an important population.	No *Solanum karsense* grass were identified within the Subject Site therefore the proposed action is not anticipated to disrupt the breeding cycle of the species.	**No significant impact**
f) Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the Species is likely to decline.	No *Solanum karsense* grass were identified within the Subject Site. Thus, the removal of vegetation within the Subject Site is not considered to result in species decline.	**No significant impact**
g) Result in invasive species that are harmful (by competition, modification of habitat, or predation) to a vulnerable species, becoming established in the vulnerable species' habitat.	The proponent will exercise its Biosecurity obligations to prevent weed spread. No new species that affects *Solanum karsense* is likely to be introduced as a direct result of the proposal.	**No significant impact**
h) Introduce a disease that may cause a species to decline.	No diseases that affect the *Solanum karsense* are likely to be introduced as a direct or indirect result of the proposed action.	**No significant impact**
i) Interferes substantially with the recovery of the species.	The proposal is not anticipated to interfere with the recovery of the species.	**No significant impact**

The above assessment has determined that the proposed Action does not significantly impact *Solanum karsense*. Referral to the Department of Climate Change, Energy, the Environment and Water (DCCEEW) is not required for this species.

Slender Darling-pea (*Swainsona murrayana*)

EPBC Act Status: Vulnerable

Distribution

Slender Darling-pea occurs from South Australia through south-west Victoria and central NSW to southeast Queensland (DECC, 2005a). In NSW, this species occurs in the central western slopes, the Western Division, and the Riverina area (DECC, 2005a). Slender Darling-pea is found in grassland, herbland, and open Black-box Woodland, often in depressions (DSE, 2001; Harden, 2002; DECC, 2005a). This species grows in heavy grey or brown clay, loam, or red cracking clays (DSE, 2001; DECC, 2005a). It is often associated with low chenopod shrubs (Maireana spp.), wallaby-grass (*Austrodanthonia* spp), and spear grass (*Austrostip*a spp.) (DSE, 2001; Harden, 2002). The species may require some disturbance and has been known to occur in paddocks that have been moderately grazed or occasionally cultivated (DECC, 2005a).

Threats

The main identified threats to Slender Darling-pea include grazing from domestic stock and rabbits (*Oryctolagus cuniculus*); weed invasion; cultivation; and roadside maintenance activities (Ayres et al., 1996; DSE, 2001; DECC, 2005a). The main potential threats to the species include habitat destruction by goats (*Capra hircus*) and feral pigs (*Sus scrofa*); salinisation of habitat; urban development in grassland habitat; and inappropriate fire regimes (Ayres et al., 1996; DECC, 2005a). This species should not be burnt more frequently than once every ten years (NSW RFS, 2004).

Survey Results

There are no NSW BioNet records within 10 km of the Subject Site. The species was not found in 5,500 threatened flora surveys undertaken across a 100 m grid of over whole of the Impact Site nor in any of the more than 80 VI plots undertaken by Bio Aus.

Significant Impact Criteria

Table 20: Significant impact assessment – *Swainsona murrayana*

Significant Impact Criteria	Details	Resulting Impact
a) Lead to a long-term decrease in the size of an important population of a species.	Insufficient information is available to describe important populations of this species. All populations should be considered important. No *Swainsona murrayana* plants or subpopulations were found during extensive survey within the Subject Site, thus is a less than remote chance the proposed action will lead to any long-term decreases in the size of any important population of a species.	**No significant impact**
b) Reduce the area of occupancy of an important population.	The Site is outside the known or predicted extent for the species. No *Swainsona murrayana* were identified within the Subject Site therefore the proposed action will not reduce the AOO of the population.	**No significant impact**
c) Fragment an existing important population into two or more populations.	No *Swainsona murrayana* were identified within the Subject Site therefore the proposed action will not result in fragmentation of an existing population.	**No significant impact**
d) Adversely affect habitat critical to the survival of a species.	No habitat critical to the survival of the species has been identified in the Conservation Advice or listed on the register of critical habitat. No *Swainsona murrayana* were identified within the Subject Site therefore the proposed action is a less than remote chance to have a significant impact on critical habitat.	**No significant impact**

Significant Impact Criteria	Details	Resulting Impact
e) Disrupt the breeding cycle of an important population.	No *Swainsona murrayana* were identified within the Subject Site therefore the proposed action is not anticipated to disrupt the breeding cycle of the species.	**No significant impact**
f) Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the Species is likely to decline.	No *Swainsona murrayana* were identified within the Subject Site. Thus, the removal of vegetation within the subject site is not considered to result in species decline.	**No significant impact**
g) Result in invasive species that are harmful (by competition, modification of habitat, or predation) to a vulnerable species, becoming established in the vulnerable species' habitat.	The proponent will exercise its Biosecurity obligations to prevent weed spread. No new species that affects *Swainsona murrayana* is likely to be introduced as a direct result of the proposal.	**No significant impact**
h) Introduce a disease that may cause a species to decline.	No diseases that affect the *Swainsona murrayana* are likely to be introduced as a direct or indirect result of the proposed action.	**No significant impact**
i) Interferes substantially with the recovery of the species.	The proposal is not anticipated to interfere with the recovery of the species.	**No significant impact**

The above assessment has determined that the proposed Action does not significantly impact *Swainsona murrayana*. Referral to the Department of Climate Change, Energy, the Environment and Water (DCCEEW) is not required for this species.

Yellow Swainson-pea (*Swainsona pyrophila*)

EPBC Act Status: Vulnerable

Distribution

The Yellow Swainson-pea occurs in mallee vegetation communities in inland south-eastern Australia, where it is widely distributed from the northern Eyre Peninsula in South Australia (SA) to north-western Victoria (Vic) and western New South Wales (NSW). The number and size of subpopulations of Yellow Swainson-pea is unknown. The number of mature individuals fluctuates as plants only appear for a few years after fire. The NSW species profile states Yellow Swainson-pea is "recorded in small to moderately large subpopulations, including 3, 20, 50, 250 and 300 plants, often scattered" (OEH 2018).

The species grows in mallee scrub on sandy or loamy soil, usually found only after fire. Sites include cleared and burnt mallee scrub on red loam to sand, previously burnt *Eucalyptus dumosa* mallee, disturbed woodland in sheltered aspects, a bulldozed firebreak adjacent to wheat paddocks, roadsides, claypans and at the edge of fire ash.

Threats

Yellow Swainson-pea plants only appear following fire or disturbance and only survive for 1–2 years. Survival of the species relies on seeds stored in the soil. The soil seedbank must be able to persist between fires and must be sufficiently replenished to grow the next generation of Yellow Swainson-pea after the next fire. It is not known if mechanical disturbance of the soil within a subpopulation triggers significant germination, as can occur in some other native legumes. These characteristics make the Yellow Swainson-pea susceptible to threats during the short time it exists as an above-ground plant, and to threats that impact the persistence of a soil seedbank. Other threatening processes include fire regimes that cause declines in biodiversity, loss of mallee woodland habitat, or activities that degrade habitat by causing intense physical damage to soils or increasing competition from other plants. Threats may be summarised as:

- Habitat destruction (clearing and agricultural activities).
- Altered fire regimes (dependent upon fire to stimulate germination).
- Feral animal disturbance (goat and rabbit invasion in sandy habitats may precipitate soil erosion and vegetation loss, especially in vulnerable post-fire sites).
- Viability of seeds in the soil seedbank.
- Younger plants may be palatable to goats and stock.
- Insufficient understanding of distribution.
- Insufficient understanding of threats.

Survey Results

There are no NSW BioNet records within 10 km of the Subject Site. The species was not found in 5,500 threatened flora surveys undertaken across a 100 m grid of over whole of the Impact Site nor in any of the more than 80 VI plots undertaken by Bio Aus.

Significant Impact Criteria

Table 21: Significant impact assessment – *Swainsona pyrophila*

Significant Impact Criteria	Details	Resulting Impact
a) Lead to a long-term decrease in the size of an important population of a species.	Insufficient information is available to describe important populations of this species. All populations should be considered important. No *Swainsona pyrophila* plants or subpopulations were found during extensive survey within the Subject Site, thus is a less than remote chance the proposed action will lead to any long-term decreases in the size of any important population of a species.	**No significant impact**
b) Reduce the area of occupancy of an important population.	The Site is outside the known or predicted extent for the species. No *Swainsona pyrophila* were identified within the Subject Site therefore the proposed action will not reduce the AOO of the population.	**No significant impact**
c) Fragment an existing important population into two or more populations.	No *Swainsona pyrophila* were identified within the Subject Site therefore the proposed action will not result in fragmentation of an existing population.	**No significant impact**
d) Adversely affect habitat critical to the survival of a species.	No habitat critical to the survival of the species has been identified in the Conservation Advice or listed on the register of critical habitat. No *Swainsona pyrophila* were identified within the Subject Site therefore the proposed action is a less than remote chance to have a significant impact on critical habitat.	**No significant impact**
e) Disrupt the breeding cycle of an important population.	No *Swainsona pyrophila* were identified within the Subject Site therefore the proposed action is not anticipated to disrupt the breeding cycle of the species.	**No significant impact**
f) Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the Species is likely to decline.	No *Swainsona pyrophila* were identified within the Subject Site. Thus, the removal of vegetation within the Subject Site is not considered to result in species decline.	**No significant impact**
g) Result in invasive species that are harmful (by competition, modification of habitat, or predation) to a vulnerable species, becoming established in the vulnerable species' habitat.	The proponent will exercise its Biosecurity obligations to prevent weed spread. No new species that affects *Swainsona pyrophila* is likely to be introduced as a direct result of the proposal.	**No significant impact**
h) Introduce a disease that may cause a species to decline.	No diseases that affect the *Swainsona pyrophila* are likely to be introduced as a direct or indirect result of the proposed action.	**No significant impact**
i) Interferes substantially with the recovery of the species.	The proposal is not anticipated to interfere with the recovery of the species.	**No significant impact**

The above assessment has determined that the proposed Action does not significantly impact *Swainsona pyrophila*. Referral to the Department of Climate Change, Energy, the Environment and Water (DCCEEW) is not required for this species.

9.2 Fauna species with potential to occur on site and targeted during detailed survey (all birds)

Bird survey effort undertaken in accordance with all relevant EPBC Act and BC Act Targeted Threatened Survey guidelines (Raptors, Birds of prey, Parrots and Woodland Birds) comprised the following:

- 20 min dawn and dusk diurnal bird surveys for sightings and vocalisation totalling 4,860 minutes (81 hours) at 243 locations between January 2018 and October 2023.
- A total of 12 recording days call playback for Striated Grasswren, Red-lored Whistler and Black-eared Miner (at the end of each survey above).
- A song meter was activated in 39 sites between March 2018-March 2022 for 3.5 hours per day (dawn and dusk), a total of 42 hours in 2022.
- Camera traps were deployed for 87 days/nights.
- A general bird of prey survey as well as Nest and Area Searches on foot and from vehicle from 4-19 December 2024.
- Targeted Morning searches around water sources and hollows from 4-19 December 2024.
- Opportunistic observations were undertaken during all site visits.
- Targeted bird surveys within mallee vegetation communities in February 2025.
- Hollow Bearing Trees were recorded.
- Targeted bird of prey surveys in February 2025.

Murray Mallee Striated Grasswren (*Amytornis striatus howei*)

EPBC Act Status: Endangered

Distribution

The Murray Mallee Striated Grasswren occurs in New South Wales, South Australia and Victoria. In NSW recent records are in the Murray Mallee region and restricted to Scotia and Tarawi in the west (OEH 2024).

The species is confined to areas with well-developed Porcupine Grass (*Triodia irritans*), usually in association with mallee eucalypts and sandy soils. It Is known to re-occupy burnt vegetation 6 to 8 years following fire and prefers areas with large hummocks of spinifex which is greatest 25 to 40 years post-fire. Feeds on the ground upon small invertebrates and seeds.

Nests are a substantial dome of interwoven grasses, bark and spinifex, well-hidden towards the top of a spinifex clump. Usually recorded in pairs, though sometimes in small parties, and first often detected by its call. Can be shy and difficult to observe, though may also be inquisitive and respond to observers, particularly during the breeding season (TSSC 2023).

Threats

- Risk of large-scale intense wildfire reducing habitat and resource availability and infrequent fire impacting the structural suitability of habitat.
- Overgrazing and browsing from feral goats impacting habitat structure, condition, and resources for foraging and breeding. This threat is exacerbated after fire and during drought periods.
- Habitat degradation and loss due to overgrazing and burrowing by rabbits.
- Overgrazing and browsing from both domestic stock (e.g. Dorper and Merino sheep) and goats (both feral and commercial) impacting habitat structure, condition, and resources for foraging and breeding. This threat is exacerbated after fire and during drought.
- Increased predation risk from introduced predators (cats and foxes), especially after fire (reducing suitable vegetation cover with birds occupying lower quality habitat within refugia). Increased predation risk from introduced predators (cats and foxes), especially after fire (reducing suitable vegetation cover with birds occupying lower quality habitat within refugia).
- Small and declining population size susceptible to demographic threats and stochastic events. The NSW population is estimated to be only a few hundred individuals.
- Clearing of habitat for agriculture and grazing (DCCEEW 2023).

Survey Results

The species was not found during extensive bird surveys between 2018 and 2025.

Significant Impact Criteria

Significant impact guidelines for an endangered species are defined by DotE (2013) and are addressed below.

Table 22: Significant impact assessment – Murray Mallee Striated Grasswren

Significant Impact Criteria	Details	Resulting Impact
a) Lead to a long-term decrease in the size of a population of a species.	No population or individuals of the species was found on site during extensive surveys between 2018 and 2025, including mallee-specific surveys. It is submitted that no Murray Mallee Striated Grasswren population occurs within the Impact Site.	**No significant impact**
b) Reduce the area of occupancy of a population.	The AOO was estimated to be 2800 km2 with low reliability (TSSC 2023). The AOO at should not be reduced by the proposal since the species was not found to be occupying the Impact Site.	**No significant impact**
c) Fragment an existing population into two or more populations.	No population or individuals of the species was not found on site during extensive surveys between 2018 and 2025. It is submitted that no Murray Mallee Striated Grasswren occurs within the Impact Site.	**No significant impact**
d) Adversely affect habitat critical to the survival of a species.	Habitat critical to the survival of the species has not been defined, however, the species is known to require Triodia grassland and prefer areas with large hummocks of spinifex, greatest 25 to 40 years post-fire. Such habitat is absent from the Impact Site.	**No significant impact**
e) Disrupt the breeding cycle of a population.	The proposed activity is not likely to disrupt the breeding cycle of a population, due to the points described above. No breeding population is known or likely to occur within the Impact Site.	**No significant impact**
f) Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the Species is likely to decline.	Habitat at the Site does not represent critical or preferred habitat, so it is a less than remote chance that the removal will lead to the species decline.	**No significant impact**
g) Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat.	Feral cats and foxes are already present within the Impact Site so will not be introduced. Weed introduction will be avoided through general biosecurity measures.	**No significant impact**
h) Introduce a disease that may cause a species to decline.	Disease is not considered a key threat to the species. No diseases that affect the Striated Grasswren are likely to be introduced as a direct or indirect result of the proposed action	**No significant impact**
i) Interferes with the recovery of the species.	The proposal is not anticipated to interfere with the recovery of the species.	**No significant impact**

The above assessment has determined that the proposal is not considered likely to have a significant impact on the Striated Grasswren. Significant survey effort over eight years have failed to record the species. Referral to the Department of Climate Change, Energy, the Environment and Water (DCCEEW) is not required for this Species.

Malleefowl (*Leipoa ocellata*)

EPBC Act Status: Vulnerable

Distribution

The stronghold for this species in NSW is the mallee in the southwest centred on Mallee Cliffs NP and extending east to near Balranald and scattered records as far north as Mungo NP. West of the Darling River a population also occurs in the Scotia mallee including Tarawi NR and Scotia Sanctuary and is part of a larger population north of the Murray River in South Australia.

The species predominantly inhabits mallee communities, preferring the tall, dense and floristically-rich mallee found in higher rainfall (300 - 450 mm mean annual rainfall) areas. Utilises mallee with a spinifex understorey, but usually at lower densities than in areas with a shrub understorey. Less frequently found in other eucalypt woodlands, such as Inland Grey Box, Ironbark or Bimble Box Woodlands with thick understorey, or in other woodlands such dominated by Mulga or native Cypress Pine species. Prefers areas of light sandy to sandy loam soils and habitats with a dense but discontinuous canopy and dense and diverse shrub and herb layers

Threats

Loss of habitat, fragmentation, degradation of habitat, inappropriate fire regimes, predation by cats and foxes, disturbance to active mound nests by feral goats and pigs, climate change are the main factors of the species population decline.

Survey Results

Direct surveys for the species were conducted, with call play backs and visual surveys conducted in areas where suitable habitat was observed. No birds, mounds or tracks were found during extensive surveys over eight years. Records of the species only occur north of the Subject Site.

Significant Impact Criteria

Significant impact guidelines for a vulnerable species are defined by DotE (2013) and are addressed below.

Table 23: Significant impact assessment – Malleefowl (*Leipoa ocellata*)

Significant Impact Criteria	Details	Resulting Impact
a) Lead to a long-term decrease in the size of a population of a species	No population, individuals or evidence of the species was found on site during extensive surveys between 2018 and 2025, including mallee-specific surveys. It is submitted that no Malleefowl population occurs within the Impact Site.	**No significant impact**
b) Reduce the area of occupancy of a population.	The A0O of the species is not stated, however, the lack of the species presence indicates the species is not reliant on the habitat to be cleared and therefore the AOO is a less than remote chance to be reduced by The Action.	**No significant impact**
c) Fragment an existing population into two or more populations.	There is little suitable Malleefowl habitat within the Impact Site and no population has been recorded nor evidence of the species found over many surveys.	**No significant impact**
d) Adversely affect habitat critical to the survival of a species.	Habitat critical to the survival of the species is poorly understood. in reserve systems in the Murray mallee of NSW, habitats on sandy substrates that support Triodia were of greatest importance (e.g. Woorinen and Red swale mallee sands) (DCCEEW, 2024). Approximately 12 ha of mallee habitat will be cleared, none of which represent preferred habitat for the species.	**No significant impact**

Significant Impact Criteria	Details	Resulting Impact
e) Disrupt the breeding cycle of a population.	The proposed activity is not likely to disrupt the breeding cycle of a population, due to the points described above.	**No significant impact**
f) Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the Species is likely to decline.	Due to the lack of the species presence in the Impact Site, it is considered a less than remote chance that the development will modify, destroy, remove or isolate habitat to such an extent that it will cause further species decline.	**No significant impact**
g) Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat.	No new invasive species that affects the Malleefowl are likely to be introduced as a direct or indirect result of the proposed action.	**No significant impact**
h) Introduce a disease that may cause a species to decline.	No diseases that affect the Malleefowl are likely to be introduced as a direct or indirect result of the proposed action.	**No significant impact**
i) Interferes with the recovery of the species.	The proposal is not anticipated to interfere with the recovery of the species.	**No significant impact**

The above assessment has determined that the proposal is not considered likely to have a significant impact on Malleefowl. Significant survey effort over eight years have failed to record the species or any evidence of the species within the Impact Site. Referral to the Department of Climate Change, Energy, the Environment and Water (DCCEEW) is not required for this Species.

Grey Falcon (*Falco hypoleucos*)

EPBC Act Status: Vulnerable

Distribution

The Grey Falcon is sparsely distributed in NSW, chiefly throughout the Murray-Darling Basin, with the occasional vagrant east of the Great Dividing Range. The species is restricted to shrubland, grassland and wooded watercourses of arid and semi-arid regions and also occurs near wetlands where surface water attracts prey. Gray Falcon preys primarily on birds, especially parrots and pigeons.

Threats

- Grazing and clearing of arid and semi-arid zone rangelands.
- Secondary poisoning through mouse and locust control programs.
- Taking of eggs and young for collections and falconry.
- Insufficient understanding of distribution. (OEH 2022s).

Survey Results

The Grey Falcon was not recorded within or near the Impact Site. NSW Bionet records search shows five 95) records within 10 km of the study site, with records all occurring close to the Anabranch to the east of the Impact Site.

Significant Impact Criteria

Significant impact guidelines for a vulnerable species are defined by DotE (2013) and are addressed below in Table 24.

Table 24: Significant impact assessment – Grey Falcon (*Falco hypoleucos*)

Significant Impact Criteria	Details	Resulting Impact
a) Lead to a long-term decrease in the size of an important population of a species.	One man-made ephemeral waterbody occurs onsite and will be retained during the dredging process. Salinity levels are very high such that it would be regarded as a salt water system, generally unsuitable as a water source for the species' prey. The species was not recorded during extensive survey. No important population is present within the Impact Site.	**No significant impact**
b) Reduce the area of occupancy of an important population.	No important population is considered to occur so the proposal would not likely reduce the AOO of any potential population.	**No significant impact**
c) Fragment an existing important population into two or more populations.	The Impact Site is not considered to support an important population.	**No significant impact**
d) Adversely affect habitat critical to the survival of a species.	Habitat critical to the survival has not been defined. The species frequents timbered lowland plains, particularly acacia shrublands that are crossed by tree-lined watercourses. Such habitat is not available at or near the Impact Site.	**No significant impact**
e) Disrupt the breeding cycle of an important population.	It is a less than remote chance the proposed activity will disrupt the breeding cycle of a population of Grey Falcon because no individuals have been observed within the site and are a less than remote chance to breed without the presence of fresh water watercourses.	**No significant impact**

Significant Impact Criteria	Details	Resulting Impact
f) Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the Species is likely to decline.	Due to the already fragmented state of the proposed development site, any further development is a less than remote chance to impact negatively on the quality of habitat potentially available to the species.	**No significant impact**
g) result in invasive species that are harmful to a V species becoming established in the V species' habitat.	The proponent will exercise their biosecurity obligations and will ensure potential harmful species to the Grey Falcon are not introduced.	**No significant impact**
h) Introduce a disease that may cause a species to decline.	Disease is not a recognised threat to the species.	**No significant impact**
i) Interferes with the recovery of the species.	There is no adopted or made Recovery Plan for this species (DCCEEW 2023). The proposed action does not interfere with any of the management objectives, actions within Key management sites or critical actions for this species as outlined by OEH (2022e). The Action will not interfere substantially with the recovery of the species.	**No significant impact**

The above assessment has determined that the proposal is not considered likely to have a significant impact on the Grey Falcon. Referral to the Department of Climate Change, Energy, the Environment and Water (DCCEEW) is not required for this Species.

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11. Appendices

A-1 Protected matters search tool results

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 15-Jan-2025

Summary
Details
- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat
Acknowledgements

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	3
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	3
Listed Threatened Species:	38
Listed Migratory Species:	9

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	15
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	2
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	8
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands) [Resource Information]

Ramsar Site Name	Proximity	Buffer Status
Banrock station wetland complex	50 - 100km upstream from Ramsar site	In buffer area only
Riverland	10 - 20km upstream from Ramsar site	In buffer area only
The coorong, and lakes alexandrina and albert wetland	200 - 300km upstream from Ramsar site	In buffer area only

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions	Endangered	Community may occur within area	In feature area
Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions	Endangered	Community may occur within area	In buffer area only
Mallee Bird Community of the Murray Darling Depression Bioregion	Endangered	Community likely to occur within area	In feature area

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Amytornis striatus howei			
Murray Mallee Striated Grasswren, Striated Grasswren (sandplain) [91648]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Aphelocephala leucopsis Southern Whiteface [529]	Vulnerable	Species or species habitat known to occur within area	In feature area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area	In buffer area only
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area	In feature area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat known to occur within area	In feature area
Lophochroa leadbeateri leadbeateri Major Mitchell's Cockatoo (eastern), Eastern Major Mitchell's Cockatoo, Pink Cockatoo (eastern) [82926]	Endangered	Species or species habitat known to occur within area	In feature area
Manorina melanotis Black-eared Miner [449]	Endangered	Species or species habitat known to occur within area	In feature area
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Pachycephala rufogularis Red-lored Whistler [601]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Pedionomus torquatus Plains-wanderer [906]	Critically Endangered	Species or species habitat may occur within area	In feature area
Polytelis anthopeplus monarchoides Regent Parrot (eastern) [59612]	Vulnerable	Breeding likely to occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area	In feature area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat may occur within area	In feature area
FISH			
Bidyanus bidyanus Silver Perch, Bidyan [76155]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Craterocephalus fluviatilis Murray Hardyhead [56791]	Endangered	Species or species habitat may occur within area	In buffer area only
Galaxias rostratus Flathead Galaxias, Beaked Minnow, Flat-headed Galaxias, Flat-headed Jollytail, Flat-headed Minnow [84745]	Critically Endangered	Species or species habitat may occur within area	In feature area
Maccullochella macquariensis Trout Cod [26171]	Endangered	Species or species habitat may occur within area	In buffer area only
Maccullochella peelii Murray Cod [66633]	Vulnerable	Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Macquaria australasica			
Macquarie Perch [66632]	Endangered	Species or species habitat may occur within area	In buffer area only
FROG			
Litoria raniformis			
Southern Bell Frog,, Growling Grass Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog [1828]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
MAMMAL			
Bettongia lesueur lesueur			
Burrowing Bettong (Shark Bay), Boodie [66659]	Vulnerable	Translocated population known to occur within area	In buffer area only
Leporillus conditor			
Wopilkara, Greater Stick-nest Rat [137]	Vulnerable	Translocated population known to occur within area	In buffer area only
Myrmecobius fasciatus			
Numbat [294]	Endangered	Translocated population known to occur within area	In buffer area only
Nyctophilus corbeni			
Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Onychogalea fraenata			
Bridled Nail-tail Wallaby, Bridled Nailtail Wallaby [239]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)			
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat may occur within area	In buffer area only
PLANT			
Atriplex infrequens			
[4143]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Lepidium monoplocoides			
Winged Pepper-cress [9190]	Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pterostylis xerophila Desert Greenhood [7997]	Vulnerable	Species or species habitat may occur within area	In feature area
Solanum karsense Menindee Nightshade [7776]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Swainsona murrayana Slender Darling-pea, Slender Swainson, Murray Swainson-pea [6765]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Swainsona pyrophila Yellow Swainson-pea [56344]	Vulnerable	Species or species habitat may occur within area	In feature area
REPTILE			
Hemiaspis damelii Grey Snake [1179]	Endangered	Species or species habitat may occur within area	In feature area

Listed Migratory Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area	In buffer area only
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area	In buffer area only

Other Matters Protected by the EPBC Act

Listed Marine Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat known to occur within area overfly marine area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area overfly marine area	In buffer area only
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat likely to occur within area overfly marine area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area	In buffer area only
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area overfly marine area	In feature area

Extra Information

State and Territory Reserves			[Resource Information]
Protected Area Name	Reserve Type	State	Buffer Status
Scotia	Private Nature Reserve	NSW	In buffer area only
Tarawi	Nature Reserve	NSW	In buffer area only

EPBC Act Referrals				[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Lake Victoria Wind Farm	2024/09965		Referral Decision	In feature area
Controlled action				
Electricity Transmission Line	2001/380	Controlled Action	Completed	In buffer area only
EnergyConnect NSW - Western Section	2020/8673	Controlled Action	Post-Approval	In buffer area only
Great Darling Anabranch - pipeline construction and environmental water flow ma	2004/1319	Controlled Action	Post-Approval	In buffer area only
Not controlled action				
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed	In feature area
Release of Captive Bridled Nailtail Wallabies	2010/5447	Not Controlled Action	Completed	In buffer area only
Not controlled action (particular manner)				
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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A-2 Likelihood of occurrence assessment

Table 25: Likelihood of Occurrence Assessment Summary

Scientific name	Common Name	EPBC Act	Distribution	Required Habitat	Likelihood of Occurrence	Justification	BioNet records within 10km
Ecological Communities							
Mallee Bird Community of the Murray Darling Depression Bioregion	Mallee Bird Community (MBC)	E	Entire Murray-Darling Depression IBRA bioregion, as well as NE Victoria and SE South Australia	Mallee communities, generally associated with unconsolidated sands and low rainfall (250-300mm annually). Coincides with PCTs 170 and 171 in the Impact Site. • Mallee communities in MDD • unconsolidated sands • low rainfall (250-300mm annually).	Moderate	Suitable habitat occurs within and adjacent to Linear Corridor	1
Coolibah Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions	Coolibah-Black Box Woodlands	E	Associated with the floodplains and drainage areas of the Darling Riverine Plains and the Brigalow Belt South IBRA bioregions.	Found on the grey, self-mulching clays of periodically waterlogged floodplains, swamp margins, ephemeral wetlands, and stream levees. Eucalyptus coolabah subsp. coolabah (Coolibah, Coolabah) and/or Eucalyptus largiflorens (Black Box) are the dominant canopy species and where the understory tends to be grassy.	Unlikely	The Impact Site is outside IBRA bioregion. Dominant species not recorded. Soils are sand based, not clay.	0
Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions	Buloke Woodlands	E	SW New South Wales, NW Victoria and eastern South Australia. In NSW occurs in the Riverina and Murray-Darling Depression Bioregions. In the north of the Murray-Darling Depression bioregion, restricted to near freshwater river systems (notably the Murray and Wimmera Rivers) or adjacent to sites of ground water discharge, such as Pink Lakes, the Raak Plain and Rocket Lake.	Dominated by *Allocasuarina luehmannii* or grey box *Eucalyptus microcarpa* and slender cypress-pine *Callitris gracilis*. Presence of clayey and/or alkaline sub-soils.	Unlikely	The Impact Site is distant from permanent freshwater systems. Dominant species are absent, clayey subsoils absent.	0
Birds							

Scientific name	Common Name	EPBC Act	Distribution	Required Habitat	Likelihood of Occurrence	Justification	BioNet records within 10km
Amytornis striatus howei	Murray Mallee Striated Grasswren	E	NSW, SA and Vic. in the Murray Mallee region where they now occur patchily through the Riverland Biosphere Reserve in South Australia, as well as in the adjacent Scotia in western New South Wales. In 2021, EOO was estimated to be 41,200 (40,000-43,000) km2 with high reliability. AOO was estimated to be 2,800 (1,400-5,600) km2 with low reliability – both declining.	Habitat is sandplains dominated by mature spinifex (Triodia spp.), typically with an overstorey of mallee eucalypts (Verdon et al. 2021). Confined to areas with well-developed Porcupine Grass, usually in association with mallee eucalypts and sandy soils. Prefers areas with large hummocks of spinifex which is greatest 25 to 40 years post-fire. are a substantial dome (with a side entrance) of interwoven grasses, bark and spinifex, well-hidden towards the top or edge of a spinifex clump (Rowley et al. 2020; DPIE 2021a). Breeding has been recorded Aug–Jan and following rainfall (Rowley et al. 2020). Breeding territory of the striated grasswren is approximately three hectares.	Moderate	Extensive field surveys to date have not detected the species	0
Aphelocephala leucopsis	Southern Whiteface	V	Occur across most of mainland Australia south of the tropics, from the northeastern edge of the Western Australian wheatbelt, east to the Great Dividing Range	There is a wide range of open woodlands and shrublands where there is an understory of grasses or shrubs, or both. These areas are usually in habitats dominated by acacias or eucalypts on ranges, foothills and lowlands, and plains. Favour habitat with low tree densities and an herbaceous understory litter cover.	High	Recorded across the Impact Site	
Botaurus poiciloptilus	Australasian Bittern	E	widespread but uncommon over south-eastern Australia. In NSW they may be found over most of the state except for the far northwest.	Prefers permanent freshwater wetlands with tall, dense vegetation. Spends the day in reeds or rushes and feeds mostly at night.	Unlikely	Suitable habitat absent	0
Calidrus acuminata	Sharp-tailed Sandpiper	V	Occurs in Australia during the non-breeding part of the year. Found on both the coast and inland areas. widespread in most regions of New South Wales and Victoria, especially in coastal areas. Flies north to Siberia to breed.	utilises fresh and hypersaline environments, feeding along the edge of water on mudflats, coastal and inland wetlands, and sewage ponds On migration, the species forages and roosts on rocky and sandy beaches, freshwater habitats, and inland saltwater habitats	Low	Salt lake only available during infrequent wet periods	0
Calidrus ferruginea	Curlew Sandpiper	CE Marine	distributed around most of the Australian coastline (including Tasmania). It occurs along the	generally, occupies littoral and estuarine habitats, and in New South Wales is mainly found in intertidal mudflats of sheltered coasts.	Low	Wet habitat only available during	3

Scientific name	Common Name	EPBC Act	Distribution	Required Habitat	Likelihood of Occurrence	Justification	BioNet records within 10km
			entire coast of NSW, particularly in the Hunter Estuary, and sometimes in freshwater wetlands in the Murray-Darling Basin. Inland records are probably mainly of birds pausing for a few days during migration. The Curlew Sandpiper breeds in Siberia and migrates to Australia (as well as Africa and Asia) for the non-breeding period, arriving in Australia between August and November, and departing between March and mid-April	It also occurs in non-tidal swamps, lakes and lagoons on the coast and sometimes inland. It forages in or at the edge of shallow water, occasionally on exposed algal mats or waterweed, or on banks of beach-cast seagrass or seaweed. It roosts on shingle, shell or sand beaches; spits or islets on the coast or in wetlands; or sometimes in salt marsh, among beach-cast seaweed, or on rocky shores. Curlew Sandpipers are omnivorous, feeding on worms, molluscs, crustaceans, insects and some seeds.		infrequent wet periods	
Falco hypoleucos	Grey Falcon	V	Occurs in arid and semi-arid Australia, including the Murray-Darling Basin, Eyre Basin, central Australia and Western Australia. Sparsely distributed in NSW, chiefly throughout the Murray-Darling Basin, with the occasional vagrant east of the Great Dividing Range	Usually restricted to shrubland, grassland and wooded watercourses of arid and semi-arid regions, although it is occasionally found in open woodlands near the coast. Also occurs near wetlands where surface water attracts prey. Species is highly vagrant.	Low	Vagrant, no wooded watercourses within 10km	5
Gallinago hardwickii	Latham's Snipe	V Marine	a non-breeding visitor to south-eastern Australia, west of the Great Dividing Range in New South Wales. breed in Hokkaido and highland areas of Honshu in Japan, and in Sakhalin and the nearby Kuril Islands of far eastern Russia	Habitat in Australia includes permanent and ephemeral wetlands. feed in soft mudflats or shallow water typically at night, early morning, or evening. omnivorous and feeds on seeds and other plant material of reeds and grasses. Roost in adequate shallow flooded or inundated substrate with dense cover comprising sedges, grasses, lignum, reeds, and rushes	Low	Ephemeral wetlands available only occasionally after significant rainfall	0
Grantiella picta	Painted Honeyeater	V	nomadic and occurs at low densities throughout its range. The greatest concentrations of the bird and almost all breeding occurs on the inland slopes of	inhabits mistletoes in eucalypt forests/woodlands, riparian woodlands of black box and river red gum, box-ironbark-yellow gum woodlands, acacia-dominated woodlands, paperbarks, casuarinas, Callitris, and trees on farmland or	Low	Mistletoes uncommon	0

Scientific name	Common Name	EPBC Act	Distribution	Required Habitat	Likelihood of Occurrence	Justification	BioNet records within 10km
			the Great Dividing Range in NSW, Victoria and southern Queensland. exhibits seasonal north-south movements governed principally by the fruiting of mistletoe. During the winter it is more likely to be found in the north of its distribution. 100 per cent of mature individuals exist in one subpopulation	gardens. The species prefers woodlands which contain a higher number of mature trees, Inhabits Boree/Weeping Myall (Acacia pendula), Brigalow (A. harpophylla) and Box-Gum Woodlands and Box-Ironbark Forests. Feeds on mistletoes preferably the genus *Amyema*., occasionally insects and nectar from mistletoe and eucalypts			
Leipoa ocellata	Malleefowl	V	Occurs in mallee in the NSW southwest centred on Mallee Cliffs NP and extending east to near Balranald and scattered records as far north as Mungo NP. West of the Darling River a population also occurs in the Scotia mallee including Tarawi NR and Scotia Sanctuary.	Predominantly inhabit mallee communities, preferring the tall, dense and floristically-rich mallee found in higher rainfall (300- 450 mm mean annual rainfall) areas. Utilises mallee with a spinifex understorey, but usually at lower densities than in areas with a shrub understorey. Semi-arid to arid shrublands and low woodlands dominated by mallee and associated habitats, such as broom-bush *Melaleuca uncinata* and native pine Callitris spp. scrub (Frith 1962a, b; Marchant & Higgins 1993; Benshemish 1999; Garnett & Crowley 2000). Favours mallee that is long unburnt and ungrazed (that is, old growth).	Moderate	Not recorded during extensive surveys, mounds should be noticeable, never seen by owner but known from Scotia & Tarawi NR and mallee present in Impact Site.	84
Lophochroa leadbeateri leadbeateri	Pink Cockatoo	E	Found across the arid and semi-arid inland, from south-western Queensland south to northwest Victoria, through most of South Australia, north into the south-west Northern Territory and across to the west coast between Shark Bay and about Jurien. In NSW it is found regularly as far east as about Bourke and Griffith, and sporadically further east than that.	Inhabits a wide range of treed and treeless inland habitats, always within easy reach of water. Nests in large old Hollow Bearing Trees.	High	Recorded	162
Manorina melanotis	Black-eared Miner	E		Birds are restricted to large tracts (30,000 hectares or greater) of mature, unfragmented mallee on the more fertile soils. Occupies	Fair	Not detected by survey or call playback	19

Scientific name	Common Name	EPBC Act	Distribution	Required Habitat	Likelihood of Occurrence	Justification	BioNet records within 10km
				vegetation with a post fire age of greater than 25 years but is most abundant in areas with a post fire age of 50 years or more. Restricted to mature mallee eucalypt woodland, favouring areas that have not been burnt for at least 50 years and have not been cleared (Starks 1987; McLaughlin 1990; Muir et al. 1999). Nests are built in upright forks of mallee eucalypts or dense epicormic shoots (McLaughlin 1990; Higgins et al. 2001). Habitat quality declines in long unburnt sites after several decades and senescent spinifex is unsuitable habitat for this species (Verdon et al. 2021).			
Melanodryas cucullata cucullata	South-eastern Hooded Robin	E	South-eastern Australia from far southeast Queensland to Yorke Peninsula, South Australia EOO and AOO are estimated at 1,200,000 km2 (range 1,100,000–1,400,000 km2) and 30,000 km2 (16,000–50,000 km2), respectively (Ford et al. 2021). Both the EOO and AOO estimates for the subspecies have contracting trends (Ford et al. 2021).	Found in open eucalypt woodlands, acacia scrub and mallee, often in or near clearings or open areas. Requires diverse habitats with mature eucalypts, saplings, small shrubs and moderately tall native grasses. Often perches on low dead stumps and fallen timber or on low-hanging branches, using a perch-and-pounce method of hunting insect prey.	High	Recorded on the Impact Site	35
Neophema chrysostoma	Blue-winged Parrot	V	Found from coastal, sub- coastal and inland areas, through to semi-arid zones. During the non-breeding period, from autumn to early spring, birds are recorded from northern Victoria, eastern South Australia, south-western Queensland and western New South Wales. breed on mainland Australia south of the Great Dividing Range in southern Victoria, far southeast of	Habitat critical to the survival of the blue-winged parrot include areas that include: • Foraging and staging habitats found from coastal, sub-coastal and inland areas, right through to semi-arid zones including: grasslands, grassy woodlands and semi-arid chenopod shrubland with native and introduced grasses, herbs and shrubs. • Wetlands both near the coast and in semi-arid zones used for foraging and staging. • Eucalypt forests and woodlands within the breeding range in Tasmania, coastal south eastern South Australia and southern Victoria.	Moderate	Potential foraging habitat, outside breeding range	6

Scientific name	Common Name	EPBC Act	Distribution	Required Habitat	Likelihood of Occurrence	Justification	BioNet records within 10km
			South Australia, and the north-western, central and eastern parts of Tasmania	• Live and dead trees and stumps with suitable hollows within the breeding range.			
Pachycephala rufogularis	Red-lored Whistler	V		Found in mallee woodland with a shrub layer, usually of Broombush and native pine such as Mallee Pine (*Callitris verrucosa*), with occasional patches of spinifex and emergent mallee, forming a relatively dispersed canopy.	Fair	Scattered habitat present	3
Pedionomus torquatus	Plains-wanderer	CE		Plains-wanderers live in semi-arid, lowland native grasslands that typically occur on hard red-brown soils. These grasslands support a high diversity of plant species, including a number of state and nationally threatened species.	Low	Soils are sand-based not clay	1
Polytelis anthopeplus monarchoides	Regent Parrot	V	South-western NSW and Victoria. In NSW it occurs along the Murray River downstream of Tooleybuc, the Wakool River downstream of Kyalite, and the Murrumbidgee River immediately upstream from the junction with the Murray River and adjoining areas of mallee.	Occurs in riverine river red gum woodlands, adjacent black box, belah, buloke and cypress pine woodlands, and mallee woodlands and shrublands (Beardsell 1985; Burbidge 1985; Webster 1991; Emison et al. 1987). Often occurs in farmland Most feeding activity is on the ground, foraging for grass seed. They also seek seed and blossoms in the limbs of trees, usually acacia and eucalypt species. Nesting is at the base of a tree hollow of great depth, up to fifteen feet within the main stem of the plant. The site is usually a large eucalyptus, with a hollow in the trunk that may reach almost to ground level Habitat constraint is living or dead Eucalyptus camaldulensis with hollows >5 cm, more than 5 m above the ground, OR trees with DBH greater than 40 cm within 1 km of watercourses or billabongs. Trees can be isolated but within 20 km of mallee habitats. Surveys for this species can be limited by restricting surveys to within 1km of waterways and where suitable trees occur. As per the TBDC, breeding habitat is identified by an observed nest or observation of two or more birds on site	Low	Impact Site is greater than 30 km from the Murray and Murrumbidgee Rivers	

Scientific name	Common Name	EPBC Act	Distribution	Required Habitat	Likelihood of Occurrence	Justification	BioNet records within 10km
Rostratula australis	Australian Painted Snipe	E		Prefers fringes of swamps, dams and nearby marshy areas where there is a cover of grasses, lignum, low scrub or open timber.	None	Ephemeral wetlands available only occasionally after significant rainfall	0
Stagonopleura guttata	Diamond Firetail	V		Found in grassy woodlands including Box-Gum Woodlands and Snow Gum Woodland.	None	Suitable habitat absent. Not recorded during extensive surveys. No records in locality.	0
				Frogs			
Litoria raniformis	Southern Bell Frog	E	In NSW the species occurs from Bombala in the far south-eastern corner of the state, through the Southern Tablelands, and along the Murrumbidgee and Murray Rivers (Pyke 2002). Suitable breeding and non-breeding shelter habitat consists of any waterbody with emergent aquatic vegetation and preferably without the plague minnow (Gambusia holbrook,). Foraging habitat and migratory habitat are areas of native and nonnative vegetation connected to the identified breeding habitat.	Usually found in or around permanent or ephemeral Black Box/Lignum/Nitre Goosefoot swamps, Lignum/Typha swamps and River Red Gum swamps or billabongs along floodplains and river valleys. Breeding is triggered by flooding of ephemeral waterbodies during spring or summer. Does not occur in waterbodies where salinity levels exceed 7.0 ms/cm for lengthy periods. Large, continuous areas containing both permanent and ephemeral waterbodies that undergo regular flooding and are surrounded by areas containing suitable refugia in the form of ground debris, vegetation cover and cracking soils.	Low	Breeding habitat absent, no permanent water on site, salinity levels in saltpan /wetland too high as flooding is irregular. Refugia may be available on site.	14
				Reptiles			
Hemiaspis damelii	Grey Snake	E	The distribution and ecology of H. damelii is poorly known. Existing records of the grey snake are most commonly found in south-eastern Queensland and north-central New South Wales, however	It tends to favour dry sclerophyll forests and woodlands on clay soils where water bodies or gullies are present. It shelters under rocks, logs and other debris, as well as in cracks in soil.	Low	Suitable habitat absent. Reptile hand searches undertaken at 74 locations for 30 minutes each. Total	

Scientific name	Common Name	EPBC Act	Distribution	Required Habitat	Likelihood of Occurrence	Justification	BioNet records within 10km
			small populations have also been found to occur in north-eastern South Australia and south-western New South Wales.			survey effort was 2,220 person minutes. Not recorded.	
Mammals							
Bettongia leseur leseur	Burrowing Bettong	V	Extinct in the area. Translocated population known in Scotia sanctuary	Known from translocated population in Scotia sanctuary	Unlikely	Suitable habitat absent. Extinct in wild in NSW. captive bred translocated to Scotia sanctuary	0
Leporillus conditor	Greater Stick-nest Rat	V	Extinct historical in the area Translocated population known to occur within area	Known from translocated population in Scotia sanctuary	Unlikely	Suitable habitat absent. Extinct in wild in NSW. captive bred translocated to Scotia sanctuary	0
Myrmecobius fasciatus	Numbat	E	Extinct in the area Translocated population known to occur within area	Known from translocated population in Scotia sanctuary	Unlikely	Extinct in wild in NSW. captive bred translocated to Scotia sanctuary	0
Nyctophilus corbeni	Corben's Long-eared Bat	V	Found across the Murray Darling Basin with the Pilliga Scrub region being the distinct stronghold for this species	Inhabits a variety of vegetation types, including mallee, bulloke *Allocasuarina leuhmanni* and box eucalypt dominated communities, but it is distinctly more common in box/ironbark/cypress-pine vegetation that occurs in a north-south belt along the western slopes and plains of NSW and Southern Qld.	Fair	Mallee habitat present Results of anabat surveys?	0
Onychogalea fraenata	Bridled Nail-tail Wallaby	E		Known from translocated population in Scotia sanctuary	Unlikely	Suitable habitat absent. Extinct in wild in NSW. captive bred translocated to Scotia sanctuary	
Phascolarctos cinereus	Koala	E	typically occurs in eastern Australian forests and	habitat that is critical to the survival of a species:	Unlikely		0

Scientific name	Common Name	EPBC Act	Distribution	Required Habitat	Likelihood of Occurrence	Justification	BioNet records within 10km
(combined populations of Qld, NSW and ACT)	Important population defined as • have the potential to act as source populations to adjacent areas of suitable, or potentially suitable, habitat; • exist in areas of climatically suitable refugia during periods of environmental stress including droughts, heatwaves, and long-term climate change; • are genetically diverse; • are disease free and/or exhibit low rates of infection with important pathogens; • contain genes which may confer adaptation to current and future environmental		woodlands of predominantly Eucalyptus species. listed population of the koala has a wide but patchy distribution that spans the coastal and inland areas of Queensland north to the Herberton area, extending westwards into hotter and dryer semi-arid climates of central Queensland, New South Wales and the Australian Capital Territory. In NSW include Murray Darling Depression bioregion stressors; • are geographical or environmental outliers within the species range.	(a) whether the habitat is used during periods of stress (examples: flood, drought or fire); (b) whether the habitat is used to meet essential life cycle requirements (examples: foraging, breeding, nesting, roosting, social behaviour patterns or seed dispersal processes); (c) the extent to which the habitat is used by important populations; (d) whether the habitat is necessary to maintain genetic diversity and long-term evolutionary development; (e) whether the habitat is necessary for use as corridors to allow the species to move freely between sites used to meet essential life cycle requirements; (f) whether the habitat is necessary to ensure the long-term future of the species or ecological community through reintroduction or re-colonisation; (g) any other way in which habitat may be critical to the survival of a listed threatened species or a listed threatened ecological community. New South Wales has identified critical koala populations as “areas of currently known high koala occupancy”		No koala records and no evidence of koalas recorded during survey. Suitable habitat absent	
Plants							

Scientific name	Common Name	EPBC Act	Distribution	Required Habitat	Likelihood of Occurrence	Justification	BioNet records within 10km
Atriplex infrequens	A Saltbush	V		Occurs in a broad range of drainage tracts, clay flats and possibly occasionally inundated habitats	Low	Not found in 5,500 threatened flora surveys undertaken across a 100m grid over the entire Impact Site; nor in any VI plots totalling 80 + previous	1
Lepidium monoplocoides	Winged Pepper-cress	E		Occurs on seasonally moist to waterlogged sites, on heavy fertile soils, with a mean annual rainfall of around 300-500 mm Predominant vegetation is usually an open woodland dominated by *Allocasuarina luehmannii* (Bulloak) and/or eucalypts, particularly *Eucalyptus largiflorens* (Black Box) or *Eucalyptus populnea* (Poplar Box).	Low	Not found in 5,500 threatened flora surveys undertaken across a 100m grid over the entire Impact Site	0
Pterostylis xerophila	Desert Greenhood	V		Occurs in generally remote locations in semi-desert environments, growing mostly on rock outcrops under low shrubs. Only eight populations containing about 150 plants are known	Low	Not found in 5,500 threatened flora surveys undertaken across a 100m grid over the entire Impact Site. No rock outcrops present	0
Solanum karsense	Menindee Nightshade	V		Grows in occasionally flooded depressions with heavy soil, including level river floodplains of grey clay with Black Box and Old Man Saltbush, and open treeless plains with solonized brown soils • Habitats are generally lake beds or floodplains of heavy grey clays with a highly self-mulching surface. Also found on sandy floodplains and ridges and in calcareous soils, red sands, red-brown earths and loamy soils. • This species is ephemeral in nature, appearing following rainfall events. It also tolerates disturbance	Low	Not found in 5,500 threatened flora surveys undertaken across a 100m grid over the entire Impact Site	6

Scientific name	Common Name	EPBC Act	Distribution	Required Habitat	Likelihood of Occurrence	Justification	BioNet records within 10km
Swainsona murrayana	Slender Darling-pea	V		The species has been collected from clay-based soils, ranging from grey, red and brown cracking clays to red-brown earths and loams.	Low	Not found in 5,500 threatened flora surveys undertaken across a 100m grid over the entire Impact Site.	0
Swainsona pyrophila	Yellow Swainson-pea	V		Found in Box-Gum Woodland in the Southern Tablelands and Southwest Slopes. • Sometimes found in association with cypress-pines Callitris spp.	Low	Not found in 5,500 threatened flora surveys undertaken across a 100m grid over the entire Impact Site.	0
Migratory Marine species							
Apus pacificus	Fork-tailed Swift	MM	occur over inland plains but sometimes above foothills or in coastal areas. They often occur over cliffs and beaches and also over islands and sometimes well out to sea				1
Migratory Terrestrial species							
Motacilla cinerea	Grey Wagtail	MM					
Motacilla flava	Yellow Wagtail	MM					
Migratory Wetland species							
Actitis hypoleucos	Common Sandpiper	MW	A small sandpiper that is widely distributed in small numbers along the coast of Australia and in many inland regions.				1
Calidris acuminata	Calidris acuminata	MW					
Calidris melanotos	Pectoral Sandpiper	MW	A small to medium sandpiper. In Australia it can be found in both shallow fresh and salt water.				0

Scientific name	Common Name	EPBC Act	Distribution	Required Habitat	Likelihood of Occurrence	Justification	BioNet records within 10km
			The sandpiper flies to Russia and Northern America to breed.				
Pandion haliaetus	Osprey	MW					
Marine							
Bubulcus ibis as Ardea ibis	Cattle Egret	Marine	The Cattle Egret occurs in tropical and temperate grasslands, and terrestrial wetlands. It has occasionally been seen in arid and semi-arid regions however this is extremely rare.				
Chalcites osculans as Chrysococcyx oscula	Black-eared Cuckoo	Marine					
Haliaeetus leucogaster	White-bellied Sea-Eagle	Marine					
Hydroprogne caspia	Caspian Tern	-	breeding habitat is large lakes and ocean coasts in Australasia.	Sheltered coastal embayments, estuaries, and sandy or muddy shorelines, roost and loaf on sandbars, exposed sand or shell spits, and beaches. Inland wetlands or in large lakes (including ephemeral lakes), waterholes, reservoirs, rivers, and creeks are utilized.	Low	Not found in 5,500 threatened flora surveys undertaken across a 100m grid over the entire Impact Site. No suitable habitat for the Species on the Impact Site	1
Merops ornatus	Rainbow Bee-eater	Marine					

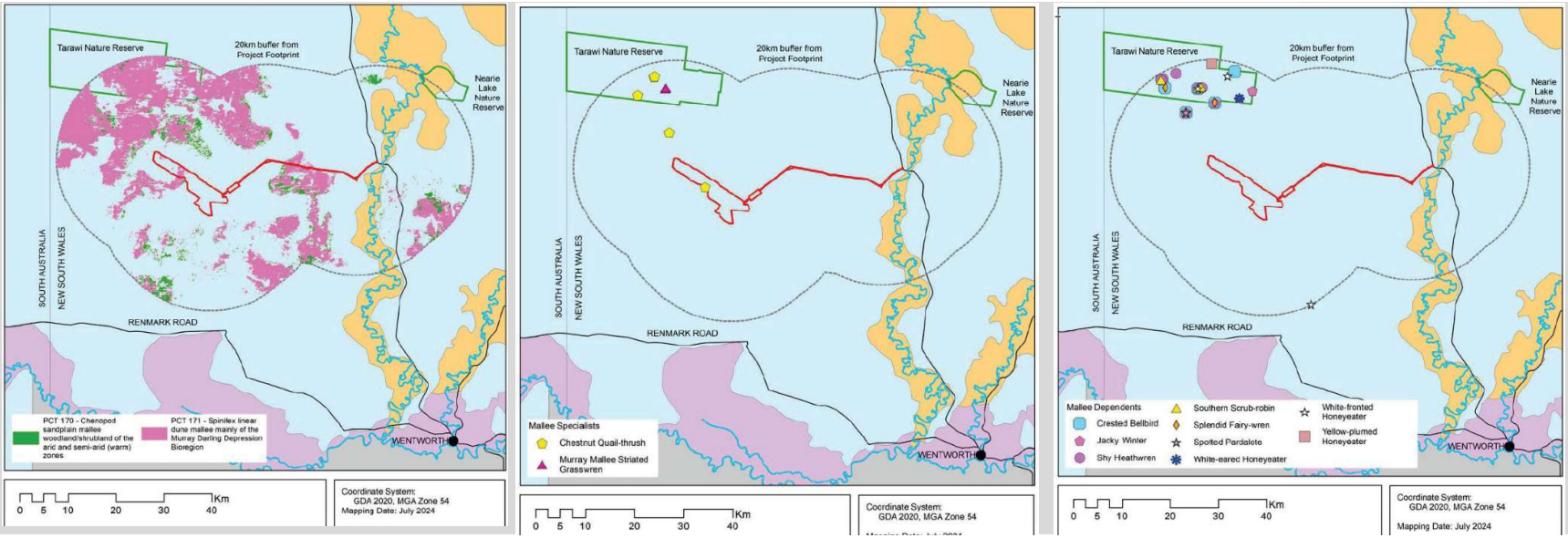
*Note: Where species fall into more than one category, they are listed in the uppermost category in Table 2.

Table 3: EPBC Act listed TECs and threatened species recorded or with high likelihood of occuring in the Impact Site

Common name	Scientific name	Listing status EPBC Act	Occurrence assessment	Habitat critical to the survival	Habitat within the Study Area and/ or Impact Site
		Threatened Ecological Communities			

Mallee Bird Community	*Mallee Bird Community of the Murray Darling Basin*	E	Moderate likelihood –
			
			Mine Site mallee does not meet TEC size criteria.
			Linear Corridor mallee likely meets size criteria. No mallee specialists or dependents recorded in or adjacent to Linear Corridor.
			
			Across the site, field surveys identified one mallee specialist (Chestnut Quail-thrush) on a single occasion as a single bird) and several mallee dependent species, being:
			• Crested Bellbird
			• Grey-fronted Honeyeater
			• Jacky Winter
			• Splendid Fairy-wren
			• Yellow-plumed Honeyeater
				• Known populations of threatened mallee birds listed individually under national environment law, especially the limited range mallee specialists
				• Areas where several members of the Mallee Bird community are known to occur
				• Areas where several members of the Mallee Bird community were formerly known to occur (recorded) within at least the past ten years and bird populations and/or mallee habitats
				• Areas where there has been long-term monitoring of either bird populations and/or mallee habitats may regenerate
				
				Areas of high value:
				• Mallee habitats that are most intact, larger and retain mid to old growth mallee trees (particularly those with hollows) and support a diversity of bird species.
				• Occurrences outside of conservation tenure that function as wildlife corridors that connect conservation areas where the Mallee Birds occur, or function as havens for some populations of Mallee Birds
				• Occurrences in habitats that have surrounding, adjacent and/or buffering areas of native vegetation.
				• Occurrences that are in areas where the ecological community has been most heavily
				• impacted, or that are at the natural edge of some species' range.
				• Areas of woodland that contain nationally or state-listed threatened species, not limited to members of the Mallee Bird Community.
				• Mallee areas where key threats are relatively low level or where these can be managed efficiently, notably for pest animal impacts.
					TEC = Mallee PCTs 170 and 171 where:
					• Native vegetation (*50% or more native crown cover and 50% or more native perennial cover less than 2m*) patch is at least 10 ha with at least 5 ha of mallee with:
					  • Tree canopy crown cover of at least 5% and <70%
					  • Mallee eucalypt trees as the dominant tree canopy type present
					  • At least 3 specialist or dependent bird species recorded

Common name	Scientific name	Listing status EPBC Act	Occurrence assessment	Habitat critical to the survival	Habitat within the Study Area and/ or Impact Site



Maps above show mallee habitat (left), mallee specialist records (centre) and malle dependent records (right) within 20km of The Action.
Note: Former proposed Impact Site shown, NW section of Action now removed.

		Threatened Fauna			
Pink Cockatoo		E	Recorded	• Arid and semi-arid woodlands dominated by mulga (*Acacia aneura*), mallee and box eucalypts, slender cypress pine (*Callitris gracilis*) or belah (*Casuarina cristata*).	• Treed PCTs 154, 170, 171, 221, 253, 254 • Within 500m of water • >5ha of intact vegetation and corridors

Common name	Scientific name	Listing status	Occurrence assessment	Habitat critical to the survival	Habitat within the Study Area and/ or Impact Site
		EPBC Act			
				• Known habitat containing suitable attributes, including potential habitat for the subspecies, especially where there are large mature trees with suitable hollows; and • Surrounding matrix of these areas for the role of providing movement corridors for dispersal across the landscape. •Nests occur in very old trees with large hollows	• For nesting – • Mature trees with DBH >34 to <150cm with • Hollows greater than 10 cm in diameter (TBDC, retrieved from BioNet Atlas), or • Hollows with entrance minimum 8cm horizontal x 9 cm vertical - larger better (up to 30x80) and depth 19-180cm (Hurley & Harris, 2014)
South-eastern Hooded Robin		E	Recorded	• dry eucalypt and acacia woodlands and shrublands remnants with an open understorey, some grassy areas and a complex ground layer, often in or near clearings or open areas; • structurally diverse habitats featuring: mature eucalypts, saplings, some small shrubs and a ground layer of moderately tall native grasses; • standing dead or live trees and tree stumps are also essential for nesting, roosting and foraging; • moderately deep to deep soils, rocks and fallen timber which provides essential foraging habitat.	Treed communities - PCTs 58, 170, 171, 221 and 254 in moderate to good condition - not badly impacted by goats • With an open understorey • Containing or adjacent open areas • Complex understorey • Deep soils • Rocks and fallen timber> 10% cover • Standing dead trees and tree stumps
Southern Whiteface	*Aphelocephala leucopsis*	V	Recorded	• areas of relatively undisturbed open woodlands and shrublands with an understorey of grasses or shrubs, or both; • habitat with low tree densities and an herbaceous understory litter cover which provides essential foraging habitat; • living and dead trees with hollows and crevices which are essential for roosting and nesting. Breeding season typically occurs between July to October but can vary in the arid regions depending on rainfall and birds may not breed at all during periods of drought (Higgins and Peter 2002). Nests are made of grass, bark and roots in a large bulky dome shape usually in a hollow or crevice, or sometimes in low bushes.	Open woodlands and shrublands with grassy or shrubby understorey or herbaceous understorey litter cover • All PCTs (except 64) in good condition - not impacted by goats • Hollow Bearing Trees
Striated Grasswren	*Amytornis striatus howei*	V	Moderate likelihood	A spinifex obligate species known to occur with or without an overstory of mallee eucalypts, on sand plains and dunes in south-western NSW, eastern SA, and north-western Victoria	• PCTs 170 and 171

Common name	Scientific name	Listing status	Occurrence assessment	Habitat critical to the survival	Habitat within the Study Area and/ or Impact Site
		EPBC Act			
Malleefowl	*Leipoa ocellata*	V	Low likelihood	Not well understood In MDD - habitats on sandy substrates that support *Triodia* . Prefer old growth mallee (40+ years). Abundance of leaf litter necessary for nesting. Utilises mallee with a spinifex understorey, but usually at lower densities than in areas with a shrub understorey. Abundance of food plants (esp. leguminous shrubs and herbs may be important.	• PCTs 170 and 171 with Triodia
Grey Falcon	*Falco hypoleucos*	V	Low likelihood	Not specifically listed. Use arid timbered lowland plains, particularly acacia shrublands that are crossed by tree-lined water courses Prey species presence, including doves, pigeons, small parrots and cockatoos, and finches. The nests chosen are usually in the tallest trees along watercourses, particularly River Red Gum *(Eucalyptus camaldulensis*) and Coolibah (E. *coolabah*), but falcons also nest in telecommunication towers	• Tall trees • No tree-lined watercourses within 20km • No permanent water on site
Corben's Long-eared Bat	*Nyctophilus corbeni*	V	Fair likelihood	Not specifically listed. Old-growth vegetation is a critical habitat component in the Victorian distribution. Dead trees or dead spouts of live trees important for roosting. The species has also been found to be much more abundant in habitats that have a distinct tree canopy and a dense, cluttered understorey layer and is more abundant in extensive stands of vegetation in comparison to smaller woodland patches. Species is distinctly more common in box / ironbark / cypress-pine vegetation that occurs in a north-south belt along the western slopes and plains of New South Wales	• Old growth- Hollow Bearing Trees, dead trees • PCTs

A-3 Details Targeted Threatened Species Survey Effort

A-3-1 Flora Species

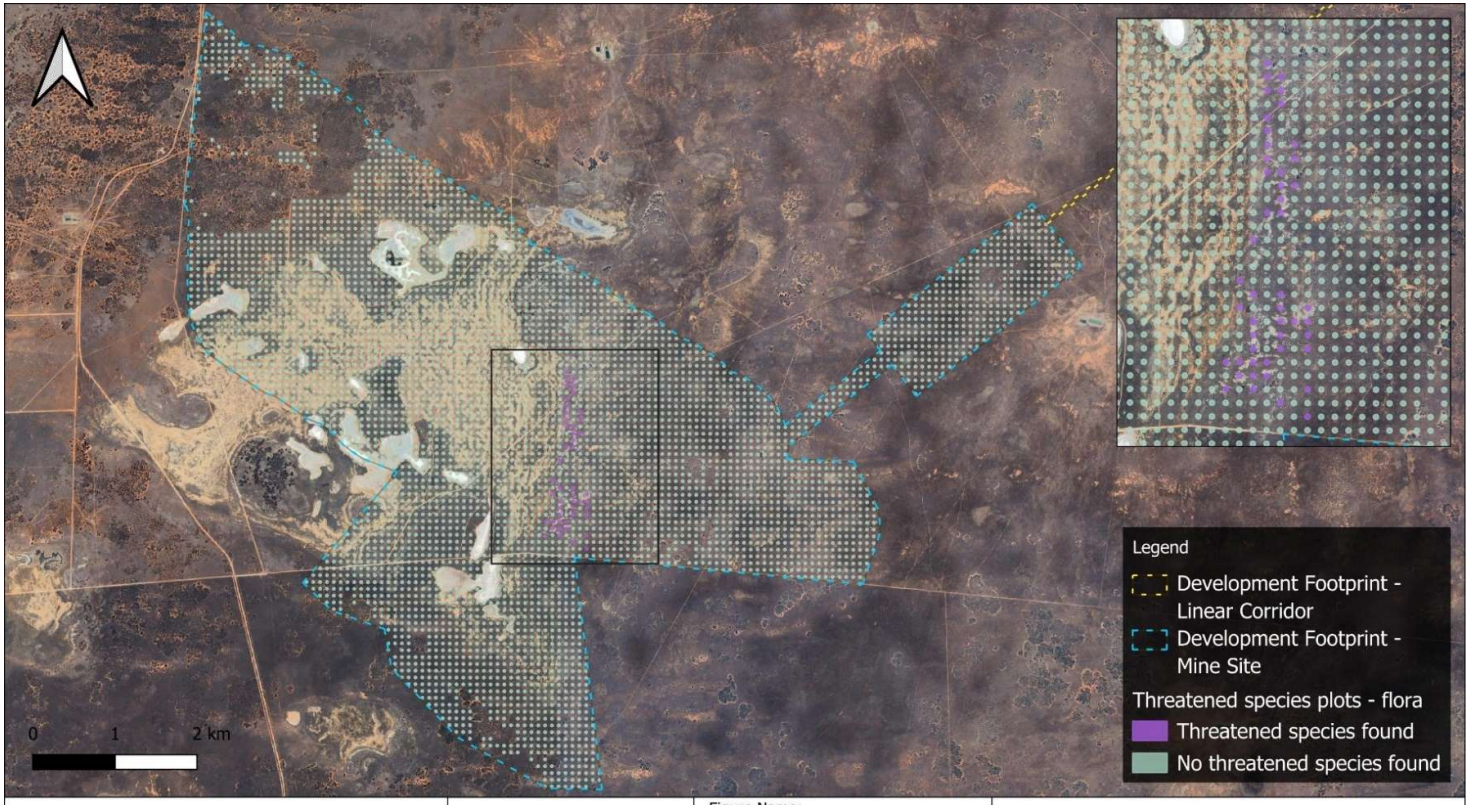
Two-phase Grid-based systematic large Area survey

A targeted survey for threatened flora species was undertaken over the Impact Site between 11th November and 30th November 2024.

The survey method for the target species followed the *Surveying Threatened Plants and Their Habitats* and the *NSW Survey guide for the Biodiversity Assessment Method 2020* consisting of botanists walking over large areas of suitable habitat using a two-phase grid-based systematic survey approach. Survey locations were positioned on a 100 m grid intersect, facilitating planning and enabling rapid assessment across larger areas. At each survey location (grid intersect), a 40 m diameter area was surveyed (Figure 31, Figure 32, Figure 33, Figure 34, Figure 35). This survey technique typically involves searches along a grid of parallel traverses within the Subject Land.

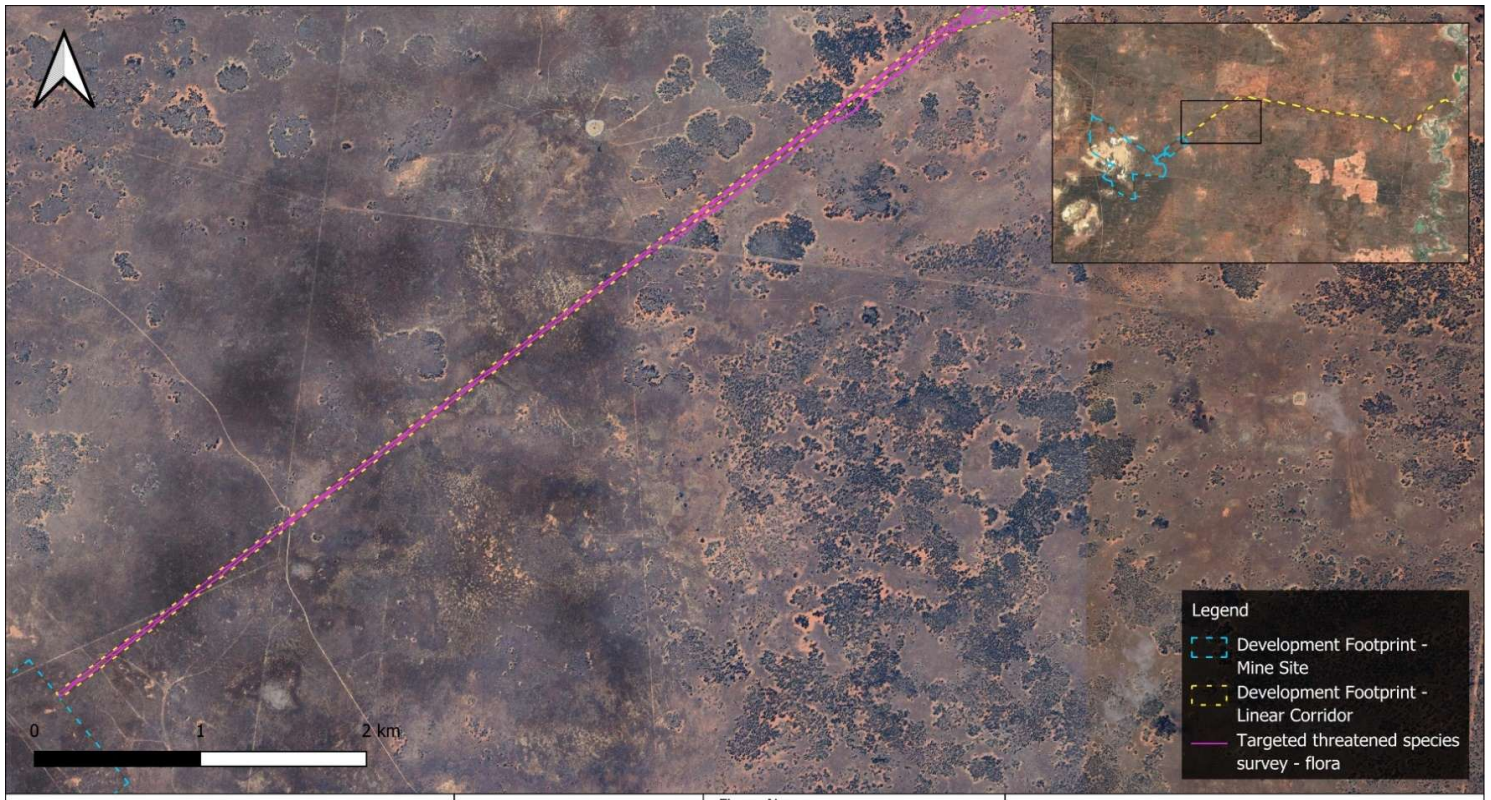
Multiple threatened plant species were searched during the same traverse. However, to ensure detectability is not compromised the survey followed what is recommended that multiple-species searches should be restricted to a maximum of five species in the same stratum (i.e. search for five ground species, five mid-layer species or five canopy species) per traverse (Table 26). The surveys were conducted within the area covered by the 100-square-metre grid, as the habitat and life forms were similar to the same type and have the same optimal survey time as specified by the TBDC.

If the initial 100 m grid survey (nested within a one-square-kilometre topographic map grid) fails to detect the target species, no further surveys are required in that location (BAM, 2020).



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Targeted Threatened Species Flora Survey - Development Footprint - Mine Site	Biodiversity AUSTRALIA	
	Drawn by: NE	Location: Warwick Station		
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:60000

Figure 31: Large area targeted threatened flora surveys within the Impact Site – Mine Site



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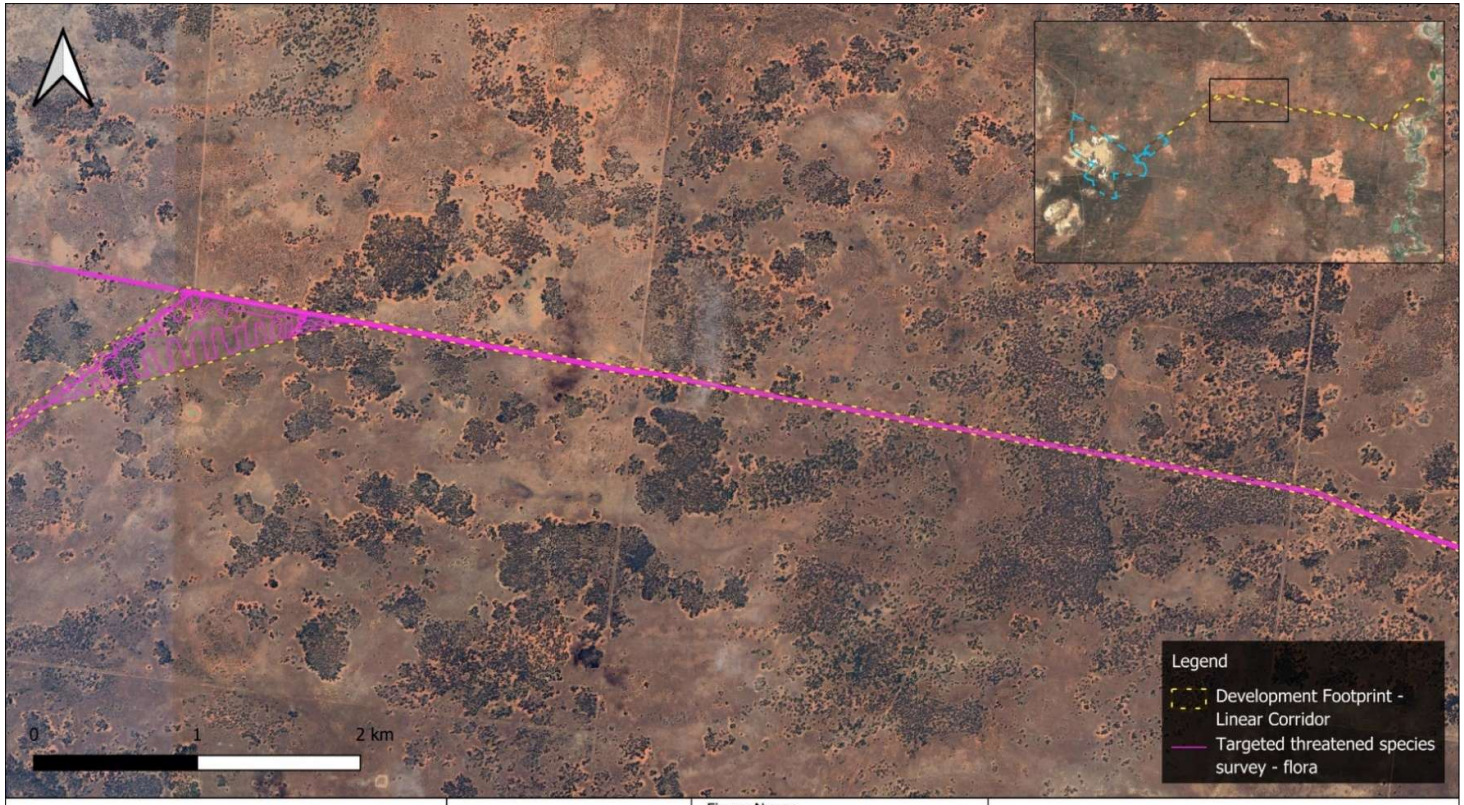
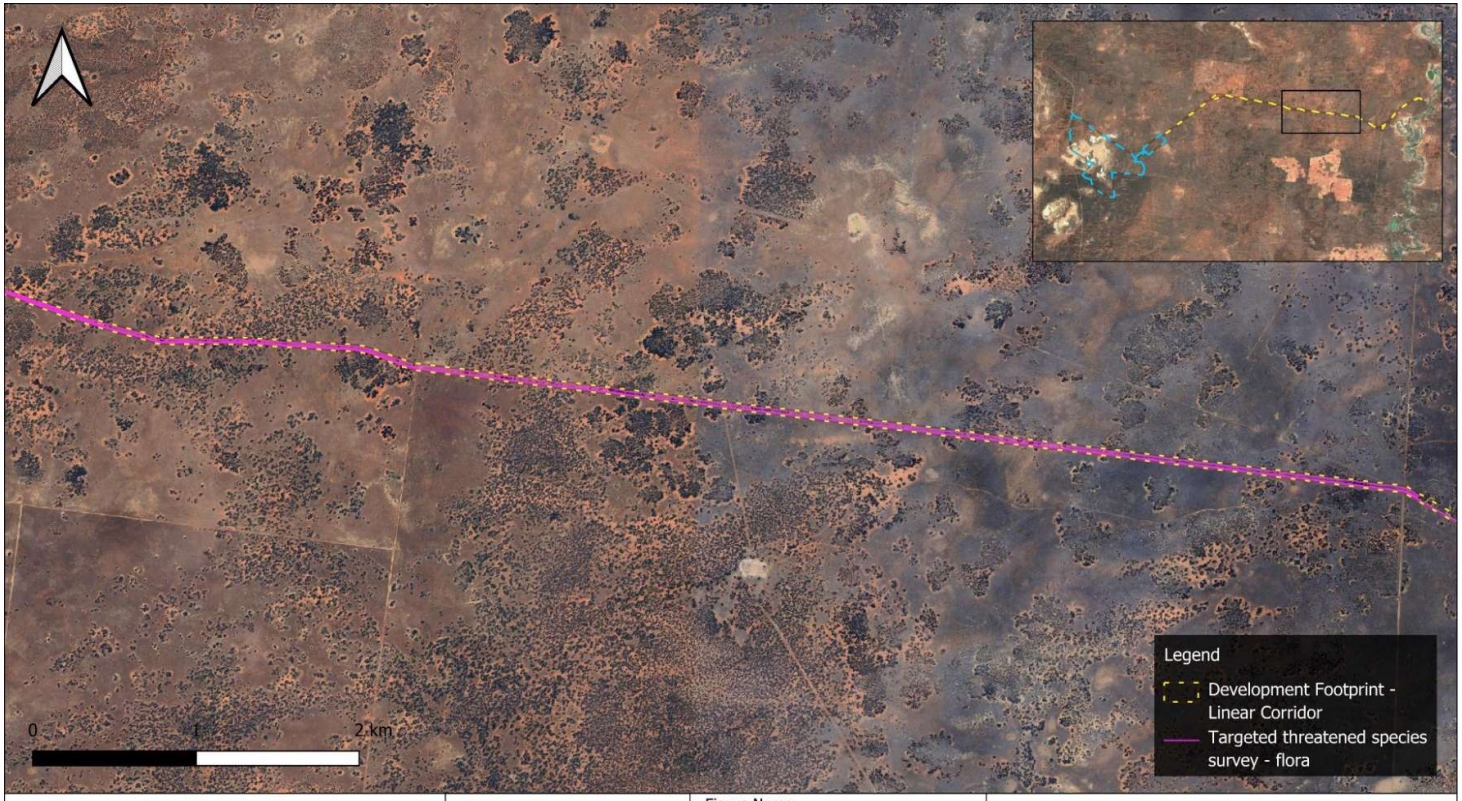
Project Manager: NC	Figure Name: Targeted Threatened Species Flora Survey - Development Footprint - Linear Corridor 1/4	Biodiversity AUSTRALIA	
Drawn by: NE	Location: Warwick Station		
Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:30000

Figure 32: Targeted threatened flora surveys within the Impact Site – Linear Corridor 1/4



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Targeted Threatened Species Flora Survey - Development Footprint - Linear Corridor 2/4	Biodiversity AUSTRALIA	
	Drawn by: NE	Location: Warwick Station		
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:30000

Figure 33: Targeted threatened flora surveys within the Impact Site – Linear Corridor 2/4



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	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:30000

Figure 34: Targeted threatened flora surveys within the Impact Site – Linear Corridor 3/4

This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Targeted Threatened Species Flora Survey - Development Footprint - Linear Corridor 4/4	Biodiversity AUSTRALIA	
	Drawn by: NE	Location: Warwick Station		
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54 Scale: 1:30000

Figure 35: Targeted threatened flora surveys within the Impact Site – Linear Corridor 4/4

Table 26: Threatened plant species grouped by stratum and survey period

Common Name	Scientific Name	BC Status	Survey Timing required	Survey Timing concluded	Method Applied
Shrub					
Harrow Wattle	*Acacia acanthoclada*	Endangered	Aug-Nov	November	Two-phase grid-based System
Purple-wood Wattle	*Acacia carneorum*	Vulnerable	All year	November	Two-phase grid-based System
Bluebush Daisy	*Cratystylis conocephala*	Endangered	All year	November	Two-phase grid-based System
Desert Hopbush	*Dodonaea stenozyga*	Critically Endangered	All year	November	Two-phase grid-based System
Fleshy Minuria	*Kippistia suaedifolia*	Endangered	All year	November	Two-phase grid-based System
Pink Velvet Bush	*Lasiopetalum behrii*	Critically Endangered	All year	November	Two-phase grid-based System
Thyme Rice-Flower	*Pimelea serpyllifolia subsp. serpyllifolia*	Endangered	Jul-Nov	November	Two-phase grid-based System
Bitter Quandong	*Santalum murrayanum*	Endangered	All year	November	Two-phase grid-based System
Bladder Senna	*Swainsona colutoides*	Endangered	All year	November	Two-phase grid-based System
Yellow Swainson-pea	*Swainsona pyrophila*	Vulnerable	Sep-Nov	November	Two-phase grid-based System
Forb					
A Saltbush	*Atriplex infrequens*	Vulnerable	Nov-Feb	November	Two-phase grid-based System
Mossgiel Daisy	*Brachyscome papillosa*	Vulnerable	Sep-Nov	November	Two-phase grid-based System
A Burr-daisy	*Calotis moorei*	Endangered	Sep-Nov	November	Two-phase grid-based System

Winged Peppercress	*Lepidium monoplocoides*	Endangered	Sep-Dec	November	Two-phase grid-based System
Button Immortelle	*Leptorhynchos waitzia*	Endangered	Sep-Nov	November	Two-phase grid-based System
Greenhood Orchid	*Pterostylis cobarensis*	Vulnerable	Oct	November	Two-phase grid-based System
Silky Swainson-pea	*Swainsona sericea*	Vulnerable	Sep-Nov	November	Two-phase grid-based System
Grass					
A Spear-grass	*Austrostipa metatoris*	Vulnerable	Oct-Nov	November	Two-phase grid-based System
A Spear-grass	*Austrostipa nullanulla*	Endangered	Sep-Dec	November	Two-phase grid-based System

Austrostipa nullanulla was located, and finer-scale grid surveys were used to locate population extent, which helped define the species polygon. This subsequent phase ensured a greater intensity of survey effort in locations where the target species occurred.

The plot traverses are a set distance apart depending on the life form and type of vegetation and cover the entire extent of potential habitat for each target plant species. Due to the type of extent vegetation on site, traverses were conducted along all vegetated areas and guided by 10 m parallel traverses with occasional random meandering to inspect for smaller or more cryptic species.

Opportunistic searches for threatened flora species were also undertaken during the vegetation plot surveys as well as during other survey-related activities within the Subject Land.

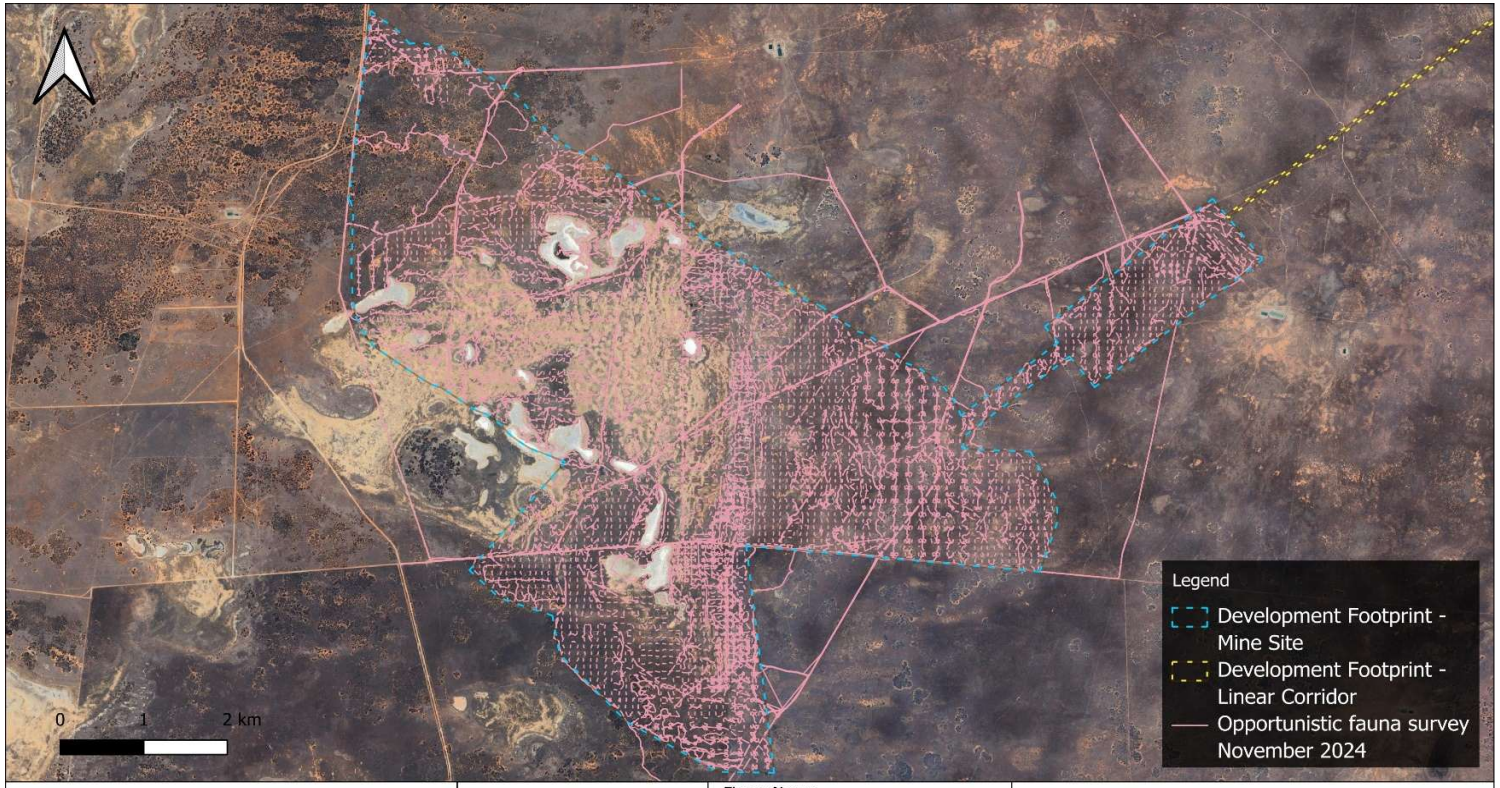
A-3-2 Fauna Species

All threatened fauna species were surveyed in accordance with recommended survey guidelines and during recommended survey periods as detailed in the BioNet TBDC, specific threatened species survey guidelines, and/or other resources (see sections below for specific sources).

A-3-3 Complementary Opportunistic Fauna Surveys

Species targeted: Australian Bustard (*Ardeotis australis*), Bush Stone-curlew (*Burhinus grallarius*), White-bellied Sea-eagle (*Haliaeetus leucogaster*), Black-breasted Buzzard (*Hamirostra melanosternon*), Pink Cockatoo (*Lophochroa leadbeateri*), Square-tailed Kite (*Lophoictinia isura*), Southern Hairy-nosed Wombat (*Lasiorhinus latifrons*).

Opportunistic fauna surveys, complementary to the method-specific targeted surveys detailed below, were conducted on foot across the Impact Site – Mine Site between 11 – 29 November 2024. Qualified fauna ecologists experienced in bird identification and equipped with binoculars and fauna identification resources, traversed the areas between Threatened Flora plots whilst searching for individuals and signs of wildlife. Additional surveys were conducted along tracks outside the Impact Site (Figure 36). Surveyors paid particular attention to soaring birds, stick nests and burrows. All other species encountered incidentally were also recorded. The complementary opportunistic fauna surveys covered approximately 1958.70 km (Figure 36).



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	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:60000

Figure 36: Locations of complimentary opportunistic targeted threatened fauna surveys within the Impact Site – Mine Site

Habitat Constraints

Desktop assessments and field surveys within the Impact Site included assessment of habitat constraints and microhabitats for fauna Species Credit Species. This included desktop assessment of the proximity of the Impact Site to features such as caves, wetlands and waterways and field inspection of microhabitats including leaf litter, stick nests and Hollow Bearing Trees etc.

The fauna surveys undertaken by Biodiversity Australia spanned from November 2024 to February 2024. The EnviroKey fauna surveys were conducted between January 2018 and January 2024. EnviroKey records obtained prior to June 2020 were discarded due to these being gathered outside the 5-year period.

Surveys were undertaken by Accredited Persons and ecologists under both Biodiversity Australia and EnviroKey's scientific licenses and animal research authority. The methods per survey measure are detailed below.

Habitat Evaluation

This was the main survey method employed to assess the suitability habitats for threatened species observed in the Assessment Area, or in broadly similar habitats in the region. Habitats on and adjacent to the Impact Site were defined and assessed according to parameters such as:

- Structural and floristic characteristics of the vegetation e.g. understorey type and development, crown depth, groundcover density, etc.
- Degree and extent of disturbance e.g. fire, grazing by livestock/feral goats, logging, weed invasion, modification to structure and diversity, etc.
- Presence of water in any form e.g. rivers, dams, creeks, drainage lines, soaks.
- Size and abundance of hollows and fallen timber.
- Availability of shelter e.g. rocks, logs, hollows, undergrowth.
- Wildlife corridors, refuges and proximate habitat types.
- Presence of mistletoe, nectar, gum, seed, sap, etc. sources.

This information is considered for evaluation of the potential occurrence of threatened species on or adjacent to the site based on desktop searches including species records, cited ecology and personal experience/knowledge of the species.

A-3-4 Active Herpetological Surveys

Biodiversity Australia

Species targeted: Crowned Gecko (*Lucasium stenodactylum*)

Targeted surveys involved nocturnal spotlight, physical habitat searches, and Elliot and pitfall trapping (see section 4.3.3.8). The nocturnal spotlight surveys were conducted in suitable habitats (PCTs 154, 221) within the Impact Site – Mine Site between 9 – 17th January 2025. The surveys were conducted by scanning for eye-shine with hand-held torches either on foot as a random meander (n = 10; ∑ effort = 756 person minutes) or in a slow-moving vehicle (n = 37; ∑ effort = 437 person minutes) (Figure 37FigureFigure 38). All observations of eye shine were investigated, and the species responsible was identified.

The physical habitat searches were also conducted in suitable habitat (PCTs 154, 221) and involved lifting timber, rocks and debris, and inspecting dense vegetation and leaf litter to locate and identify gecko species. These searches were done opportunistically during nocturnal spotlighting and other surveys. Any habitat elements that were removed during the searches were replaced in the position in which they were found.

Survey guidelines utilised: NSW Government Department of Planning and Environment (DPE) (2022): Threatened reptiles BAM survey guide.

Survey guideline requirements (per 50 ha suitable habitat):

- Four spotlight surveys spanning 120 person minutes, *or*
- Four pitfall trapping surveys spanning 72 trap days.

Survey guidelines met:

- Yes, 10 spotlight surveys on foot spanning 756 person minutes, 37 spotlight surveys in a slow-moving vehicle spanning 437 person minutes, and 3 pitfall trapping surveys spanning 84 trap days.

EnviroKey BDAR September 2024

Reptile hand searches were conducted by EnviroKey ecologists at 74 locations across the Impact Site and broader Subject Land. Each survey location was systematically searched by an experienced herpetologist for a period of 30 minutes for active and inactive animals during the field surveys. Fallen timber, spinifex grass (live and dead), loose bark, tree and ground hollows, and loose soil and rock were extensively searched by raking and lifting. Total survey effort was 2,220 minutes (37 hours).

A-3-5 Diurnal Bird Surveys

Biodiversity Australia

Diurnal bird census surveys

Species targeted: Black-eared Miner (*Malorina melanotis*); Pink Cockatoo (*Lophochroa leadbeateri*); Red-lored Whistler (*Pachycephala rufogularis*); South-eastern Hooded Robin (*Melanodryas cucullata*); Southern Whiteface (*Aphelocephala leucopsis*); White-fronted Chat (*Epthianura albifrons*).

Diurnal bird census surveys targeting the Eastern Mallee Bird TEC and other threatened bird species were conducted in suitable habitat (PCTs 170, 171) within and adjacent to the Impact Sites between 5 – 24 February 2025. The surveys consisted of a 30-minute area search of an area covering 2 ha. During each survey, observers identified and recorded all bird species seen and heard. Surveys were conducted in the early morning (dawn) or late afternoon (dusk) when bird activity was highest. The dawn surveys commenced at daybreak, once lighting was sufficient to adequately identify species (15 minutes after sunrise), and concluded when bird activity waned (2.5 hours after sunrise). The dusk surveys commenced 2 hours before sunset and concluded when either light was insufficient to identify species or when bird activity waned. A total of 42 surveys were conducted for a combined 1,258 minutes (21 hours) over 45.8 kms (Figure 39 and Figure 40).

Survey guidelines utilised: Australian Government Department of the Environment, Water, Heritage and the Arts (DEWHA) (2010): Survey guidelines for Australia's threatened birds Guidelines for detecting birds listed as threatened under the E*nvironment Protection and Biodiversity Conservation Act 1999*. NSW

Bionet Threatened Biodiversity Database Collection Threatened biodiversity ecological data – retrieved from BioNet Atlas

Survey guideline requirements:

- General - Early morning area searches in suitable habitat.
- Black-eared Miner – Minimum 24 hours survey effort over at least 8 days.
- Red-lored Whistler – Minimum 15 hours survey effort over at least 5 days.

Survey guidelines met:

- General – Yes, 21 hours survey effort over 15 days.
- Black-eared Miner – Yes, when combined with EnviroKey bird surveys confirmed to occur within the 5-year window. Between the Bio Aus and EnviroKey surveys, over 46 hours of survey effort were conducted across more than 23 days within the Impact Site. When including surveys from the broader Subject Land, the total survey effort for area searches amounted to 61 hours.
- Red-lored Whistler – Yes, 21 hours survey effort over 15 days.

Diurnal birds of prey surveys

Species targeted: Black-breasted Buzzard (*Hamirostra melanosternon*), Square-tailed Kite (*Lophoictinia isura*), Little Eagle (*Hieraaetus morphnoides*), Australian Bustard (*Ardeotis australis*); Pink Cockatoo (*Lophochroa leadbeateri*)

Combined foot and vehicle surveys were conducted for birds of prey within the Impact Site between 29 November and 4 December 2024. The surveys commenced during the heat of the day when it was expected that conditions for thermal soaring would be optimal. Observers surveyed the sky for soaring individuals and scanned their surroundings for individuals perched on trees. Additionally, observers searched for large stick nests in areas with suitable habitat for nest construction (PCTs 58, 170, 171, 221). Any pink cockatoos or other bird species of interest located opportunistically while surveying for birds of prey were also recorded. In total, six combined foot and vehicle surveys were conducted, resulting in a combined 732 minutes (12 hours) of survey effort over 191.4 km (Figure 39 and Figure 40).

Survey guideline requirements:

- There are no survey guidelines for the abovementioned birds of prey as these species are typically recorded opportunistically given their large foraging ranges. However, these are conspicuous diurnal species which can potentially be detect by aerial surveys/observing from vantage points approaching (and from within) suitable foraging and breeding habitat. Surveys to be conducted in and around the associated PCTs, suitable foraging and breeding habitat described in the TBDC for each species.

Survey guidelines met:

- N/A.

EnviroKey BDAR September 2024

Diurnal bird census surveys including diurnal call playback

EnviroKey ecologists conducted surveys to determine the presence and usage of the Impact Site by diurnal birds in either the early morning or late afternoon to coincide with peak bird activity. These surveys were completed at 243 locations between January 2018 and January 2024 across the Impact Site and Subject Land. Of these surveys, 120 were within the 5-year window (post-June 2020). 76 of the 120 surveys were conducted within the Impact Site, while the remainder were conducted in the broader Subject Land (Figure 39 and Figure 40). They were guided by a standardised technique (20 minutes survey). Observers actively searched for diurnal birds and identified species by sight and by vocalisation during each 20-minute bird survey. Opportunistic data was also collected during the field survey whenever traversing the Impact Site and Assessment Area.

Call playback was conducted at the conclusion of each diurnal bird survey to elicit a response from each of the predicted candidate species. These were (in order of call playback): Striated Grasswren; Red-lored Whistler; Bush Stone Curlew; and Black-eared Miner (for all bird survey locations in PCT 171). The call of each species was played for one minute, followed by a one-minute listening period. The call was then played again, followed by another listening period. Diurnal call playback was about 10 minutes depending on survey location and PCT. For the purpose of this BDAR, minimum survey effort was assumed to be three minutes at each site.

Total survey effort for diurnal bird surveys was 4,860 minutes (81 hours) and diurnal call playback was 729 minutes (12.15 hours). Total survey effort for diurnal bird surveys within the 5-year window was 2,400 minutes (1,520 minutes in the Impact Site and 880 minutes in the broader Subject Land).

Song meters

EnviroKey ecologists used song meter SM4 acoustic recorders during the 2022 field surveys to record bird calls. A song meter was activated at four locations (1 within the Impact Site and 3 within the broader Subject Land) for a total of 3 full days, giving a total of 12 recording days. Song meters were pre-set to begin recording 30 minutes before sunrise, and record for two hours. Song meters also commenced recording 1 hour prior to sunset and recorded for 1.5 hours. Daily recording time for each song meter was 3.5 hours per day. Total recording time for the song meters was 42 hours (10.5 hours within the Impact Site and 31.5 hours within the broader Subject Land).

Data was then analysed by Principal Ecologist Steve Sass.

A-3-6 Hollow Bearing Tree Search

Biodiversity Australia

Species targeted: Pink Cockatoo (*Lophochroa leadbeateri*)*;* Masked Owl (*Tyto novaehollandiae*)

Data on Hollow Bearing Trees and tree hollows were recorded opportunistically while conducting diurnal bird survey and nocturnal spotlighting surveys within and adjacent to the Impact Site between 5 – 23 February 2025. Where tree hollows were located, the number, size, and height above ground of hollows, as well as the Diameter at Breast Height (DBH) and species of the trees in which hollows were located were recorded. Additionally, the coordinates of the Hollow Bearing Trees were recorded using a hand-held Global Positioning System (GPS). To ensure the time allocated to the bird and spotlighting surveys remained unchanged, the time spent recording Hollow Bearing Tree data was added to their duration (Figure 39 and Figure 40).

Survey guidelines utilised: Advice from DCCEEW (pers. comm.); NSW Bionet Threatened Biodiversity Database Collection Threatened biodiversity ecological data – retrieved from BioNet Atlas

Survey guideline requirements:

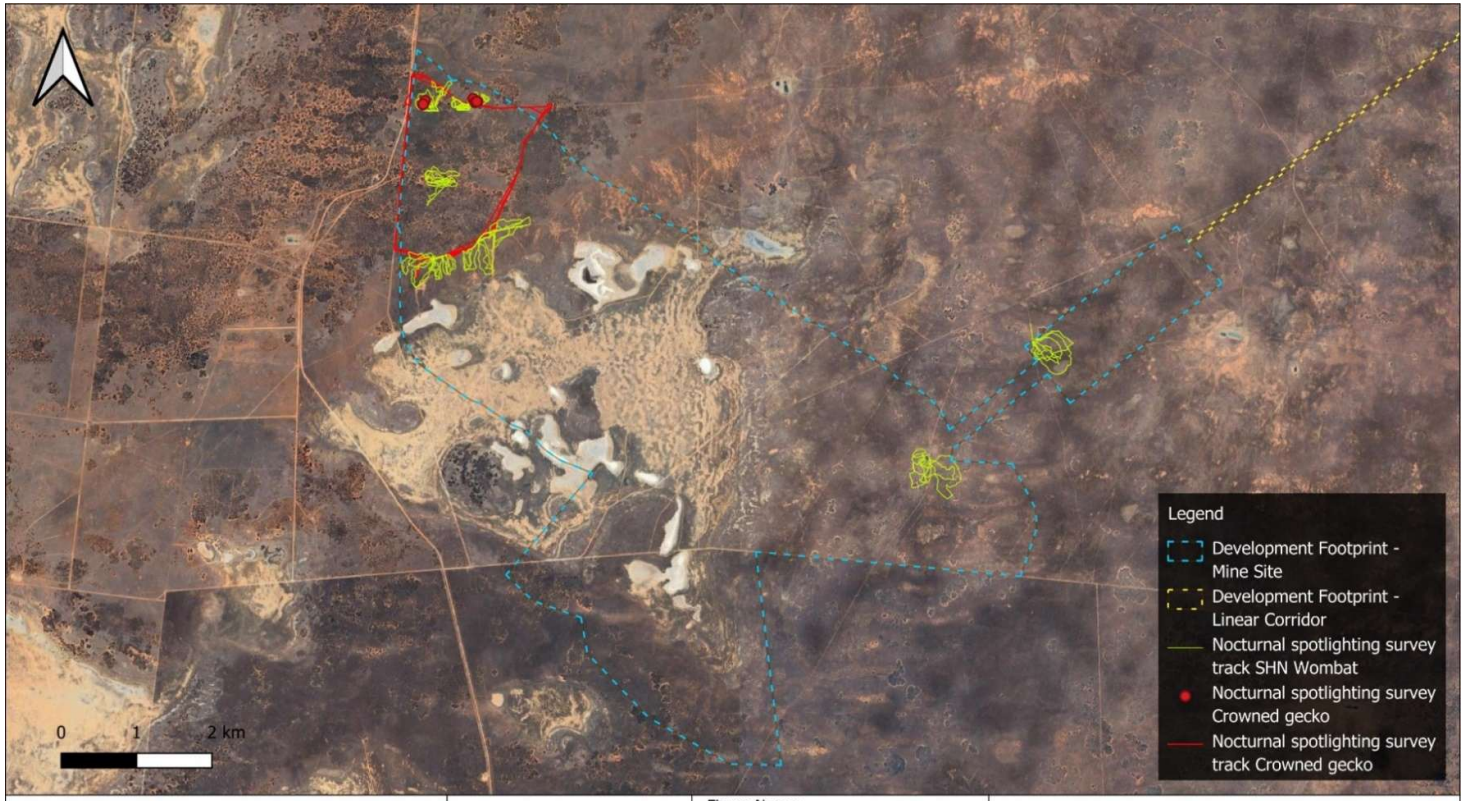
- Pink Cockatoo – Searches for living or dead trees with hollows greater than 10 cm diameter.

Survey guidelines met:

- General – Yes, 40 tree hollows greater than 10 cm in diameter were located.

EnviroKey BDAR September 2024

No targeted Hollow Bearing Tree searches were reported in EnviroKey BDAR.



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Project Manager: NC	Figure Name: Locations of Nocturnal Spotlighting Surveys - Development Footprint - Mine Site	Biodiversity AUSTRALIA	
Drawn by: NE	Location: Warwick Station		
Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:65000

Figure 37: Locations of nocturnal spotlighting surveys - Impact Site - Mine Site

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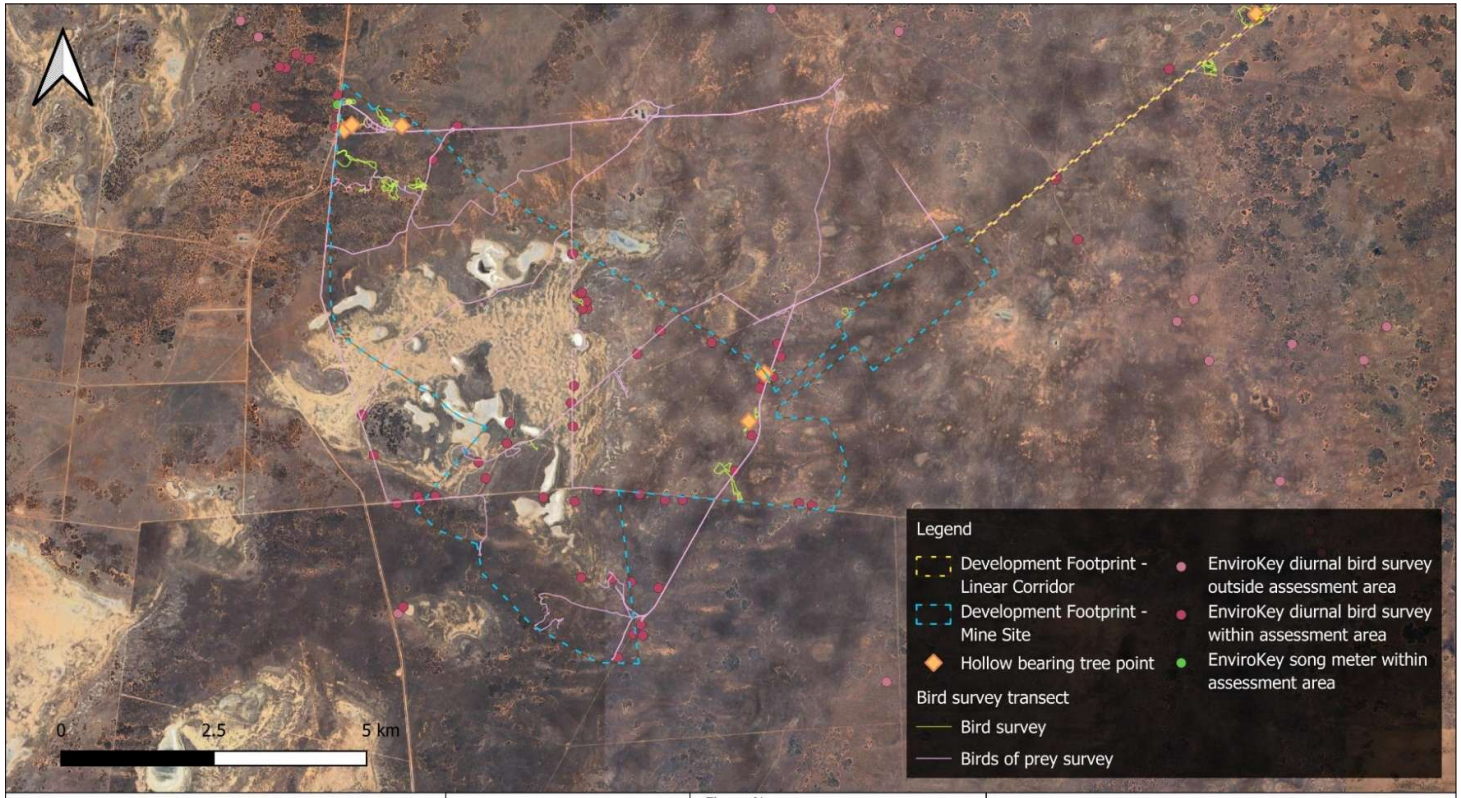
	Drawn by: NE	Location: Warwick Station		
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:110000

Figure 38: Locations of nocturnal spotlighting surveys - Impact Site – Linear Corridor



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	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:80000

Figure 39: Diurnal bird census surveys & Hollow Bearing Tree points – Impact Site – Mine Site

This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.	Project Manager: NC	Figure Name: Diurnal bird census surveys & Hollow Bearing Tree Points - Development Footprint - Linear Corridor	Biodiversity AUSTRALIA	
	Drawn by: NE	Location: Warwick Station		
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54 Scale: 1:110000

Figure 40: Diurnal bird census surveys & Hollow Bearing Tree points – Impact Site – Linear Corridor

A-3-7 Nocturnal Spotlighting Surveys

Biodiversity Australia

Species targeted: Southern Hairy-nosed Wombat (*Lasiorhinus latifrons)*

Targeted nocturnal spotlight surveys were conducted within the Impact Site between 5 – 23 February 2025. In areas of suitable habitat (PCTs 58, 152, 154, 170, 171), observers searched for burrows/warrens, scats, and individuals, using high-power hand-held torches and thermal binoculars. Each search spanned a minimum of 60 person minutes and was replicated in the same area on the following night. Searches commenced a minimum of two hours after sundown and were completed a minimum of one hour prior to sunrise. A total of 20 transects were searched, equating to 40 individual surveys conducted over 2827 minutes (47 hours) and 164 kilometres (Figure 37 and Figure 38).

Survey guidelines utilised: Advice from DCCEEW (pers. comm.); NSW Bionet Threatened Biodiversity Database Collection Threatened biodiversity ecological data – retrieved from BioNet Atlas

Survey guideline requirements (per 100 ha of suitable habitat):

- Spotlighting surveys spanning 60 person minutes and replicated across 2 consecutive nights.

Survey guidelines met:

- Yes, 40 spotlight surveys (20 transects) conducted spanning 2827 person minutes.

EnviroKey BDAR September 2024

No targeted spotlighting surveys for the Southern Hairy-nosed Wombat were conducted by EnviroKey ecologists, though scat and sign searches were conducted. The details of the scat and sign searches are as follows:

While no dedicated scat and sign searches were completed across the Impact Site and Assessment Areas, searches for a period of 10 minutes each were carried out at the conclusion of every Diurnal bird survey resulting in 243 scat and sign searches. In addition, any track and scat of interest observed during the field survey while undertaking other survey methods, was inspected. In the case of scats, identification was made using ‘Tracks, Scats and Other Traces: A field guide to Australian Mammals’ (Triggs, 2008). Total survey effort was 2,430 minutes.

A-3-8 Nocturnal Call Playback

Biodiversity Australia

Species targeted: Masked Owl (*Tyto novaehollandiae*)

Nocturnal call playbacks were undertaken within the Impact Site between 10 – 17 January 2025. Observers surveyed for the Masked Owl in suitable habitat (PCT 24) by spotlighting with hand-held torches and listening for the species' calls for a period of 10 minutes. If no sightings or calls were registered during this time, the observers broadcast a recording of the Masked Owl's call over a speaker at a volume of 60 decibels (dB) for a period of 15 seconds. This was followed by a wait period of 30 seconds, during which time the observers again searched for the masked owl and listened for its calls. This process was repeated 6 times, with the volume of the recording dialled to 100 dB for the final broadcast. Each of 7 sites was surveyed 6 times, with surveys conducted in the late evening (8 pm – 12 am) and early morning (2:30 – 5:30 am) (Figure 41).

Survey guidelines utilised: Australian Government Department of the Environment, Water, Heritage and the Arts (DEWHA) (2010): Survey guidelines for Australia's threatened birds Guidelines for detecting birds listed as threatened under the E*nvironment Protection and Biodiversity Conservation Act 1999*. NSW Bionet Threatened Biodiversity Database Collection Threatened biodiversity ecological data – retrieved from BioNet Atlas

Survey guideline requirements:

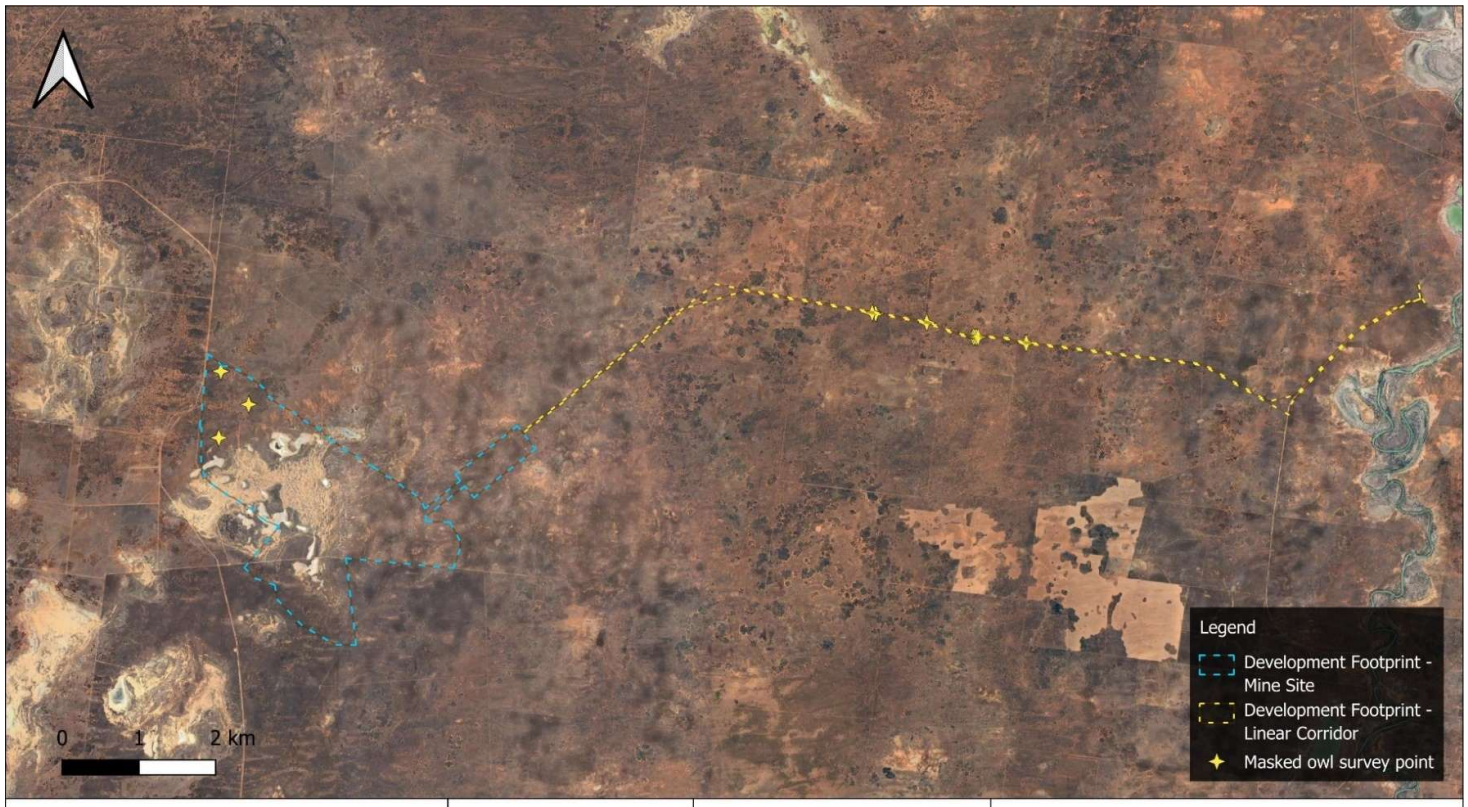
- Survey at night during calm and dry weather. Begin with a 10-minute listening and search period. If no owls detected, broadcast prerecorded calls for 15 seconds at a volume of 60 dB, then listen for responses for at least 30 seconds. If no owls detected, repeat this process for a 15-minute period, gradually increasing volume from 60 to 100 dB. After the conclusion of call playbacks, conduct 15 minutes of spotlighting. Repeat call playback surveys 6 times at each site, preferably across multiple weeks.

Survey guidelines met:

- Yes, surveys commenced with a 10 minute spotlight and listening period, followed by 15 minutes of call playback. Surveys were repeated 6 times at each site; however, these were conducted over consecutive nights rather than across multiple weeks.

EnviroKey BDAR September 2024

EnviroKey ecologists conducted nocturnal call playback surveys for the Bush Stone-curlew (*Burhinus grallarius*) but not for the Masked Owl. At each of the three survey locations, call playback survey commenced with an initial listening period of 10 minutes. The call of the target species (Bush Stone curlew) was then transmitted intermittently over a period of five minutes, followed by a five-minute listening period. Spotlighting was undertaken at the conclusion of the call playback, with a minimum of 60 minutes at each site by two persons.



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	Drawn by: NE	Location: Warwick Station		
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
				Scale: 1:160000

Figure 41: Location of nocturnal Call Playback stations – Impact Site

A-3-9 Elliot and Pitfall Trapping

Biodiversity Australia

Species targeted: Desert Mouse (*Pseudomys desertor*); Crowned Gecko

Concurrent Elliot and pitfall trapping surveys were undertaken within the Impact Site between 10 – 14 December 2024. Three Elliot and pitfall trap arrays were established in suitable habitat (PCTs 171, 221), two within the Impact Site – Mine Site and one along the Impact Site – Linear Corridor (Figure 42 and Figure 55). The pitfall arrays consisted of a 30 m drift fence with 7 buckets distributed along its length. Ten 'A' sized Elliot traps were set in the area surrounding each pitfall array, each baited with a mix of peanut butter, honey, and oats. Both the Elliot and pitfall traps were checked each morning within two hours of sunrise, and any captured fauna was identified and released. The traps were then closed and re-opened/reset within an hour of sunset the following evening. This survey effort resulted in a total of 84 pitfall trap nights and 120 Elliot trap nights.

Survey guidelines utilised: Department of Environment and Conservation (DEC) (2004), Threatened Species Survey and Assessment: Guidelines for developments and activities (working draft), New South Wales Department of Environment and Conservation, Hurstville, NSW; NSW Bionet Threatened Biodiversity Database Collection Threatened biodiversity ecological data – retrieved from BioNet Atlas

Survey guideline requirements:

- Elliot trapping surveys spanning 100 trap nights over 3 – 4 consecutive nights; or
- Pitfall trapping surveys spanning 24 trap nights over 3 – 4 consecutive nights.

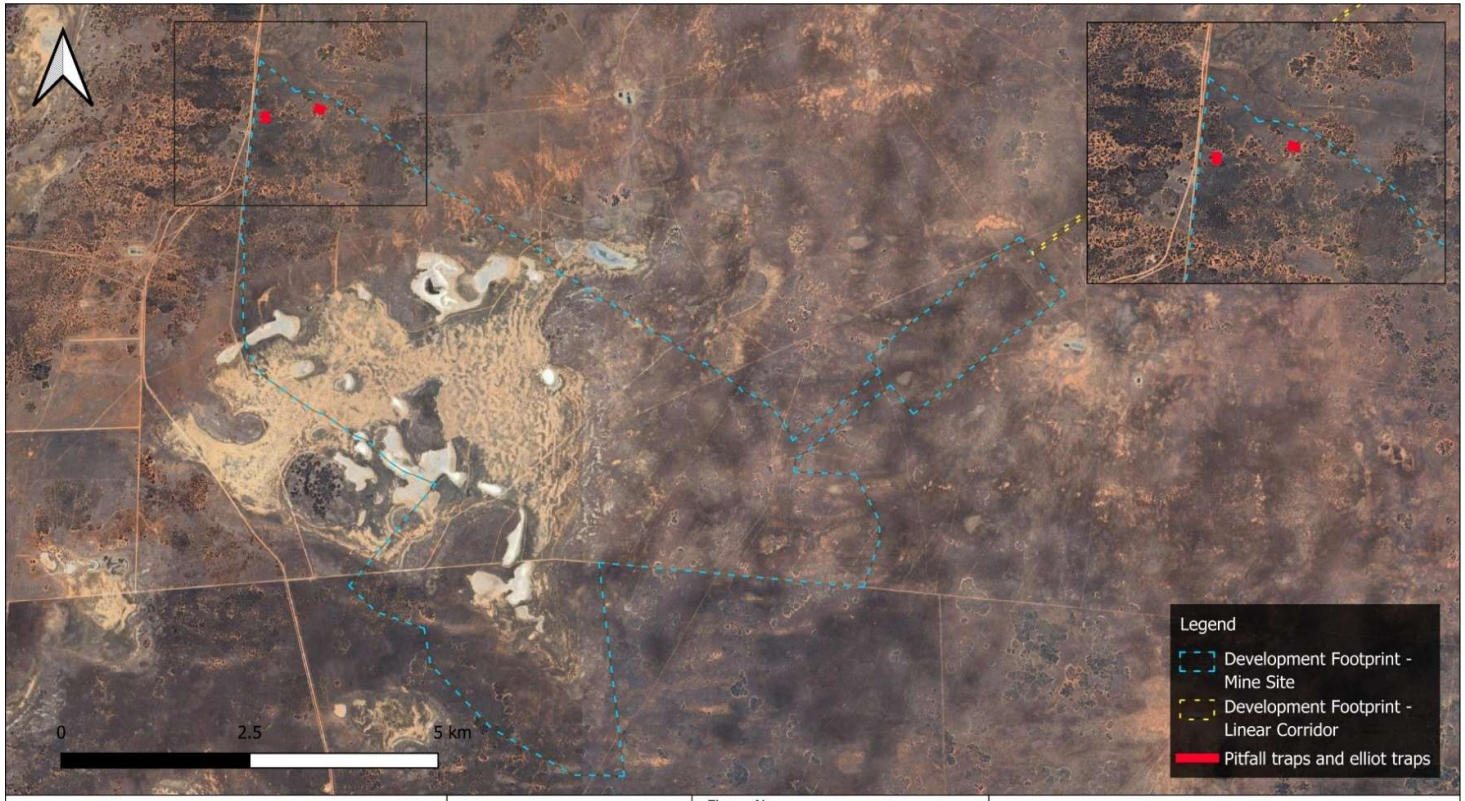
Survey guidelines met:

- Yes, 3 Elliot trapping surveys spanning 120 trap nights over 4 consecutive nights, and 3 pitfall trapping surveys spanning 84 trap nights over 4 consecutive nights.

EnviroKey BDAR September 2024

Prior to the Elliot and pitfall trapping surveys conducted by Biodiversity Australia, several Elliot and funnel trapping surveys targeting the desert mouse were also conducted in suitable habitat (PCT 171) by EnviroKey ecologists. No EnviroKey surveys targeting the Crowned Gecko were conducted in the 5-year window after June 2020. The details of the Elliot and funnel trapping surveys are as follows:

- 'A' sized Elliot traps were baited with a mix of peanut butter, honey and rolled oats to attract small terrestrial mammals. These were spaced about 5 metres (m) apart in transects of 20 traps. They were left in situ for 4 nights during each survey and checked both morning and afternoon. Elliot trapping surveys targeting the desert mouse were conducted at 2 sites within the Impact Sites in March 2021 and 1 site in March 2022. Total survey effort targeting the desert mouse was 240 trap nights (Figure 42 and Figure 43).
- Three pairs of funnel traps (six funnel traps) were established along a 20 m drift fence (a single site) for a maximum of four nights at 10 different locations. Funnel trapping surveys targeting the desert mouse were completed at two sites during the March 2022 field survey. Survey effort was 48 trap nights (Figure 42 and Figure 43).



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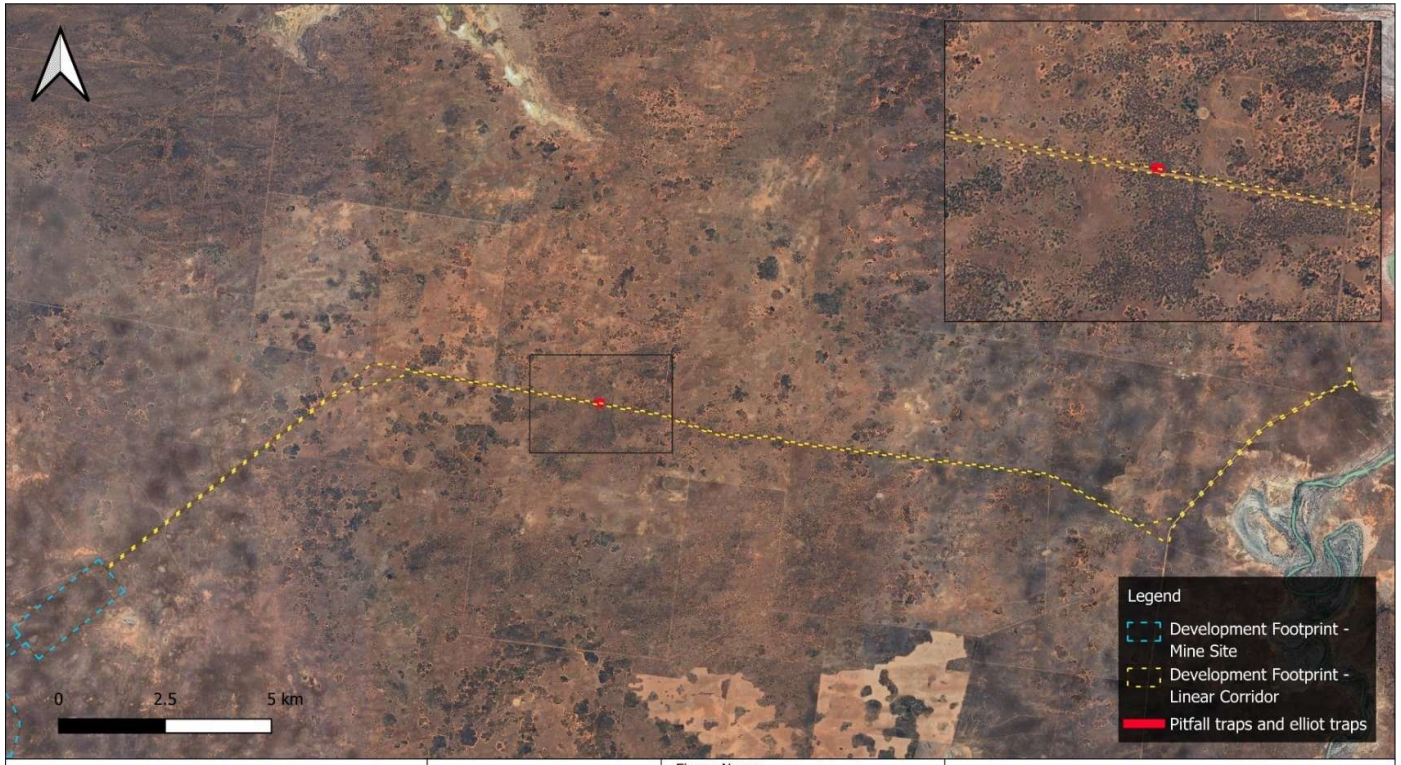
	Drawn by: NE	Location: Warwick Station		
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54 Scale: 1:65000

Figure 42: Locations of Elliot and pitfall trapping arrays - Impact Site - Mine Site



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Project Manager: NC	Figure Name: Locations of Elliot and Pitfall Trapping Arrays - Development Footprint - Linear Corridor	Biodiversity AUSTRALIA	
Drawn by: NE	Location: Warwick Station		
Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:110000

Figure 43: Locations of Elliot and pitfall trapping arrays - Impact Site – Linear Corridor

A-3-10 Microbat Call Recording and Analysis

Biodiversity Australia

Species targeted: Southern Myotis (*Myotis macropus*)

Microchiropteran bat calls were recorded using Anabat Swift, Anabat Chorus, and Anabat Express detectors over four deployment periods in 2025 in suitable habitat (PCTs 58, 170, 171, 221) within the Impact Site. The first deployment was within the Impact Site – Mine Site, occurred between 9 – 12 January, and consisted of one Swift, two Chorus and five Express detectors (Figure 44). @Of these, one Express and one Chorus detector failed to record data. The second deployment occurred along the Impact Site – Linear Corridor between 13 – 16 January, and consisted of one Swift, two Express, and three Chorus detectors. The three Chorus detectors failed to record data during this deployment period. The third deployment occurred along the Impact Site – Linear Corridor between 5 – 8 February and consisted of two Express and two Chorus detectors. One of each detector model failed to record data. The fourth and final deployment was also along the Linear Corridor and occurred between 9 – 12 February. This deployment involved two Chorus and one Express detectors, of which the latter failed to record data. The detectors were fixed to trees at a height of 1.5 metres. In total, 24 survey nights of data were recorded from 6 sites in each of the two survey areas (Impact Site - Mine Site and Impact Site - Linear Corridor) (Figure 44).

Survey guidelines utilised: NSW Government Department of Planning, Industry & Environment (DPIE) (2021): 'Species credit' threatened bats and their habitats, NSW survey guide for the BAM.

Survey guideline requirements:

- Acoustic detection spanning 16 trap nights over 4 consecutive nights.

Survey guidelines met:

- Yes, acoustic detection at 12 sites spanning 48 trap nights over 4 consecutive nights.

The data obtained from the Anabat detectors were sent to *Balance! Environmental* for expert analysis. *Balance! Environmental* followed the below method using Anabat Insights (Version 2.1.3; Titley Scientific):

1. The Convert ZCA function was used to extract individual zero-crossing (.ZC) sequence files from the Anabat Express ZCA files.
2. The Search function was then used to scan all resulting ZC files and the Anabat Swift WAV files using a filter designed to find bat calls potentially belonging to *Nyctophilus* spp. and *Myotis macropus*. Filter criteria used in the search included:
    - Characteristic frequency (Fc) minimum 35 kHz – maximum 45 kHz
    - Slope of characteristic section (Sc) minimum 50 octaves per second (OPS)
    - Pulse duration (Dur) minimum 2 ms
    - Difference between maximum frequency and Fc (Fmax-Fc) minimum 5 kHz
    - ZC threshold (relevant only to WAV files) = Auto
    - Smoothness level = 5

- Minimum number of pulses per sequence meeting the above criteria = 4

3. Files that passed the above Search process were then reviewed manually to compare spectrogram characteristics and derived metrics with those of reference calls and published call descriptions (e.g., Pennay et al. 2004) for the target species.

The standard of the report provided by *Balance! Environmental* followed Australasian Bat Society standards for the interpretation and reporting of bat call data (Reardon 2003), available on-line at http://www.ausbats.org.au/.

EnviroKey BDAR September 2024

While spotlighting, EnviroKey ecologists targeted microchiropteran bats by using a 'Titley' Anabat SD1 Echolocation Call Recording Unit coupled to a Personal Digital Assistant for active monitoring. Surveys were conducted at three survey locations, with a minimum of 60 minutes at each site by two persons. Additionally, a single stationary Anabat unit was activated at a water point given that microchiropteran bats needs to drink regularly when foraging. Mobile monitoring was also conducted while travelling across the Impact Site and Mine Site during nocturnal hours with the use of an Anabat Car Mount with High Mount Microphone. Total survey effort for Anabat surveys was 160 person minutes per location, giving a total of 480 minutes (8 hours).

The use of Echolocation Call Recording Units is consistent with State and Commonwealth guidelines for surveying microchiropteran bats. All data collected from the Anabat SD1 were then analysed and placed into bat and non-bat origin files. These files were then analysed using the software package AnalookW guided by 'Bat Calls of New South Wales: Region based guide to echolocation calls of microchiropteran bats' (Pennay et al., 2004) and the EnviroKey reference call collection. Members of the Nyctophilus genus could not be identified to species level due to a lack of differentiation between species and are identified to genus level only. Anabat analysis was conducted by Principal Ecologist Steve Sass, who has analysed more than 100,000 files from across Western and Central NSW.

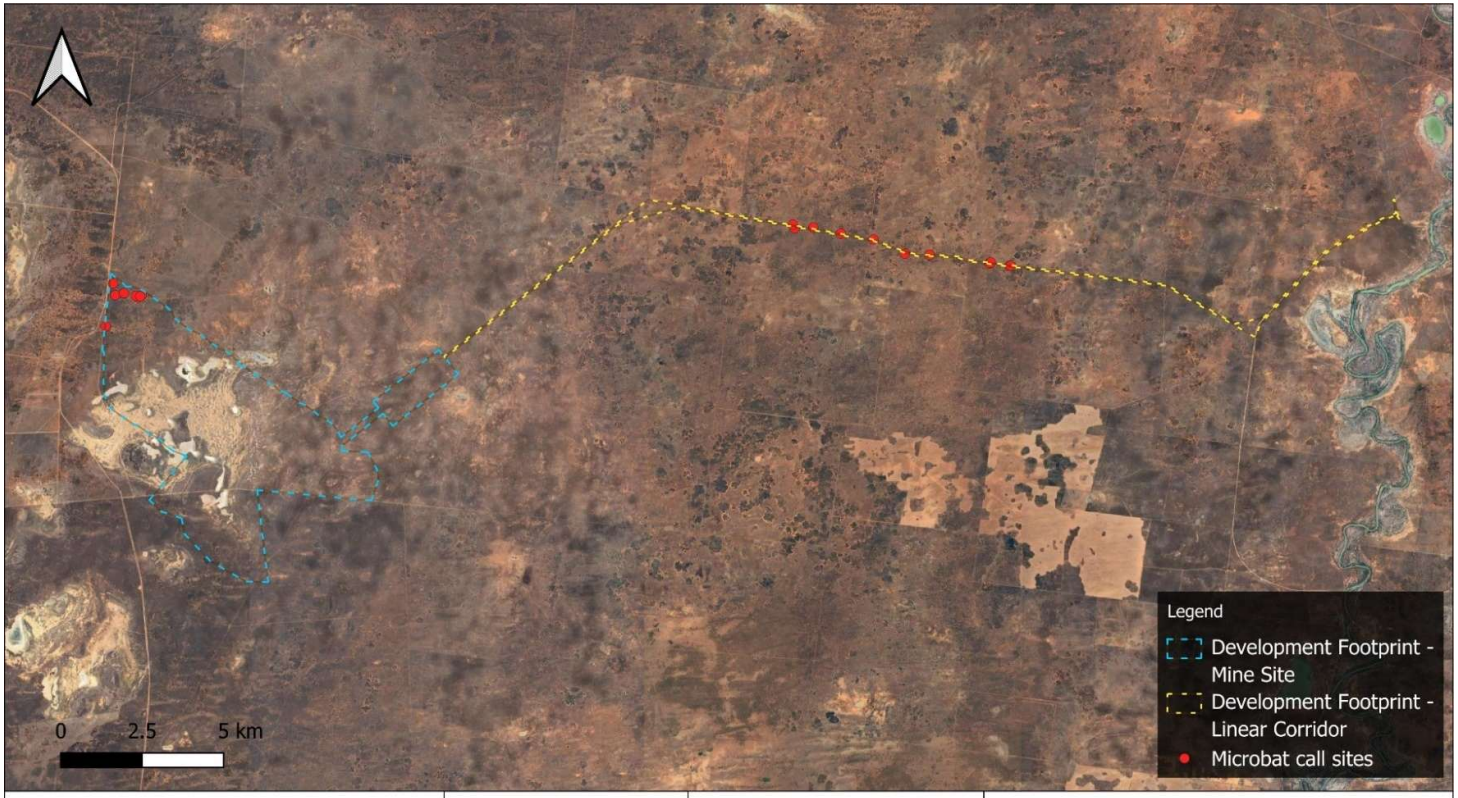
A call was defined as a sequence of three or more consecutive pulses of similar frequency. Due to variability in the quality of calls and the difficulty in distinguishing some species the identification of each call was assigned a confidence rating as follows.

D = Definite: Species identification not in doubt.

PR = Probable: Call most likely to represent a particular species, but there exists a low probability of confusion with species of similar call types.

PO = Possible: Call characteristics are comparable with the species, but there exists a reasonable probability of confusion with one or more similar Bat species or the quality or length of call prohibits a confident identification.

Those calls unable to be identified due to poor call quality resulting in a lack of diagnostic features were assigned 'Unidentifiable'.



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	Drawn by: NE	Location: Warwick Station	
	Date: April 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:150000

Figure 44: Locations of microbat call recording sites - Impact Site

A-3-11 Acoustic Recorder Surveys

Biodiversity Australia

Species targeted: Painted Burrowing Frog (*Neobatrachus pictus*)

Family: Myobatrachidae

Six (6) Wildlife Acoustics SM4 Song Meter acoustic recorders were deployed within areas of potential breeding habitat (Figure 45) six months after heavy rainfall (>50 millimetres in 24 hrs). Acoustic recordings were required to be captured during the 48 hrs immediately after >50 millimetres of rain in a 24 hr period on. More than 50 m rain causes inundation of the site containing suitable breeding habitat such as claypans, temporary roadside pools, ditches, mallee swales and dry dams. Recorders were deployed where associated PCTs were incorporated into the 200 m radius from the edge of identified breeding habitat. To date, sufficient rain event has not occurred with the potential habitat areas to trigger the breeding events and as a result no frogs have been identified within the Impact Site.

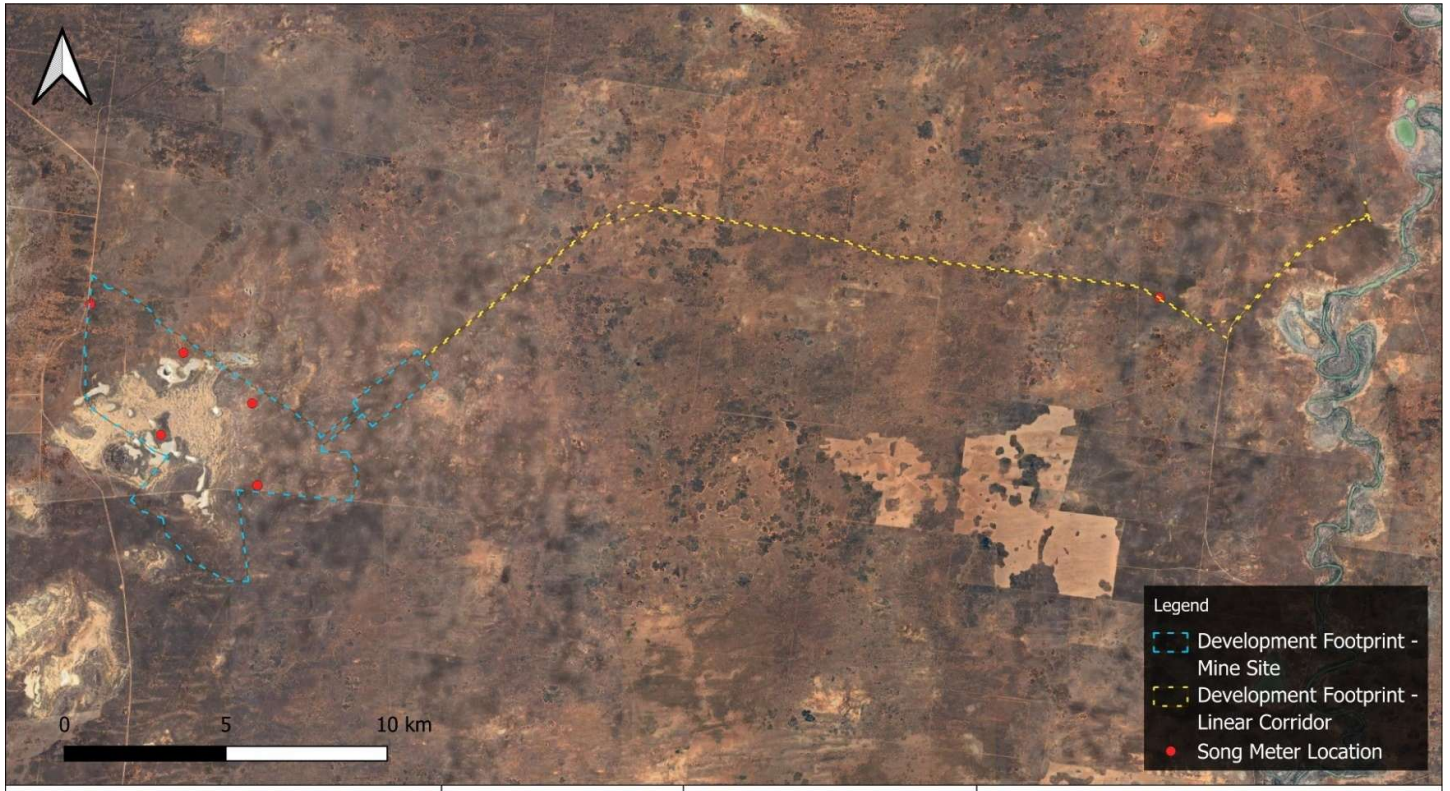
Survey guidelines utilised: NSW Government Department of Planning, Industry & Environment (DPIE) (2020): NSW Survey Guide for Threatened Frogs; A guide for the survey of threatened frogs and their habitats for the BAM.

Survey guideline requirements:

- 4 call days of Acoustic detection over 2 days after >50 millimetres in 24 hrs.

Survey guidelines met:

- No.



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	Drawn by: NE	Location: Warwick Station	
	Date: May 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872
			Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:150000

Figure 45: Location of targeted acoustic recorder surveys - Impact Site