View southwest across the study area.

BIODIVERSITY ASSESSMENT REPORT

RESIDENTIAL SUBDIVISION OF LOT 7025 DP1020631, LOT 7332 DP1166365, LOT 7317 DP1166614 AND WORKS WITHIN LOT 1 DP1077961

FORBES, NSW

JANUARY 2024

Report prepared by

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for NSW Land and Housing Corporation

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Acknowledgement

OzArk acknowledge the traditional custodians of the area on which this assessment took place and pay respect to their beliefs, cultural heritage and continuing connection with the land. We also acknowledge and pay respect to the post-contact experiences of Aboriginal people with attachment to the area and to the Elders, past and present, as the next generation of role models and vessels for memories, traditions, culture and hopes of local Aboriginal people.

EXECUTIVE SUMMARY

OzArk Environment & Heritage (OzArk) has been engaged by Land and Housing Corporation (LAHC) to complete a Biodiversity Assessment Report (BAR) regarding the development of a residential subdivision on Lot 7332 in DP1166365, Lot 7025 in DP1020631, Lot 7317 in DP1166614 and works within Lot 1 DP1077961, located at Watson Close, Upper Morton, Lower Morton, York, Dawson, Belah and Farnell Streets, Forbes.

Approximately 9.71 ha of native vegetation occurs within the subject site. This vegetation was identified as belonging to four Plant Community Types (PCTs):

- PCT 26 – Weeping Myall open woodland of the Riverina Bioregion and NSW Southwestern Slopes Bioregion
- PCT 45 – Plains Grass grassland on alluvial mainly clay soils in the Riverina Bioregion and NSW Southwestern Slopes Bioregion
- PCT 52 – Queensland Bluegrass +/- Mitchell Grass grassland on cracking clay floodplains and alluvial plains mainly the northern-eastern Darling Riverine Plains Bioregion
- PCT 70 – White Cypress Pine woodland on sandy loams in central NSW wheatbelt

Considering the quantity of native vegetation present within the subject site, this proposal would usually trigger entry into the NSW Biodiversity Offsets Scheme (BOS), and require the preparation of a Biodiversity Development Assessment Report (BDAR), rather than a BAR, however, as it is being assessed under Part 5 of the *Environmental Planning and Assessment Act* 1979, entry into the BOS is voluntary only.

The occurrence of PCT 26 constitutes an example of the *Biodiversity Conservation Act* 2016 (BC Act)-listed Endangered Ecological Community (EEC) *Myall Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain, Murray-Darling Depression, Riverina and NSW South Western Slopes bioregions*, as this listing applies to all woodlands in which Weeping Myall is the dominant canopy species. Based on aerial mapping, it is likely to also constitute an example of the *Environment Protection and Biodiversity Conservation Act* 1999 (EPBC Act)-listed EEC, which applies to Weeping Myall communities over 0.50 ha in size that satisfy certain composition and condition requirements. In the present case, the community appears to occupy 0.54 ha, to meet the 5% canopy cover threshold, and to contain more than two layers of *Acacia pendula*. It should be noted, however, that most of this community occurs on private land and its total extent could not be ground-truthed during the survey. As this EEC is restricted to the edge of the subject site, it is recommended that this EEC is excluded from the development footprint.

One minor, non-perennial Strahler 1st order stream crosses the southwestern edge of the subject site. This watercourse is not identified as Protected Riparian Land (PRL) or Key Fish Habitat (KFH) by the Department of Primary Industries – Fisheries (DPI – Fisheries). As per

Fairfull (2013), the watercourse would be considered Class 4 – Unlikely key fish habitat. There is no PRL or KFH within the 1.5 km study area, however PRL and KFH are mapped as occurring within 10 km of the subject site. No threatened fish species or threatened populations are predicted to occur within the subject site or study area. Considering the ephemeral nature of the watercourse, the absence of KFH, and the lack of predicted habitat for threatened aquatic fauna, the proposal is not expected to impact any threatened fish species or populations; therefore, no tests of significance were considered necessary under the *Fisheries Management Act* 1994 (FM Act). While there are likely to be minor impacts on the watercourse, as a result of this proposal, the mitigation measures and recommendations stated in this report will reduce the environmental impact on the watercourse. In addition, the Minister for Agriculture will need to be notified under S199 of FM Act for dredging and reclamation works and the proponent will need to consider any matters concerning the proposed work that are raised by the Minister.

There were no hollow-bearing trees, nests, substantial deposits of fallen timber, rock outcrops, areas of surface rock, or other habitat features of note recorded during the site assessment.

Sixty species or populations that are listed as threatened and/or migratory under the BC Act and/or the EPBC Act were assessed as having a moderate or high likelihood of occurring at the subject site, however, none were detected during the field survey. No significant impact on any threatened or migratory species or population is anticipated as a result of this proposal.

An EPBC Act protected matters search identified one Wetland of International Importance, four Threatened Ecological Communities (TECs), 37 threatened, and 12 migratory species, that may occur within the search area. However, no significant impact to any entity listed under the EPBC Act is expected, provided adequate mitigation measures are followed.

This assessment covers the current form of the proposal, with any changes potentially requiring reassessment. If entry into the BOS is triggered by changes, additional fieldwork according to the Biodiversity Assessment Method (2020) may be necessary.

CONTENTS

FIGURES

TABLES

ABBREVIATIONS

Term	Description
^{0}C	Degrees Celsius
AOBV	Areas of Outstanding Biodiversity Value
ASL	Above Sea Level
BAM	Biodiversity Assessment Method 2020
BAR	Biodiversity Assessment Report
BDAR	Biodiversity Development Assessment Report
BC Act	NSW *Biodiversity Conservation Act 2016*
BOS	NSW Biodiversity Offsets Scheme
CAMBA	China-Australia Migratory Bird Agreement
CEEC	Critically Endangered Ecological Community
CEMP	Construction Environmental Management Plan
DCCEEW	Commonwealth Department of Climate Change, Energy the Environment and Water
DoE	Department of Environment
DPI	NSW Department of Primary Industries
DPIE	NSW Department of Planning, Industry and Environment
EEC	Endangered ecological community
EIS	Environmental Impact Statement
EP&A Act	NSW *Environmental Planning and Assessment Act 1979*
EPBC Act	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
ESCP	Erosion and Sediment Control Plan
FACS	Family and Community Services
FM Act	NSW *Fisheries Management Act 1994*
GDEs	Groundwater dependent ecosystems
GPS	Global Positioning System
ha	Hectare
HTE	High Threat Exotic
IBRA	Interim Biogeographic Regionalisation of Australia. Each region is a land area made up of a group of interacting ecosystems repeated in similar form across the landscape.
JAMBA	Japan-Australia Migratory Bird Agreement
KFH	Key Fish Habitat
KTP	Key Threatening Process
LEP	Local Environmental Plan
LGA	Local Government Area
mm/cm/m/m^2/km	Millimetre/centimetre/metre/square metre/kilometre
MNES	Matters of National Environmental Significance
NPW Act	NSW *National Parks and Wildlife Act 1974*
NSW	New South Wales
OEH	NSW Office of Environment and Heritage
PCT	Plant Community Type

Term	Description
PMST	Protected Matters Search Tool
PW	Priority Weed
RAMSAR	Convention on Wetlands of International Importance
REF	Review of Environmental Factors
ROKAMBA	Republic of Korea-Australia Migratory Bird Agreement
SEPP	State Environmental Planning Policy
SIS	Species Impact Statement
TECs	Threatened Ecological Communities
TSPD	Threatened Species Profile Database
VIS	Vegetation information system
WoNS	Weeds of National Significance

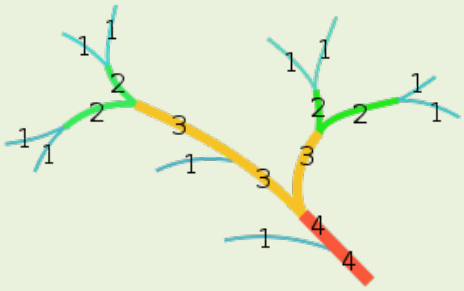
GLOSSARY OF TERMS

Term	Description

Areas of outstanding biodiversity	An area of outstanding biodiversity value is:
	• an area important at a State, national or global scale, and
	• an area that makes a significant contribution to the persistence of at least one of the following:
	  ○ multiple species or at least one threatened species or ecological community
	  ○ irreplaceable biological distinctiveness
	  ○ ecological processes or ecological integrity
	  ○ outstanding ecological value for education or scientific research.
	
	The declaration of an area may relate, but is not limited, to protecting threatened species or ecological communities, connectivity, climate refuges and migratory species (BC Act).

Cumulative impact	The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Refer to Clause 228(2) of the EP&A Regulation 2000 for cumulative impact assessment requirements.
Direct impacts	Are those that directly affect the habitat of species and ecological communities and of individuals using the study area. They include, but are not limited to, death through predation, trampling, poisoning of the animal/plant itself and the removal of suitable habitat (OEH 2018).
Habitat	The area occupied or used, including areas periodically or occasionally occupied or used, by any threatened species or ecological community and includes all the different aspects (both biotic and abiotic) used by species during the different stages of their life cycle (OEH 2018).
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 (DE 2013).
Indirect impact	Occur when project-related activities affect species or ecological communities in a manner other than direct loss within the subject site. Indirect impacts may sterilise or reduce the habitability of adjacent or connected habitats. Indirect impacts can include loss of individuals through starvation, exposure, predation by domestic and/or feral animals, loss of breeding opportunities, loss of shade/shelter, reduction in viability of adjacent habitat due to edge effects, deleterious hydrological changes, increased soil salinity, erosion, inhibition of nitrogen fixation, weed invasion, noise, light spill, fertiliser drift, or increased human activity within or directly adjacent to sensitive habitat areas (OEH 2018).
Invasive species	Is an introduced species, including an introduced (translocated) native species, which out-competes native species for space and resources, or which is a predator of native species. Introducing an invasive species into an area may result in that species becoming established. An invasive species may harm listed threatened species or ecological communities by direct competition, modification of habitat or predation.
Local occurrence (EEC)	The ecological community present within the study area. However, the local occurrence may include adjacent areas if the ecological community on the study area forms part of

Term	Description
	a larger contiguous area of the ecological community and the movement of individuals and exchange of genetic material across the boundary of the study area can be clearly demonstrated.
Local population (in regard to a threatened or migratory species)	A local population of a threatened plant species comprises those individuals occurring in a defined area or a cluster of individuals extends into habitat adjoining and contiguous with the study area where the individuals could reasonably be expected to cross-pollinate. A local population of fauna species comprises those individuals known or likely to occur in a defined area, as well as any individuals occurring in adjoining areas (contiguous or otherwise) that are known or likely to utilise habitats in the study area. The local population of migratory or nomadic fauna species comprises those individuals likely to occur in the study area from time to time (DECC 2007).
Low condition (vegetation)	Either: a) woody native vegetation with native over-storey percent foliage cover less than 50% of the lower value of the over-story percent foliage cover benchmark for that vegetation type, and where either: • less than 50% of ground cover vegetation is indigenous species, or • greater than 90% of ground cover vegetation is cleared or b) native grassland, wetland or herb field where either: • less than 50% of ground cover vegetation is indigenous species, or • more than 90% of ground cover vegetation is cleared. Note: The percentages for the ground cover calculations must be made in a season when the proportion of native ground cover vegetated compared to non-native ground cover vegetation is likely to be at its maximum.
Moderate to good condition (vegetation)	If native vegetation is not in low condition (above), it is in moderate to good condition.
Mitigation	Action to reduce the severity of an impact.
Mitigation measure	Any measure that prevents, reduce or controls adverse environmental effects of a project.
NSW (Mitchell) landscape	Landscapes with relatively homogeneous geomorphology, soils and broad vegetation types, mapped at a scale of 1:250,000 (OEH 2018).
Proposal	Is considered to include 'all activities likely to be undertaken within the subject site to achieve the objective of the proposed development' (DECC 2007).
Risk of extinction	The likelihood that the local population will become extinct either in the short-term or in the long-term as a result of direct or indirect impacts on the viability of that population.
Search area	Is considered to 'include the lands that surround the subject site for a distance of 10 km' (DECC 2007). The search area has been used to search information sources to establish the landscape context of the subject site.
Significant impact	A 'significant impact' is an impact which is important, notable, or of consequence, having regard to its context or intensity.
Strahler stream order	Strahler stream orders are used to define stream size based on a hierarchy of tributaries, based on the diagram below.

Term	Description
	
Study area	Means the subject site and any additional areas which are likely to be affected by the proposal, either directly or indirectly. The study area should extend as far as is necessary to take all potential impacts into account (OEH 2018). In this instance, the study area extends 1,500 m from the site.
Subject site	Means the area directly affected by the proposal. The subject site includes the footprint of the proposal and any ancillary works, facilities, accesses or hazard reduction zones that support the construction or operation of the development or activity (OEH 2018).
Target species	A species that is the focus of a study or intended beneficiary of a conservation action or connectivity measure.

1 INTRODUCTION

1.1 PROPOSAL OVERVIEW

OzArk Environment & Heritage (OzArk) has been engaged by the Land and Housing Corporation, Department of Planning and Environment (the client), to complete a Biodiversity Assessment Report (BAR) for Lot 7332 in DP1166365, Lot 7025 in DP1020631, Lot 7317 in DP1166614 and works within Lot 1 DP1077961, located at Watson Close, Upper Morton, Lower Morton, York, Dawson, Belah and Farnell Streets, Forbes (the subject site). The subject site would be impacted by the Land and Housing Corporation (LAHC) Forbes Housing Subdivision (the proposal). The subject site is currently under ownership of the State of New South Wales and is a reserve within the meaning of part 5 of the *Crown Lands Act* 1989. The proposal would create 102 Lots, over an area of approximately 12.3 hectares (ha). To acknowledge that the current proposal is for subdivision only. The subject site is in the Forbes Shire Council Local Government Area (LGA) (**Figure 1-1** and **Figure 1-2**). The proposed development is shown in more detail in **Figure 1-3** and **Figure 1-4** and incorporates all subdivision and ancillary works, including, but not limited to, vegetation removal, earthworks, road construction, service installation, access tracks and a stormwater management basin.

The environmental assessment and determination of the proposal has been undertaken in accordance with Part 5 of the *Environmental Planning and Assessment Act* 1979 (EP&A Act). For this proposal, Land and Housing Corporation is the determining authority (EP&A Act s.5.1) as the proposal is development without consent, pursuant to Division 6, Section 42, Subclause 2, for Residential Development under the *State Environmental Planning Policy (Housing)* 2021. The BAR has been prepared in accordance with Clause 171 of the *EP&A Regulation* (2021).

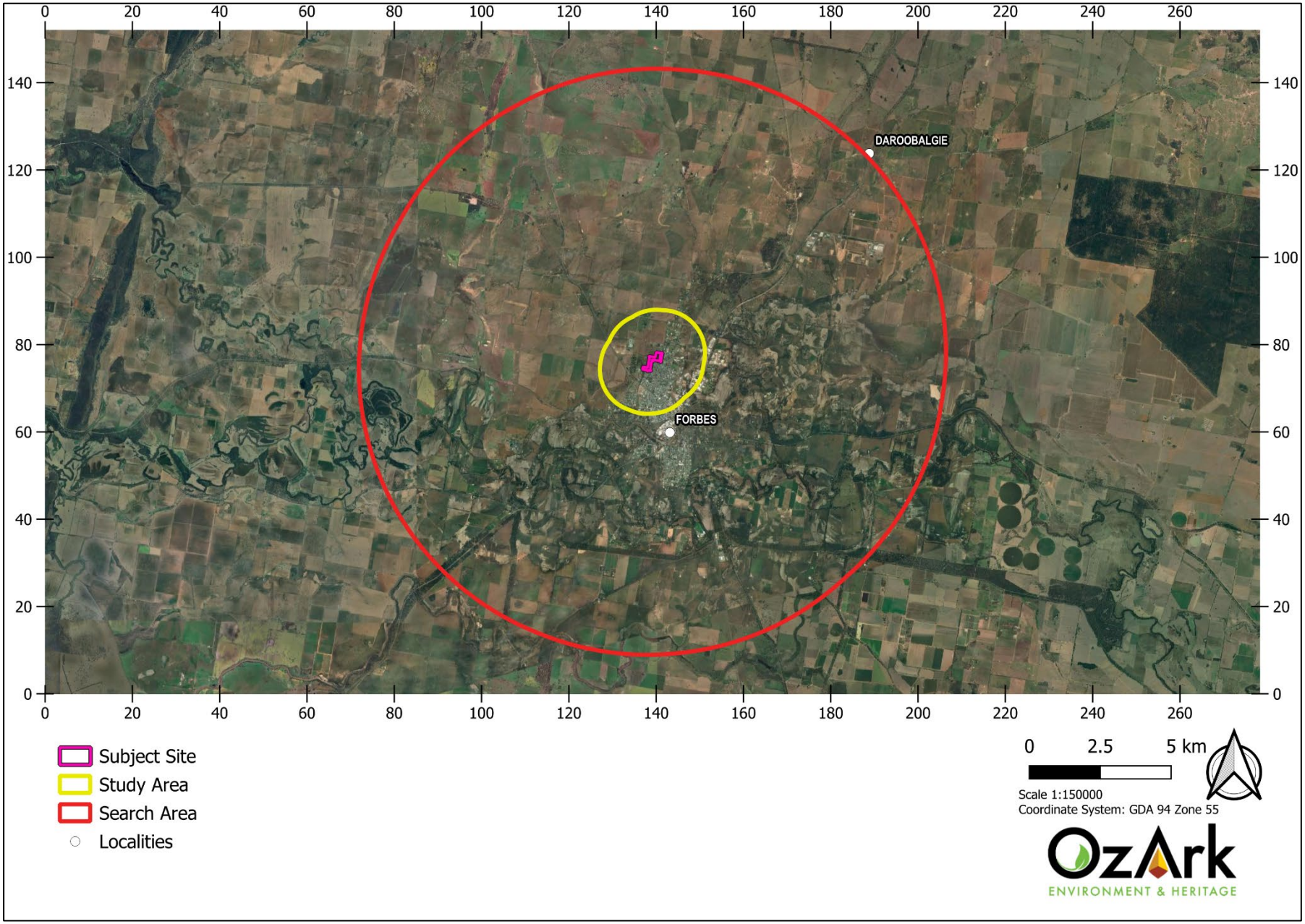


Figure 1-1. Map showing the regional context of the proposal.

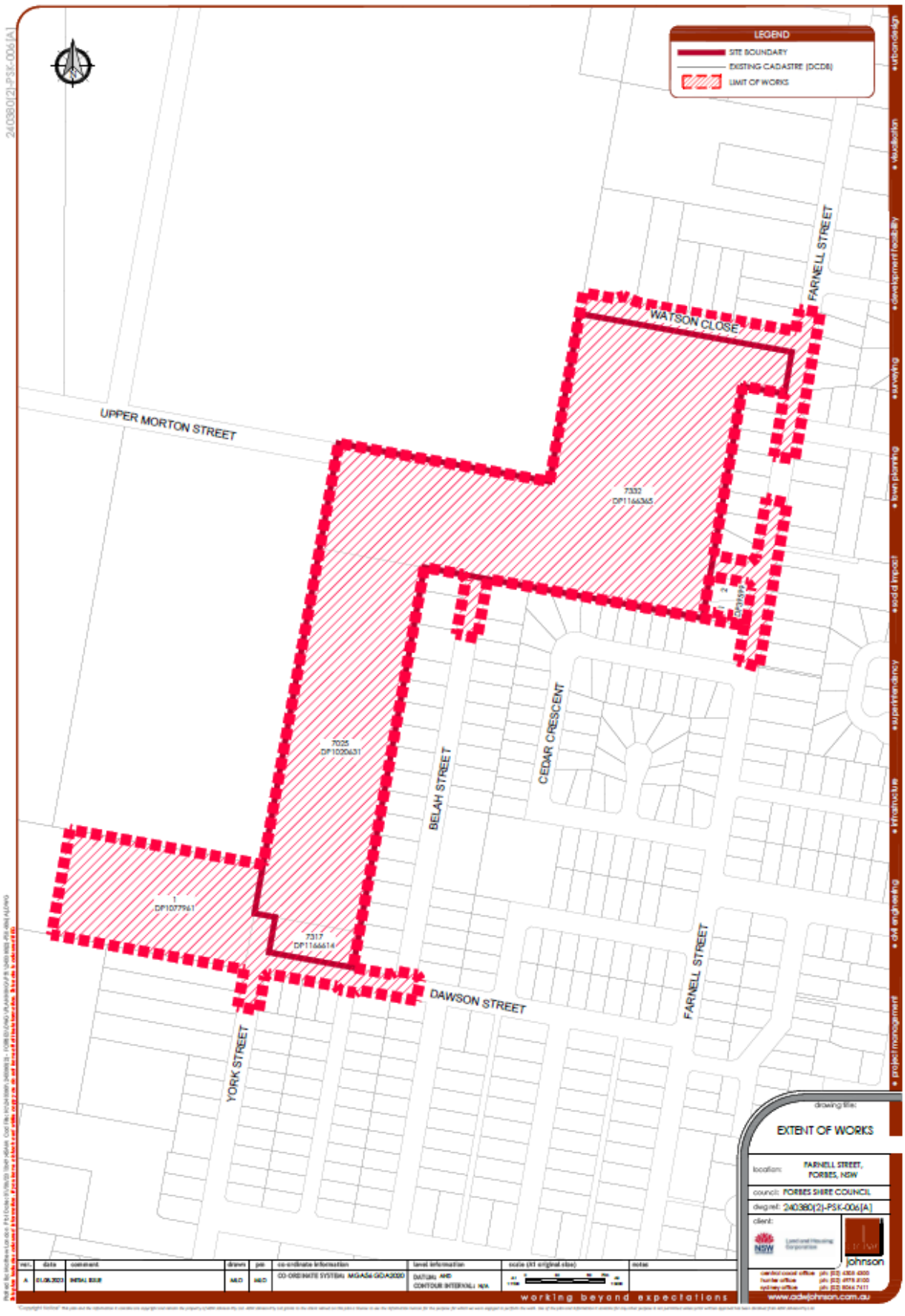


Figure 1-2. Site plan showing the subject site.

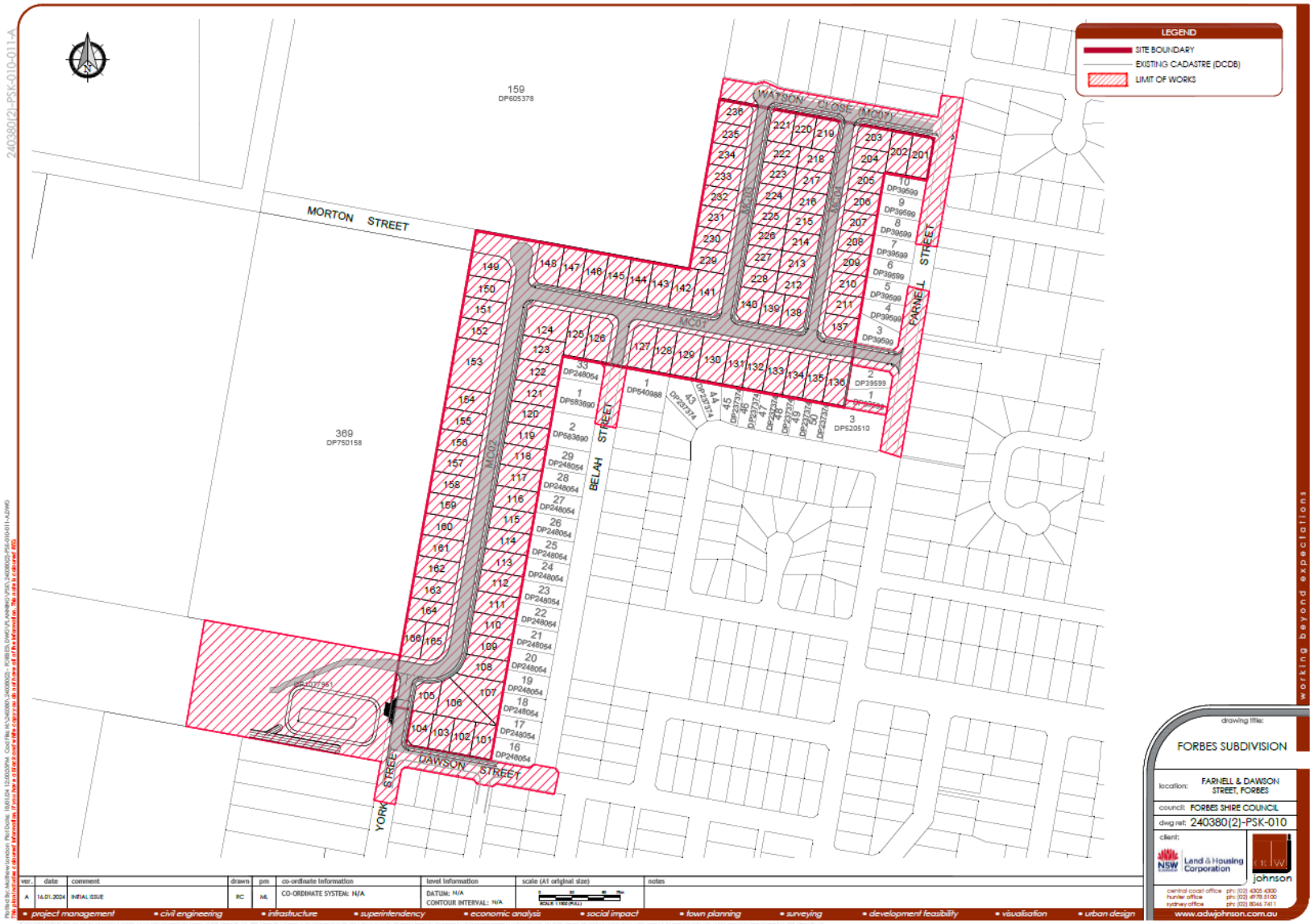


Figure 1-3. Proposed Subdivision Plan.

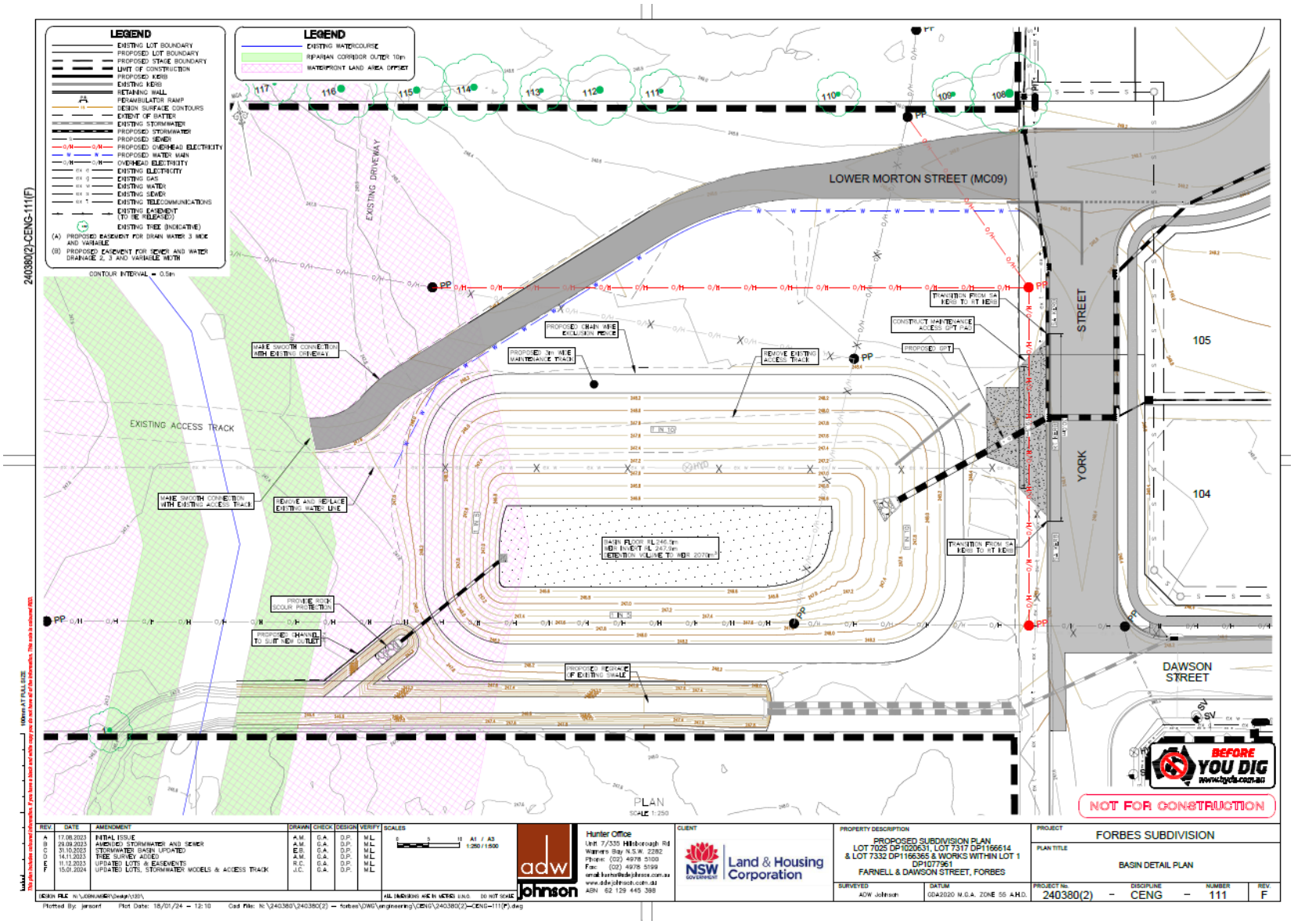


Figure 1-4. Proposed Subdivision Plan (magnified stormwater basin design).

Table 1-1. Regional context for the project.

Criteria	Value
Interim Biogeographic Regionalisation for Australia (IBRA Region)	South Western Slopes
Interim Biogeographic Regionalisation for Australia Sub-region (IBRA Sub-Region)	Lower Slopes
State	NSW
Local Government Area	Forbes Shire Council
Nearest town	Forbes
Nearest park, state forest or reserve	Lachlan Valley National Park (~18.6km)
Mitchell Landscapes	Calarie Plains
Nearest waterway (Name, Type)	1 minor unnamed non-perennial watercourses Lachlan River (~3.1km)
Surrounding land use	5.4 Residential and Farm infrastructure 5.7 Transport and Communication 2.1 Grazing Native Vegetation 3.2 Grazing Modified Pastures
Surrounding land zone	RU1 Primary Production R1 General Residential RE1 Public Recreation

1.2 SEARCH AREA, STUDY AREA, SUBJECT SITE

This report uses the following terms to describe and contextualise the development location:

10 km search area — the area within a 10 km radius of the subject site. This 10 km buffer has been used to search information sources to establish the landscape context of the subject site.

Study area — the area within a 1,500 m radius of the subject site. Native vegetation has been mapped within this 1,500 m buffer to provide some context regarding the connectivity and cover of native vegetation in the area affected by the proposal, and to inform the impact assessment of the proposal.

Subject site — the footprint of the proposal and the area directly affected by the development activities.

2 STATUTORY AND PLANNING CONTEXT

2.1 COMMONWEALTH LEGISLATION

2.1.1 Environment Protection & Biodiversity Conservation Act 1999 (EPBC Act)

To assist with nationally listed matters assessments, the *Matters of National Environmental Significance: Significant impact guidelines 1.1. Environment Protection and Biodiversity Conservation Act 1999* (DoE 2013) are followed.

Birds which are listed in the following international agreements are listed as migratory birds under the EPBC Act.

- Japan-Australia Migratory Bird Agreement (JAMBA).
- China-Australia Migratory Bird Agreement (CAMBA).
- Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA).

Matters which fall under this legislation are addressed in **Section 5.6** and **Appendix F**.

2.2 STATE LEGISLATION

2.2.1 *Environmental Planning and Assessment Act* 1979 (EP&A Act)

The EP&A Act is the principal planning legislation for NSW. It provides a framework for the overall environmental planning and assessment of proposals.

Part 5 of this Act requires that a determination be made as to whether a proposed action is likely to significantly affect threatened species or ecological communities, or their habitats listed on Schedule 1 and 2 of the BC Act. Where found, the assessment criteria under Part 7 Section 7.3 of the BC Act (the 'Assessment of Significance') will be drawn upon to determine whether there would be a significant effect on these species and hence whether a Species Impact Statement [or Biodiversity Development Assessment Report should the proponent elect that option] is required.

2.2.2 *Biodiversity Conservation Act* 2016 (BC Act)

The BC Act relates to the terrestrial environment and includes threatened species, ecological communities, key threatening processes and other protected animals and plants.

Section 7.3 of the BC Act contains a five-part test of significance for determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats.

Where a significant impact is likely to occur, a species impact statement (SIS) or biodiversity development assessment report must be prepared.

BC Act listed species and communities are addressed in **Sections 5.2 & 5.3** and **Appendices D and E**.

2.2.3 *Biosecurity Act* 2015

The Biosecurity Act aims to manage biosecurity risks from animal and plant pests and diseases, weeds and contaminants in NSW. The Biosecurity Act imposes a general biosecurity duty to ensure that, so far as is reasonably practicable, any biosecurity risk is prevented, eliminated or minimised. The proponent is required to manage the presence of weeds in the study area.

2.2.4 *Local land Services Act* 2013

The objects of the Act include 'to ensure the proper management of natural resources in the social, economic and environmental interests of the State, consistently with the principles of ecologically sustainable development. The Act regulates the clearing of native vegetation, however section 60(O)(b)(ii) excludes the need for consent under the LLS Act where the clearing is an activity carried out by a determining authority within the meaning of Part 5 of the EP&A Act 1979.

2.2.5 *Fisheries Management Act* 1994 (FM Act)

Part 7A of the FM Act along with schedules within the act, list threatened aquatic and marine species, populations and ecological communities and key threatening processes which must be considered as part of obligations under Section 5.6 of the EP&A Act.

Section 199 of the FM Act states that a public authority must give the Minister for Agriculture written notice of the proposed works prior to carrying out any dredging or reclamation work. Dredging work means any work that involves excavating water land. Reclamation work means any work that involves depositing any material on water land.

Under section 198A of the FM Act:

"water land" means land submerged by water:

(a) whether permanently or intermittently, or

(b) whether forming an artificial or natural body of water,

and includes wetlands and any other land prescribed by the regulations as water land to which this Division applies.

Refer to **Section 4.4** for requirements under the FM Act.

2.2.6 *Water Management Act* 2000 (WM Act)

The WM Act aims to provide for the 'sustainable and integrated management of the water sources of the state for the benefit of both present and future generations.'

The WM Act provides for the granting of various licenses and approvals, including for the use of water and water supply work. Additionally, the WM Act identifies provisions relating to 'controlled activities' carried out on 'waterfront land' (within 40 m of a river bank, lake shore, or estuary's high water mark). Controlled activities include:

- erecting a building,
- carrying out works,
- removing material (e.g., plants and rocks),
- depositing material (e.g., gravel and fill),
- any activity which affects the quantity or flow of water in a water source.

Examples of controlled activities include:

- construction of watercourse crossings (e.g., bridges, bed level crossings),
- laying pipes and cables,
- sand and gravel extraction.

Public Authorities (e.g., Local Government Council) have an exemption under Clause 41 of the *Water Management (General) Regulation 2018*, therefore controlled activity approval is not required. Due to the nature of the proposed works (see **Figure 1-4**), it falls under the category "Stormwater outlet structures and essential services" and is an acceptable controlled activity according to DPE 2022b.

2.2.7 Forbes Shire Council Local Environment Plan

A Local Environmental Plan (LEP) is a legal document prepared by Council and approved by the State Government to regulate land use and development. LEPs guide planning decisions for local governments. The plan allows Council to regulate the ways in which all land both private and public may be used and protected through zoning and development controls. The subject site falls within the Forbes Shire Council LGA; consequently, the provisions of the Forbes Local Environmental Plan 2013 apply to the proposal.

The particular aims of this Plan, relevant to the proposal, are as follows:

> (aa) to protect and promote the use and development of land for arts and cultural activity, including music and other performance arts,
>
> (a) to encourage and manage ecologically sustainable development in Forbes,
>
> (b) to reinforce the existing urban character of Forbes as the urban focus,

(c) to reinforce the rural character of Forbes while promoting sustainable development,

(d) to protect the agricultural land of Forbes for continued agricultural production while allowing for planned expansion at the urban fringe,

(e) to promote Forbes as a premier tourist-destination building on its unique heritage and environmental attributes as well as sporting and leisure facilities,

(f) to protect, enhance and conserve the natural environment, including the Lachlan River, Lake Forbes, wetlands, native vegetation, environmentally sensitive land and other natural features that provide habitat for fauna and flora, provide scenic amenity and that may prevent or mitigate land degradation,

(g) to provide a range and variety of housing choices to cater for the different needs and lifestyles of residents.

The subject site falls within an area mapped as possessing terrestrial biodiversity values in the LEP (**Figure 2-1**).

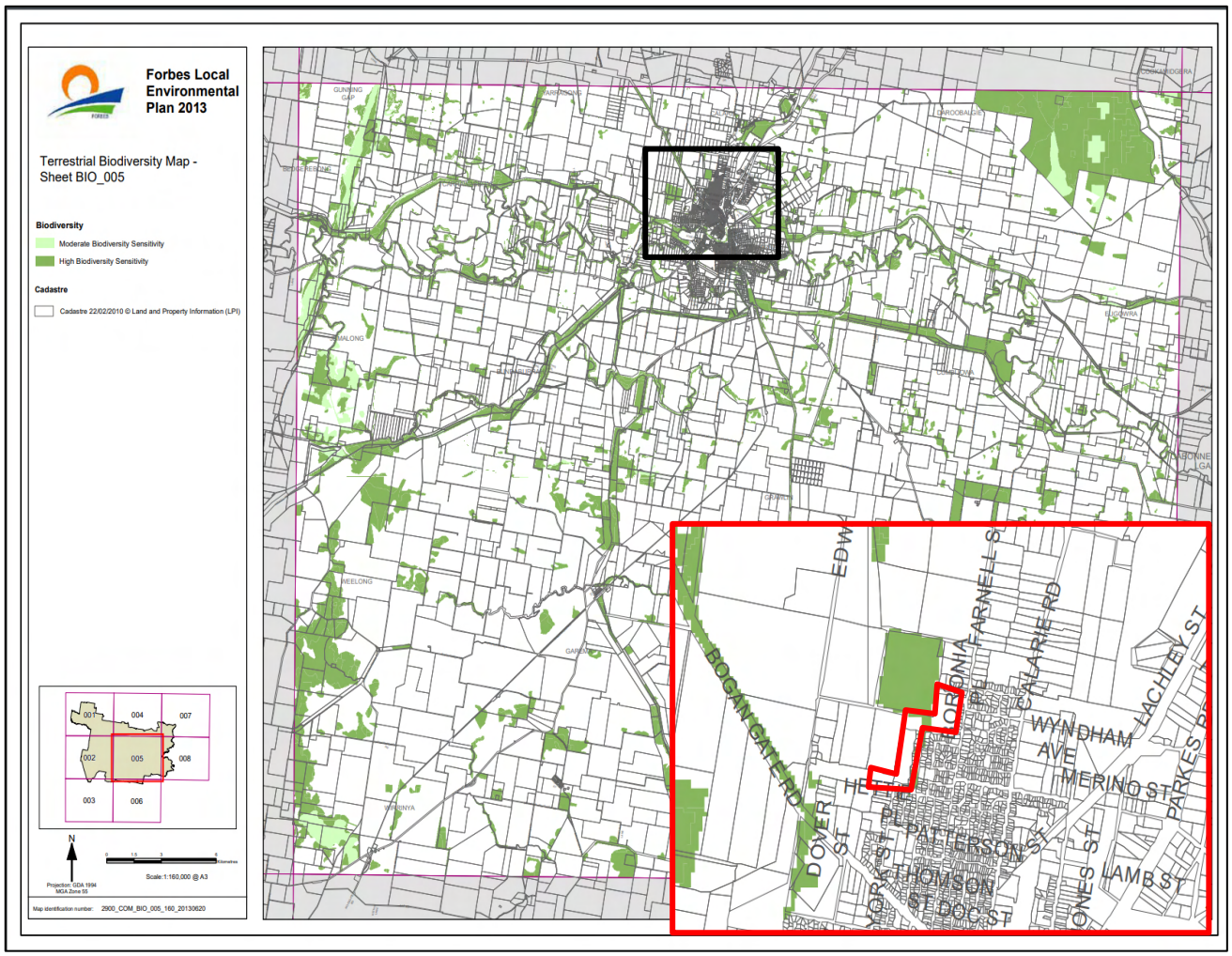


Figure 2-1. Terrestrial Biodiversity Map from the (Forbes LEP 2013).

2.3 STATE ENVIRONMENTAL PLANNING POLICIES UNDER THE EP&A ACT 1979

2.3.1 *State Environmental Planning Policy (Transport and Infrastructure)* 2021

The Transport and Infrastructure SEPP aims to facilitate the effective delivery of infrastructure across the state, including for roads and road infrastructure facilities.

2.3.2 *State Environmental Planning Policy (Biodiversity and Conservation)* 2021

The *SEPP (Biodiversity and Conservation)* 2021 is the collation of biodiversity and conservation related SEPP. Chapters 3 and 4 aim to encourage the 'proper conservation and management of areas of natural vegetation that provide habitat for Koalas to ensure a permanent free-living population over their present range and reverse the current trend of Koala population decline'.

The SEPP only applies to developments under Part 4 of the EP&A Act, specifically excluding Part 5 activities, therefore the proposal is exempt.

3 METHODS

The ecological assessment was carried out in three stages:

1. Desktop searches and review of ecological databases and information to identify threatened species, populations or ecological communities listed in the NSW *Biodiversity Conservation Act* 2016, *Fisheries Management Act* 1994 or the Commonwealth *Environment Protection and Biodiversity Conservation Act* 1999 that have the potential to occur in the study area.

2. Field survey of the subject site for the purposes of:

    - collating lists of those plants present, these being used to assist with the identification of the site' vegetation communities
    - determining the habitat structures present
    - determining habitat availability for fauna species recorded or expected to occur.
    - Identifying and documenting the nature and extent of any threatened species or communities and describing its 'viable local population'.

3. Preparation of a written Biodiversity Assessment Report (BAR) that describes the impacts of the proposed activity on native vegetation and threatened species, populations and ecological communities, and provides recommendations to avoid, minimise and mitigate these impacts.

3.1 PERSONNEL

OzArk operates under NSW Scientific Research License 101908, and NSW Department of Primary Industries (DPI) Accreditation of a corporation as an animal research establishment Ref No. AW2022/012.

The field survey was completed by Ecologist Dr David Orchard on 12th of May 2023 between the hours of 12:00 pm and 3:00 pm. For reference, the weather conditions experienced during the site inspection were warm, clear and fine. Reporting components were completed by ecologist Paris Hughes with quality control provided by Senior Ecologist Dr Crystal Graham. Key details of personnel are provided in **Table 3-1**.

Table 3-1 Summary of OzArk personnel qualifications.

Name	Position	CV Details
Dr Crystal Graham	Senior Ecologist	• BAM-accredited Assessor #BAAS22024 • Postdoctoral Fellow – Smithsonian Tropical Research Institute • Doctor of Philosophy (Biology) – University of Sydney • Honours in Biology – University of Sydney • Bachelor of Advanced Science – University of Sydney • 4WD Training • First Aid Training • WH&S Induction Training for Construction Work • Worker at Heights Training
Dr David Orchard	Ecologist	• BAM-accredited Assessor #BAAS21028 • Doctor of Philosophy (Agriculture) – Charles Sturt University • Graduate Diploma in Science (Botany) – University of New England • Bachelor of Arts (Honours)– Australia National University • First Aid Training • WH&S Induction Training for Construction Work • Rail Industry Worker Card
Paris Hughes	Ecologist	• Honours (Animal Behaviour) – Flinders University • Bachelor of Science (Biodiversity and Conservation) – Flinders University • First Aid Training • WH&S Induction Training for Construction Work

3.2 BACKGROUND RESEARCH

Preliminary assessments drew on local experience, previous reporting and information held on government databases and archives. Results of database searches were used to assist in identifying distributions, suitable habitats and known records of threatened species to increase the effectiveness of field investigations. Information sources reviewed included the following:

- NSW Government online aerial imagery (www.maps.six.nsw.gov.au).
- Critical habitat register, available on the DPIE website at: https://www.environment.gov.au/cgi-bin/sprat/public/publicregisterofcriticalhabitat.pl
- NSW Government Biodiversity Values Map which identifies land with high biodiversity value, as defined by the Biodiversity Conservation Regulation 2017 https://www.lmbc.nsw.gov.au/Maps/index.html?viewer=BOSETMap
- Flora and fauna records and profiles contained in the NSW Threatened Species Database, EPBC Protected Matters Search Tool and DPI threatened fish distribution maps.
- BioNet (www.bionet.nsw.gov.au) Wildlife Atlas and Plant Community Type databases.
- Flora of NSW (Harden 1991-2002) and Flora NSW Online https://plantnet.rbgsyd.nsw.gov.au/floraonline.htm .
- State Vegetation Type Map C1.1.M1.1 (DPE, 2022a)

Database searches were undertaken before the field assessment to determine the predicted species and also those previously recorded within 10 km of the subject site. The results of these searches led to the identification of key species for field survey effort and targeted searches.

Results of the database searches are provided in **Appendix A.** A series of other background searches were performed to comply with legal standards (**Table 3-2**).

Table 3-2 Presence and/or proximity of environmental considerations.

Environmental Considerations	In the study area?
Land identified on the Biodiversity Values Map under the NSW *BC Act 2016*	Yes (**Appendix A**)
Area of Outstanding Biodiversity Value (AOBV) under the NSW *BC Act 2016*	No
Critical habitat nationally?	No
An area reserved or dedicated under the *National Parks and Wildlife Act 1974*?	No
Is the proposal located within land reserved or dedicated within the meaning of the *Crown Lands Act 1989* for preservation of other environmental protection purposes?	Yes (**Section 1.1**)
A World Heritage Area?	No
Environmental Protection Zones in environmental planning instruments?	No
Lands protected under *SEPP (Biodiversity and Conservation) 2021*?	Yes (**Section 2.3.2**)
Land identified as wilderness under the *Wilderness Act 1987* or declared as wilder-ness under the *National Parks and Wildlife Act 1974?*	No
Aquatic reserves dedicated under the *Fisheries Management Act 1994*?	No
Aquatic Threatened Ecological Community?	No
Wetland areas dedicated under the Ramsar Wetlands Convention?	No
Land subject to a conservation agreement under the *National Parks and Wildlife Act 1974*?	No
Land identified as State Forest under the *Forestry Act 1916*?	No
Acid sulphate area?	No
Protected riparian habitat?	No
Mapped Key Fish Habitat?	No

3.3 HABITAT ASSESSMENT

The results of the desktop review and the field assessment were collated and reviewed in the context of local ecological knowledge to determine the likelihood of occurrence of threatened species and ecological communities, and potential impacts of the proposal (**Appendix D**). For instance, some threatened species may be predicted to occur locally but, on assessment of the site, key habitat elements or conditions are not present, in which case the species is assessed as not being present or impacted.

The likelihood of occurrence of threatened species, populations or ecological communities was categorised as follows:

- 'Known' – the species was observed or has been previously recorded on the site.

- ‘High’ – a medium to high probability that a species uses the site, based on nearby records and suitable habitat being present.
- ‘Moderate’ – suitable habitat for a species occurs on the site, but the species has not been observed or previously recorded at the site.
- ‘Low’ – a very low likelihood that the species uses the site, based on lack of the preferred type and size of habitat.
- ‘Absent’ – habitat on-site and in the vicinity is unsuitable for the species.

For those species or ecological communities considered to have a moderate-high likelihood of occurring at the site (**Appendix D**), tests of significance were then completed for these species and ecological communities in accordance with the BC Act (**Appendix E**) and/or the assessment of significance under the EPBC Act **(Appendix F**), and the relevant guidelines for these assessments.

3.4 FIELD SURVEY

The objectives of the field survey were to:

- Identify native species and vegetation communities present.
- Describe the quality and value of the vegetation and the flora and fauna habitat at the development site.
- Determine if species, populations or ecological communities listed as threatened under the BC Act or EPBC Act are/may be present.
- Determine the significance of impact to any threatened entities present or likely to be present.

3.4.1 Vegetation surveys

Vegetation communities were identified in accordance with the online NSW Master Plant Community Type Classification (OEH, 2018a), which is the current state-wide vegetation classification system for Plant Community Types (PCT). This classification system is used for vegetation mapping, development assessment and site planning purposes. It describes over 1,500 PCTs across the state, and groups the vegetation communities into vegetation Class and Formation / Sub-formation as per Keith (2004).

In this study PCTs were identified on the basis of the following inputs:

- The State Vegetation Type Map (DPE, 2022a), which provides predictive mapping of PCTs in and around the subject site. This mapping is indicative only. It is not necessarily accurate at a fine scale for the purposes of the current study. Owing to technical limitations in the published mapping, the locations of predicted PCTs within the study area cannot be provided.

- Professional ecological knowledge about locally occurring vegetation types and landscape, soil and topographic patterns, including transitions from one community to another and potential for intergrades between plant communities.
- Field survey results confirming the flora species present, vegetation structure, landscape position and soil type at the subject site and the extent and condition of native vegetation. When surveying the assessment area, a version of the Random Meander Method (Cropper 1993) was employed. This method entails traversing sites that require investigation by foot, during which notes are made on the structure and floristic composition of the native vegetation, as well as the availability of habitat for threatened species.
- The BioNet Vegetation Classification database was used to identify the candidate vegetation communities likely to be present based on the site conditions (flora species present, vegetation structure, bioregion, and landscape position and soil type) and the relevant published PCT descriptions.

If any of the PCTs were identified as having potential to be part of a Threatened Ecological Community (TEC), the relevant identification guidelines (NSW Scientific Committee listing criteria and Commonwealth identification guides) were consulted to determine the status of the vegetation community present on the subject site. These guidelines provide the identification criteria used to positively identify the community as being part of the TEC. The criteria include location, species present, overstorey species, weed cover, number and type of native species including whether certain 'important' native species are present.

Plant identification followed nomenclature in the Royal Botanic Gardens PlantNet online database (Royal Botanic Gardens and Domain Trust, 2023).

The site was assessed according to the specifications for a BDAR, though a BDAR was not ultimately required. In total, six BAM plots were completed on 12 May 2023 (see **Figure 5-1**). Plots were surveyed according to the BAM (2020) as follows:

- The survey plots consisted of nested 20 m x 50 m and 20 m x 20 m plots.
- Species composition and structure (species and percent cover) data were collected from within 20 m x 20 m plot.
- Vegetation function data (size and number of trees, presence of hollow-bearing trees and woody debris) were collected from within 20 m x 50 m plot.
- Percent litter cover data were collected within five 1 m x 1 m squares positioned at 5 m, 15 m, 25 m, 35 m and 45 m points of the 50 m plot.

- The plots were positioned within the subject land and their GPS locations were recorded (GDA 94 / MGA Zone 55).

The remainder of the subject land was traversed by foot to confirm the nature of vegetation (i.e. native or non-native) and search for habitat features such as hollow bearing trees, rock outcrops, and nests.

3.4.2 Fauna surveys

The subject site was incidentally searched for fauna use while undertaking floristic and habitat surveys. All habitat trees (i.e., hollow-bearing trees or trees containing nests) were GPS tagged. The size, number of hollows and/or type of nest was recorded for each tree. Potential habitat (e.g., rocks, logs, loose bark and coarse woody debris) was examined for cryptic species. Areas of suitable substrate were searched for animal tracks and burrows. Secondary evidence of fauna presence on the subject site (e.g., scats, feathers and sloughed skin) was also searched for.

3.5 LIMITATIONS

This study is based upon the species data available at the time of the study, and the environmental conditions, season, and time constraints imposed by the project for the field survey. Specific limitations on this study include the following:

- The field survey was completed over a period of approximately three hours in May 2023. Owing to the short duration of the survey and the seasonal conditions at the time, it is unlikely that the survey captured all flora and fauna species that may occur locally. Therefore, the included flora and fauna lists should not be considered conclusive as a greater diversity of species are likely to use the site.
- Fauna trapping, frog surveys and nocturnal spotlighting were not undertaken for the current assessment.
- Microbat ultrasonic call capture and analysis was not undertaken.
- The field survey was undertaken in or very near to the subject site and plant community type extents outside of the subject site were not confirmed.

To overcome some of these limitations, a ‘precautionary approach’ for species presence has been adopted where required. If suitable habitat for a particular threatened species is present on the site or known to occur in the study area, then the species is assumed to also be present and the impact assessment is completed on that basis.

The above-mentioned constraints were also considered when preparing the recommendations of avoiding, minimising and mitigating potential impacts.

4 EXISTING ENVIRONMENT

4.1 BIOREGION

The study area falls within the Lower Slopes Subregion of the South Western Slopes Bioregion as per the Interim Biogeographic Regionalisation of Australia (IBRA) (Thackway & Cresswell, 1995). The subregion is characterised by geology, landforms, soil types and vegetation as described in **Table 4-1.**

Table 4-1: Description of the Lower Slopes subregion (OEH, 2018b).

Lower Slopes Subregion	
Geology	Ordovician to Devonian folded and faulted sedimentary sequences with inter-bedded volcanic rocks and large areas of intrusive granites.
Landforms	Undulating and hilly ranges and isolated peaks set in wide valleys at the apices of the Riverina alluvial fans.
Soils	Similar to the Upper Slopes but with more extensive red-brown earths on undulating plains and more extensive grey clays on alluvium.
Vegetation	Dwyer's gum on granite, red ironbark on sedimentary rocks Hill red gum, white cypress pine and red stringybark in the ranges. Grey box woodlands with yellow box, white cypress pine and belah on lower areas. Poplar box, kurrajong, wilga and red box in the north, limited areas of bull mallee, blue mallee, green mallee and congoo mallee in the central west. Myall, rosewood and yarran on grey clays, yellow box, polar box, and belah on alluvial loams. River red gum on all streams with black box in the west with some lignum and river cooba.

4.2 NSW LANDSCAPES

The landscapes of NSW, previously termed Mitchell Landscapes, were mapped in 2002 to provide a framework for reporting reserve establishment and for determining over-cleared landscapes (Mitchell, 2002). These landscapes broadly describe areas of similar topography, geology, soils and vegetation. The subject site falls within the **Calarie Plaines** landscape, while the **Bimbi Plains, Lachlan - Bland Channels and Floodplains** and **Eugowra Plains** landscape also occurs in the wider study area.

4.2.1 Calarie Plains

Undulating low hills and rises on folded steep dipping Ordovician quartz sandstone, slate and chert, Silurian and Devonian quartzite, sandstone, conglomerate and small areas of limestone. General elevation 250 to 300m, local relief 15m. Open woodlands of red ironbark (Eucalyptus sideroxylon) and grey box (*Eucalyptus microcarpa*) with a grassy understorey.

4.2.2 Bimbi Plains

Quaternary alluvial plains from bedrock hills and ridges of the Gobondery/Gillenbine and the Belmont/Brooklyn land systems. General elevation 200 to 250m, local relief 30m. Gravelly clay loams and red brown clays, red-brown texture-contrast soils on higher slopes grading to red-brown gradational and uniform profiles of clay loams and clays along creeks. Grey box (*Eucalyptus microcarpa*) and white cypress pine (*Callitris glaucophylla*) originally dominant, sparse bimble box (*Eucalyptus populnea*) along creek lines. Mostly cleared and cultivated.

4.2.3 Lachlan - Bland Channels and Floodplains

Extensive Quaternary alluvial plains at the break in slope between the western slopes and western plains. Numerous tributary streams with levees and backplain swamps, occasional lakebed. General elevation 200 to 280m, local relief <10m. Grey cracking clays with gilgai along channels and in swamps. Low levees of red-brown sand or loamy sand on stream banks extensive red-brown structured texture-contrast soils on the plain. Extensively cleared and cropped. Woodlands of bimble box (*Eucalyptus populnea*), grey box (*Eucalyptus microcarpa*), yellow box (*Eucalyptus melliodora*) and white cypress pine (*Callitris glaucophylla*) with grasses. river red gum (*Eucalyptus camaldulensis*) and river cooba (*Acacia stenophylla*) along creeks, black box (*Eucalyptus largiflorens*) lining back-plain swamp margins. Lignum (*Muehlenbeckia cunninghamii*), common reed (*Phragmites australis*) and cane grass (*Eragrostis australasica*) on lake floors and larger swamps. Buloke (*Allocasuarina luehmannii*) and belah (*Casuarina cristata*) on extensive gilgai.

4.2.4 Eugowra Plains

Alluvial plains and lower hill slopes of Lachlan River terraces and tributary valleys on Quaternary alluvium. General elevation 250 to 300m, local relief 15m. Extensive red-brown earths and cracking clay soils. Extensively cleared and farmed originally carried white cypress pine (*Callitris glaucophylla*) and grey box (*Eucalyptus microcarpa)* with yellow box (*Eucalyptus melliodora*) communities and river red gum (*Eucalyptus camaldulensis*) adjacent to streamlines. Includes small areas of low bedrock hills.

4.3 CLIMATE

The study area experiences warm summers, with the highest mean maximum temperature of 34.4°C experienced in January. Mild minimum temperatures are experienced during this summer period. Winters are cool, with temperatures in the coolest month (July) ranging from a minimum of 2.7°C to a mean maximum of 14.7°C (Bureau of Meteorology, 2023). An average of 526.7 mm

of rainfall is recorded annually. BOM statistics show that the study area experiences generally wetter summer months and drier winter months (Bureau of Meteorology, 2023) (**Figure 4-1**).

The mean climate statistics recorded for the Forbes NSW are presented **Figure 4-1.** Monthly rainfall trends were retrieved from Forbes Airport Weather Station (065103). On the day of survey, the weather was warm, fine, cloudless and without strong prevailing wind.

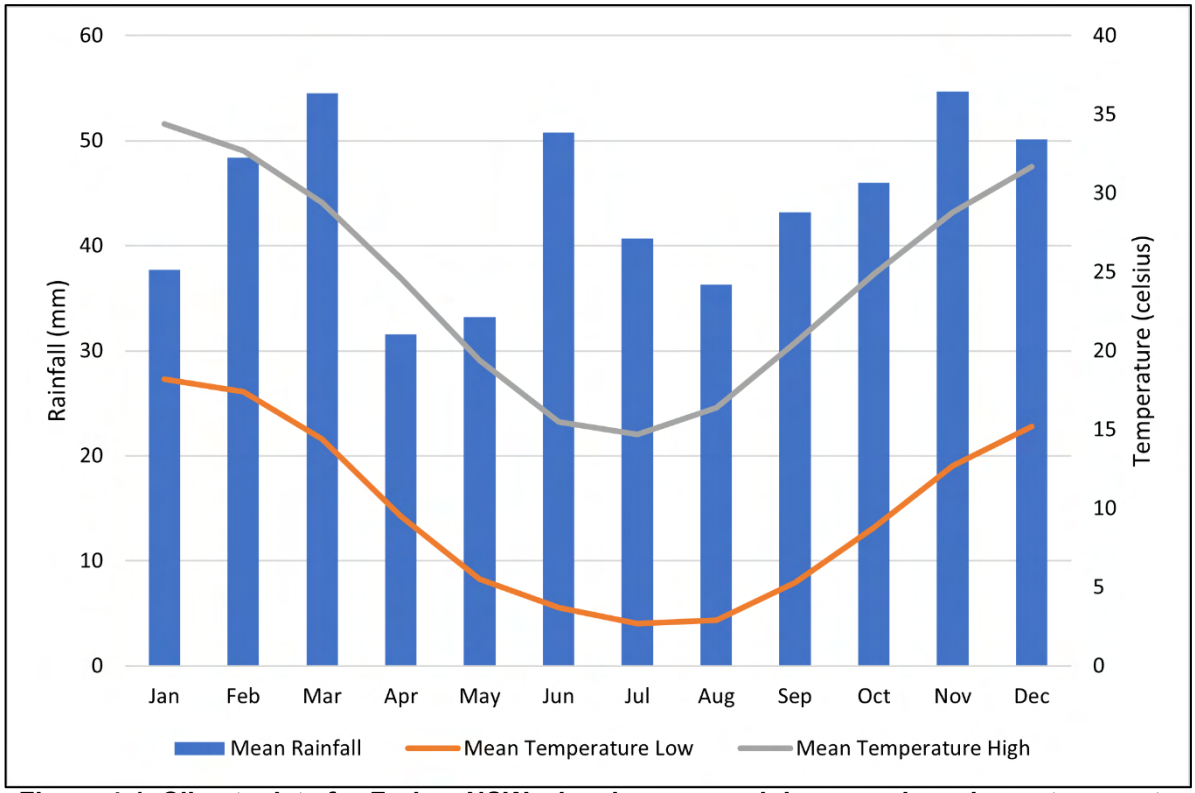


Figure 4-1. Climate data for Forbes NSW, showing mean minimum and maximum temperatures and rainfall (Bureau of Meteorology, 2023).

4.4 WATERCOURSES

One minor, non-perennial watercourse crosses the southwestern edge of the subject site. This watercourse is mapped in **Figure 1-4** and **Figure 4-4**. The watercourse is mapped using Hydroline Spatial Data as being a Strahler 1st order stream. The watercourse is non-perennial and has no defined banks or flow path (see photographs in **Figure 4-3**). No rocks or snags occur within the watercourse and there is no distinct riparian vegetation community; rather, the vegetation associated with the watercourse is continuous with the surrounding landscape. Previous photographs of the site show that this area has been historically slashed. There are no clearly defined changes in vegetation to imply that this watercourse regularly contains water. For example, wet-area species such as *Juncus* spp., native docks (particularly *Rumex brownii*), and *Carex inversa* would be expected to line watercourses in this area; no such species were observed in the vicinity. This implies that the mapped watercourse is ephemeral drainage at best, serving only to drain overflow from farm dams. The agricultural landscape and existing

residential stormwater flows discharge any likelihood of natural environmental conditions persisting in the mapped waterline.

As per Fairfull (2013), the waterway class would be considered Class 4 – Unlikely key fish habitat. Waterways in this class are defined as "Waterway (generally unnamed) with intermittent flow following rain events only, little or no defined drainage channel, little or no flow or free standing water of pools post rain events (e.g., dry gullies or shallow floodplain depressions with no aquatic flora present)."

This watercourse mapped within the subject site is not identified as Protected Riparian Land (PRL) or Key Fish Habitat (KFH) by the Department of Primary Industries – Fisheries (DPI – Fisheries). There is no PRL or KFH within the 1.5 km study area, however PRL and KFH are mapped as occurring within 10 km of the subject site (**Figure 4-3**). No threatened fish species or threatened populations are predicted to occur within the subject site or study area. As such, the proposal is not expected to impact any threatened fish species or populations; therefore, no tests of significance were considered necessary under the FM Act.

Under Section 199 of the FM Act, the proponent is required to give the Minister written notice of the proposed works prior to carrying out any dredging or reclamation work on water land.

Design and construction for this project must be in accordance with the relevant guidelines that seek to maintain natural flows and connectivity between upstream and downstream habitats, and which will minimise all impacts to fish passage and aquatic habitats (Fairfull, 2013). Following the completion of works, any temporary in-stream materials (e.g., environmental controls) will be removed and the site will be restored as close as possible to pre-work conditions. Mitigation measures to reduce the proposal's impact on the watercourse have been summarised in **Section 7.2.** Provided that the mitigation methods provided in **Section 7.2** are adhered to, and that the conditions of the DPI notice are met, then the proposal is unlikely to significantly impact aquatic species or habitat.

Figure 4-2. Upstream (top) and downstream views (bottom) of the mapped 1st order non-perennial stream.

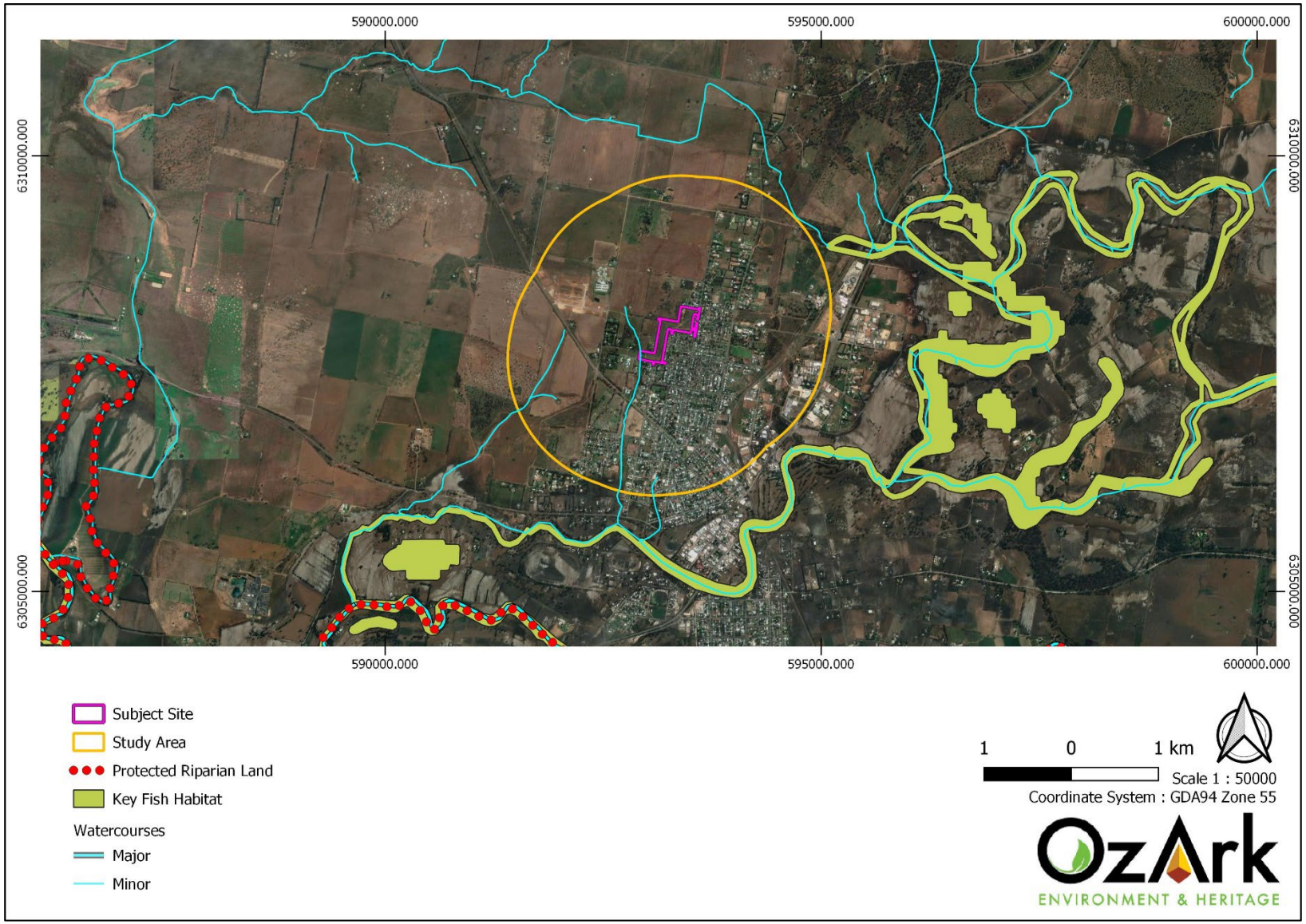


Figure 4-3. Watercourses, Key Fish Habitat and Protected Riparian Land within the search area.

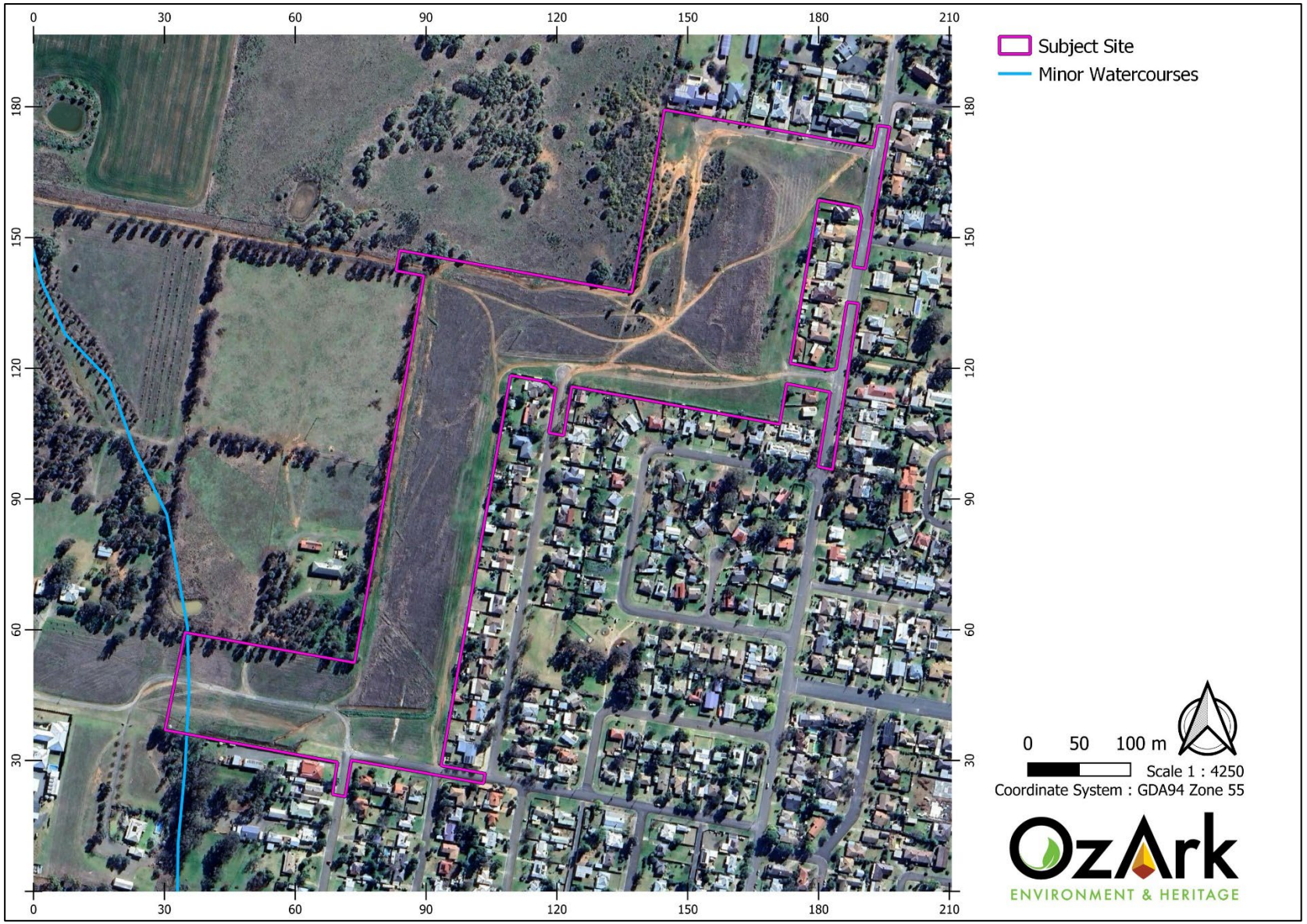


Figure 4-4. Close up of the subject site showing the intersecting Strahler 1st Order Stream.

4.5 GROUNDWATER DEPENDENT ECOSYSTEMS

Groundwater plays an important ecological role in directly and indirectly supporting terrestrial and aquatic ecosystems. Groundwater sustains terrestrial and aquatic ecosystems by supporting vegetation and providing discharge to channels, lacustrine and palustrine wetlands, and both the estuarine and marine environment. Aquifer ecosystems are inherently groundwater dependent (QLD Department of Environment and Heritage Protection, 2017).

The Bureau of Meteorology Atlas of Groundwater Dependant Ecosystems (GDEs) did not identify any potential aquatic GDEs within the study area and subject site (**Figure 4-5;** Bureau of Meteorology, 2017). However, moderate and low potential terrestrial GDEs were identified within the northwestern margin of the subject site (**Figure 4-5**).

The proposal does not include the extraction of groundwater. Mitigation measures to reduce the proposals impact on GDEs have been provided in **Section 7.2**.

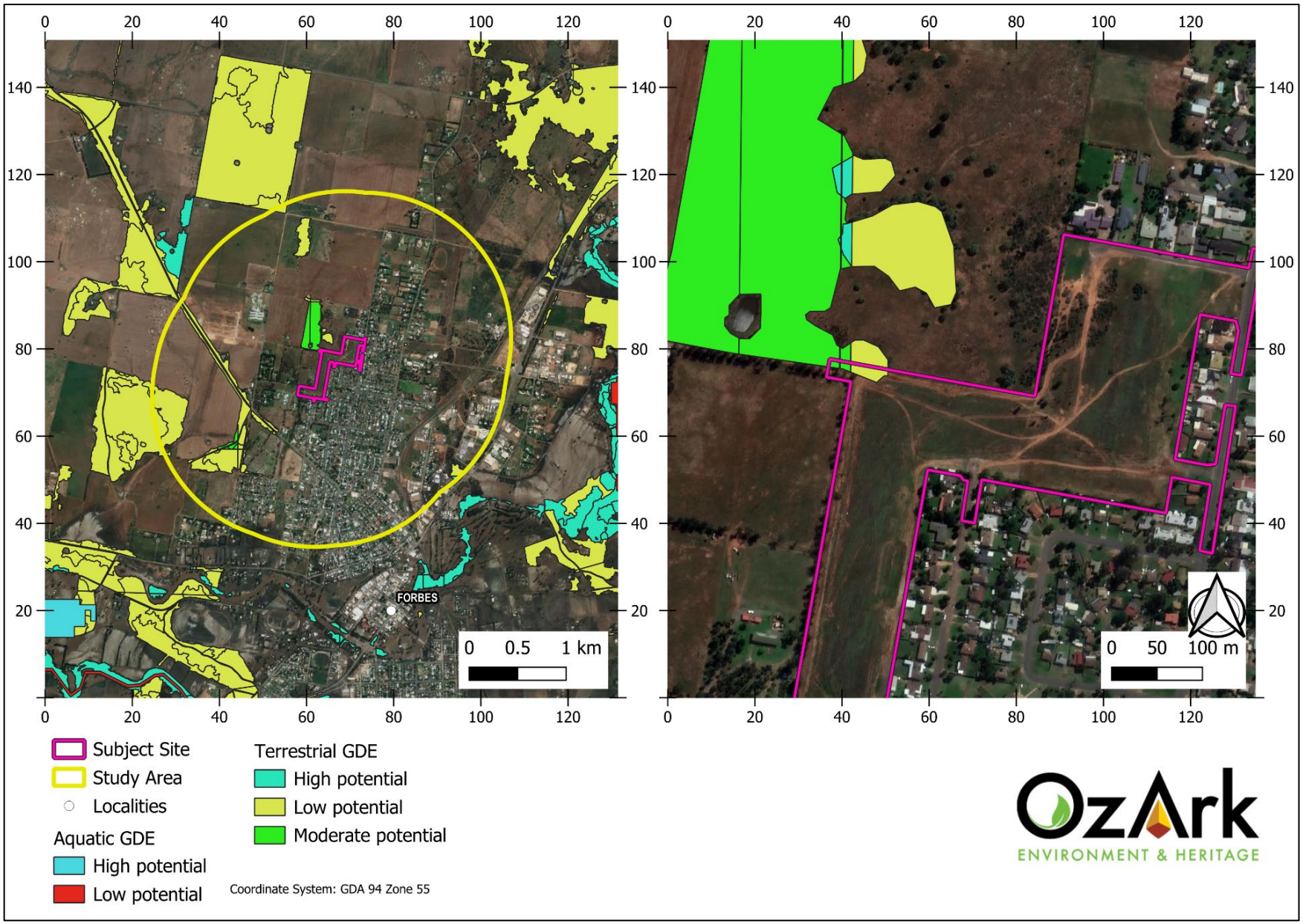


Figure 4-5. GDEs within the 1.5 km study area.

5 RESULTS

5.1 PLANT COMMUNITY TYPES (PCTS)

The field survey identified four PCTs within the subject site. The extent of each community is provided in **Table 5-1** and they are mapped in **Figure 5-1**. Representative photographs of PCTs are available in **Appendix B**, and a list of all flora species encountered during the survey is available in **Appendix C.**

Table 5-1. Plant community types within the subject site.

PCT ID	PCT Name	Area (ha)
26	Weeping Myall open woodland of the Riverina Bioregion and NSW South Western Slopes Bioregion	0.05
45	Plains Grass grassland on alluvial mainly clay soils in the Riverina Bioregion and NSW South Western Slopes Bioregion	0.81
52	Queensland Bluegrass +/- Mitchell Grass grassland on cracking clay floodplains and alluvial plains mainly in the northern-eastern Darling Riverine Plains Bioregion	8.10
70	White Cypress Pine woodland on sandy loams in central NSW wheatbelt	0.75
	Total Native Vegetation	**9.71**
	Non-native vegetation	**3.55**
	Total Area:	**13.26**

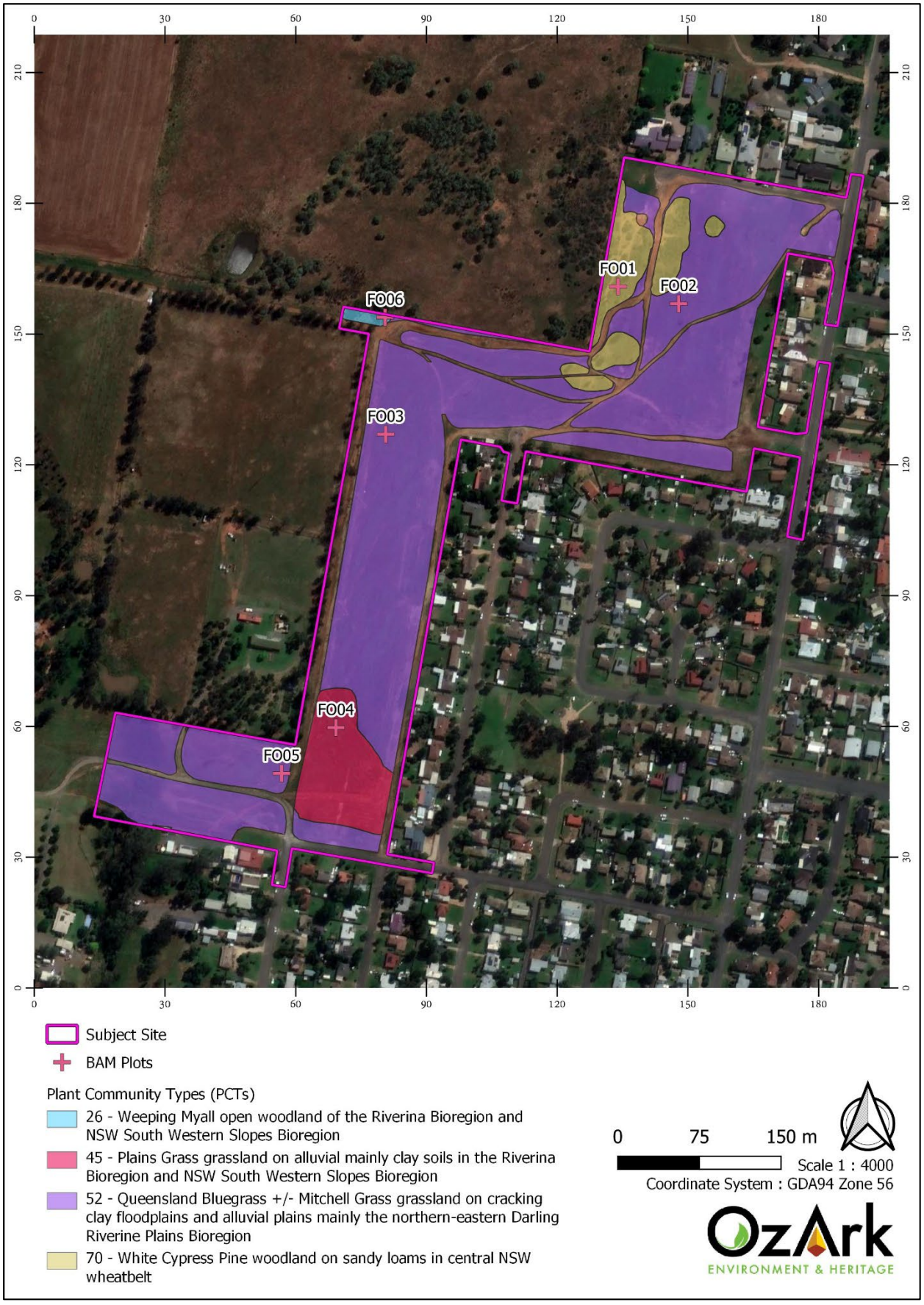


Figure 5-1. Plant Community Types (PCTs) recorded within the subject site and locations of BAM Vegetation Integrity plots.

5.2 THREATENED ECOLOGICAL COMMUNITIES

Three of the recorded PCTs are associated with Threatened Ecological Communities (TECs):

- PCT 26 is associated with two TECs:
    - BC Act, Endangered Ecological Community (EEC): *Myall Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain, Murray-Darling Depression, Riverina and NSW South Western Slopes bioregions*.
    - EPBC Act, EEC: *Weeping Myall Woodlands*.
- PCT 45 is associated with two TECs:
    - BC Act, Critically Endangered Ecological Community (CEEC): *Artesian Springs Ecological Community in the Great Artesian Basin*.
    - EPBC Act, CEEC: *Natural Grasslands of the Murray Valley Plains*.
- PCT 52 is associated with two TECs:
    - BC Act, EEC: *Native Vegetation on Cracking Clay Soils of the Liverpool Plains*.
    - EPBC Act, CEEC: *Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland*.

The occurrence of PCT 26 constitutes an example of the BC Act-listed EEC *Myall Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain, Murray-Darling Depression, Riverina and NSW South Western Slopes bioregions*, as this listing applies to all woodlands in which Weeping Myall is the dominant canopy species. Based on aerial mapping, it is likely to also constitute an example of the EPBC Act-listed EEC, which applies to Weeping Myall communities over 0.50 ha in patch size which satisfy certain composition and condition requirements. In the present case, the community appears to occupy 0.54 ha (of total patch between subject site and neighboring property), to meet the 5% canopy cover threshold, and to contain more than two layers of *Acacia pendula*. It should be noted, however, that most of this community occurs on private land and its total extent could not be ground-truthed during the survey.

The occurrence of PCT 45 does not meet the condition criteria to be considered an example of the *Artesian Springs* CEEC as there is no evidence of artesian spring activity within the site. The occurrence of PCT 45 also fails to meet the condition criteria for the *Natural Grasslands* CEEC as the subject site falls well outside the distribution of that community.

The occurrence of PCT 52 does not satisfy the conditions for the BC Act-listed EEC as the site falls outside of the Liverpool Plains catchment. It similarly does not satisfy the conditions for the EPBC Act-listed CEEC as that community is considered to occur only on the Darling Downs, Liverpool Plains, and Moree Plains. The subject site does not fall within any of these areas.

Consequently, up to 0.05 ha of the BC Act-listed *EEC Myall Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain, Murray-Darling Depression, Riverina and NSW South Western Slopes bioregions* and the EPBC Act-listed EEC *Weeping Myall Woodlands* would

be impacted by the proposal. These communities are mapped in **Figure 5-2**. Additional areas of the Weeping Myall EECs can be seen to the north of the mapped extent in the **Figure 5-2**.

Figure 5-2. Extent of Weeping Myall Endangered Ecological Communities (EECs) within and immediately adjacent to the subject site.

5.3 THREATENED SPECIES AND POPULATIONS

A review of the Threatened Species Profiles database has found that 88 threatened or migratory flora and fauna species or populations listed under the BC and/or EPBC Act are predicted or known to occur in the Lower Slopes Subregion of the NSW South Western Slopes Bioregion (**Appendix A**). Based on proximity of past records, habitat requirements and the results of the field survey, 60 species were assessed as having a moderate-high likelihood of occurring within the subject site (**Appendix D**). These are listed in **Table 5-2**.

The field survey did not detect any of the predicted threatened species. However, due to the timing of the survey i.e. one day during autumn, when many of the flora species were not in flower, and lack of targeted fauna surveys, non-detection cannot be considered as confirmation of their absence.

Table 5-2. BC and EPBC Act-listed threatened and migratory species with potential to be impacted by the proposal.

Scientific Name	Common Name	*NSW Status	+Comm Status	Records within 10km?
Anseranas semipalmata	Magpie Goose	V,P	-	8
Apus pacificus	Fork-tailed Swift	P	C,J,K	3
Artamus cyanopterus cyanopterus	Dusky Woodswallow	V,P	-	16
Botaurus poiciloptilus	Australasian Bittern	E1,P	E	2
Bubulcus ibis syn. *Ardea ibis*	Cattle Egret	P	C,J	6
Burhinus grallarius	Bush Stone-curlew	E1,P	-	-
Calidris acuminata	Sharp-tailed Sandpiper	P	C,J,K	3
Calyptorhynchus lathami lathami	Glossy Black-Cockatoo	V	E	-
Certhionyx variegatus	Pied Honeyeater	V,P	-	-
Chthonicola sagittata	Speckled Warbler	V,P	-	5
Circus assimilis	Spotted Harrier	V,P	-	8
Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	V,P	V	68
Daphoenositta chrysoptera	Varied Sittella	V,P	-	4
Epthianura albifrons	White-fronted Chat	V,P	-	6
Falco hypoleucos	Grey Falcon	V,P,2	V	8
Falco subniger	Black Falcon	V,P	-	16
Gallinago hardwickii	Latham's Snipe	P	C,J,K	4
Grantiella picta	Painted Honeyeater	V,P	V	-
Grus rubicunda	Brolga	V,P	-	1
Haliaeetus leucogaster	White-bellied Sea-Eagle	V,P	-	121
Hieraaetus morphnoides	Little Eagle	V,P	-	13
Hirundapus caudacutus	White-throated Needletail	P	V,C,J,K	2
Lathamus discolor	Swift Parrot	E1,P,3	CE	-
Lophochroa leadbeateri	Major Mitchell's Cockatoo	V,P,2	E	-
Lophoictinia isura	Square-tailed Kite	V,P,3	-	-

Scientific Name	Common Name	*NSW Status	+Comm Status	Records within 10km?
Melanodryas cucullata cucullata	Hooded Robin (south-eastern form)	V,P	E	2
Merops ornatus	Rainbow Bee-eater	P	J	17
Neophema pulchella	Turquoise Parrot	V,P,3	-	2
Ninox connivens	Barking Owl	V,P,3	-	2
Oxyura australis	Blue-billed Duck	V,P	-	109
Pachycephala inornata	Gilbert's Whistler	V,P	-	2
Petroica boodang	Scarlet Robin	V,P	-	-
Petroica phoenicea	Flame Robin	V,P	-	3
Polytelis swainsonii	Superb Parrot	V,P,3	V	31
Pomatostomus temporalis temporalis	Grey-crowned Babbler (eastern subspecies)	V,P	-	87
Rostratula australis	Australian Painted Snipe	E1,P	E	3
Stagonopleura guttata	Diamond Firetail	V,P	V	4
Stictonetta naevosa	Freckled Duck	V,P	-	82
Tyto novaehollandiae	Masked Owl	V,P,3	-	-
Cercartetus nanus	Eastern Pygmy-possum	V,P	-	-
Chalinolobus dwyeri	Large-eared Pied Bat	V,P	V	-
Chalinolobus picatus	Little Pied Bat	V,P	-	-
Dasyurus maculatus	Spotted-tailed Quoll	V,P	E	1
Nyctophilus corbeni	Corben's Long-eared Bat	V,P	V	-
Petaurus norfolcensis	Squirrel Glider	V,P	-	-
Phascolarctos cinereus	Koala	V,P	E	-
Pteropus poliocephalus	Grey-headed Flying-fox	V,P	V	-
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	V,P	-	-
Sminthopsis macroura	Stripe-faced Dunnart	V,P	-	-
Austrostipa metatoris	A spear-grass	V	V	-
Austrostipa wakoolica	A spear-grass	E1	E	-
Brachyscome muelleroides	Claypan Daisy	V	V	-
Brachyscome papillosa	Mossgiel Daisy	V	V	-
Diuris tricolor	Pine Donkey Orchid	V,P,2	-	1
Lepidium aschersonii	Spiny Peppercress	V	V	-
Lepidium monoplocoides	Winged Peppercress	E1	E	-
Leptorhynchos orientalis	Lanky Buttons	E1	-	-
Pilularia novae-hollandiae	Austral Pillwort	E1,3	-	-
Swainsona murrayana	Slender Darling Pea	V	V	-
Swainsona sericea	Silky Swainson-pea	V	-	-

*Listed under the BC Act, where E1 = Endangered, P = Protected, V = Vulnerable, 2=Category 2 sensitive species, 3=Category 3 sensitive species

+Listed under the EPBC Act, where C=CAMBA, J=JAMBA, K=ROKAMBA, CE=Critically endangered, E=Endangered, V=Vulnerable

5.4 WILDLIFE CONNECTIVITY CORRIDORS

The site sits on the edge of a township, it is heavily impacted by disturbance and currently being used for recreational activities. Fragmentation within the subject site is seen with the minimal cover of trees and the interruption by pathways, constituting notable continuing fragmentation into the wider landscape with the town edge on the east and south of the site and paddocks to the north and west. Due to the already highly disturbed nature of the site it is unlikely the proposal will exacerbate any of the fragmentation already occurring to the extent where it will impact the connectivity between habitats.

5.5 HABITAT FEATURES

There were no hollow-bearing trees, nests, substantial deposits of fallen timber, rock outcrops, areas of surface rock, or other habitat features of note recorded during the site assessment.

5.6 MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE

Under the environmental assessment provisions of the EPBC Act, Matters of National Environmental Significance (MNES) and impacts on Commonwealth land are required to be considered to assist in determining whether the proposal should be referred to the Australian Government DoEE. The EPBC Act protected matters search has identified four wetlands of international importance, four TECs, 38 threatened species, 12 migratory species and 19 marine species that could possibly occur in the study area (**Appendix A**). A summary of these matters and whether the proposal is likely to impact them is provided in **Table 5-3**. No entities listed under the EPBC Act are likely to be significantly impacted by the proposal (**Appendix F**).

Table 5-3. Impacts to Matters of National Environmental Significance and Commonwealth land.

Consideration	Potential impact?
Any impact on a listed threatened species or communities?	Yes (non-significant, **Appendix F**)
Any impacts on listed migratory species?	Yes (non-significant, **Appendix F**)
Any impacts on a Ramsar wetland of international importance?	No
Any impacts on a Commonwealth marine environment?	No
Any impacts on a World Heritage property?	No
Any impacts on a National Heritage place?	No
Any impacts on the Great Barrier Reef Marine Park?	No
Does the proposal involve a nuclear action (including uranium mining)?	No
Any impact on a water resource, in relation to coal seam gas development and large coal mining development?	No
Additionally, any impact (direct or indirect) on Commonwealth land?	No

6 IMPACT ASSESSMENT

6.1 DIRECT /CONSTRUCTION IMPACTS

6.1.1 Impacts on native vegetation and threatened ecological communities

The subject site is 13.26 ha in area, of which 3.55 ha is free from native vegetation. The remaining 9.71 ha consists of native vegetation that would be removed or disturbed by the proposal.

The proposal would also result in impacts of up to 0.05 ha of the *Myall Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain, Murray-Darling Depression, Riverina and NSW South Western Slopes bioregions* EEC.

As the clearing of native vegetation is recognised as a Key Threatening Process under the BC Act, efforts should be made to reduce the removal of native vegetation where possible (see **Section 7**).

6.1.2 Impact to threatened flora

Eleven threatened plant species or populations were assessed as having a moderate or greater potential of occurring at the subject site, although none were detected during the field survey. It should however be recognised that non-detection is not confirmation of absence, particularly given the short duration of the survey. The BC and EPBC Act (**Appendix D and E**) tests of significance were applied and the results concluded that the proposal would not constitute a significant impact on these species.

6.1.3 Impact to threatened fauna and associated habitat

Although 49 threatened or migratory fauna species or populations were assessed as having a moderate or greater potential of occurring within the subject site (**Appendix D**), none were detected during the field survey. There were no significant habitat features seen within the subject site. The 5-part test of significance and EPBC test of significance (if applicable) was applied to all species (**Appendices E and F**). The results concluded that the proposal would not constitute a significant impact on these species.

6.1.4 Fauna injury and mortality

During the construction phase of the proposal, the removal of native vegetation is likely to disturb fauna. In addition, fauna may become trapped in or may choose to shelter in machinery that is stored in the study area overnight. If these animals were to remain inside the machinery, or under the wheels or tracks, they may be injured or die once the machinery is in use. Mitigation measures designed to reduce an injury and mortality of fauna are provided in **Section 7.**

6.1.5 Impact on Watercourses

The proposal seeks to install and repair ancillary infrastructure to the subdivision (watermain and access track) that will require the groundwork to disturb the unnamed 1st order stream mapped within the subject site (see **Section 4.4**). The proposal seeks to install stormwater management facilities as ancillary infrastructure to the subdivision that will occur within 40 metres of a watercourse. The works within the watercourse are shown within **Figure 1-4**.
The following is in reference to the Stormwater Management Plan prepared by ADW Johnson dated 18th January 2024 and concept design plans prepared by ADW Johnson with reference 240380(2)-CENG-F:

- The water main re-alignment will have minor impacts to the watercourse during construction. These impacts can be reduced with the mitigation measures identified within **Section 7**. The existing water main is already present within the general location that the new water main is proposed. Therefore, the impact of the new water main should be negligible.

- The access track will have minor impacts to the watercourse during construction. These impacts can be reduced with the mitigation measures identified within **Section 7**. The existing access track present is of degraded quality due to a lack of adequate maintenance and causing some level of impact to the environment. Therefore, the upgraded access track is unlikely to be more impactful on the watercourse than the existing access track.

- The existing site includes a number of unsealed tracks and unlined swale drains potentially washing sediments and pollutants into the watercourse and downstream. The proposed design includes removal or sealing of access tracks to ameliorate these potential sources of sediments and pollutants.

- The Stormwater Management plan details no increase in volume runoff from the natural state or increase beyond the accepted standards by Australian Runoff Quality Guide. The basin and associated stormwater infrastructure including outlets will have impacts to the watercourse during construction and operation. These impacts can be reduced with the mitigation measures identified within **Section 7**.

6.2 INDIRECT/OPERATIONAL IMPACTS

6.2.1 Wildlife connectivity and habitat fragmentation

The site sits within an already heavily fragmentated environment. Fragmentation within the patch is common, being disrupted due to dirt pathways and ongoing disturbance by humans. Due to the already disturbed nature of the site, it is unlikely that the proposal will exacerbate any of the fragmentation already occurring to an extent where it will impact the connectivity between habitats. Mitigation measures designed to reduce the impact of the proposal on wildlife connectivity and habitat fragmentation are provided in **Section 7**.

6.2.2 Edge effects on adjacent native vegetation and habitat

The subject site is in an area that is currently subject to a high level of edge effects from the edge of the township along with roads, fences, powerlines and other infrastructure already present through and around the subject site. The clearance of vegetation will exacerbate the impacts of existing edge effects. These may result from changes in abiotic factors (e.g., the microclimate) or from biotic factors associated with colonisation. Weed encroachment, which is a significant edge effect, is considered further below.

Further to this is the impact on the small area of the *Myall Woodland* EEC encroaching into the edge of the subject site. Impacts to the EEC within the subject site would likely result in edge effects on the larger remnant of the community in the adjacent property.

6.2.3 Invasion and spread of weeds

Four weed species listed as high-threat exotic (HTE) under BAM and were recorded during the site survey (**Table 6-1**). Of these, one was also listed as a Weed of National Significance (WoNS) and priority weed for the (PW).

Proliferation of weed species is an indirect impact of proposal activities. The most likely causes of weed dispersal and importation associated with the proposal include earthworks, movement of soil, and attachment of seed (and other propagules) to vehicles and machinery. Mitigation measures designed to limit the spread of weeds are provided in **Section 7**.

Table 6-1. List of significant weeds recorded during field surveys at the subject site.

Scientific Name	Common Name	HTE[1]	WoNS[2]	PW[3]
Carthamus lanatus	Saffron Thistle	**Yes**	No	No
Eragrostis curvula	African Lovegrass	**Yes**	No	No
Lycium ferocissimum	African Boxthorn	**Yes**	**Yes**	**Yes**
Paspalum dilatatum	Paspalum	**Yes**	No	No

[1]HTE – High threat Exotic weed according to the BAM (Yes/No), [2]WoNS – Weed of National Significance (Yes/No), [3]PW – Priority Weed for the region.

6.2.4 Invasion and spread of pests

The study area is likely already habitat for a range of pest species. Common ones within the area include: the European rabbit (*Oryctolagus cuniculus*), the European starling (*Sturnus vulgaris*), and the feral cat (*Felis catus)*. Mitigation measures designed to limit the spread of pests are provided in **Section 7**.

6.2.5 Invasion and spread of pathogens and disease

Several pathogens known from NSW have potential to impact on biodiversity as a result their movement and infection during construction. Of these, two are listed as Key Threatening Processes under either the EPBC Act and/or BC Act including:

- Infection of frogs by amphibian chytrid fungus causing the disease chytridiomycosis.
- Infection of native plants by *Phytophthora cinnamomi* (see **Appendix H**).

These pathogens were not observed or tested for in the study area. The most likely causes of pathogen dispersal and importation associated with the proposal include earthworks, movement of soil, and attachment of plant matter to vehicles and machinery during establishment of the pipeline. Mitigation measures designed to limit the invasion and spread of pathogens and disease are provided in **Section 7.**

6.2.6 Noise, light and vibration

Some noise and vibration impacts are expected during the construction phase of this proposal. Given that much of the proposal will be occurring within existing pre-disturbed areas, these additional sources of noise and vibration construction should not impact biodiversity. The magnitude of this impact would be low, and several mitigation measures are provided in **Section 7**.

6.3 CUMULATIVE IMPACTS

The potential biodiversity impacts of the proposal must be considered as a consequence of the construction and operation of the proposal within the existing environment. Rather than acting in isolation, this proposal will be an additive part contributing to biodiversity loss. The incremental effects of multiple sources of impact (past, present and future) are referred to as cumulative impacts and provide an opportunity to consider the proposal within a strategic context.

In general, the accumulating impacts of historic vegetation clearing for agriculture, rural development, and development and maintenance of infrastructure have contributed to the loss of biodiversity in the South Western Slopes. The landscape surrounding the subject site contains substantial areas of remnant vegetation of hills and ridges but also contains extensive tracts of

highly modified land associated with agriculture and mining. The subject site exists close to the threshold between these areas. While the impacts associated with the proposal may not themselves be significant, they nevertheless represent a contribution to the ongoing decline in biodiversity values within the region and across the state.

6.4 IMPACT SUMMARY

Based on the assessment above, the proposal will not have a significant impact on biodiversity, including predicted populations of threatened species and threatened ecological communities.

Separate assessments of significance were undertaken under the differing impact significance criteria of the NSW BC Act and Commonwealth EPBC Act (**Appendices E** and **F**). The assessments under the BC Act and the EPBC Act concluded that the proposal would not significantly impact on threatened species or ecological communities. However, opportunities to avoid and minimise impacts should be considered in finalising the proposal.

7 AVOID, MINIMISE AND MITIGATE IMPACTS

A key part of the proponent's management of biodiversity for this proposal is the application of the 'avoid, minimise, mitigate and offset' hierarchy as follows:

1. Avoid and minimise impacts as the highest priority

2. Mitigate impacts where avoidance is not feasible or practicable in the circumstance

3. Offset where residual, significant unavoidable impacts would occur

7.1 AVOIDANCE AND MINIMISATION RECOMMENDATIONS

The following impact avoidance methods are recommended to be implemented:

- To avoid impacts associated with weed introduction and spread, inspect all machinery before entering and exiting the subject site. Machinery must be clean of all mud, soil and vegetation material.
- The construction works and vehicle access to the construction site is to be constrained to the minimum area practical. The proposed access will provide the sole access to the construction site.
- Material stockpiles, equipment and machinery storage and laydown areas will be consolidated within a defined impact area to minimise the overall impact footprint.
- The impact footprint will be minimised by restricting access across the site to the defined development footprint, including avoiding unnecessary vehicle and personnel movements across unused land.
- If possible, it is recommended that the small section of the BC Act-listed EEC *Myall Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain, Murray-Darling Depression, Riverina and NSW South Western Slopes bioregion* be excised from the footprint due to the small area of the community and the limited continuation of this vegetation beyond the footprint.
- It is recommended that construction activities in and around the watercourse and waterfront land occur during dry periods to minimise potential for indirect impacts (primarily erosion and sedimentation) downstream.
- It is recommended that the Department of Planning and Environment guidelines are adhered to for all work on waterfront land including the following fact sheets:
    - Controlled activities - Guidelines for riparian corridors on waterfront land (DPE, 2022b)
    - Controlled activities - Guidelines for instream works on waterfront land (DPE, 2022c)
    - Controlled activities - Guidelines for watercourse crossings on waterfront land (DPE, 2022d)

- Controlled activities - Guidelines for laying pipes and cables in watercourses on waterfront land (DPE, 2022e)
- Controlled activities - Guidelines for outlet structures on waterfront land (DPE, 2022f)

7.2 MITIGATION MEASURES

Mitigation measures are to be undertaken during the construction and operational phases, including managing the vegetation clearing process, weed management, and installation of erosion and sediment controls as appropriate.

The following mitigation measures are recommended for implementation (see **Table 7-1).**

Table 7-1: Mitigation measures and environmental safeguards.

Aspect	Environmental safeguards	Responsibility	Timing

General	• Any change in design outside the assessed impact footprint (subject site) will require further ecological survey and assessment.
	• All personnel working on site will be made aware of the environmental sensitivities of the site and safeguards/mitigations to be implemented, e.g., site induction and 'toolbox' style briefings. This includes all native vegetation, threatened ecological communities and potential threatened flora and fauna (**Table 5-2**). Evidence of all personnel receiving an induction will be kept on file (e.g., signed induction sheets).
	• All contractors will be specifically advised of the designated work area. The following activities are not to occur outside of designated work areas to minimise environmental impacts:
	  • Storage and mixing of materials.
	  • Liquid disposal.
	  • Machinery repairs and/or refuelling.
	  • Combustion of any material.
	  • Any filling or excavation including trenching, topsoil skimming and/or surface excavation.
	• All liquids (fuel, oil, cleaning agents, etc.) will be stored appropriately and disposed of at suitably licensed facilities. Spill management procedures will be implemented as required.
		Proponent	Pre-construction, construction, operation

Clearing of native vegetation	• All construction personnel should be inducted to be aware that any deliberate or accidental damage of a stand of native vegetation outside the subject site has legislative consequences under Part 4 or 5 of the EP&A Act. Evidence of all personnel receiving this induction would be kept on file (signed induction sheets etc.). • All construction personnel should be inducted to be aware of the potential presence of those threatened flora species listed in **Table 5-2**. If any threatened flora species are encountered, construction must stop in the immediate area and an ecologist should be consulted for advice and guidance before proceeding with works. • Before starting work, a physical vegetation clearing boundary at the approved clearing limit is to be demarcated and implemented. The delineation of such a boundary may include the use of temporary fencing, parawebbing or similar. • Vegetation would be removed in such a way as to avoid damage to surrounding vegetation. • Groundcover disturbance would be kept to a minimum.	Proponent / contractor	Pre-construction, construction

Aspect	Environmental safeguards	Responsibility	Timing

	• Any stockpile and compound sites should be located using the following criteria:
	  ○ At least 40 m away from the nearest waterway
	  ○ In areas of low ecological conservation significance (i.e. previously disturbed land)
	  ○ On relatively level ground
	  ○ Outside the one in 10-year Average Recurrence Interval (ARI) floodplain
	• Stockpiling materials and equipment and parking vehicles would be avoided within the dripline (extent of foliage cover) of any tree.
	• Where possible, vegetation to be removed would be mulched on-site and re-used to stabilise disturbed areas.		

Accidental death of fauna	• Where fauna is encountered, a fauna spotter catcher would be engaged to remove the animal(s) and relocate them nearby, or if necessary, deliver them to a veterinarian or wildlife carer for rehabilitation.	Contractor	Construction
Light	• Any artificial lighting to be used during construction or operation should follow the Best Practice Lighting Design within the National Light Pollution Guidelines (DoEE 2020). In particular, all lighting should be kept close to the ground, directed, and shielded to avoid light spill.		
Soil Management / Erosion and Sedimentation Control	• Identify potential erosion areas. • Install erosion and sediment controls in line with Landcom's Managing Urban Stormwater, Soils & Construction Guidelines (The Blue Book. Landcom 2004). • Best practice erosion and sedimentation controls should be put in place to limit offsite movement of materials into the adjacent vegetation and unnamed Strahler 1st order stream. • Installation and maintenance of flow, erosion, sediment and nutrient control within the site during construction ahead of pavement and kerb establishment. • Separate 'dirty' construction water from the 'clean' natural overland flow water. • Implement dust suppression activities. • Perform routine site inspections of drains, channels, and water quality. • Erosion and sedimentation controls are to be checked and maintained on a regular basis. This includes clearing of sediment from behind barriers and after heavy rainfall events.	Contractor	Pre-construction, construction and post-construction

Aspect	Environmental safeguards	Responsibility	Timing
	• Where practicable, spread mulch made from vegetation cleared on site on areas of bare soil to stabilise, preventing dust and erosion. • Erosion and sediment control measures are not to be removed until the works are complete and areas are stabilised. • Stockpile topsoil removed to be redistributed across site at completion of construction. • Revegetation of any bare soil or cleared areas with locally occurring native flora species typical of the original habitat types is usually recommended.		
Introduction and spread of priority weeds and pathogens	• Construction crew should be briefed on the identification of priority weeds that occur on site during inductions (see **Table 6-1**). • If declared priority weeds are identified during construction, they will be managed according to the requirements of the *Biosecurity Act 2015.* Keep records of any weed control activities that take place. • Construction machinery (bulldozers, excavators, trucks, loaders and graders) will be cleaned using a high-pressure washer or other suitable device before entering and exiting work sites. • Machinery will be inspected by designated personnel following washdown to ensure no soil, mud, or vegetative material remains. Records of inspections to be maintained. • All pesticides will be used in accordance with the requirements on the label. Any person carrying out pesticide (including herbicide) application will be trained to do so and have the proper certificate of completion/competency or statement of attainment issued by a registered training organisation.	Contractor	Construction
Disturbance to fallen timber, dead wood, and bush rock	• Any fallen timber, dead wood, and bush rock encountered on site would be left *in situ* (where possible) or relocated to a suitable place nearby. • Rock would be removed with suitable machinery so as not to damage the underlying rock or result in excessive soil disturbance.	Contractor	Construction

Aspect	Environmental safeguards	Responsibility	Timing
Rehabilitating cleared areas	• Revegetation of any bare soil or cleared areas with locally occurring native flora species typical of the original habitat types is usually recommended. • Stockpiled topsoil to be re-spread over cleared areas.	Proponent, contractor	Construction and post-construction
Exacerbating invasive fauna	• All food scraps and rubbish are to be appropriately disposed of in sealed receptacles to prevent providing forage habitats for foxes, rats, dogs, and cats.	Contractor	Construction
Increased risk of fire	• If any “hot works” are to be undertaken, these activities will not take place on days of extreme fire danger (where possible).	Contractor	Construction
Aquatic habitat and watercourse	• The Water Sensitive Urban Design (WSUD) measures as shown within concept design plans prepared by ADW Johnson with reference 240380(2)-CENG-F are to be incorporated into Subdivision Works Certificate design plans. • Mitigation measures from DPI's Policy and guidelines for fish habitat conservation and management (Fairfull 2013) shall be incorporated into Subdivision Works Certificate, to maintain connectivity between upstream and downstream habitats and minimise impacts to fish passage and aquatic and riparian habitats. • Undertaking the works during low (or no) flow conditions is recommended. • Impacts to snags large woody debris >50 cm in two dimensions) within waterways will be avoided. If snags occur and must be moved, they would be realigned within the waterway, rather than removed.	Proponent, contractor	Pre-construction, construction and post-construction

CONCLUSION

The following summary of findings and conclusions are provided to assist with ongoing project planning.

OzArk has been engaged by LAHC to complete a BAR regarding the development of a residential subdivision on Lot 7332 in DP1166365, Lot 7025 in DP1020631, Lot 7317 in DP1166614 and works within Lot 1 DP1077961, located at Watson Close, Upper Morton, Lower Morton, York, Dawson, Belah and Farnell Streets, Forbes.

Approximately 9.71 ha of native vegetation occurs within the subject site. This vegetation was identified as belonging to four PCTs:

- PCT 26 – Weeping Myall open woodland of the Riverina Bioregion and NSW Southwestern Slopes Bioregion
- PCT 45 – Plains Grass grassland on alluvial mainly clay soils in the Riverina Bioregion and NSW Southwestern Slopes Bioregion
- PCT 52 – Queensland Bluegrass +/- Mitchell Grass grassland on cracking clay floodplains and alluvial plains mainly the northern-eastern Darling Riverine Plains Bioregion
- PCT 70 – White Cypress Pine woodland on sandy loams in central NSW wheatbelt

Considering the quantity of native vegetation present within the subject site, this proposal would usually trigger entry into the BOS, and require the preparation of a BDAR, rather than a BAR, however, as it is being assessed under Part 5 of the *Environmental Planning and Assessment Act* 1979, entry into the BOS is voluntary only.

The occurrence of PCT 26 constitutes an example of the BC Act-listed EEC *Myall Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain, Murray-Darling Depression, Riverina and NSW South Western Slopes bioregions*, as this listing applies to all woodlands in which Weeping Myall is the dominant canopy species. Based on aerial mapping, it is likely to also constitute an example of the EPBC Act-listed EEC, which applies to Weeping Myall communities over 0.50 ha in size that satisfy certain composition and condition requirements. In the present case, the community appears to occupy 0.54 ha, to meet the 5% canopy cover threshold, and to contain more than two layers of *Acacia pendula*. It should be noted, however, that most of this community occurs on private land and its total extent could not be ground-truthed during the survey. As this EEC is restricted to the edge of the subject site, it is recommended that this EEC is excluded from the development footprint.

One minor, non-perennial Strahler 1st order stream crosses the southwestern edge of the subject site. This watercourse is not identified as Protected Riparian Land (PRL) or Key Fish Habitat (KFH) by the Department of Primary Industries – Fisheries (DPI – Fisheries). As per Fairfull (2013), the watercourse would be considered Class 4 – Unlikely key fish habitat. There

is no PRL or KFH within the 1.5 km study area, however PRL and KFH are mapped as occurring within 10 km of the subject site. No threatened fish species or threatened populations are predicted to occur within the subject site or study area. Considering the ephemeral nature of the watercourse, the absence of KFH, and the lack of predicted habitat for threatened aquatic fauna, the proposal is not expected to impact any threatened fish species or populations; therefore, no tests of significance were considered necessary under the FM Act. While there are likely to be minor impacts on the watercourse, as a result of this proposal, the mitigation measures and recommendations stated in this report will reduce the environmental impact on the watercourse. In addition, the Minister for Agriculture will need to be notified under S199 of FM Act for dredging and reclamation works and the proponent will need to consider any matters concerning the proposed work that are raised by the Minister.

There were no hollow-bearing trees, nests, substantial deposits of fallen timber, rock outcrops, areas of surface rock, or other habitat features of note recorded during the site assessment.

Sixty species or populations that are listed as threatened and/or migratory under the BC Act and/or the EPBC Act were assessed as having a moderate or high likelihood of occurring at the subject site, however, none were detected during the field survey. No significant impact on any threatened or migratory species or population is anticipated as a result of this proposal.

An EPBC Act protected matters search identified one Wetland of International Importance, four TECs, 37 threatened, and 12 migratory species, that may occur within the search area. However, no significant impact to any entity listed under the EPBC Act is expected, provided adequate mitigation measures are followed.

This assessment covers the current form of the proposal, with any changes potentially requiring reassessment. If entry into the BOS is triggered by changes, additional fieldwork according to the BAM may be necessary.

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APPENDIX A – DATABASE SEARCH RESULTS

Australian Government
Department of Climate Change, Energy, the Environment and Water

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: 28-Jun-2023

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	4
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	4
Listed Threatened Species:	38
Listed Migratory Species:	12

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:	2
Commonwealth Heritage Places:	1
Listed Marine Species:	19
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:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	3
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	700 - 800km upstream from Ramsar site	In feature area
Hattah-kulkyne lakes	500 - 600km upstream from Ramsar site	In feature area
Riverland	600 - 700km upstream from Ramsar site	In feature area
The coorong, and lakes alexandrina and albert wetland	800 - 900km upstream from Ramsar site	In feature area

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
Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	Endangered	Community likely to occur within area	In feature area
Poplar Box Grassy Woodland on Alluvial Plains	Endangered	Community likely to occur within area	In feature area
Weeping Myall Woodlands	Endangered	Community likely to occur within area	In feature area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically 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			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Aphelocephala leucopsis Southern Whiteface [529]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Callocephalon fimbriatum Gang-gang Cockatoo [768]	Endangered	Species or species habitat may occur within area	In buffer area only
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat known to occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat known to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Lophochroa leadbeateri leadbeateri Major Mitchell's Cockatoo (eastern), Eastern Major Mitchell's Cockatoo [82926]	Endangered	Species or species habitat likely to occur within area	In feature area
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat likely to occur within area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Polytelis swainsonii Superb Parrot [738]	Vulnerable	Species or species habitat known to occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area	In feature area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat likely to occur within area	In feature area
FISH			
Bidyanus bidyanus Silver Perch, Bidyan [76155]	Critically Endangered	Species or species habitat known to 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 feature area
FROG			
Crinia sloanei			
Sloane's Froglet [59151]	Endangered	Species or species habitat may occur within area	In feature area
MAMMAL			
Dasyurus maculatus maculatus (SE mainland population)			
Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat known to occur within area	In feature area
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
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 likely to occur within area	In feature area
Pteropus poliocephalus			
Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour may occur within area	In feature area
PLANT			
Androcalva procumbens			
[87153]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Austrostipa metatoris			
[66704]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Austrostipa wakoolica			
[66623]	Endangered	Species or species habitat likely to occur within area	In feature area
Lepidium aschersonii			
Spiny Peppercress [10976]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Lepidium monoplocoides			
Winged Pepper-cress [9190]	Endangered	Species or species habitat may occur within area	In feature area
Swainsona murrayana			
Slender Darling-pea, Slender Swainson, Murray Swainson-pea [6765]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Thesium australe			
Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area	In feature area
Vincetoxicum forsteri listed as Tylophora linearis			
[92384]	Endangered	Species or species habitat may occur within area	In feature area
REPTILE			
Aprasia parapulchella			
Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat known to occur within area	In feature area
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			
Hirundapus caudacutus			
White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Motacilla flava			
Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
Myiagra cyanoleuca			
Satin Flycatcher [612]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area	In buffer area only
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]		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
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Species or species habitat likely to occur within area	In buffer area only

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State	Buffer Status
Communications, Information Technology and the Arts - Telstra Corporation Limited		
Commonwealth Land - Australian Telecommunications Commission [15130]	NSW	In buffer area only
Commonwealth Land - Telstra Corporation Limited [15123]	NSW	In buffer area only

Commonwealth Heritage Places			[Resource Information]
Name	State	Status	Buffer Status
Historic			
Forbes Post Office	NSW	Listed place	In buffer area only

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]		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
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]		Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area	In buffer area only
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		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
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area	In buffer area only
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Species or species habitat likely to occur within area overfly marine area	In buffer area only

Extra Information

EPBC Act Referrals				[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Inland Rail Stockinbingal to Parkes	2021/9138		Completed	In buffer area only
Not controlled action				
Daroobalgie Solar Farm Project	2021/9020	Not Controlled Action	Completed	In buffer area only
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	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 are 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

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

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

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
- 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.

BioNET Atlas search – threatened species predicted to occur within the Lower Slopes Subregion of the South Western Slopes Bioregion

Class	Scientific Name	Common Name	*NSW status	+Comm. Status	Records
Amphibia	*Crinia sloanei*	Sloane's Froglet	V,P	E	7
Amphibia	*Litoria raniformis*	Southern Bell Frog	E1,P	V	14
Aves	^^*Anthochaera phrygia*	Regent Honeyeater	E4A,P,2	CE	15
Aves	^^*Calyptorhynchus lathami*	Glossy Black-Cockatoo, Riverina population	E2,V,P,2	V	98
Aves	^^*Calyptorhynchus lathami*	Glossy Black-Cockatoo	V,P,2	V	123
Aves	^^*Falco hypoleucos*	Grey Falcon	V,P,2	V	52
Aves	^^*Lophochroa leadbeateri*	Major Mitchell's Cockatoo	V,P,2		150
Aves	*Actitis hypoleucos*	Common Sandpiper	P	C,J,K	4
Aves	*Anseranas semipalmata*	Magpie Goose	V,P		62
Aves	*Apus pacificus*	Fork-tailed Swift	P	C,J,K	28
Aves	*Ardeotis australis*	Australian Bustard	E1,P		1
Aves	*Artamus cyanopterus cyanopterus*	Dusky Woodswallow	V,P		1064
Aves	*Botaurus poiciloptilus*	Australasian Bittern	E1,P	E	28
Aves	*Burhinus grallarius*	Bush Stone-curlew	E1,P		58
Aves	*Calidris acuminata*	Sharp-tailed Sandpiper	P	C,J,K	74
Aves	*Calidris ferruginea*	Curlew Sandpiper	E1,P	CE,C,J,K	3
Aves	*Calidris melanotos*	Pectoral Sandpiper	P	J,K	3
Aves	*Calidris ruficollis*	Red-necked Stint	P	C,J,K	5
Aves	*Callocephalon fimbriatum*	Gang-gang Cockatoo	V,P,3	E	2
Aves	*Certhionyx variegatus*	Pied Honeyeater	V,P		20
Aves	*Chlidonias leucopterus*	White-winged Black Tern	P	C,J,K	2
Aves	*Chthonicola sagittata*	Speckled Warbler	V,P		679
Aves	*Cinclosoma castanotum*	Chestnut Quail-thrush	V,P		3
Aves	*Circus assimilis*	Spotted Harrier	V,P		147
Aves	*Climacteris affinis*	White-browed Treecreeper population in Carrathool local government area south of the Lachlan River and Griffith local government area	E2,P		16
Aves	*Climacteris picumnus victoriae*	Brown Treecreeper (eastern subspecies)	V,P		2646
Aves	*Daphoenositta chrysoptera*	Varied Sittella	V,P		291
Aves	*Drymodes brunneopygia*	Southern Scrub-robin	V,P		10
Aves	*Epthianura albifrons*	White-fronted Chat	V,P		122
Aves	*Falco subniger*	Black Falcon	V,P		100
Aves	*Gallinago hardwickii*	Latham's Snipe	P	J,K	56
Aves	*Gelochelidon nilotica*	Gull-billed Tern	P	C	22
Aves	*Glareola maldivarum*	Oriental Pratincole	P	C,J,K	1
Aves	*Glossopsitta porphyrocephala*	Purple-crowned Lorikeet	V,P,3		1
Aves	*Glossopsitta pusilla*	Little Lorikeet	V,P		114

Class	Scientific Name	Common Name	*NSW status	+Comm. Status	Records
Aves	*Grantiella picta*	Painted Honeyeater	V,P	V	188
Aves	*Grus rubicunda*	Brolga	V,P		68
Aves	*Haliaeetus leucogaster*	White-bellied Sea-Eagle	V,P		181
Aves	*Hamirostra melanosternon*	Black-breasted Buzzard	V,P,3		7
Aves	*Hieraaetus morphnoides*	Little Eagle	V,P		238
Aves	*Hirundapus caudacutus*	White-throated Needletail	P	V,C,J,K	27
Aves	*Hydroprogne caspia*	Caspian Tern	P	J	10
Aves	*Hylacola cautus*	Shy Heathwren	V,P		128
Aves	*Ixobrychus flavicollis*	Black Bittern	V,P		1
Aves	*Lathamus discolor*	Swift Parrot	E1,P	CE	139
Aves	*Leipoa ocellata*	Malleefowl	E1,P	V	82
Aves	*Limosa lapponica*	Bar-tailed Godwit	P	C,J,K	3
Aves	*Limosa limosa*	Black-tailed Godwit	V,P	C,J,K	6
Aves	*Lophoictinia isura*	Square-tailed Kite	V,P,3		9
Aves	*Melanodryas cucullata cucullata*	Hooded Robin (south-eastern form)	V,P		353
Aves	*Melithreptus gularis gularis*	Black-chinned Honeyeater (eastern subspecies)	V,P		256
Aves	*Neophema pulchella*	Turquoise Parrot	V,P,3		280
Aves	*Ninox connivens*	Barking Owl	V,P,3		92
Aves	*Numenius phaeopus*	Whimbrel	P	C,J,K	1
Aves	*Oxyura australis*	Blue-billed Duck	V,P		139
Aves	*Pachycephala inornata*	Gilbert's Whistler	V,P		335
Aves	*Pandion cristatus*	Eastern Osprey	V,P,3		2
Aves	*Pedionomus torquatus*	Plains-wanderer	E1,P,3	CE	2
Aves	*Petroica boodang*	Scarlet Robin	V,P		82
Aves	*Petroica phoenicea*	Flame Robin	V,P		263
Aves	*Pluvialis fulva*	Pacific Golden Plover	P	C,J,K	3
Aves	*Polytelis swainsonii*	Superb Parrot	V,P,3	V	1181
Aves	*Pomatostomus temporalis temporalis*	Grey-crowned Babbler (eastern subspecies)	V,P		1789
Aves	*Rostratula australis*	Australian Painted Snipe	E1,P	E	25
Aves	*Stagonopleura guttata*	Diamond Firetail	V,P		862
Aves	*Stictonetta naevosa*	Freckled Duck	V,P		131
Aves	*Tringa glareola*	Wood Sandpiper	P	C,J,K	7
Aves	*Tringa nebularia*	Common Greenshank	P	C,J,K	17
Aves	*Tringa stagnatilis*	Marsh Sandpiper	P	C,J,K	21
Aves	*Tyto novaehollandiae*	Masked Owl	V,P,3		P
Flora	^^*Caladenia arenaria*	Sand-hill Spider Orchid	E1,P,2	E	1329
Flora	^^*Caladenia concolor*	Crimson Spider Orchid	E1,P,2	V	P
Flora	^^*Diuris sp. (Oaklands, D.L. Jones 5380)*	Oaklands Diuris	E1,P,2		918
Flora	^^*Diuris tricolor*	Pine Donkey Orchid	V,P,2		426

Class	Scientific Name	Common Name	*NSW status	+Comm. Status	Records
Flora	*Acacia ausfeldii*	Ausfeld's Wattle	V		1
Flora	*Amphibromus fluitans*	Floating Swamp Wallaby-grass	V	V	3
Flora	*Austrostipa metatoris*	A spear-grass	V	V	1
Flora	*Austrostipa wakoolica*	A spear-grass	E1	E	79
Flora	*Brachyscome muelleroides*	Claypan Daisy	V	V	53
Flora	*Brachyscome papillosa*	Mossgiel Daisy	V	V	3
Flora	*Cullen parvum*	Small Scurf-pea	E1		5
Flora	*Eleocharis obicis*	Spike-Rush	V	V	2
Flora	*Eucalyptus leucoxylon subsp. pruinosa*	Yellow Gum	V		1
Flora	*Grevillea ilicifolia subsp. ilicifolia*	Holly-leaf Grevillea	E4A		P
Flora	*Kippistia suaedifolia*	Fleshy Minuria	E1		4
Flora	*Lepidium aschersonii*	Spiny Peppercress	V	V	12
Flora	*Lepidium monoplocoides*	Winged Peppercress	E1	E	28
Flora	*Leptorhynchos orientalis*	Lanky Buttons	E1		69
Flora	*Philotheca angustifolia subsp. angustifolia*		E4,P		1
Flora	*Pilularia novae-hollandiae*	Austral Pillwort	E1,3		30
Flora	*Pomaderris cocoparrana*	Cocoparra Pomaderris	E1	E	4
Flora	*Senecio garlandii*	Woolly Ragwort	V		3
Flora	*Swainsona murrayana*	Slender Darling Pea	V	V	49
Flora	*Swainsona recta*	Small Purple-pea	E1	E	2
Flora	*Swainsona sericea*	Silky Swainson-pea	V		74
Flora	*Tylophora linearis*		V	E	38
Flora	*Wilsonia rotundifolia*	Round-leafed Wilsonia	E1		1
Mammalia	*Cercartetus nanus*	Eastern Pygmy-possum	V,P		P
Mammalia	*Chalinolobus dwyeri*	Large-eared Pied Bat	V,P	V	1
Mammalia	*Chalinolobus picatus*	Little Pied Bat	V,P		26
Mammalia	*Dasyurus maculatus*	Spotted-tailed Quoll	V,P	E	10
Mammalia	*Falsistrellus tasmaniensis*	Eastern False Pipistrelle	V,P		1
Mammalia	*Macrotis lagotis*	Bilby	E4,P	V	2
Mammalia	*Miniopterus orianae oceanensis*	Large Bent-winged Bat	V,P		1
Mammalia	*Myotis macropus*	Southern Myotis	V,P		9
Mammalia	*Nyctophilus corbeni*	Corben's Long-eared Bat	V,P	V	6
Mammalia	*Petaurus norfolcensis*	Squirrel Glider in the Wagga Wagga Local Government Area	E2,V,P		10
Mammalia	*Petaurus norfolcensis*	Squirrel Glider	V,P		118
Mammalia	*Phascogale tapoatafa*	Brush-tailed Phascogale	V,P		1
Mammalia	*Phascolarctos cinereus*	Koala	E1,P	E	362
Mammalia	*Pteropus poliocephalus*	Grey-headed Flying-fox	V,P	V	19
Mammalia	*Saccolaimus flaviventris*	Yellow-bellied Sheathtail-bat	V,P		33

Class	Scientific Name	Common Name	*NSW status	+Comm. Status	Records
Mammalia	*Scoteanax rueppellii*	Greater Broad-nosed Bat	V,P		1
Mammalia	*Sminthopsis macroura*	Stripe-faced Dunnart	V,P		P
Mammalia	*Vespadelus baverstocki*	Inland Forest Bat	V,P		1
Reptilia	*Aprasia parapulchella*	Pink-tailed Legless Lizard	V,P	V	4
Reptilia	*Hemiaspis damelii*	Grey Snake	E1,P	E	1

*NSW Status: P=Protected, P13=Protected native plant, V=Vulnerable, E1=Endangered, E2=Endangered population, E4=Extinct, E4A=Critically endangered, 2=Category 2 sensitive species, 3=Category 3 sensitive species.

+ Comm. Status: C=CAMBA, J=JAMBA, K=ROKAMBA, CE=Critically endangered, E=Endangered, V=Vulnerable.

- Number of Records: P = predicted to occur.

BioNET Atlas search – threatened ecological communities predicted to occur within the Lower Slopes IBRA subregion.

Scientific Name	NSW Status	Comm. Status	Records
Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions		E	K
Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions		E	K
Fuzzy Box Woodland on alluvial Soils of the South Western Slopes, Darling Riverine Plains and Brigalow Belt South Bioregions	E3		K
Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia		E	K
Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions	E3		K
Mallee and Mallee-Broombush dominated woodland and shrubland, lacking Triodia, in the NSW South Western Slopes Bioregion	E4B		K
Myall Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain, Murray-Darling Depression, Riverina and NSW South Western Slopes bioregions	E3		K
Natural Grasslands of the Murray Valley Plains		CE	K
Poplar Box Grassy Woodland on Alluvial Plains		E	K
Sandhill Pine Woodland in the Riverina, Murray-Darling Depression and NSW South Western Slopes bioregions	E3		P
Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains		CE	K
Weeping Myall Woodlands		E	K
White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and	E4B		K
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland		CE	K

*NSW Status: P=Protected, P13=Protected native plant, V=Vulnerable, E1=Endangered, E2=Endangered population, E3= Endangered Ecological Community, E4=Extinct, E4A=Critically endangered, E4B=Critically Endangered Ecological Community, 2=Category 2 sensitive species, 3=Category 3 sensitive species.

+Comm. Status: C=CAMBA, J=JAMBA, K=ROKAMBA, CE=Critically endangered, E=Endangered, V=Vulnerable.

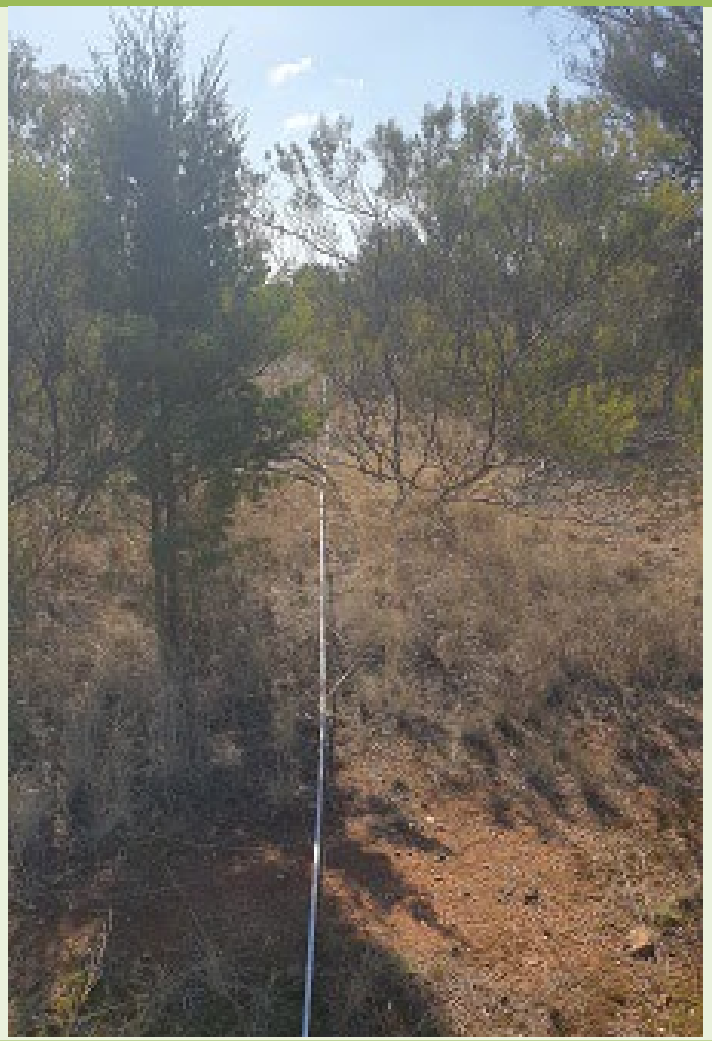
- Number of Records: P = predicted to occur, K= known to occur

BioNET Atlas search – Key Threatening Processes predicted to occur within the Lower Slopes IBRA subregion.

Common Name	NSW Status	Comm. Status	Records
Aggressive exclusion of birds from woodland and forest habitat by abundant Noisy Miners, *Manorina melanocephala* (Latham, 1802)	KTP	KTP	P
Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands	KTP		P
Anthropogenic Climate Change	KTP	KTP	P
Bushrock removal	KTP		P
Clearing of native vegetation	KTP	KTP	P
Competition and grazing by the feral European Rabbit, *Oryctolagus cuniculus* (L.)	KTP	KTP	P
Competition and habitat degradation by Feral Goats, *Capra hircus* Linnaeus 1758	KTP	KTP	P
Competition from feral honey bees, *Apis mellifera* L.	KTP		P
Forest eucalypt dieback associated with over-abundant psyllids and Bell Miners	KTP		P
Habitat degradation and loss by Feral Horses (brumbies, wild horses), *Equus caballus* Linnaeus 1758	KTP		P
Herbivory and environmental degradation caused by feral deer	KTP		P
High frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition	KTP		P
Importation of Red Imported Fire Ants *Solenopsis invicta* Buren 1972	KTP	KTP	P
Infection by Psittacine Circoviral (beak and feather) Disease affecting endangered psittacine species and populations	KTP	KTP	P
Infection of frogs by amphibian chytrid causing the disease chytridiomycosis	KTP	KTP	P
Infection of native plants by *Phytophthora cinnamomi*	KTP	KTP	P
Introduction of the Large Earth Bumblebee *Bombus terrestris* (L.)	KTP		P
Invasion and establishment of exotic vines and scramblers	KTP		P
Invasion and establishment of Scotch Broom (*Cytisus scoparius*)	KTP		P
Invasion and establishment of the Cane Toad (*Bufo marinus*)	KTP	KTP	P
Invasion of native plant communities by African Olive *Olea europaea* subsp. *cuspidata* (Wall. ex G. Don) Cif.	KTP		P
Invasion of native plant communities by *Chrysanthemoides monilifera*	KTP		P
Invasion of native plant communities by exotic perennial grasses	KTP		P
Invasion of the Yellow Crazy Ant, *Anoplolepis gracilipes* (Fr. Smith) into NSW	KTP		P
Invasion, establishment and spread of Lantana (*Lantana camara* L. sens. Lat)	KTP		P
Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants	KTP	KTP	P
Loss of Hollow-bearing Trees	KTP		P
Loss or degradation (or both) of sites used for hill-topping by butterflies	KTP		P
Predation and hybridisation by Feral Dogs, *Canis lupus familiaris*	KTP		P
Predation by *Gambusia holbrooki* Girard, 1859 (Plague Minnow or Mosquito Fish)	KTP		P

Common Name	NSW Status	Comm. Status	Records
Predation by the European Red Fox *Vulpes vulpes* (Linnaeus, 1758)	KTP	KTP	P
Predation by the Feral Cat *Felis catus* (Linnaeus, 1758)	KTP	KTP	P
Predation, habitat degradation, competition and disease transmission by Feral Pigs, *Sus scrofa* Linnaeus 1758	KTP	KTP	P
Removal of dead wood and dead trees	KTP		P

APPENDIX B – VEGETATION PLOT DATA

Plot Name	PCT	Easting (MGA Zone 55)	Northing (MGA Zone 55)	Photographs
FO01	70	593386.7	6308152.7	 

Plot Name	PCT	Easting (MGA Zone 55)	Northing (MGA Zone 55)	Photographs
FO02	52	593442.3	6308137.0	 

Plot Name	PCT	Easting (MGA Zone 55)	Northing (MGA Zone 55)	Photographs
FO03	52	593173.5	6308017.1	 

Plot Name	PCT	Easting (MGA Zone 55)	Northing (MGA Zone 55)	Photographs
FO04	45	593127.7	6307747.9	 

Plot Name	PCT	Easting (MGA Zone 55)	Northing (MGA Zone 55)	Photographs
FO05	52	593077.9	6307705.9	 

Plot Name	PCT	Easting (MGA Zone 55)	Northing (MGA Zone 55)	Photographs
FO06	26	593172.9	6308124.4	 

APPENDIX C – FIELD SURVEY RESULTS

Flora species list

These species were identified on the subject site during the May 2023 field survey.

Growth Form	Scientific Name	Common Name	Status	HTE	WoNS	PW
EG	*Cheilanthes sieberi*	Poison Rock Fern	N	No	No	No
FG	*Astragalus hamosus*	Yellow Milk-Vetch	I	No	No	No
FG	*Carthamus lanatus*	Saffron Thistle	I	Yes	No	No
FG	*Cichorium intybus*	Chicory	I	No	No	No
FG	*Cirsium vulgare*	Spear Thistle	I	No	No	No
FG	*Conyza bonariensis*	Flaxleaf Fleabane	I	No	No	No
FG	*Conyza canadensis*	Canadian Fleabane	I	No	No	No
FG	*Dichondra repens*	Kidney Weed	N	No	No	No
FG	*Echium plantagineum*	Paterson's Curse	I	No	No	No
FG	*Einadia nutans*	Climbing Saltbush	N	No	No	No
FG	*Epilobium billardiereanum*	Willowherb	N	No	No	No
FG	*Gazania linearis*	Treasure Flower	I	No	No	No
FG	*Goodenia glabra*	Smooth Goodenia	N	No	No	No
FG	*Hypochaeris glabra*	Smooth Catsear	I	No	No	No
FG	*Lactuca serriola*	Prickly Lettuce	I	No	No	No
FG	*Lepidium africanum*	African Peppercress	I	No	No	No
FG	*Malva parviflora*	Small-Flowered Mallow	I	No	No	No
FG	*Medicago laciniata*	Cut-Leaved Medic	I	No	No	No
FG	*Medicago polymorpha*	Burr Medic	I	No	No	No
FG	*Oxalis perennans*	Grassland Wood-sorrel	N	No	No	No
FG	*Oxalis pes-caprae*	Soursob	I	No	No	No
FG	*Polygonum arenastrum*	Wireweed	I	No	No	No
FG	*Rumex crispus*	Curled Dock	I	No	No	No
FG	*Salvia verbenaca*	Vervain	I	No	No	No
FG	*Sida corrugata*	Corrugated Sida	N	No	No	No
FG	*Sida trichopoda*	Hairy Sida	N	No	No	No
FG	*Solanum esuriale*	Quena	N	No	No	No
FG	*Sonchus oleraceus*	Common Sowthistle	I	No	No	No
FG	*Trifolium angustifolium*	Narrow-Leaved Clover	I	No	No	No
FG	*Trifolium arvense*	Haresfoot Clover	I	No	No	No
FG	*Vittadinia pterochaeta*	Winged New Holland Daisy	N	No	No	No
FG	*Wahlenbergia communis*	Tufted Bluebell	N	No	No	No
GG	*Austrostipa aristiglumis*	Plains Grass	N	No	No	No
GG	*Austrostipa scabra*	Speargrass	N	No	No	No
GG	*Avena fatua*	Wild Oats	I	No	No	No
GG	*Bothriochloa macra*	Red Grass	N	No	No	No
GG	*Bromus alopecuros*	Brome	I	No	No	No
GG	*Carex inversa*	Knob Sedge	N	No	No	No
GG	*Chloris truncata*	Windmill Grass	N	No	No	No

Growth Form	Scientific Name	Common Name	Status	HTE	WoNS	PW
GG	*Chloris ventricosa*	Plump Windmill Grass	N	No	No	No
GG	*Cynodon dactylon*	Couch	N	No	No	No
GG	*Dichanthium sericeum*	Queensland Bluegrass	N	No	No	No
GG	*Digitaria brownii*	Cotton Panic Grass	N	No	No	No
GG	*Enteropogon acicularis*	Curly Windmill Grass	N	No	No	No
GG	*Enteropogon ramosus*	Curly Windmill Grass	N	No	No	No
GG	*Eragrostis curvula*	African Lovegrass	I	Yes	No	No
GG	*Eriochloa pseudoacrotricha*	Early Spring Grass	N	No	No	No
GG	*Lolium* sp.	Ryegrass	I	No	No	No
GG	*Panicum decompositum*	Native Millet	N	No	No	No
GG	*Panicum effusum*	Hairy Panic	N	No	No	No
GG	*Paspalum dilatatum*	Paspalum	I	Yes	No	No
GG	*Rytidosperma caespitosum*	Ringed Wallaby Grass	N	No	No	No
GG	*Sporobolus caroli*	Fairy Grass	N	No	No	No
GG	*Sporobolus creber*	Western Rat-Tail Grass	N	No	No	No
TG	*Corymbia citriodora*	Lemon-Scented Gum	I	No	No	No
TG	*Schinus molle* var. *areira*	Pepper Tree	I	No	No	No
OG	*Amyema quandang*	Grey Mistletoe	N	No	No	No
SG	*Acacia deanei*	Deane's Wattle	N	No	No	No
SG	*Acacia decora*	Western Silver Wattle	N	No	No	No
SG	*Atriplex semibaccata*	Creeping Saltbush	N	No	No	No
SG	*Enchylaena tomentosa*	Ruby Saltbush	N	No	No	No
SG	*Lycium ferocissimum*	African Boxthorn	I	Yes	Yes	Yes
SG	*Maireana decalvans*	Black Cotton Bush	N	No	No	No
SG	*Maireana microphylla*	Small-Leaf Bluebush	N	No	No	No
SG	*Salsola australis*	Buckbush	N	No	No	No
SG	*Sclerolaena muricata*	Black Rolypoly	N	No	No	No
TG	*Acacia pendula*	Weeping Myall, Boree	N	No	No	No
TG	*Acacia salicina*	Cooba	N	No	No	No
TG	*Allocasuarina luehmannii*	Bulloak	N	No	No	No
TG	*Brachychiton populneus*	Kurrajong	N	No	No	No
TG	*Callitris glaucophylla*	White Cypress Pine	N	No	No	No
TG	*Eucalyptus polyanthemos*	Red Box	N	No	No	No
TG	*Eucalyptus sideroxylon*	Mugga Ironbark	N	No	No	No
TG	*Fraxinus angustifolia* subsp. *angustifolia*	Desert Ash	I	No	No	No

*FG = Forb, GG = Grass and Grass-like, SG = Shrub, TG = Tree, EG = Fern, OG = Other +
N = Native, I = Introduced

Fauna species list

Fifteen fauna species were identified on the site during the May 2023 field survey. Of the detected species, three are exotic and 12 are native; none are threatened:

Class	Species Name	Common Name	Status+	*NSW Status	^Comm. Status
Amphibia	*Crinia parinsignifera*	Eastern Sign-bearing Froglet	N	-	-
Aves	*Entomyzon cyanotis*	Blue-faced Honeyeater	N	-	-
Aves	*Gymnorhina tibicen*	Australian Magpie	N	-	-
Aves	*Grallina cyanoleuca*	Magpie-lark	N	-	-
Aves	*Manorina melanocephala*	Noisy Miner	N	-	-
Aves	*Ocyphaps lophotes*	Crested Pigeon	N	-	-
Aves	*Sturnus vulgaris*	Common Starling	I	-	-
Aves	*Acanthiza chrysorrhoa*	Yellow-rumped Thornbill	N	-	-
Aves	*Coracina novaehollandiae*	Black-faced Cuckoo-shrike	N	-	-
Aves	*Passer domesticus*	House Sparrow	I	-	-
Aves	*Malurus cyaneus*	Superb Fairy-wren	N	-	-
Aves	*Acanthiza nana*	Yellow Thornbill	N	-	-
Aves	*Strepera graculina*	Pied Currawong	N	-	-
Aves	*Philemon corniculatus*	Noisy Friarbird	N	-	-
Mammalia	*Oryctolagus cuniculus*	Rabbit	I	-	-

+ N = Native, I = Introduced

*NSW Status: listed under the BC Act

+Comm. Status: listed under the EPBC Act

BAM Data Sheets

BAM Plot - Field Survey Sheet

Date	12/05/2023	**Survey Name**	Forbes FACS subdivision				
Recorders	David Orchard			**Plot ID #**	FO01	**Zone ID**	70_Remn.
Photo #				**Plot dimensions**			20x50 m
Datum	GDA 94	**Zone**	55	**Plot bearing along midline**			10
Easting	593386.7	**Northing**	6308152.7	Record magnetic bearing along midline from 0 m point			

Record easting, northing at plot marker (0 m point), Photos taken vertically and horizontally at 0m point and 50 m point, looking into plot

IBRA region	NSW South Western Slopes
Subregion	Lower Slopes
Likely Vegetation Class	
Plant Community Type	70 — **Condition state** Remnant

Floristics plot is centred on the midline, at 0 m point, 10 m either side

BAM Composition / Structure plot (400m^2)

Dimensions (circle applicable size)

20 x 20 m | 10 x 40 m

		Sum values*
Native Richness (count of native species)	**Trees**	3
	Shrubs	3
	Grasses etc	6
	Forbs	4
	Ferns	1
	Other	0
Cover (sum of cover of natives species)	**Trees**	5.1
	Shrubs	25.2
	Grasses etc	29.3
	Forbs	0.4
	Ferns	1
	Other	0
High threat weed cover		0.1

*These values summarise the floristic data for input into BAM calculator

Function plot is an extention of floristics plot out to 50 m along midline (or equiv. area)

BAM Function plot (1000m^2)

Dimensions (circle applicable size)

20 x 50 m | 10 x 100 m

Tree stem DBH (cm)	
>80	0
50 - 79	0
30 - 49	-
20 - 29	+
10 - 19	-
5 - 9	+
< 5	-

Notes on function attributes:

Stem size class records # large trees (cf. benchmark)

Record stems for living trees only, and for all species

For multistemmed trees, record only the largest stem

Presence of <5cm stems records regeneration

Record # trees with hollows, not number of hollows

Count as one stem where tree is multistemmed

Hollow bearing stem may be a dead stem (incl. stag)

# Trees with hollows	<20cm	Total #
	>20cm**	0
Length of logs		Total (m) 0

Measure length of logs >10cm, fully or partly in contact with the ground, and within the plot.

**Hollows of >20cm are recorded for habitat for some threatened species

BAM Litter/ Groundcover (1 x 1 m plots) Litter cover is used for BAM, other attributes are useful for recording site condition in general

		1	2	3	4	5	**Average**
Sub-plot score (% cover)	**Litter**	50	2	20	30	80	36.4
	Bare ground						
	Cryptogam						
	Rock						

Litter / groundcover plots are located at 5, 15, 25, 35, 45 m (alternating sides) along the midline of Function plot

Other plot information (not essential for BAM)

Disturbance	Severity	Timing	**Landform**
Clearing (incl. logging)			**Microrelief**
Cultivation			**Slope**
Grazing (native / stock)			**Aspect**
Soil erosion			**Soil surface texture**
Firewood removal			**Soil colour**
Fire (ground stratum, mid, canopy burnt?)			**Site drainage**
Storm damage			**Distance to nearest water**
Weediness			**Distance to nearest rock outcrop /cave**

Severity code: 0=no evidence, 1=slight, 2=moderate, 3= severe

Timing code: R = recent (<3y), NR = not recent, O = old/historic

Notes

BAM Plot - Field Survey Sheet

Date	12/05/2023	**Survey Name**	Forbes FACS			
Recorders	David Orchard		**Plot ID #**	FO01	**Zone ID**	70_Remn.
GF code	***Genus species*** (tick if photographed or sample taken)		**N, E, HTE**	**Cover %**	**Stratum**	**Abund** (count)
TG	Callitris glaucophylla		N	3		
TG	Allocasuarina luehmannii		N	2		
SG	Acacia decora		N	25		
GG	Austrostipa scabra		N	2		
GG	Rytidosperma caespitosum		N	25		
FG	Wahlenbergia communis		N	0.1		20
FG	Trifolium angustifolium		E	0.1		10
GG	Dichanthium sericeum		N	1		
EG	Cheilanthes sieberi		N	1		
FG	Hypochaeris glabra		E	0.1		10
GG	Enteropogon acicularis		N	1		
FG	Gazania linearis		E	0.1		1
GG	Eragrostis curvula		HTE	0.1		2
FG	Vittadinia pterochaeta		N	0.1		20
TG	Acacia pendula		N	0.1		1
FG	Goodenia glabra		N	0.1		30
SG	Maireana decalvans		N	0.1		8
GG	Eriochloa pseudoacrotricha		N	0.1		1
FG	Einadia nutans		N	0.1		10
GG	Digitaria brownii		N	0.2		40
SG	Acacia deanei		N	0.1		1

Growth Form (see BAM Appendix 4) - Tree (TG), Shrub (SG), Grass & grasslike (GG), Forb (FG), Fern (EG), Other (OG)
Cover: 0.1, 0.2, 0.3, ... 1, 2, 3, ...10, 15, 20, 25, ...100% (incl. leaf, branch, stem cover per species).
Abundance for each species with ≤5% cover: 1, 2, 3, 4, ... 10, 20, 30, ... 100, 500, 1000, 1500, 2000 stems
N=native, E=exotic, HTE=high threat exotic
All species in a plot must be recorded. If you can only ID to genus, separate different species by unique identifiyer e.g. *Genus* sp1, *Genus* sp2 etc
Identify top 3 dominants in each stratum (use own stratum definitions) Cover area examples: 0.1% = 63x63cm, 0.5% = 1.4x1.4m, 1% =2x2 m, 5%=4x5m, 25%=10x10m

BAM Plot - Field Survey Sheet

Date	12/05/2023	**Survey Name**	Forbes FACS subdivision				
Recorders	David Orchard			**Plot ID #**	FO02	**Zone ID**	52_Mod
Photo #				**Plot dimensions**			20x50 m
Datum	GDA 94	**Zone**	55	**Plot bearing along midline**			10
Easting	593442.3	**Northing**	6308137	Record magnetic bearing along midline from 0 m point			

Record easting, northing at plot marker (0 m point), Photos taken vertically and horizontally at 0m point and 50 m point, looking into plot

IBRA region	NSW South Western Slopes
Subregion	Lower Slopes
Likely Vegetation Class	
Plant Community Type	52
Condition state	Moderate

Floristics plot is centred on the midline, at 0 m point, 10 m either side

BAM Composition / Structure plot (400m^2)

Dimensions (circle applicable size)

20 x 20 m | 10 x 40 m

		Sum values*
Native Richness (count of native species)	**Trees**	0
	Shrubs	2
	Grasses etc	5
	Forbs	1
	Ferns	0
	Other	0
Cover (sum of cover of natives species)	**Trees**	0
	Shrubs	0.3
	Grasses etc	85.2
	Forbs	0.1
	Ferns	0
	Other	0
High threat weed cover		2.2

*These values summarise the floristic data for input into BAM calculator

Function plot is an extention of floristics plot out to 50 m along midline (or equiv. area)

BAM Function plot (1000m^2)

Dimensions (circle applicable size)

20 x 50 m | 10 x 100 m

Tree stem DBH (cm)		Notes on function attributes:
>80	0	Stem size class records # large trees (cf. benchmark)
50 - 79	0	Record stems for living trees only, and for all species
30 - 49	-	For multistemmed trees, record only the largest stem
20 - 29	-	Presence of <5cm stems records regeneration
10 - 19	-	Record # trees with hollows, not number of hollows
5 - 9	-	Count as one stem where tree is multistemmed
< 5	-	Hollow bearing stem may be a dead stem (incl. stag)

# Trees with hollows	<20cm	Total #
	>20cm**	0
Length of logs		Total (m)
		0

Measure length of logs >10cm, fully or partly in contact with the ground, and within the plot.

**Hollows of >20cm are recorded for habitat for some threatened species

BAM Litter/ Groundcover (1 x 1 m plots) Litter cover is used for BAM, other attributes are useful for recording site condition in general

		1	2	3	4	5	**Average**
Sub-plot score (% cover)	**Litter**	10	5	5	0	1	4.2
	Bare ground						
	Cryptogam						
	Rock						

Litter / groundcover plots are located at 5, 15, 25, 35, 45 m (alternating sides) along the midline of Function plot

Other plot information (not essential for BAM)

Disturbance	Severity	Timing	**Landform**
Clearing (incl. logging)			**Microrelief**
Cultivation			**Slope**
Grazing (native / stock)			**Aspect**
Soil erosion			**Soil surface texture**
Firewood removal			**Soil colour**
Fire (ground stratum, mid, canopy burnt?)			**Site drainage**
Storm damage			**Distance to nearest water**
Weediness			**Distance to nearest rock outcrop /cave**

Severity code: 0=no evidence, 1=slight, 2=moderate, 3= severe

Timing code: R = recent (<3y), NR = not recent, O = old/historic

Notes

BAM Plot - Field Survey Sheet

Date	12/05/2023	**Survey Name**	Forbes FACS			
Recorders	David Orchard		**Plot ID #**	FO02	**Zone ID**	52_Mod
GF code	***Genus species*** (tick if photographed or sample taken)		**N, E, HTE**	**Cover %**	**Stratum**	**Abund** (count)
GG	Dichanthium sericeum		N	40		
SG	Maireana decalvans		N	0.2		60
FG	Solanum esuriale		N	0.1		50
GG	Bothriochloa macra		N	40		
GG	Cynodon dactylon		N	5		
GG	Eriochloa pseudoacrotricha		N	0.1		10
FG	Trifolium arvense		E	0.1		20
GG	Bromus alopecuros		E	5		
FG	Rumex crispus		E	0.1		2
FG	Hypochaeris glabra		E	0.1		10
FG	Trifolium angustifolium		E	0.1		20
GG	Paspalum dilatatum		HTE	2		
FG	Lactuca serriola		E	0.1		10
FG	Conyza bonariensis		E	0.1		10
GG	Avena fatua		E	0.1		1
GG	Lolium sp.		E	1		
GG	Eragrostis curvula		HTE	0.2		10
GG	Carex inversa		N	0.1		10
SG	Salsola australis		N	0.1		1
FG	Medicago laciniata		E	1		

Growth Form (see BAM Appendix 4) - Tree (TG), Shrub (SG), Grass & grasslike (GG), Forb (FG), Fern (EG), Other (OG)
Cover: 0.1, 0.2, 0.3, ... 1, 2, 3, ...10, 15, 20, 25, ...100% (incl. leaf, branch, stem cover per species).
Abundance for each species with ≤5% cover: 1, 2, 3, 4, ... 10, 20, 30, ... 100, 500, 1000, 1500, 2000 stems
N=native, E=exotic, HTE=high threat exotic
All species in a plot must be recorded. If you can only ID to genus, separate different species by unique identifiyer e.g. *Genus* sp1, *Genus* sp2 etc
Identify top 3 dominants in each stratum (use own stratum definitions) Cover area examples: 0.1% = 63x63cm, 0.5% = 1.4x1.4m, 1% =2x2 m, 5%=4x5m, 25%=10x10m

BAM Plot - Field Survey Sheet

Date	12/05/2023	**Survey Name**	Forbes FACS subdivision				
Recorders	David Orchard			**Plot ID #**	FO03	**Zone ID**	52_Mod
Photo #				**Plot dimensions**			20x50 m
Datum	GDA 94	**Zone**	55	**Plot bearing along midline**			156
Easting	593173.5	**Northing**	6308017.1	Record magnetic bearing along midline from 0 m point			

Record easting, northing at plot marker (0 m point), Photos taken vertically and horizontally at 0m point and 50 m point, looking into plot

IBRA region	NSW South Western Slopes
Subregion	Lower Slopes
Likely Vegetation Class	
Plant Community Type	52

Condition state Moderate

Floristics plot is centred on the midline, at 0 m point, 10 m either side

BAM Composition / Structure plot (400m^2)

Dimensions (circle applicable size)

20 x 20 m | 10 x 40 m

		Sum values*
Native Richness (count of native species)	**Trees**	0
	Shrubs	2
	Grasses etc	7
	Forbs	0
	Ferns	0
	Other	0
Cover (sum of cover of natives species)	**Trees**	0
	Shrubs	0.4
	Grasses etc	95.2
	Forbs	0
	Ferns	0
	Other	0
High threat weed cover		0

*These values summarise the floristic data for input into BAM calculator

Function plot is an extention of floristics plot out to 50 m along midline (or equiv. area)

BAM Function plot (1000m^2)

Dimensions (circle applicable size)

20 x 50 m | 10 x 100 m

Tree stem DBH (cm)		Notes on function attributes:
>80	0	Stem size class records # large trees (cf. benchmark)
50 - 79	0	Record stems for living trees only, and for all species
30 - 49	-	For multistemmed trees, record only the largest stem
20 - 29	-	Presence of <5cm stems records regeneration
10 - 19	-	Record # trees with hollows, not number of hollows
5 - 9	-	Count as one stem where tree is multistemmed
< 5	-	Hollow bearing stem may be a dead stem (incl. stag)

# Trees with hollows	<20cm	Total #
	>20cm**	0
Length of logs		Total (m)
		0

Measure length of logs >10cm, fully or partly in contact with the ground, and within the plot.

**Hollows of >20cm are recorded for habitat for some threatened species

BAM Litter/ Groundcover (1 x 1 m plots) Litter cover is used for BAM, other attributes are useful for recording site condition in general

		1	2	3	4	5	**Average**
Sub-plot score (% cover)	**Litter**	1	30	30	2	5	13.6
	Bare ground						
	Cryptogam						
	Rock						

Litter / groundcover plots are located at 5, 15, 25, 35, 45 m (alternating sides) along the midline of Function plot

Other plot information (not essential for BAM)

Disturbance	Severity	Timing	**Landform**
Clearing (incl. logging)			**Microrelief**
Cultivation			**Slope**
Grazing (native / stock)			**Aspect**
Soil erosion			**Soil surface texture**
Firewood removal			**Soil colour**
Fire (ground stratum, mid, canopy burnt?)			**Site drainage**
Storm damage			**Distance to nearest water**
Weediness			**Distance to nearest rock outcrop /cave**

Severity code: 0=no evidence, 1=slight, 2=moderate, 3= severe

Timing code: R = recent (<3y), NR = not recent, O = old/historic

Notes

BAM Plot - Field Survey Sheet

Date	12/05/2023	**Survey Name**	Forbes FACS			
Recorders	David Orchard		**Plot ID #**	FO03	**Zone ID**	52_Mod
GF code	***Genus species*** (tick if photographed or sample taken)		**N, E, HTE**	**Cover %**	**Stratum**	**Abund** (count)
GG	Dichanthium sericeum		N	65		
GG	Austrostipa aristiglumis		N	1		60
FG	Conyza canadensis		E	0.1		50
GG	Chloris truncata		N	1		
SG	Salsola australis		N	0.2		
SG	Maireana decalvans		N	0.2		10
GG	Sporobolus caroli		N	0.1		20
FG	Gazania linearis		E	0.1		
GG	Rytidosperma caespitosum		N	3		2
FG	Cichorium intybus		E	0.1		10
FG	Trifolium angustifolium		E	0.1		20
FG	Salvia verbenaca		E	0.1		
GG	Chloris ventricosa		N	0.1		10
GG	Austrostipa scabra		N	25		10
FG	Medicago laciniata		E	0.1		1

Growth Form (see BAM Appendix 4) - Tree (TG), Shrub (SG), Grass & grasslike (GG), Forb (FG), Fern (EG), Other (OG)
Cover: 0.1, 0.2, 0.3, ... 1, 2, 3, ...10, 15, 20, 25, ...100% (incl. leaf, branch, stem cover per species).
Abundance for each species with ≤5% cover: 1, 2, 3, 4, ... 10, 20, 30, ... 100, 500, 1000, 1500, 2000 stems
N=native, E=exotic, HTE=high threat exotic
All species in a plot must be recorded. If you can only ID to genus, separate different species by unique identifiyer e.g. *Genus* sp1, *Genus* sp2 etc
Identify top 3 dominants in each stratum (use own stratum definitions) Cover area examples: 0.1% = 63x63cm, 0.5% = 1.4x1.4m, 1% =2x2 m, 5%=4x5m, 25%=10x10m

BAM Plot - Field Survey Sheet

Date	12/05/2023	**Survey Name**	Forbes FACS subdivision				
Recorders	David Orchard			**Plot ID #**	FO04	**Zone ID**	45_Mod
Photo #				**Plot dimensions**			20x50 m
Datum	GDA 94	**Zone**	55	**Plot bearing along midline**			145
Easting	593127.7	**Northing**	6307747.9	Record magnetic bearing along midline from 0 m point			

Record easting, northing at plot marker (0 m point), Photos taken vertically and horizontally at 0m point and 50 m point, looking into plot

IBRA region	NSW South Western Slopes
Subregion	Lower Slopes
Likely Vegetation Class	
Plant Community Type	45
Condition state	Moderate

Floristics plot is centred on the midline, at 0 m point, 10 m either side

BAM Composition / Structure plot (400m^2)

Dimensions (circle applicable size)

20 x 20 m | 10 x 40 m

		Sum values*
Native Richness (count of native species)	**Trees**	0
	Shrubs	2
	Grasses etc	7
	Forbs	0
	Ferns	0
	Other	0
Cover (sum of cover of natives species)	**Trees**	0
	Shrubs	0.4
	Grasses etc	95.2
	Forbs	0
	Ferns	0
	Other	0
High threat weed cover		0

*These values summarise the floristic data for input into BAM calculator

Function plot is an extention of floristics plot out to 50 m along midline (or equiv. area)

BAM Function plot (1000m^2)

Dimensions (circle applicable size)

20 x 50 m | 10 x 100 m

Tree stem DBH (cm)		Notes on function attributes:
>80	0	Stem size class records # large trees (cf. benchmark)
50 - 79	0	Record stems for living trees only, and for all species
30 - 49	-	For multistemmed trees, record only the largest stem
20 - 29	-	Presence of <5cm stems records regeneration
10 - 19	-	Record # trees with hollows, not number of hollows
5 - 9	-	Count as one stem where tree is multistemmed
< 5	-	Hollow bearing stem may be a dead stem (incl. stag)

# Trees with hollows	<20cm	Total #
	>20cm**	0
Length of logs		Total (m)
		0

Measure length of logs >10cm, fully or partly in contact with the ground, and within the plot.

**Hollows of >20cm are recorded for habitat for some threatened species

BAM Litter/ Groundcover (1 x 1 m plots) Litter cover is used for BAM, other attributes are useful for recording site condition in general

		1	2	3	4	5	**Average**
Sub-plot score (% cover)	**Litter**	1	5	0	20	80	21.2
	Bare ground						
	Cryptogam						
	Rock						

Litter / groundcover plots are located at 5, 15, 25, 35, 45 m (alternating sides) along the midline of Function plot

Other plot information (not essential for BAM)

Disturbance	Severity	Timing	**Landform**
Clearing (incl. logging)			**Microrelief**
Cultivation			**Slope**
Grazing (native / stock)			**Aspect**
Soil erosion			**Soil surface texture**
Firewood removal			**Soil colour**
Fire (ground stratum, mid, canopy burnt?)			**Site drainage**
Storm damage			**Distance to nearest water**
Weediness			**Distance to nearest rock outcrop /cave**

Severity code: 0=no evidence, 1=slight, 2=moderate, 3= severe

Timing code: R = recent (<3y), NR = not recent, O = old/historic

Notes

BAM Plot - Field Survey Sheet

Date	12/05/2023	**Survey Name**	Forbes FACS			
Recorders	David Orchard		**Plot ID #**	FO04	**Zone ID**	45_Mod
GF code	***Genus species*** (tick if photographed or sample taken)		**N, E, HTE**	**Cover %**	**Stratum**	**Abund** (count)
GG	Austrostipa aristiglumis		N	65		
FG	Solanum esuriale		N	1		60
GG	Cynodon dactylon		E	0.1		50
GG	Dichanthium sericeum		N	1		
SG	Maireana decalvans		N	0.2		
SG	Sclerolaena muricata		N	0.2		10
SG	Maireana microphylla		N	0.1		20
GG	Austrostipa scabra		E	0.1		
FG	Lactuca serriola		N	3		2
GG	Enteropogon ramosus		E	0.1		10
FG	Cirsium vulgare		E	0.1		20
GG	Bothriochloa macra		E	0.1		
GG	Chloris ventricosa		N	0.1		10
GG	Carex inversa		N	25		10

Growth Form (see BAM Appendix 4) - Tree (TG), Shrub (SG), Grass & grasslike (GG), Forb (FG), Fern (EG), Other (OG)
Cover: 0.1, 0.2, 0.3, ... 1, 2, 3, ...10, 15, 20, 25, ...100% (incl. leaf, branch, stem cover per species).
Abundance for each species with ≤5% cover: 1, 2, 3, 4, ... 10, 20, 30, ... 100, 500, 1000, 1500, 2000 stems
N=native, E=exotic, HTE=high threat exotic
All species in a plot must be recorded. If you can only ID to genus, separate different species by unique identifiyer e.g. *Genus* sp1, *Genus* sp2 etc
Identify top 3 dominants in each stratum (use own stratum definitions) Cover area examples: 0.1% = 63x63cm, 0.5% = 1.4x1.4m, 1% =2x2 m, 5%=4x5m, 25%=10x10m

BAM Plot - Field Survey Sheet

Date	12/05/2023	**Survey Name**	Forbes FACS subdivision				
Recorders	David Orchard			**Plot ID #**	FO05	**Zone ID**	52_Slash.
Photo #				**Plot dimensions**			20x50 m
Datum	GDA 94	**Zone**	55	**Plot bearing along midline**			285
Easting	593077.9	**Northing**	6307705.9	Record magnetic bearing along midline from 0 m point			

Record easting, northing at plot marker (0 m point), Photos taken vertically and horizontally at 0m point and 50 m point, looking into plot

IBRA region	NSW South Western Slopes
Subregion	Lower Slopes
Likely Vegetation Class	
Plant Community Type	52
Condition state	Slashed

Floristics plot is centred on the midline, at 0 m point, 10 m either side

BAM Composition / Structure plot (400m^2)

Dimensions (circle applicable size)

20 x 20 m | 10 x 40 m

		Sum values*
Native Richness (count of native species)	**Trees**	0
	Shrubs	0
	Grasses etc	8
	Forbs	2
	Ferns	0
	Other	0
Cover (sum of cover of natives species)	**Trees**	0
	Shrubs	0
	Grasses etc	85.3
	Forbs	0.2
	Ferns	0
	Other	0
High threat weed cover		1

*These values summarise the floristic data for input into BAM calculator

Function plot is an extention of floristics plot out to 50 m along midline (or equiv. area)

BAM Function plot (1000m^2)

Dimensions (circle applicable size)

20 x 50 m | 10 x 100 m

Tree stem DBH (cm)		Notes on function attributes:
>80	0	Stem size class records # large trees (cf. benchmark)
50 - 79	0	Record stems for living trees only, and for all species
30 - 49	-	For multistemmed trees, record only the largest stem
20 - 29	-	Presence of <5cm stems records regeneration
10 - 19	-	Record # trees with hollows, not number of hollows
5 - 9	-	Count as one stem where tree is multistemmed
< 5	-	Hollow bearing stem may be a dead stem (incl. stag)

# Trees with hollows	<20cm	Total #
	>20cm**	0
Length of logs		Total (m)
		0

Measure length of logs >10cm, fully or partly in contact with the ground, and within the plot.

**Hollows of >20cm are recorded for habitat for some threatened species

BAM Litter/ Groundcover (1 x 1 m plots) Litter cover is used for BAM, other attributes are useful for recording site condition in general

		1	2	3	4	5	**Average**
Sub-plot score (% cover)	**Litter**	1	5	0	20	80	21.2
	Bare ground						
	Cryptogam						
	Rock						

Litter / groundcover plots are located at 5, 15, 25, 35, 45 m (alternating sides) along the midline of Function plot

Other plot information (not essential for BAM)

Disturbance	Severity	Timing	**Landform**
Clearing (incl. logging)			**Microrelief**
Cultivation			**Slope**
Grazing (native / stock)			**Aspect**
Soil erosion			**Soil surface texture**
Firewood removal			**Soil colour**
Fire (ground stratum, mid, canopy burnt?)			**Site drainage**
Storm damage			**Distance to nearest water**
Weediness			**Distance to nearest rock outcrop /cave**

Severity code: 0=no evidence, 1=slight, 2=moderate, 3= severe

Timing code: R = recent (<3y), NR = not recent, O = old/historic

Notes

BAM Plot - Field Survey Sheet

Date	12/05/2023	**Survey Name**	Forbes FACS			
Recorders	David Orchard		**Plot ID #**	FO05	**Zone ID**	52_Slash
GF code	***Genus species*** (tick if photographed or sample taken)		**N, E, HTE**	**Cover %**	**Stratum**	**Abund** (count)
GG	Dichanthium sericeum		N	75		
GG	Austrostipa aristiglumis		N	1		
GG	Cynodon dactylon		N	5		
GG	Panicum effusum		N	0.1		10
FG	Lactuca serriola		E	0.1		20
GG	Bothriochloa macra		N	2		
GG	Paspalum dilatatum		HTE	1		
FG	Rumex crispus		E	0.1		4
GG	Enteropogon ramosus		N	0.2		40
FG	Sonchus oleraceus		E	0.1		50
GG	Sporobolus creber		N	1		
FG	Cirsium vulgare		E	0.1		30
FG	Hypochaeris glabra		E	0.1		20
GG	Carex inversa		N	1		
FG	Solanum esuriale		N	0.1		20
FG	Astragalus hamosus		E	0.1		40
FG	Echium plantagineum		E	0.1		10
FG	Epilobium billardiereanum		N	0.1		1
FG	Medicago polymorpha		E	0.1		30
FG	Polygonum arenastrum		E	0.2		10

Growth Form (see BAM Appendix 4) - Tree (TG), Shrub (SG), Grass & grasslike (GG), Forb (FG), Fern (EG), Other (OG)
Cover: 0.1, 0.2, 0.3, ... 1, 2, 3, ...10, 15, 20, 25, ...100% (incl. leaf, branch, stem cover per species).
Abundance for each species with ≤5% cover: 1, 2, 3, 4, ... 10, 20, 30, ... 100, 500, 1000, 1500, 2000 stems
N=native, E=exotic, HTE=high threat exotic
All species in a plot must be recorded. If you can only ID to genus, separate different species by unique identifiyer e.g. *Genus* sp1, *Genus* sp2 etc
Identify top 3 dominants in each stratum (use own stratum definitions) Cover area examples: 0.1% = 63x63cm, 0.5% = 1.4x1.4m, 1% =2x2 m, 5%=4x5m, 25%=10x10m

BAM Plot - Field Survey Sheet

Date	12/05/2023	**Survey Name**	Forbes FACS subdivision				
Recorders	David Orchard			**Plot ID #**	FO06	**Zone ID**	26_Remn.
Photo #				**Plot dimensions**			20x50 m
Datum	GDA 94	**Zone**	55	**Plot bearing along midline**			294
Easting	593172.9	**Northing**	6308124.4	Record magnetic bearing along midline from 0 m point			

Record easting, northing at plot marker (0 m point), Photos taken vertically and horizontally at 0m point and 50 m point, looking into plot

IBRA region	NSW South Western Slopes
Subregion	Lower Slopes
Likely Vegetation Class	
Plant Community Type	26 — **Condition state** Remnant

Floristics plot is centred on the midline, at 0 m point, 10 m either side

BAM Composition / Structure plot (400m^2)

Dimensions (circle applicable size): 20 x 20 m | 10 x 40 m

		Sum values*
Native Richness (count of native species)	**Trees**	2
	Shrubs	3
	Grasses etc	7
	Forbs	4
	Ferns	0
	Other	0
Cover (sum of cover of natives species)	**Trees**	67
	Shrubs	16
	Grasses etc	1.6
	Forbs	10.2
	Ferns	0
	Other	0
High threat weed cover		1

*These values summarise the floristic data for input into BAM calculator

Function plot is an extention of floristics plot out to 50 m along midline (or equiv. area)

BAM Function plot (1000m^2)

Dimensions (circle applicable size): 20 x 50 m | 10 x 100 m

Tree stem DBH (cm)		Notes on function attributes:
>80	0	Stem size class records # large trees (cf. benchmark)
50 - 79	0	Record stems for living trees only, and for all species
30 - 49	-	For multistemmed trees, record only the largest stem
20 - 29	-	Presence of <5cm stems records regeneration
10 - 19	-	Record # trees with hollows, not number of hollows
5 - 9	-	Count as one stem where tree is multistemmed
< 5	-	Hollow bearing stem may be a dead stem (incl. stag)

# Trees with hollows	<20cm	Total #
	>20cm**	0
Length of logs		Total (m) 0

Measure length of logs >10cm, fully or partly in contact with the ground, and within the plot.

**Hollows of >20cm are recorded for habitat for some threatened species

BAM Litter/ Groundcover (1 x 1 m plots) Litter cover is used for BAM, other attributes are useful for recording site condition in general

		1	2	3	4	5	Average
Sub-plot score (% cover)	**Litter**	70	90	90	50	50	70
	Bare ground						
	Cryptogam						
	Rock						

Litter / groundcover plots are located at 5, 15, 25, 35, 45 m (alternating sides) along the midline of Function plot

Other plot information (not essential for BAM)

Disturbance	Severity	Timing	**Landform**
Clearing (incl. logging)			**Microrelief**
Cultivation			**Slope**
Grazing (native / stock)			**Aspect**
Soil erosion			**Soil surface texture**
Firewood removal			**Soil colour**
Fire (ground stratum, mid, canopy burnt?)			**Site drainage**
Storm damage			**Distance to nearest water**
Weediness			**Distance to nearest rock outcrop /cave**

Severity code: 0=no evidence, 1=slight, 2=moderate, 3= severe

Timing code: R = recent (<3y), NR = not recent, O = old/historic

Notes

BAM Plot - Field Survey Sheet

Date	12/05/2023	**Survey Name**	Forbes FACS			
Recorders	David Orchard		**Plot ID #**	FO06	**Zone ID**	26_Remn
GF code	***Genus species*** (tick if photographed or sample taken)		**N, E, HTE**	**Cover %**	**Stratum**	**Abund** (count)
TG	Acacia pendula		N	65		
FG	Einadia nutans		N	8		
SG	Enchylaena tomentosa		N	10		
SG	Lycium ferocissimum		HTE	1		
GG	Lolium sp.		E	10		
GG	Austrostipa aristiglumis		N	1		
GG	Austrostipa scabra		N	0.1		5
GG	Enteropogon ramosus		N	0.1		4
GG	Rytidosperma caespitosum		N	0.1		10
SG	Maireana decalvans		N	5		
FG	Oxalis perennans		N	0.1		1
FG	Lactuca serriola		E	0.1		10
FG	Dichondra repens		N	2		
FG	Oxalis pes-caprae		E	1		
GG	Dichanthium sericeum		N	0.1		2
GG	Eriochloa pseudoacrotricha		N	0.1		1
SG	Atriplex semibaccata		N	1		
FG	Sida trichopoda		N	0.1		1
GG	Panicum decompositum		N	0.1		1
FG	Lepidium africanum		E	0.1		5
TG	Callitris glaucophylla		N	2		2

Growth Form (see BAM Appendix 4) - Tree (TG), Shrub (SG), Grass & grasslike (GG), Forb (FG), Fern (EG), Other (OG)
Cover: 0.1, 0.2, 0.3, ... 1, 2, 3, ...10, 15, 20, 25, ...100% (incl. leaf, branch, stem cover per species).
Abundance for each species with ≤5% cover: 1, 2, 3, 4, ... 10, 20, 30, ... 100, 500, 1000, 1500, 2000 stems
N=native, E=exotic, HTE=high threat exotic
All species in a plot must be recorded. If you can only ID to genus, separate different species by unique identifiyer e.g. *Genus* sp1, *Genus* sp2 etc
Identify top 3 dominants in each stratum (use own stratum definitions) Cover area examples: 0.1% = 63x63cm, 0.5% = 1.4x1.4m, 1% =2x2 m, 5%=4x5m, 25%=10x10m

APPENDIX D – BC AND EPBC ACT HABITAT ASSESSMENT FOR THREATENED SPECIES AND COMMUNITIES PREDICTED TO OCCUR

List generated by conducting a vegetation associations report for the South Western Slopes Bioregion, Lower Slopes subregion and filtering the results by the PCTs present within the subject site.

To determine whether any threatened species occurred near the subject site, BioNET Atlas records of threatened species within the Lower Slopes IBRA subregion were downloaded and the records clipped to within 10 km of the subject site in QGIS. Likelihood of occurrence description is sourced from https://www.environment.nsw.gov.au/threatenedSpeciesApp

Likelihood of occurrence table for BC and EPBC Act listed threatened and migratory species.

Scientific Name	Common Name	*NSW Status	+Comm Status	Records within 10km?	Likelihood of Occurrence	ToS required ?
Crinia sloanei	Sloane's Froglet	V,P	E	-	Sloane's Froglet has been recorded from widely scattered sites in the floodplains of the Murray-Darling Basin, with the majority of records in the Darling Riverine Plains, NSW South Western Slopes and Riverina bioregions in New South Wales. It has not been recorded recently in the northern part of its range and has only been recorded infrequently in the southern part of its range in NSW. It is typically associated with periodically inundated areas in grassland, woodland and disturbed habitats. **Low – Search area is within the species predicted distribution but there are no known associated vegetation communities present or records within 10km.**	No
Actitis hypoleucos	Common Sandpiper	P	C,J,K	-	Found along all coastlines of Australia and in many areas inland, the Common Sandpiper is widespread in small numbers. The population when in Australia is concentrated in northern and western Australia. The species utilises a wide range of coastal wetlands and some inland wetlands, with varying levels of salinity, and is mostly found around muddy margins or rocky shores and rarely on mudflats. The Common Sandpiper has been recorded in estuaries and deltas of streams, as well as on banks farther upstream; around lakes, pools, billabongs, reservoirs, dams and claypans, and occasionally piers and jetties. The muddy margins utilised by the species are often narrow and may be steep. The species is often associated with mangroves, and sometimes found in areas of mud littered with rocks or snags. **Low – Search area is within the species predicted distribution but there are no known associated vegetation communities present or records within 10km.**	No
Anseranas semipalmata	Magpie Goose	V,P	-	8	The Magpie Goose is still relatively common in the Australian northern tropics but had disappeared from south-east Australia by 1920 due to drainage and overgrazing of reed swamps used for breeding. Since the 1980s there have been an increasing number of records in central and northern NSW. Vagrants can follow food sources to south-eastern NSW. Mainly found in shallow wetlands (less than 1 m deep) with dense growth of rushes or sedges.	Yes

Scientific Name	Common Name	*NSW Status	+Comm Status	Records within 10km?	Likelihood of Occurrence	ToS required ?
					High – Search area is within the species known distribution, there is an associated vegetation community (PCTs 45 and 52) present, and there are records from within 10 km.	
Anthochaera phrygia	Regent Honeyeater	CE	CE	-	The Regent Honeyeater mainly inhabits temperate woodlands and open forests of the inland slopes of south-east Australia. Birds are also found in drier coastal woodlands and forests in some years. Once recorded between Adelaide and the central coast of Queensland, its range has contracted dramatically in the last 30 years to between north-eastern Victoria and south-eastern Queensland. There are only three known key breeding regions remaining: north-east Victoria (Chiltern-Albury), and in NSW at Capertee Valley and the Bundarra-Barraba region. In NSW the distribution is very patchy and mainly confined to the two main breeding areas and surrounding fragmented woodlands. In some years flocks converge on flowering coastal woodlands and forests. The Regent Honeyeater is a flagship threatened woodland bird whose conservation will benefit a large suite of other threatened and declining woodland fauna. The species inhabits dry open forest and woodland, particularly Box-Ironbark woodland, and riparian forests of River Sheoak. Regent Honeyeaters inhabit woodlands that support a significantly high abundance and species richness of bird species. These woodlands have significantly large numbers of mature trees, high canopy cover and abundance of mistletoes. **Low – Search area is within the species predicted distribution but there are no known associated vegetation communities present or records within 10km**	No
Aphelocephala leucopsis	Southern Whiteface		V	-	Distribution Southern whiteface occur 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. 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. Birds build large bulky domed nest of grass, bark and roots, usually in a hollow or crevice, although sometimes in low bushes. **Low – Search area is within the species predicted distribution but there are no known associated vegetation communities present or records within 10km**	No
Apus pacificus	Fork-tailed Swift	P	C,J,K	3	In NSW, the Fork-tailed Swift is recorded in all regions. Many records occur east of the Great Divide; however, a few populations have been found west of the Great Divide. These are widespread but scattered further west of the line joining Bourke and Dareton. Sightings have been recorded at Milparinka, the Bulloo River and Thurloo Downs (Higgins 1999). The Fork-tailed Swift is almost exclusively aerial, flying from less than 1 m to at least 300 m above ground and probably much higher. **Moderate – Search area is within the species predicted distribution and there are records within 10km, there are no known associated vegetation communities present.**	Yes
Artamus cyanopterus cyanopterus	Dusky Woodswallow	V,P	-	16	Dusky woodswallows are widespread in eastern, southern and south western Australia. The species occurs throughout most of New South Wales, but is sparsely scattered in, or largely absent from, much of the upper western region. Most breeding activity occurs on the western slopes of the Great Dividing Range. Primarily inhabit dry, open eucalypt forests and woodlands, including mallee associations, with an open or sparse understorey of eucalypt saplings, acacias and other shrubs, and ground-cover of grasses or sedges and fallen woody	Yes

Scientific Name	Common Name	*NSW Status	+Comm Status	Records within 10km?	Likelihood of Occurrence	ToS required ?
					debris. It has also been recorded in shrublands, heathlands and very occasionally in moist forest or rainforest. Also found in farmland, usually at the edges of forest or woodland. **Moderate – Search area is within the species predicted distribution and there are known associated vegetation communities present (PCTs 26, 45, 52 and 70), though there are no records within 10km.**	
Botaurus poiciloptilus	Australasian Bittern	E1,P	E	2	Australasian Bitterns are widespread but uncommon over south-eastern Australia. In NSW they may be found over most of the state except for the far north-west. Favours permanent freshwater wetlands with tall, dense vegetation, particularly bullrushes (*Typha* spp.) and spikerushes (*Eleocharis* spp.). Hides during the day amongst dense reeds or rushes and feed mainly at night on frogs, fish, yabbies, spiders, insects and snails. Feeding platforms may be constructed over deeper water from reeds trampled by the bird; platforms are often littered with prey remains. Breeding occurs in summer from October to January; nests are built in secluded places in densely-vegetated wetlands on a platform of reeds; there are usually six olive-brown eggs to a clutch. **Moderate – Search area is within the species predicted distribution and there are records within 10km, there are no known associated vegetation communities present.**	Yes
Bubulcus ibis syn. *Ardea ibis*	Cattle Egret	P	C,J	6	In Australia it is most widespread and common in north-eastern Western Australia across the Top End, Northern Territory, and in south-eastern Australia from Bundaberg, Queensland to Port Augusta, South Australia, including Tasmania. The Cattle Egret is found in grasslands, woodlands and wetlands, and is not common in arid areas. It also uses pastures and croplands, especially where drainage is poor. Will also forage at garbage dumps and is often seen with cattle and other stock. **Moderate – Search area is within the species predicted distribution and there are records within 10km, there are no known associated vegetation communities present.**	Yes
Burhinus grallarius	Bush Stone-curlew	E1,P	-	-	The Bush Stone-curlew is found throughout Australia except for the central southern coast and inland, the far south-east corner, and Tasmania. Only in northern Australia is it still common however and in the south-east it is either rare or extinct throughout its former range. Inhabits open forests and woodlands with a sparse grassy ground layer and fallen timber. Largely nocturnal, being especially active on moonlit nights. Feed on insects and small vertebrates, such as frogs, lizards and snakes. Nest on the ground in a scrape or small bare patch. Two eggs are laid in spring and early summer. **Moderate – Search area is within the species predicted distribution and there are known associated vegetation communities present (PCTs 26, 52 and 70), though there are no records within 10km.**	Yes
Calidris acuminata	Sharp-tailed Sandpiper	P	C,J,K	3	The Sharp-tailed Sandpiper spends the non-breeding season in Australia with small numbers occurring regularly in New Zealand. Most of the population migrates to Australia, mostly to the south-east and are widespread in both inland and coastal locations and in both freshwater and saline habitats. Many inland records are of birds on passage. In Australasia, the Sharp-tailed Sandpiper prefers muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation. This includes lagoons, swamps, lakes and pools near the coast, and dams, waterholes, soaks, bore drains and bore swamps,	Yes

Scientific Name	Common Name	*NSW Status	+Comm Status	Records within 10km?	Likelihood of Occurrence	ToS required ?
					saltpans and hypersaline salt lakes inland. They also occur in saltworks and sewage farms. They use flooded paddocks, sedgelands and other ephemeral wetlands, but leave when they dry. They use intertidal mudflats in sheltered bays, inlets, estuaries or seashores, and swamps and creeks lined with mangroves. They tend to occupy coastal mudflats mainly after ephemeral terrestrial wetlands have dried out, moving back during the wet season. They may be attracted to mats of algae and water weed either floating or washed up around terrestrial wetlands. **Moderate – Search area is within the species predicted distribution and there are records within 10km, there are no known associated vegetation communities present.**	
Calidris ferruginea	Curlew Sandpiper	E1	CE,C,J, K	-	The Curlew Sandpiper is distributed around most of the Australian coastline (including Tasmania). It occurs along the 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. **Low – Search area is within the species predicted distribution but there are no known associated vegetation communities present or records within 10km.**	No
Calidris melanotos	Pectoral Sandpiper	P	J,K	-	The Pectoral Sandpiper breeds in northern Russia and North America. Within Australasia, the Pectoral Sandpiper prefers shallow fresh to saline wetlands. In New South Wales (NSW), the Pectoral Sandpiper is widespread, but scattered. Records exist east of the Great Divide, from Casino and Ballina, south to Ulladulla. West of the Great Divide, the species is widespread in the Riverina and Lower Western regions. The species is usually found in coastal or near coastal habitat but occasionally found further inland. It prefers wetlands that have open fringing mudflats and low, emergent or fringing vegetation, such as grass or samphire. The species has also been recorded in swamp overgrown with lignum. They forage in shallow water or soft mud at the edge of wetlands. **Low – Search area is within the species predicted distribution but there are no known associated vegetation communities present or records within 10km.**	No
Callocephalon fimbriatum	Gang-gang Cockatoo	V,P,3	E	-	The Gang-gang Cockatoo is distributed from southern Victoria through south- and central-eastern New South Wales. In New South Wales, the Gang-gang Cockatoo is distributed from the south-east coast to the Hunter region, and inland to the Central Tablelands and south-west slopes. It occurs regularly in the Australian Capital Territory. It is rare at the extremities of its range, with isolated records known from as far north as Coffs Harbour and as far west as Mudgee. In spring and summer, generally found in tall mountain forests and woodlands, particularly in heavily timbered and mature wet sclerophyll forests. **Low – Search area is within the species predicted distribution but there are no known associated vegetation communities present or records within 10km.**	No
Calyptorhynchus lathami lathami	Glossy Black-Cockatoo	V	E	-	The Riverina population of the Glossy Black-Cockatoo is largely restricted to hills and low ridges where suitable stands of its food plant, Drooping She-Oak (*Allocasuarina verticillata*), remain within the Narrandera Range and to the north-west in the Brobenah Hills, McPhersons	Yes

Scientific Name	Common Name	*NSW Status	+Comm Status	Records within 10km?	Likelihood of Occurrence	ToS required ?
					Range, Cocoparra Range, Lachlan Range and Jimberoo State Forests, and the Naradhan Range. This population now occurs west of longitude 146º 40' E, within Cobar, Carrathool, Narrandera and Leeton local government areas. The population is largely restricted to hills and low ridges where suitable stands of its food plant Drooping Sheoak (*Allocasuarina verticillata*) remain. **Moderate – Search area is within the species predicted distribution and there are known associated vegetation communities present (PCT 70), though there are no records within 10km.**	
Certhionyx variegatus	Pied Honeyeater	V,P	-	-	Widespread throughout acacia, mallee and spinifex scrubs of arid and semi-arid Australia. Occasionally occurs further east, on the slopes and plains and the Hunter Valley, typically during periods of drought. Inhabits wattle shrub, primarily Mulga (*Acacia aneura*), mallee, spinifex and eucalypt woodlands, usually when shrubs are flowering; feeds on nectar, predominantly from various species of emu-bushes (*Eremophila* spp.); also from mistletoes and various other shrubs (e.g. *Grevillea* spp.); also eats saltbush fruit, berries, seed, flowers and insects. Highly nomadic, following the erratic flowering of shrubs; can be locally common at times. **Moderate – Search area is within the species predicted distribution and there are known associated vegetation communities present (PCTs 26 and 70), though there are no records within 10km.**	Yes
Chthonicola sagittata	Speckled Warbler	V,P	-	5	The Speckled Warbler has a patchy distribution throughout south-eastern Queensland, the eastern half of NSW and into Victoria, as far west as the Grampians. The species is most frequently reported from the hills and tablelands of the Great Dividing Range, and rarely from the coast. The Speckled Warbler lives in a wide range of Eucalyptus dominated communities that have a grassy understorey, often on rocky ridges or in gullies. Typical habitat would include scattered native tussock grasses, a sparse shrub layer, some eucalypt regrowth and an open canopy. Large, relatively undisturbed remnants are required for the species to persist in an area. The diet consists of seeds and insects, with most foraging taking place on the ground around tussocks and under bushes and trees. Pairs are sedentary and occupy a breeding territory of about ten hectares, with a slightly larger home-range when not breeding. The species may act as host to the Black-eared Cuckoo. Speckled Warblers often join mixed species feeding flocks in winter, with other species such as Yellow-rumped, Buff-rumped, Brown and Striated Thornbills. **High – Search area is within the species known distribution, there is an associated vegetation community (PCT 70) present, and there are records from within 10 km.**	Yes
Circus assimilis	Spotted Harrier	V,P	-	8	The Spotted Harrier occurs throughout the Australian mainland, except in densely forested or wooded habitats of the coast, escarpment and ranges, and rarely in Tasmania. Individuals disperse widely in NSW and comprise a single population. Occurs in grassy open woodland including Acacia and mallee remnants, inland riparian woodland, grassland and shrub steppe. It is found most commonly in native grassland, but also occurs in agricultural land, foraging over open habitats including edges of inland wetlands.	Yes

Scientific Name	Common Name	*NSW Status	+Comm Status	Records within 10km?	Likelihood of Occurrence	ToS required ?
					High – Search area is within the species known distribution, there is an associated vegetation community (PCTs 26, 45, 52 and 70) present, and there are records from within 10 km.	
Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	V,P	-	68	The Brown Treecreeper is endemic to eastern Australia and occurs in eucalypt forests and woodlands of inland plains and slopes of the Great Dividing Range. It is less commonly found on coastal plains and ranges. The western boundary of the range of (*Climacteris picumnus victoriae)* runs approximately through Corowa, Wagga Wagga, Temora, Forbes, Dubbo and Inverell and along this line the subspecies intergrades with the arid zone subspecies of Brown Treecreeper (*Climacteris picumnus picumnus*) which then occupies the remaining parts of the state. The eastern subspecies lives in eastern NSW in eucalypt woodlands through central NSW and in coastal areas with drier open woodlands such as the Snowy River Valley, Cumberland Plains, Hunter Valley and parts of the Richmond and Clarence Valleys. The population density of this subspecies has been greatly reduced over much of its range, with major declines recorded in central NSW and the northern and southern tablelands. Declines have occurred in remnant vegetation fragments smaller than 300 hectares, that have been isolated or fragmented for more than 50 years. **High – Search area is within the species known distribution, there is an associated vegetation community (PCT 70) present, and there are records from within 10 km.**	Yes
Daphoenositta chrysoptera	Varied Sittella	V,P	-	4	The Varied Sittella is sedentary and inhabits most of mainland Australia except the treeless deserts and open grasslands. Distribution in NSW is nearly continuous from the coast to the far west. The Varied Sittella's population size in NSW is uncertain but is believed to have undergone a moderate reduction over the past several decades. Inhabits eucalypt forests and woodlands, especially those containing rough-barked species and mature smooth-barked gums with dead branches, mallee and Acacia woodland. **High – Search area is within the species known distribution, there is an associated vegetation community (PCTs 26 and 70) present, and there are records from within 10 km.**	Yes
Epthianura albifrons	White-fronted Chat	V,P	-	6	The White-fronted Chat is found across the southern half of Australia, from southernmost Queensland to southern Tasmania, and across to Western Australia as far north as Carnarvon. Found mostly in temperate to arid climates and very rarely sub-tropical areas, it occupies foothills and lowlands up to 1000 m above sea level. In NSW, it occurs mostly in the southern half of the state, in damp open habitats along the coast, and near waterways in the western part of the state. Along the coastline, it is found predominantly in saltmarsh vegetation but also in open grasslands and sometimes in low shrubs bordering wetland areas. **High – Search area is within the species known distribution, there is an associated vegetation community (PCTs 45 and 52) present, and there are records from within 10 km.**	Yes
Falco hypoleucos	Grey Falcon	V,P,2	V	8	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 breeding range has contracted since the 1950s with most breeding now confined to arid parts of the range. There are possibly less than 5000 individuals left. Population trends are unclear, though it is believed	Yes

Scientific Name	Common Name	*NSW Status	+Comm Status	Records within 10km?	Likelihood of Occurrence	ToS required ?
					to be extinct in areas with more than 500mm rainfall in NSW. 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. Preys primarily on birds, especially parrots and pigeons, using high-speed chases and stoops; reptiles and mammals are also taken. Like other falcons it utilises old nests of other birds of prey and ravens, usually high in a living eucalypt near water or a watercourse; peak laying season is in late winter and early spring; two or three eggs are laid. **High – Search area is within the species known distribution, there is an associated vegetation community (PCTs 26, 45, 52 and 70) present, and there are records from within 10 km.**	
Falco subniger	Black Falcon	V,P	-	16	The Black Falcon is widely, but sparsely, distributed in New South Wales, mostly occurring in inland regions. Some reports of 'Black Falcons' on the tablelands and coast of New South Wales are likely to be referable to the Brown Falcon. In New South Wales there is assumed to be a single population that is continuous with a broader continental population, given that falcons are highly mobile, commonly travelling hundreds of kilometres. The Black Falcon occurs as solitary individuals, in pairs, or in family groups of parents and offspring. **High – Search area is within the species known distribution, there is an associated vegetation community (PCTs 26, 45 and 70) present, and there are records from within 10 km.**	Yes
Gallinago hardwickii	Latham's Snipe	P	C,J,K	4	Latham's Snipe is a non-breeding visitor to south-eastern Australia and is a passage migrant through northern Australia (i.e. it travels through northern Australia to reach non-breeding areas located further south). The species has been recorded along the east coast of Australia from Cape York Peninsula through to south-eastern South Australia (including the Adelaide plains and Mount Lofty Ranges, and the Eyre Peninsula). The range extends inland over the eastern tablelands in south-eastern Queensland (and occasionally from Rockhampton in the north), and to west of the Great Dividing Range in New South. The species is widespread in Tasmania and is found in all regions of Victoria except for the north-west. Most birds spend the non-breeding period at sites located south of the Richmond River in New South Wales. In Australia, Latham's Snipe occurs in permanent and ephemeral wetlands up to 2000 m above sea-level. They usually inhabit open, freshwater wetlands with low, dense vegetation (e.g. swamps, flooded grasslands or heathlands, around bogs and other water bodies. However, they can also occur in habitats with saline or brackish water, in modified or artificial habitats, and in habitats located close to humans or human activity. **Moderate – Search area is within species predicted range and there are records within 10 km, though there are no known associated vegetation communities present.**	Yes
Gelochelidon nilotica	Gull-billed Tern	P	C	1	The Gull-billed Tern occurs on all continents except Antarctica. Gull-billed Terns are found in freshwater swamps, brackish and salt lakes, beaches and estuarine mudflats, floodwaters, sewage farms, irrigated croplands and grasslands. They are only rarely found over the ocean. **Low - Though there is a record within 10km there are no associated PCTs nor is the area within the predicted distribution**	No

Scientific Name	Common Name	*NSW Status	+Comm Status	Records within 10km?	Likelihood of Occurrence	ToS required ?
Grantiella picta	Painted Honeyeater	V,P	V	-	The Painted Honeyeater is 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 the Great Dividing Range in NSW, Victoria and southern Queensland. During the winter it is more likely to be found in the north of its distribution. Inhabits Boree/ Weeping Myall (*Acacia pendula*), Brigalow (*A. harpophylla*) and Box-Gum Woodlands and Box-Ironbark Forests. **Moderate – Search area is within the species predicted distribution and there are known associated vegetation communities present (PCTs 26, and 70), though there are no records within 10km.**	Yes
Grus rubicunda	Brolga	V,P	-	1	The Brolga was formerly found across Australia, except for the south-east corner, Tasmania and the south-western third of the country. It is still abundant in the northern tropics, but very sparse across the southern part of its range. Though Brolgas often feed in dry grassland or ploughed paddocks or even desert claypans, they are dependent on wetlands too, especially shallow swamps, where they will forage with their head entirely submerged. They feed using their heavy straight bill as a 'crowbar' to probe the ground or turn it over, primarily on sedge roots and tubers. They will also take large insects, crustaceans, molluscs and frogs. **High – Search area is within the species known distribution, there is an associated vegetation community (PCTs 26, 45 and 52) present, and there are records from within 10 km.**	Yes
Haliaeetus leucogaster	White-bellied Sea-Eagle	V,P	-	121	The White-bellied Sea-eagle is distributed around the Australian coastline, including Tasmania, and well inland along rivers and wetlands of the Murray Darling Basin. In New South Wales it is widespread along the east coast, and along all major inland rivers and waterways. Habitats are characterised by the presence of large areas of open water including larger rivers, swamps, lakes, and the sea. Occurs at sites near the sea or sea-shore, such as around bays and inlets, beaches, reefs, lagoons, estuaries and mangroves; and at, or in the vicinity of freshwater swamps, lakes, reservoirs, billabongs and saltmarsh. Terrestrial habitats include coastal dunes, tidal flats, grassland, heathland, woodland, and forest (including rainforest). Breeding habitat consists of mature tall open forest, open forest, tall woodland, and swamp sclerophyll forest close to foraging habitat. Nest trees are typically large emergent eucalypts and often have emergent dead branches or large dead trees nearby which are used as 'guard roosts'. Nests are large structures built from sticks and lined with leaves or grass. Feed mainly on fish and freshwater turtles, but also waterbirds, reptiles, mammals and carrion. Hunts its prey from a perch or whilst in flight (by circling slowly, or by sailing along 10–20 m above the shore). Prey is usually carried to a feeding platform or (if small) consumed in flight, but some items are eaten on the ground. May be solitary, or live in pairs or small family groups consisting of a pair of adults and dependent young. Typically lays two eggs between June and September with young birds remaining in the nest for 65-70 days. **High – Search area is within the species known distribution, there is an associated vegetation community (PCTs 26, 45 and 70) present, and there are records from within 10 km.**	Yes
Hieraaetus morphnoides	Little Eagle	V,P	-	13	The Little Eagle is found throughout the Australian mainland excepting the most densely forested parts of the Dividing Range escarpment. It occurs as a single population throughout	Yes

Scientific Name	Common Name	*NSW Status	+Comm Status	Records within 10km?	Likelihood of Occurrence	ToS required ?
					NSW. Occupies open eucalypt forest, woodland or open woodland. Sheoak or Acacia woodlands and riparian woodlands of interior NSW are also used. **High – Search area is within the species known distribution, there is an associated vegetation community (PCTs 26, 45, 52 and 70) present, and there are records from within 10 km.**	
Hirundapus caudacutus	White-throated Needletail	P	V,C,J,K	2	The White-throated Needletail is widespread in eastern and south-eastern. In eastern Australia, it is recorded in all coastal regions of Queensland and NSW, extending inland to the western slopes of the Great Divide and occasionally onto the adjacent inland plains. In Australia, the White-throated Needletail is almost exclusively aerial, from heights of less than 1 m up to more than 1000 m above the ground. Because they are aerial, it has been stated that conventional habitat descriptions are inapplicable, but there are, nevertheless, certain preferences exhibited by the species. Although they occur over most types of habitat, they are probably recorded most often above wooded areas, including open forest and rainforest, and may also fly between trees or in clearings, below the canopy, but they are less commonly recorded flying above woodland. **High – Search area is within the species known distribution, there is an associated vegetation community (PCTs 26, 45 and 70) present, and there are records from within 10 km.**	Yes
Hydroprogne caspia	Caspian Tern	P	J	2	Within Australia, the Caspian Tern has a widespread occurrence and can be found in both coastal and inland habitat (Higgins & Davies 1996). The following table presents the distribution and breeding sites of the Caspian Tern in Australia. Widespread east of the Great Divide, mainly in coastal regions, and also in the Riverina and Lower and Upper Western Regions, with occasional records elsewhere (Higgins & Davis 1996). The Caspian Tern is mostly found in sheltered coastal embayments (harbours, lagoons, inlets, bays, estuaries and river deltas) and those with sandy or muddy margins are preferred. They also occur on near-coastal or inland terrestrial wetlands that are either fresh or saline, especially lakes (including ephemeral lakes), waterholes, reservoirs, rivers and creeks. They also use artificial wetlands, including reservoirs, sewage ponds and saltworks. In offshore areas the species prefers sheltered situations, particularly near islands, and is rarely seen beyond reefs. **Low - Though there is a record within 10km there are no associated PCTs nor is the area within the predicted distribution.**	No
Lathamus discolor	Swift Parrot	E1,P,3	CE	-	Breeds in Tasmania during spring and summer, migrating in the autumn and winter months to south-eastern Australia from Victoria and the eastern parts of South Australia to south-east Queensland. In NSW mostly occurs on the coast and south west slopes. On the mainland they occur in areas where eucalypts are flowering profusely or where there are abundant lerp (from sap-sucking bugs) infestations. Favoured feed trees include winter flowering species such as Swamp Mahogany (*Eucalyptus robusta),* Spotted Gum (*Corymbia maculate)*, Red Bloodwood (*C. gummifera)*, Forest Red Gum (*E. tereticornis)*, Mugga Ironbark (*E. sideroxylon)*, and White Box (*E. albens)*.	Yes

Scientific Name	Common Name	*NSW Status	+Comm Status	Records within 10km?	Likelihood of Occurrence	ToS required ?
					Moderate – Search area is within the species predicted distribution and there are known associated vegetation communities present (PCTs 26 and 70), though there are no records within 10 km.	
Lophochroa leadbeateri	Major Mitchell's Cockatoo	V,P,2	E	-	Found across the arid and semi-arid inland, from south-western Queensland south to north-west 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. 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. Normally found in pairs or small groups, though flocks of hundreds may be found where food is abundant. Nesting, in tree hollows, occurs throughout the second half of the year; nests are at least 1 km apart, with no more than one pair every 30 square kilometres. **Moderate – Search area is within the species predicted distribution and there are known associated vegetation communities present (PCTs 26, 45, 52 and 70), though there are no records within 10km.**	Yes
Lophoictinia isura	Square-tailed Kite	V,P,3	-	-	The Square-tailed Kite ranges along coastal and subcoastal areas from south-western to northern Australia, Queensland, NSW and Victoria. In NSW, scattered records of the species throughout the state indicate that the species is a regular resident in the north, north-east and along the major west-flowing river systems. It is a summer breeding migrant to the south-east, including the NSW south coast, arriving in September and leaving by March. Found in a variety of timbered habitats including dry woodlands and open forests. Shows a particular preference for timbered watercourses. **Moderate – Search area is within the species predicted distribution and there are known associated vegetation communities present (PCTs 26, 45 and 70), though there are no records within 10km.**	Yes
Melanodryas cucullata cucullata	Hooded Robin (south-eastern form)	V,P	E	2	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. It is considered a sedentary species, but local seasonal movements are possible. The south-eastern form (subspecies *cucullata*) is found from Brisbane to Adelaide and throughout much of inland NSW, with the exception of the extreme north-west, where it is replaced by subspecies *picata*. Two other subspecies occur outside NSW. Prefers lightly wooded country, usually open eucalypt woodland, acacia scrub and mallee, often in or near clearings or open areas. Requires structurally diverse habitats featuring mature eucalypts, saplings, some small shrubs and a ground layer of moderately tall native grasses. **High – Search area is within the species known distribution, there is an associated vegetation community (PCTs 26 and 70) present, and there are records from within 10 km.**	Yes

Scientific Name	Common Name	*NSW Status	+Comm Status	Records within 10km?	Likelihood of Occurrence	ToS required ?
Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)	V,P	-	-	The Black-chinned Honeyeater has two subspecies, with only the nominate (*gularis*) occurring in NSW. he eastern subspecies extends south from central Queensland, through NSW, Victoria into south eastern South Australia, though it is very rare in the last state. In NSW it is widespread, with records from the tablelands and western slopes of the Great Dividing Range to the north-west and central-west plains and the Riverina. Occupies mostly upper levels of drier open forests or woodlands dominated by box and ironbark eucalypts, especially Mugga Ironbark (*Eucalyptus sideroxylon*), White Box (*E. albens*), Inland Grey Box (*E. microcarpa*), Yellow Box (*E. melliodora*), Blakely's Red Gum (*E. blakelyi*) and Forest Red Gum (*E. tereticornis*). Also inhabits open forests of smooth-barked gums, stringybarks, ironbarks, river sheoaks (nesting habitat) and tea-trees. A gregarious species usually seen in pairs and small groups of up to 12 birds. Feeding territories are large making the species locally nomadic. Recent studies have found that the Black-chinned Honeyeater tends to occur in the largest woodland patches in the landscape as birds forage over large home ranges of at least 5 hectares. Moves quickly from tree to tree, foraging rapidly along outer twigs, underside of branches and trunks, probing for insects. Nectar is taken from flowers, and honeydew is gleaned from foliage. Breeds solitarily or co-operatively, with up to five or six adults, from June to December. The nest is placed high in the crown of a tree, in the uppermost lateral branches, hidden by foliage. It is a compact, suspended, cup-shaped nest. **Low – Search area is within the species predicted distribution, though there are no associated vegetation communities or records within 10km.**	No
Merops ornatus	Rainbow Bee-eater	P	J	17	The Rainbow Bee-eater is distributed across much of mainland Australia, and occurs on several near-shore islands. It is not found in Tasmania, and is thinly distributed in the most arid regions of central and Western Australia (Barrett et al. 2003; Blakers et al. 1984; Higgins 1999). The Rainbow Bee-eater occurs mainly in open forests and woodlands, shrublands, and in various cleared or semi-cleared habitats, including farmland and areas of human habitation (Higgins 1999). It usually occurs in open, cleared or lightly-timbered areas that are often, but not always, located in close proximity to permanent water. The Rainbow Bee-eater occurs in open woodlands and shrublands, including mallee, and in open forests that are usually dominated by eucalypts. It also occurs in grasslands and, especially in arid or semi-arid areas, in riparian, floodplain or wetland vegetation assemblages. **Moderate – Search area is within predicted distribution and there are records within 10km. No associated vegetation communities present.**	Yes
Motacilla flava	Yellow Wagtail	-	M	-	Widespread wagtail, favouring wet meadows, marshland, grassy and muddy lakeshores. Occurs in fields and often near livestock during migration. Like other wagtails, walks on ground and pumps its long, white-sided tail up and down. Plumage highly variable, but breeding male wholly bright yellow below, with greenish back. Male head pattern varies regionally: in U.K. has greenish head with yellow eyebrow; in northern Europe head slaty grey overall; in central and southwest Europe head blue-grey with white eyebrow. Individuals of several subspecies may winter together. Female and nonbreeding plumages drabber and paler, with ghosting of male patterns. Uncertainty exists regarding this species presence outside of northern Europe.	No

Scientific Name	Common Name	*NSW Status	+Comm Status	Records within 10km?	Likelihood of Occurrence	ToS required ?
					Low – Search area is within the species predicted distribution, though there are no associated vegetation communities present or records within 10km.	
Myiagra cyanoleuca	Satin Flycatcher	-	M	-	The Satin Flycatcher is found along the east coast of Australia from far northern Queensland to Tasmania, including south-eastern South Australia. It is also found in New Guinea. The Satin Flycatcher is not a commonly seen species, especially in the far south of its range, where it is a summer breeding migrant. The Satin Flycatcher is found in tall forests, preferring wetter habitats such as heavily forested gullies, but not rainforests. The Satin Flycatcher takes insects on the wing, foraging actively from perches in the mid to upper canopy. After the breeding season, it may forage in loose groups, usually of adults and their newly-fledged young, in drier, more open forests. The Satin Flycatcher nests in loose colonies of two to five pairs nesting at intervals of about 20 m - 50 m apart. It builds a broad-based, cup-shaped nest of shredded bark and grass, coated with spider webs and decorated with lichen. The nest is placed on a bare, horizontal branch, with overhanging foliage, about 3 m - 25 m above the ground. Both sexes build the nest, incubate the eggs and feed the young. Nests may be parasitised by the Brush Cuckoo and, sometimes, the Pallid Cuckoo, Horsfield's Bronze-Cuckoo or the Golden Bronze-Cuckoo. **Low – Search area is within the species predicted distribution, though there are no associated vegetation communities present or records within 10km.**	No
Neophema chrystostoma	Blue-winged Parrot	-	V,M	-	Blue-winged parrots breed on mainland Australia south of the Great Dividing Range in southern Victoria from Port Albert in Gippsland west to Nelson, and sometimes in the far south-east of South Australia, and the north-western, central and eastern parts of Tasmania. **Low – Search area is within the species predicted distribution, though there are no associated vegetation communities present or records within 10km.**	No
Neophema pulchella	Turquoise Parrot	V,P,3	-	2	The Turquoise Parrot's range extends from southern Queensland through to northern Victoria, from the coastal plains to the western slopes of the Great Dividing Range. Lives on the edges of eucalypt woodland adjoining clearings, timbered ridges and creeks in farmland. **High – Search area is within the species known distribution, there is an associated vegetation community (PCT 70) present, and there are records from within 10 km.**	Yes
Ninox connivens	Barking Owl	V,P,3	-	2	The Barking Owl is found throughout continental Australia except for the central arid regions. Although common in parts of northern Australia, the species has declined greatly in southern Australia and now occurs in a wide but sparse distribution in NSW. Core populations exist on the western slopes and plains and in some northeast coastal and escarpment forests. Many populations crashed as woodland on fertile soils was cleared over the past century, leaving linear riparian strips of remnant trees as the last inhabitable areas. Surveys in 2001 demonstrated that the Pilliga Forest supported the largest population in southern Australia. The owls sometimes extend their home range into urban areas, hunting birds in garden trees and insects attracted to streetlights. Inhabits woodland and open forest, including fragmented remnants and partly cleared farmland. It is flexible in its habitat use, and hunting can extend in to closed forest and more open areas. Sometimes able to successfully breed along timbered watercourses in heavily cleared habitats (e.g. western NSW) due to the higher density of prey on these fertile riparian soils.	Yes

Scientific Name	Common Name	*NSW Status	+Comm Status	Records within 10km?	Likelihood of Occurrence	ToS required ?
					High – Search area is within the species known distribution, there is an associated vegetation community (PCT 70) present, and there are records from within 10 km.	
Numenius madagascariensis	Eastern Curlew	-	CE,M	-	The Eastern Curlew is widespread in coastal regions in the north-east and south of Australia, including Tasmania, and scattered in other coastal areas. It is rarely seen inland. It breeds in Russia and north-eastern China. On passage, they are commonly seen in Japan, Korea and Borneo. Small numbers visit New Zealand. The Eastern Curlew is found on intertidal mudflats and sandflats, often with beds of seagrass, on sheltered coasts, especially estuaries, mangrove swamps, bays, harbours and lagoons. The Eastern Curlew eats mainly small crabs and molluscs. Foraging by day and night, it is slow and deliberate, stalking slowly on sandy and muddy flats, picking from the surface or probing deep with its long bill. Eastern Curlews breed in the northern hemisphere on swampy moors and boggy marshes. Both sexes have similar plumage, with the males using their haunting calls and display flights to attract a mate and defend their territory. The nest is a shallow depression lined with grass. **Low – Search area is within the species predicted distribution, though there are no associated vegetation communities or records within 10km.**	No
Oxyura australis	Blue-billed Duck	V,P	-	109	The Blue-billed Duck is endemic to south-eastern and south-western Australia. It is widespread in NSW, but most common in the southern Murray-Darling Basin area. Birds disperse during the breeding season to deep swamps up to 300 km away. It is generally only during summer or in drier years that they are seen in coastal areas. The Blue-billed Duck prefers deep water in large permanent wetlands and swamps with dense aquatic vegetation. The species is completely aquatic, swimming low in the water along the edge of dense cover. **Moderate – Search area is within the species predicted distribution and there are records within 10 km, there are no known vegetation communities present.**	Yes
Pachycephala inornata	Gilbert's Whistler	V,P	-	2	The Gilbert's Whistler is sparsely distributed over much of the arid and semi-arid zone of inland southern Australia, from the western slopes of NSW to the Western Australian wheatbelt. The species was probably once distributed almost continuously across the woodlands and mallee of southern NSW, but this range has been greatly reduced. The Gilbert's Whistler occurs in a range of habitats within NSW, though the shared feature appears to be a dense shrub layer. It is widely recorded in mallee shrublands, but also occurs in box-ironbark woodlands, Cypress Pine and Belah woodlands and River Red Gum forests, though at this stage it is only known to use this habitat along the Murray, Edwards and Wakool Rivers. Within the mallee the species is often found in association with an understorey of spinifex and low shrubs including wattles, hakeas, sennas and hop-bushes. In woodland habitats, the understorey comprises dense patches of shrubs, particularly thickets of regrowth Callitris pine. Parasitic 'cherries' (*Exocarpus species*) appear to be an important habitat component in Belah and Red Gum communities, though in the latter case other dense shrubs, such as Lignum and wattles, are also utilised. **Moderate – Search area is within the species predicted distribution and there are records within 10 km, though there are no known associated vegetation communities present.**	Yes

Scientific Name	Common Name	*NSW Status	+Comm Status	Records within 10km?	Likelihood of Occurrence	ToS required ?
Petroica boodang	Scarlet Robin	V,P	-	-	The Scarlet Robin is found from south east Queensland to south east South Australia and also in Tasmania and south west Western Australia. In NSW, it occurs from the coast to the inland slopes. After breeding, some Scarlet Robins disperse to the lower valleys and plains of the tablelands and slopes. Some birds may appear as far west as the eastern edges of the inland plains in autumn and winter. The Scarlet Robin lives in dry eucalypt forests and woodlands. The understorey is usually open and grassy with few scattered shrubs. This species lives in both mature and regrowth vegetation. It occasionally occurs in mallee or wet forest communities, or in wetlands and tea-tree swamps. Scarlet Robin habitat usually contains abundant logs and fallen timber: these are important components of its habitat. Scarlet Robin habitat usually contains abundant logs and fallen timber: these are important components of its habitat. The Scarlet Robin breeds on ridges, hills and foothills of the western slopes, the Great Dividing Range and eastern coastal regions; this species is occasionally found up to 1000 metres in altitude. The Scarlet Robin is primarily a resident in forests and woodlands, but some adults and young birds disperse to more open habitats after breeding. In autumn and winter many Scarlet Robins live in open grassy woodlands, and grasslands or grazed paddocks with scattered trees. The Scarlet Robin is a quiet and unobtrusive species which is often quite tame and easily approached. Birds forage from low perches, fenceposts or on the ground, from where they pounce on small insects and other invertebrates which are taken from the ground, or off tree trunks and logs; they sometimes forage in the shrub or canopy layer. **Moderate – Search area is within the species predicted distribution and there are known associated vegetation communities present (PCTs 26, 70), though there are no records within 10 km.**	Yes
Petroica phoenicea	Flame Robin	V,P	-	3	The Flame Robin is endemic to south eastern Australia, and ranges from near the Queensland border to south east South Australia and also in Tasmania. In NSW, it breeds in upland areas and in winter, many birds move to the inland slopes and plains. It is likely that there are two separate populations in NSW, one in the Northern Tablelands, and another ranging from the Central to Southern Tablelands. Breeds in upland tall moist eucalypt forests and woodlands, often on ridges and slopes. Prefers clearings or areas with open understoreys. Prefers clearings or areas with open understoreys. In winter, birds migrate to drier more open habitats in the lowlands (i.e. valleys below the ranges, and to the western slopes and plains), in dry forests, open woodlands and in pastures and native grasslands, with or without scattered trees. **Moderate – Search area is within the species predicted distribution and there are records within 10 km, there are no known vegetation communities present.**	Yes
Polytelis swainsonii	Superb Parrot	V,P,3	V	31	The Superb Parrot is found throughout eastern inland NSW. On the South-western Slopes their core breeding area is roughly bounded by Cowra and Yass in the east, and Grenfell, Cootamundra and Coolac in the west. Birds breeding in this region are mainly absent during winter, when they migrate north to the region of the upper Namoi and Gwydir Rivers. The other main breeding sites are in the Riverina along the corridors of the Murray, Edward and Murrumbidgee Rivers where birds are present all year round. This species inhabits Box-Gum,	Yes

Scientific Name	Common Name	*NSW Status	+Comm Status	Records within 10km?	Likelihood of Occurrence	ToS required ?
					Box-Cypress-pine and Boree Woodlands and River Red Gum Forest. In the Riverina the birds nest in the hollows of large trees (dead or alive) mainly in tall riparian River Red Gum Forest or Woodland. On the South West Slopes nest trees can be in open Box-Gum Woodland or isolated paddock trees. Species known to be used are Blakely's Red Gum, Yellow Box, Apple Box and Red Box. May forage up to 10 km from nesting sites, and feed in trees and understorey shrubs and on the ground and their diet consists mainly of grass seeds and herbaceous plants. **High – Search area is within the species known distribution, there is an associated vegetation community (PCTs 26, 45, 52 and 70) present, and there are records from within 10 km.**	
Pomatostomus temporalis temporalis	Grey-crowned Babbler (eastern subspecies)	V,P	-	87	The eastern subspecies (temporalis) occurs from Cape York south through Queensland, NSW and Victoria and formerly to the south east of South Australia. This subspecies also occurs in the Trans-Fly Region in southern New Guinea. In NSW, the eastern sub-species occurs on the western slopes of the Great Dividing Range, and on the western plains reaching as far as Louth and Balranald. It also occurs in woodlands in the Hunter Valley and in several locations on the north coast of NSW. It may be extinct in the southern, central and New England tablelands. Inhabits open Box-Gum Woodlands on the slopes, and Box-Cypress-pine and open Box Woodlands on alluvial plains. Woodlands on fertile soils in coastal regions. Lives in family groups that consist of a breeding pair and young from previous breeding seasons. A group may consist of up to fifteen individuals. Feed on invertebrates and nests in several conspicuous, dome-shaped stick structures that are about the size of a football. A nest is used as a dormitory for roosting each night. Nests are maintained year-round, and old nests are often dismantled to build new ones. **High – Search area is within the species known distribution, there is an associated vegetation community (PCTs 26, and 70) present, and there are records from within 10 km.**	Yes
Rhipidura rufifrons	Rufous Fantail	-	M	-	The Rufous Fantail is found in northern and eastern coastal Australia, being more common in the north. It is also found in New Guinea, the Solomon Islands, Sulawesi and Guam. The Rufous Fantail is found in rainforest, dense wet forests, swamp woodlands and mangroves, preferring deep shade, and is often seen close to the ground. During migration, it may be found in more open habitats or urban areas. The Rufous Fantail feeds on insects, which it gleans from the middle and lower levels of the canopy. It is a very active feeder and constantly fans tail and flicks wings and body while foraging. The Rufous Fantail builds a small compact cup nest, of fine grasses bound with spider webs, that is suspended from a tree fork about 5 m from the ground. The bottom of the nest is drawn out into a long stem. Both sexes share nest-building, incubation and feeding of the young. One or two broods may be raised in a season. **Low – Search area is within the species predicted distribution, though there are no associated vegetation communities present or records within 10 km.**	no
Rostratula australis	Australian Painted Snipe	E1,P	E	3	The Australian Painted Snipe is restricted to Australia. Most records are from the south east, particularly the Murray Darling Basin, with scattered records across northern Australia and historical records from around the Perth region in Western Australia. In NSW many records	Yes

Scientific Name	Common Name	*NSW Status	+Comm Status	Records within 10km?	Likelihood of Occurrence	ToS required ?
					are from the Murray-Darling Basin including the Paroo wetlands, Lake Cowal, Macquarie Marshes, Fivebough Swamp and more recently, swamps near Balldale and Wanganella. Other important locations with recent records include wetlands on the Hawkesbury River and the Clarence and lower Hunter Valleys. Prefers fringes of swamps, dams and nearby marshy areas where there is a cover of grasses, lignum, low scrub or open timber. Nests on the ground amongst tall vegetation, such as grasses, tussocks or reeds. **High – Search area is within the species known distribution, there is an associated vegetation community (PCT 52) present, and there are records from within 10 km.**	
Stagonopleura guttata	Diamond Firetail	V,P	-	4	The Diamond Firetail is endemic to south-eastern Australia, extending from central Queensland to the Eyre Peninsula in South Australia. It is widely distributed in NSW, with a concentration of records from the Northern, Central and Southern Tablelands, the Northern, Central and South Western Slopes and the North West Plains and Riverina. Not commonly found in coastal districts, though there are records from near Sydney, the Hunter Valley and the Bega Valley. This species has a scattered distribution over the rest of NSW, though is very rare west of the Darling River. Found in grassy eucalypt woodlands, including Box-Gum Woodlands and Snow Gum Eucalyptus pauciflora Woodlands. Also occurs in open forest, mallee, Natural Temperate Grassland, and in secondary grassland derived from other communities. **High – Search area is within the species known distribution, there is an associated vegetation community (PCTs 26, 45 and 70) present, and there are records from within 10 km.**	Yes
Stictonetta naevosa	Freckled Duck	V,P	-	82	The Freckled Duck is found primarily in south-eastern and south-western Australia, occurring as a vagrant elsewhere. It breeds in large temporary swamps created by floods in the Bulloo and Lake Eyre basins and the Murray-Darling system, particularly along the Paroo and Lachlan Rivers, and other rivers within the Riverina. The duck is forced to disperse during extensive inland droughts when wetlands in the Murray River basin provide important habitat. The species may also occur as far as coastal NSW and Victoria during such times. Prefer permanent freshwater swamps and creeks with heavy growth of Cumbungi, Lignum or Tea-tree. During drier times they move from ephemeral breeding swamps to more permanent waters such as lakes, reservoirs, farm dams and sewage ponds. Generally, rest in dense cover during the day, usually in deep water. Feed at dawn and dusk and at night on algae, seeds and vegetative parts of aquatic grasses and sedges and small invertebrates. Nesting usually occurs between October and December but can take place at other times when conditions are favourable. Nests are usually located in dense vegetation at or near water level. **Moderate – Search area is within the species predicted distribution and there are records within 10 km, there are no known vegetation communities present.**	Yes
Tringa glareola	Wood Sandpiper	P	C,J,K	2	Wood Sandpipers are more numerous in the north than the south of Australia and are also found in New Guinea, Africa, the Indian subcontinent and South-east Asia. They breed widely across the north of Europe and Asia, mostly in Scandinavia, Baltic countries and Russia. They are the most abundant migratory wader in non-coastal areas of Asia. Wood Sandpipers are seen in small flocks or singly on inland shallow freshwater wetlands, often with other waders.	No

Scientific Name	Common Name	*NSW Status	+Comm Status	Records within 10km?	Likelihood of Occurrence	ToS required ?
					They prefer ponds and pools with emergent reeds and grass, surrounded by tall plants or dead trees and fallen timber. **Low - Though there is a record within 10 km there are no associated PCTs nor is the area within the predicted distribution.**	
Tringa nebularia	Common Greenshank	P	C,J,K	1	The Common Greenshank does not breed in Australia, however, the species occurs in all types of wetlands and has the widest distribution of any shorebird in Australia. The Common Greenshank is found in a wide variety of inland wetlands and sheltered coastal habitats of varying salinity. It occurs in sheltered coastal habitats, typically with large mudflats and saltmarsh, mangroves or seagrass. Habitats include embayments, harbours, river estuaries, deltas and lagoons and are recorded less often in round tidal pools, rock-flats and rock platforms. The species uses both permanent and ephemeral terrestrial wetlands, including swamps, lakes, dams, rivers, creeks, billabongs, waterholes and inundated floodplains, claypans and salt flats. It will also use artificial wetlands, including sewage farms and saltworks dams, inundated rice crops and bores. The edges of the wetlands used are generally of mud or clay, occasionally of sand, and may be bare or with emergent or fringing vegetation, including short sedges and saltmarsh, mangroves, thickets of rushes, and dead or live trees. It was once recorded with Black-winged Stilts (*Himantopus himantopus*) in pasture, but are generally not found in dry grassland. **Low - Though there is a record within 10 km there are no associated PCTs nor is the area within the predicted distribution.**	No
Tringa stagnatilis	Marsh Sandpiper, Little Greenshank	P	C,J,K	1	The Marsh Sandpiper is found on coastal and inland wetlands throughout Australia. The species is widespread in coastal Queensland, but few records exist north of Cooktown. It is recorded in all regions of NSW but especially the central and south coasts and (inland) on the western slopes of Great Divide and western plains. The Marsh Sandpiper lives in permanent or ephemeral wetlands of varying salinity, including swamps, lagoons, billabongs, saltpans, saltmarshes, estuaries, pools on inundated floodplains, and intertidal mudflats and also regularly at sewage farms and saltworks. They are recorded less often at reservoirs, waterholes, soaks, bore-drain swamps and flooded inland lakes. In north Australia they prefer intertidal mudflats, although surveys in Kakadu National Park recorded more birds around shallow freshwater lakes than in areas influenced by tide. At the Top End they often use ephemeral pools on inundated freshwater and tidal floodplains. **Low - Though there is a record within 10 km there are no associated PCTs nor is the area within the predicted distribution.**	No
Tyto novaehollandiae	Masked Owl	V,P,3	-	-	Extends from the coast where it is most abundant to the western plains. Overall records for this species fall within approximately 90% of NSW, excluding the most arid north-western corner. There is no seasonal variation in its distribution. Lives in dry eucalypt forests and woodlands from sea level to 1100 m. A forest owl, but often hunts along the edges of forests, including roadsides. **Moderate – Search area is within the species predicted distribution and there are known associated vegetation communities present (PCTs 26, 52 and 70), though there are no records within 10km.**	Yes

Scientific Name	Common Name	*NSW Status	+Comm Status	Records within 10km?	Likelihood of Occurrence	ToS required ?
Bidyanus bidyanus	Silver Perch, Bidyan	-	CE	-	Silver perch are endemic to the Murray-Darling system (including all states and sub-basins). Silver perch formerly utilised a diversity of habitats within the Murray-Darling system. Silver perch are commonly described as a lowland species that are not found in the cooler upper reaches of rivers. **Low – Search area is within predicted distribution but there are no records in any area of waterways within 10 km of the subject site.**	No
Maccullochella macquariensis	Trout Cod	-	E	-	The Trout Cod is known from a single natural population, two stable translocated populations and many stocked populations. All stocked sites require continued stocking and there is only limited evidence that some stocked populations are self-sustaining. Research in the Murray and Murrumbidgee Rivers show that Trout Cod occupy stream positions characterised by a high abundance of large woody debris (or 'snags') in water that is comparatively deep and close to riverbanks. However, midstream snags are also an important habitat component. **Low – Search area is within predicted distribution but there are no records in any area of waterways within 10 km of the subject site.**	No
Maccullochella peelii	Murray Cod	-	V	-	The Murray Cod was historically distributed throughout the Murray-Darling Basin (the Basin), which extends from southern Queensland, through New South Wales (NSW), the Australian Capital Territory (ACT) and Victoria to South Australia, with the exception of the upper reaches of some tributaries. The species still occurs in most parts of this natural distribution up to approximately 1000 m above sea level. **Low – Search area is within predicted distribution but there are no records in any area of waterways within 10 km of the subject site.**	No
Macquaria australasica	Macquarie Perch	-	E	-	The Macquarie Perch was once widespread through the cooler upper reaches of the southern tributaries of the Murray-Darling river system in Victoria and New South Wales. Within NSW they are now considered isolated to the upper reaches of the Lachlan and Murrumbidgee Rivers in southern NSW. **Low – Search area is within predicted distribution but there are no records in any area of waterways within 10 km of the subject site.**	No
Cercartetus nanus	Eastern Pygmy-possum	V,P	-	-	The Eastern Pygmy-possum is found in south-eastern Australia, from southern Queensland to eastern South Australia and in Tasmania. In NSW it extents from the coast inland as far as the Pilliga, Dubbo, Parkes and Wagga Wagga on the western slopes. Found in a broad range of habitats from rainforest through sclerophyll (including Box-Ironbark) forest and woodland to heath, but in most areas woodlands and heath appear to be preferred, except in north-eastern NSW where they are most frequently encountered in rainforest. **Moderate – Search area is within the species predicted distribution and there are known associated vegetation communities present (PCT 70), though there are no records within 10 km.**	Yes
Chalinolobus dwyeri	Large-eared Pied Bat	V,P	V	-	Found mainly in areas with extensive cliffs and caves, from Rockhampton in Queensland south to Bungonia in the NSW Southern Highlands. It is generally rare with a very patchy distribution in NSW. There are scattered records from the New England Tablelands and North West Slopes. Roosts in caves (near their entrances), crevices in cliffs, old mine workings and in the disused, bottle-shaped mud nests of the Fairy Martin (*Petrochelidon ariel*), frequenting low to	Yes

Scientific Name	Common Name	*NSW Status	+Comm Status	Records within 10km?	Likelihood of Occurrence	ToS required ?
					mid-elevation dry open forest and woodland close to these features. Females have been recorded raising young in maternity roosts (c. 20-40 females) from November through to January in roof domes in sandstone caves and overhangs. They remain loyal to the same cave over many years. Found in well-timbered areas containing gullies. **Moderate – Search area is within the species predicted distribution and there are known associated vegetation communities present (PCT 70), though there are no records within 10 km**	
Chalinolobus picatus	Little Pied Bat	V,P	-	-	The Little-Pied Bat is found in inland Queensland and NSW (including Western Plains and slopes) extending slightly into South Australia and Victoria. Occurs in dry open forest, open woodland, mulga woodlands, chenopod shrublands, cypress pine forest and mallee and Bimbil box woodlands. Roosts in caves, rock outcrops, mine shafts, tunnels, tree hollows and buildings. **Moderate – Search area is within the species predicted distribution and there are known associated vegetation communities present (PCTs 26, 52 and 70), though there are no records within 10 km.**	Yes
Dasyurus maculatus	Spotted-tailed Quoll	V,P	E	1	The range of the Spotted-tailed Quoll has contracted considerably since European settlement. It is now found in eastern NSW, eastern Victoria, south-east and north-eastern Queensland, and Tasmania. Only in Tasmania is it still considered relatively common. Recorded across a range of habitat types, including rainforest, open forest, woodland, coastal heath and inland riparian forest, from the sub-alpine zone to the coastline. Individual animals use hollow-bearing trees, fallen logs, small caves, rock outcrops and rocky-cliff faces as den sites. **Moderate – Search area is within the species predicted distribution and there are records within 10 km, though there are no known vegetation communities present.**	Yes
Nyctophilus corbeni	Corben's Long-eared Bat	V,P	V	-	Overall, the distribution of the south eastern form coincides approximately with 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 Queensland. Roosts in tree hollows, crevices, and under loose bark. **Moderate – Search area is within the species predicted distribution and there are known associated vegetation communities present (PCT 70), though there are no records within 10km.**	Yes
Petaurus norfolcensis	Squirrel Glider	V,P	-	-	Inhabits woodlands and dry sclerophyll forests, usually in diverse stands of shrubs and trees. Shelters and breeds in tree hollows, and is primarily an insectivorous animal but, has also been known to ingest plant exudates. **Moderate – Search area is within the species predicted distribution and there are known associated vegetation communities present (PCT 70), though there are no records within 10km.**	Yes
Phascolarctos cinereus	Koala	V,P	E	-	The Koala has a fragmented distribution throughout eastern Australia from north-east Queensland to the Eyre Peninsula in South Australia. In New South Wales, koala populations are found on the central and north coasts, southern highlands, southern and northern	Yes

Scientific Name	Common Name	*NSW Status	+Comm Status	Records within 10km?	Likelihood of Occurrence	ToS required ?
					tablelands, Blue Mountains, southern coastal forests, with some smaller populations on the plains west of the Great Dividing Range. Inhabit eucalypt woodlands and forests. **Moderate – Search area is within the species predicted distribution and there are known associated vegetation communities present (PCTs 26, 52 and 70), though there are no records within 10 km.**	
Pteropus poliocephalus	Grey-headed Flying-fox	V,P	V	-	Grey-headed Flying-foxes are generally found within 200 km of the eastern coast of Australia, from Rockhampton in Queensland to Adelaide in South Australia. In times of natural resource shortages, they may be found in unusual locations. Occur in subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops. Roosting camps are generally located within 20 km of a regular food source and are commonly found in gullies, close to water, in vegetation with a dense canopy. Individual camps may have tens of thousands of animals and are used for mating, and for giving birth and rearing young. Annual mating commences in January and conception occurs in April or May; a single young is born in October or November. Site fidelity to camps is high; some camps have been used for over a century. Can travel up to 50 km from the camp to forage; commuting distances are more often <20 km. Feed on the nectar and pollen of native trees, in particular Eucalyptus, Melaleuca and Banksia, and fruits of rainforest trees and vines. Also forage in cultivated gardens and fruit crops. **Moderate – Search area is within the species predicted distribution and there are known associated vegetation communities present (PCT 70), though there are no records within 10 km.**	Yes
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	V,P	-	-	The Yellow-bellied Sheathtail-bat is a wide-ranging species found across northern and eastern Australia. In the most southerly part of its range - most of Victoria, south-western NSW and adjacent South Australia - it is a rare visitor in late summer and autumn. There are scattered records of this species across the New England Tablelands and North West Slopes. Roosts singly or in groups of up to six, in tree hollows and buildings; in treeless areas they are known to utilise mammal burrows. When foraging for insects, flies high and fast over the forest canopy, but lower in more open country. Forages in most habitats across its very wide range, with and without trees; appears to defend an aerial territory. Breeding has been recorded from December to mid-March, when a single young is born. Seasonal movements are unknown; there is speculation about a migration to southern Australia in late summer and autumn. **Moderate – Search area is within the species predicted distribution and there are known associated vegetation communities present (PCTs 26, 45, 52 and 70), though there are no records within 10km.**	Yes
Sminthopsis macroura	Stripe-faced Dunnart	V,P	-	-	Throughout much of inland central and northern Australia, extending into central and northern NSW, western Queensland, Northern Territory, South Australia and Western Australia. They are rare on the NSW Central West Slopes and North West Slopes with the most easterly records of recent times located around Dubbo, Coonabarabran, Warialda and Ashford. Native dry grasslands and low dry shrublands, often along drainage lines where food and shelter resources tend to be better.	Yes

Scientific Name	Common Name	*NSW Status	+Comm Status	Records within 10km?	Likelihood of Occurrence	ToS required ?
					Moderate – Search area is within the species predicted distribution and there are known associated vegetation communities present (PCTs 45 and 52), though there are no records within 10km.	
Androcalva procumbens Syn. *Commersonia procumbens*		-	V	-	Endemic to NSW, mainly confined to the Dubbo-Mendooran-Gilgandra region, but also known in the Pilliga, Mount Kaputar National Park, north east of Gulgong and near Denman. Additional populations have been found in Goonoo SCA in response fires. Grows in sandy sites, often along roadsides. Recorded in *Eucalyptus dealbata* and *Eucalyptus sideroxylon* communities, *Melaleuca uncinata* scrub, under mallee eucalypts with a *Calytrix tetragona* understorey, and in a recently burnt Ironbark and *Callitris* area. Also in *Eucalyptus fibrosa* subsp. *nubila, Eucalyptus dealbata, Eucalyptus albens* and *Callitris glaucophylla* woodlands north of Dubbo. **Absent – Outside of predicted distribution, no records within 10km and no associated vegetation communities present.**	No
Austrostipa metatoris	A spear-grass	V	V	-	Most records occur in the Murray Valley with sites including Cunninyeuk Station, Stony Crossing, Kyalite State Forest (now part of Murrumbidgee Valley Regional Park) and Lake Benanee. Scattered records also occur in central NSW including Lake Cargelligo, east of Goolgowi, Condobolin and south west of Nymagee. Otherwise only known from near Bordertown in south east South Australia, where it may be locally extinct. Grows in sandy areas of the Murray Valley; habitats include sandhills, sand ridges, undulating plains and flat open mallee country, with red to red-brown clay-loam to sandy-loam soils. **Moderate – Search area is within the species predicted distribution and there are known associated vegetation communities present (PCT 70), though there are no records within 10 km.**	Yes
Austrostipa wakoolica	A spear-grass	E1	E	-	Confined to the floodplains of the Murray River tributaries of central-western and south-western NSW, with localities including Manna State Forest, Matong, Lake Tooim, Merran Creek, Tulla, Cunninyeuk and Mairjimmy State Forest (now part of South West Woodland Nature Reserve). Grows on floodplains of the Murray River tributaries, in open woodland on grey, silty clay or sandy loam soils; habitats include the edges of a lignum swamp with box and mallee; creek banks in grey, silty clay; mallee and lignum sandy-loam flat; open Cypress Pine forest on low sandy range; and a low, rocky rise. **Moderate – Search area is within the species predicted distribution and there are known associated vegetation communities present (PCTs 26, and 70), though there are no records within 10 km.**	Yes
Brachyscome muelleroides	Claypan Daisy	V	V	-	The Claypan Daisy occurs in the Wagga Wagga, Narranderra, Tocumwal and Walbundrie areas. Also occurs in north-central Victoria (only along the Murray from Tocumwal to the Ovens River). Grows in damp areas on the margins of claypans in moist grassland with *Pycnosorus globosus, Agrostis avenacea* and *Austrodanthonia duttoniana*. Also recorded from the margins of lagoons in mud or water, and in association *with Calotis anthemoides*. **Moderate – Search area is within the species predicted distribution and there are known associated vegetation communities (PCT 45), though there are no records within 10km.**	Yes

Scientific Name	Common Name	*NSW Status	+Comm Status	Records within 10km?	Likelihood of Occurrence	ToS required ?
Brachyscome papillosa	Mossgiel Daisy	V	V	-	The Mossgiel Daisy is endemic to NSW and chiefly occurs within the Riverina Bioregion, from Mossgiel in the north, Murrumbidgee Valley (Yanga) National Park in the south west to Urana in the south east. Sites are scattered across this Bioregion including the Jerilderie area, the Hay Plain (Maude and Oxley) and around Darlington Point. In addition, there are a number of records from the Willandra Lakes World Heritage Area (including Mungo National Park) with a north-western outlier at Byrnedale Station, north of Menindee. The only known site on South Western Slopes is Ganmain Reserve. **Moderate – Search area is within the species predicted distribution and there are known associated vegetation communities present (PCT 45), though there are no records within 10 km.**	Yes
Diuris tricolor	Pine Donkey Orchid	V,P,2	-	1	Sporadically distributed on the western slopes of NSW, extending from south of Narrandera all the way to the north of NSW. Localities in the south include Red Hill north of Narrandera, Coolamon, and several sites west of Wagga Wagga. Condobolin-Nymagee road, Wattamondara towards Cowra, Eugowra, Girilambone, Dubbo, and Cooyal, in the Central West. Pilliga SCA, Pilliga National Park, and Bibblewindi State Forest in the north (and extending into Queensland) and Muswellbrook in the east. Disturbance regimes are not known, although the species is usually recorded from disturbed habitats. **High – Search area is within the species known distribution, there is an associated vegetation community (PCT 70) present, and there is a record from within 10 km.**	Yes
Goodenia macbarronii	Narrow Goodenia	-	-	-	Narrow Goodenia is an annual which appears seasonally and opportunistically in ephemerally damp or wet site sand is often common at sites after good winter-rainfall periods. It favours moist, shaded, sandy sites, soils with impeded drainage, damp muddy areas of winter inundation, spring-fed paddocks and open areas where water is more available. Often found in sites with some form of recent disturbance, such as depressions and clearings made by grading and excavation along roadsides, open grazing land and paddocks inundated by weed species and areas previously cleared and grazed by cattle. **This species is no longer listed.**	No
Lepidium aschersonii	Spiny Peppercress	V	V	-	Not widespread, occurring in the marginal central-western slopes and north-western plains regions of NSW (and potentially the south western plains). In the north of the State recent surveys have recorded a number of new sites including Brigalow Nature Reserve, Brigalow State Conservation Area, Leard State Conservation Area and Bobbiwaa State Conservation Area. Also known from the West Wyalong in the south of the State. The Spiny Peppercress occurs in periodically wet sites such as gilgai depressions and the margins of freshwater and saline marshes and shallow lakes, usually on heavy clay soil. **Moderate – Search area is within the species predicted distribution and there are known associated vegetation communities present (PCTs 26), though there are no records within 10 km.**	Yes
Lepidium monoplocoides	Winged Peppercress	E1	E	-	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	Yes

Scientific Name	Common Name	*NSW Status	+Comm Status	Records within 10km?	Likelihood of Occurrence	ToS required ?
					and Deniliquin. Recorded more recently from the Hay Plain, south-eastern Riverina, and from near Pooncarie. **Moderate – Search area is within the species predicted distribution and there are known associated vegetation communities present (PCTs 26, 45 and 52), though there are no records within 10 km.**	
Leptorhynchos orientalis	Lanky Buttons	E1	-	-	Grows in woodland or grassland, sometimes on the margins of swamps. Communities include a Bimble Box plain in red-brown soil, dense Acacia pendula woodland with herbaceous understorey on red clay to clay-loam, open grassland areas on red soils, and red clay plains at the edge of a Canegrass swamp. **Moderate – Search area is within the species predicted distribution and there are known associated vegetation communities present (PCTs 26 and 45), though there are no records within 10 km.**	Yes
Pilularia novae-hollandiae	Austral Pillwort	E1,3	-	-	In NSW, Austral Pillwort has been recorded from suburban Sydney, Khancoban, the Riverina between Albury and Urana (including Henty, Walbundrie, Balldale and Howlong), Oolambeyan National Park near Carathool and at Lake Cowal near West Wyalong. The populations at Lake Cowal and Oolambeyan NP are the only known extant populations in NSW, although the species is obscure and has possibly been overlooked elsewhere. The species has also been recorded in the Australian Capital Territory, Victoria, Tasmania, South Australia and Western Australia. Austral Pillwort grows in shallow swamps and waterways, often among grasses and sedges. It is most often recorded in drying mud as this is when it is most conspicuous. **Moderate – Search area is within the species predicted distribution and there are known associated vegetation communities present (PCTs 26 and 45), though there are no records within 10 km.**	Yes
Swainsona murrayana	Slender Darling Pea	V	V	-	Found throughout NSW, it has been recorded in the Jerilderie and Deniliquin areas of the southern riverine plain, the Hay plain as far north as Willandra National Park, near Broken Hill and in various localities between Dubbo and Moree. The species has been collected from clay-based soils, ranging from grey, red and brown cracking clays to red-brown earths and loams. **Moderate – Search area is within the species predicted distribution and there are known associated vegetation communities present (PCTs 26, 45 and 52), though there are no records within 10km.**	Yes
Swainsona sericea	Silky Swainson-pea	V	-	-	Silky Swainson-pea has been recorded from the Northern Tablelands to the Southern Tablelands and further inland on the slopes and plains. There is one isolated record from the far north-west of NSW. Its stronghold is on the Monaro. Also found in South Australia, Victoria and Queensland. Found in Natural Temperate Grassland and Snow Gum Eucalyptus pauciflora Woodland on the Monaro. **Moderate – Search area is within the species predicted distribution and there are known associated vegetation communities present (PCTs 26, 45 and 70), though there are no records within 10 km.**	Yes
Thesium australe	Austral Toadflax	-	V	-	Its current distribution is sporadic but widespread, occurring between the Bunya Mountains in south-east Queensland to north-east Victoria and as far inland as the southern, central and northern tablelands in New South Wales and the Toowoomba region. Austral Toadflax is an	No

Scientific Name	Common Name	*NSW Status	+Comm Status	Records within 10km?	Likelihood of Occurrence	ToS required ?
					inconspicuous plant and is often overlooked. With survey training, collections increased substantially in northern New South Wales. One expert suggested that there could be hundreds of thousands to a million across Australia. **Low – Search area within predicted distribution, though there are no records within 10 km or associated vegetation communities present.**	
Tylophora linearis Syn. *Vincetoxicum forsteri*	Tylophora linearis	V	E	-	Majority of records occur in the central western region. Records from Goonoo, Pillaga West, Pillaga East, Bibblewindi, Cumbil and Eura State Forests, Coolbaggie NR, Goobang NP and Beni SCA. Also has been recorded Hiawatha State Forest near West Wyalong in the south and there are old records as far north as Crow Mountain near Barraba and near Glenmorgan in the western Darling Downs. Grows in dry scrub and open forest. **Low – search area is within the species predicted distribution though there are no known associated vegetation communities present or records within 10 km.**	No
Aprasia parapulchella	Pink-tailed Legless Lizard	V,P	V	-	There is a concentration of populations in the Canberra/Queanbeyan Region. Other populations have been recorded near Cooma, Yass, Bathurst, Albury and West Wyalong. This species is also found in the Australian Capital Territory. Inhabits sloping, open woodland areas with predominantly native grassy groundlayers, particularly those dominated by Kangaroo Grass (*Themeda australis*). Sites are typically well-drained, with rocky outcrops or scattered, partially buried rocks. Commonly found beneath small, partially embedded rocks and appear to spend considerable time in burrows below these rocks; the burrows have been constructed by and are often still inhabited by small black ants and termites. **Low – search area is within the species predicted distribution though there are no known associated vegetation communities present or records within 10 km.**	No
Hemiaspis damelii	Grey Snake	-	E	-	*Hemiaspis damelii* is a relatively small snake, on average reaching around 50 cm in length. Records of the grey snake are mostly in south-eastern Queensland and north-central NSW, however populations have also been found in south-western NSW. They tend to favour dry sclerophyll forests and woodlands on clay soils where water bodies or gullies are present. They shelter under rocks, logs and other debris, as well as soil cracks. **Low – search area is within the species predicted distribution though there are no known associated vegetation communities present or records within 10 km.**	No

*NSW Status: P=Protected, P13=Protected native plant, V=Vulnerable, E1=Endangered, E2=Endangered population, E4=Extinct, E4A=Critically endangered, 2=Category 2 sensitive species, 3=Category 3 sensitive species.

+Commonwealth Status: M=Migratory, C=CAMBA, J=JAMBA, K=ROKAMBA, CE=Critically endangered, E=Endangered, V=Vulnerable

Likelihood of occurrence table for BC Act Threatened Ecological Community

Community Name	NSW Status	Comm. Status	Likelihood of Occurrence	5-part test required (Yes / No)
Weeping Myall Woodlands	E		The Weeping Myall Woodlands occur in a range from open woodlands to woodlands, generally 4-12 m high, in which Weeping Myall (*Acacia pendula*) trees are the sole or dominant overstorey species. **Present – Community is present on site.**	Yes
Myall Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain, Murray-Darling Depression, Riverina and NSW South Western Slopes bioregions	E		Typically, it occurs on red-brown earths and heavy textured grey and brown alluvial soils within a climatic belt receiving between 375 and 500 mm mean annual rainfall. The structure of the community varies from low woodland and low open woodland to low sparse woodland or open shrubland, depending on site quality and disturbance history. The tree layer grows up to a height of about 10 metres and invariably includes *Acacia pendula* (Weeping Myall or Boree) as one of the dominant species or the only tree species present. **Absent – Community is not present on site.**	No
Natural Grasslands of the Murray Valley Plains		CE	The ecological community occurs predominately across the southern parts of the Riverina bioregion and extends into parts of the Murray Darling Depression and NSW South-Western Slopes bioregions. Most occurrences of the Natural Grasslands of the Murray Valley Plains ecological community are associated with Quaternary alluvial sediments (including the Shepparton formation), consisting of calcareous clay loams and clays on wetter sites, including self-mulching (cracking) clays. **Absent – Community is not present on site.**	No

NSW and Commonwealth Status: E=Endangered, CE=critically endangered

APPENDIX E – BC ACT 5-PART TEST OF SIGNIFICANCE

Biodiversity Conservation Act 2016 Test of significance

The threatened species 'test of significance' (or '5-part test') is used to determine if a development or activity is likely to significantly affect threatened species or ecological communities, or their habitats. The test of significance is set out in s.7.3 of the Biodiversity Conservation Act 2016, and is completed in accordance with the questions set out below:

The following is to be taken into account for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:

a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,

b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:

   i. is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

   ii. is likely to substantially, and adversely, modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,

c) in relation to the habitat of a threatened species or ecological community:

   i. the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and

   ii. whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and

   iii. the importance of the habitat to be removed, modified, fragmented, or isolated to the long-term survival of the species or ecological community in the locality,

d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly),

e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.

Information for column 'a' found between NSW species profile and Australian Government Department of Climate Change, Energy, the Environment and Water species profile and threats database.

BC Act Tests of Significance.

Scientific Name	Common Name	a.	b.	c.	d.	e.	Impact Significance
Anseranas semipalmata	Magpie Goose	This species primarily occurs in wetlands with nests formed in trees overhanging deep water. It feeds on grasses, bulbs, and rhizomes. There are eight records within 10 km. Considering there is no suitable wetland habitat within the subject site, the proposal is unlikely to affect the life cycle of any population.	N/A	i. This species is associated with PCTs 45 and 52 within the subject site. Consequently, up to 8.91 ha of habitat will be removed or modified because of this proposal. There are eight records within 10 km. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. Considering the site lacks permanent water and wetland features it is unlikely the proposal would remove any habitat critical for the long-term survival of the species.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Artamus cyanopterus cyanopterus	Dusky Woodswallow	This species typically migrates through NSW, heading South to breed (~250 km) and travelling North for the cooler months. Primarily inhabit dry, open eucalypt forest and woodland with occasional groups being seen in moist forest or rainforest. Most breeding occurs in the Great Dividing Range. Given the distance to priority breeding grounds and no records within the study area it is unlikely that the proposal will interfere with the maintenance of the life cycle of this species.	N/A	i. This species is associated with all vegetation within the subject site. Consequently, up to 9.71 ha of potential habitat will be removed or modified because of this proposal. There are 16 records within 10 km. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

Scientific Name	Common Name	a.	b.	c.	d.	e.	Impact Significance
				iii. Considering the lack of records within the study area, the proposal is unlikely to remove any habitat critical for the long-term survival of the species.			
Botaurus poiciloptilus	Australasian Bittern	This species favours permanent freshwater wetlands with tall, dense vegetation. They construct both feeding platforms and nests from reeds and breed in secluded areas. Both records within the search area are from more than 30 years prior. Considering this and the lack of permanent wetlands it is unlikely that the proposal will have an adverse effect on the life cycle of this species.	N/A	i. This species is not associated with any vegetation communities within the subject site. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. Though it is within the predicted distribution, given that there are no associated vegetation communities and the lack of records within the last 30 years the proposal is unlikely to remove any habitat critical for the long-term survival of the species.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Burhinus grallarius	Bush Stone-curlew	Inhabiting open forests and woodlands with a sparse grassy ground layer and fallen timber. They feed on insects and small vertebrates, such as frogs, lizards, and snakes. With no records within the search area it is unlikely that there is a viable local population.	N/A	i. This species is associated with PCTs 26, 52 and 70. Consequently, up to 8.9 ha of potential habitat will be removed or modified due to the current proposal. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

Scientific Name	Common Name	a.	b.	c.	d.	e.	Impact Significance
				fragmentation associated with urban development. iii. Though there is potential habitat, with no records the proposal is unlikely to remove any habitat critical for the long-term survival of the species.			
Calyptorhynchus lathami lathami	Glossy Black-Cockatoo	These cockatoos are widespread throughout suitable forest and woodland habitats from the coast through to the dividing range where stands of sheoak occur, the seeds of which they feed on almost exclusively. They are also dependent on hollow bearing eucalyptus as nest sites. With these features lacking from the subject site and no records within the search area it is unlikely that a viable population inhabits the area.	N/A	i. This species is associated with PCT 70. Consequently, up to 0.75 ha of potential habitat will be modified or removed. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. With the subject site lacking critical habitat features for the species and no records within the search area the proposal is unlikely to remove any habitat critical for the long-term survival of the species.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Certhionyx variegatus	Pied Honeyeater	Inhabits wattle shrub, primarily Mulga (*Acacia aneura*), mallee, spinifex and eucalypt woodlands, usually when shrubs are flowering; feeds on nectar, predominantly from various species of emu-bushes (*Eremophila* spp.); also, from mistletoes and various other shrubs (e.g. *Grevillea* spp.) which are not present within the subject site. Considering this and the lack of records within the search area it is unlikely that	N/A	i. This species is associated with PCTs 26 and 70. Consequently up to 0.80 ha of potential habitat will be modified or removed due to the current proposal. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

Scientific Name	Common Name	a.	b.	c.	d.	e.	Impact Significance
		a viable population of the species resides in the area.		fragmentation associated with urban development. iii. With the subject site lacking critical habitat features for the species and no records within the search area the proposal is unlikely to remove any habitat critical for the long-term survival of the species.			
Chthonicola sagittata	Speckled Warbler	The Speckled Warbler lives in a wide range of Eucalyptus dominated communities that have a grassy understorey, often on rocky ridges or in gullies. Typical habitat would include scattered native tussock grasses, a sparse shrub layer, some eucalypt regrowth, and an open canopy. Large, relatively undisturbed remnants are required for the species to persist in an area. There are five records of this species within 10 km of the subject site, none of which are within 2km. Given the few records within the search area and preferred habitat being nearby within a priority management zone southeast of the town, it is unlikely that a viable local population exists for this species.	N/A	i. This species is associated with PCT 70. Consequently, up to 0.75 ha of potential habitat will be modified or removed. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. With the minimal records and a priority management area within proximity which contains preferred habitat the proposal is unlikely to remove any habitat critical for the long-term survival of the species.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Circus assimilis	Spotted Harrier	Breeds in sticks nests in trees. Occurs in grassy open woodland throughout the Australian mainland, except in densely forested or wooded habitats of the coast, escarpment, and ranges. All eight records for this species occur in the same location ~9.5 km from the subject site from 30 years prior. Given the lack of recent records and no nests being seen within the subject site it is	N/A	i. This species is associated with PCTs 26, 45, 52 and 70. Consequently up to 9.71 ha of potential habitat will be impacted by the proposal. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

Scientific Name	Common Name	a.	b.	c.	d.	e.	Impact Significance
		unlikely any habitat impacted would be of critical importance for this species.		township, widening the existing fragmentation associated with urban development. iii. Though it is within the predicted distribution, given that there are no associated vegetation communities and the lack of records within the last 30 years the proposal is unlikely to remove any habitat critical for the long-term survival of the species			
Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	Found in eucalypt woodlands (including Box-Gum Woodland) and dry open forest. Mainly inhabits woodlands dominated by stringybarks or other rough-barked eucalypts, usually with an open grassy understorey also found in mallee and River Red Gum (*Eucalyptus camaldulensis*) Forest bordering wetlands with an open understorey of acacias, saltbush, lignum, cumbungi, and grasses. Sedentary, considered to be resident in many locations throughout its range; present in all seasons or year-round at many sites; territorial year-round, though some birds may disperse locally after breeding. Considering this it is likely that the grouped records within the search area are from residents ~4.5km from the subject site. Considering the sedentary nature, lack of records within the study area, and the proximity (>20km) of a priority management site it is unlikely that the subject site is a critical habitat for the species.	N/A	i. This species is associated with PCT 70. Consequently, up to 0.75 ha of potential habitat will be modified or removed. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. Given the relatively small area of potential habitat being removed and the lack of records within the study area it is unlikely that the proposal will remove habitat critical to the long-term survival of the species.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Daphoenositta chrysoptera	Varied Sittella	The Varied Sittella is sedentary and inhabits most of mainland Australia except the treeless deserts and open	N/A	i. The species is associated with PCTs 26 and 70. Consequently	No, AOBV not	Yes. See **Appendix H.**	No significant impact will arise to the

Scientific Name	Common Name	a.	b.	c.	d.	e.	Impact Significance
		grasslands. Inhabits eucalypt forests and woodlands, especially those containing rough-barked species and mature smooth-barked gums with dead branches, mallee, and Acacia woodland. Given the sedentary nature of the species and that there are no records within the study area it is unlikely that the subject site is a critical habitat for any population.		0.80 ha of potential habitat will be removed. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. Considering the lack of records within the study area, the proposal is unlikely to remove any habitat critical for the long-term survival of the species.	present within or close to the site		local viability of this species or its habitat due to the undertaking of the proposal
Epthianura albifrons	White-fronted Chat	Found mostly in temperate to arid climates and very rarely sub-tropical areas, it occupies foothills and lowlands up to 1000 m above sea level. In NSW, it occurs mostly in the southern half of the state, in damp open habitats along the coast. Considering the subject site does not fit the preferred habitat conditions and that all records are from >25years prior it is unlikely that the subject site is critical habitat for the species.	N/A	i. This species is associated with PCTs 45 and 52. Consequently up to 8.91 ha of potential habitat will be impacted by the proposal. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. Though it is within the predicted distribution, given that there are no associated vegetation communities and the lack of records within the last 30 years the proposal is unlikely to remove any habitat critical for the long-term survival of the species	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Falco hypoleucos	Grey Falcon	Usually restricted to shrubland, grassland and wooded watercourses of	N/A	i. This species is associated with all vegetation within the subject	No, AOBV	Yes. See **Appendix H.**	No significant impact will

Scientific Name	Common Name	a.	b.	c.	d.	e.	Impact Significance
		arid and semi-arid regions, although it is occasionally found in open woodlands near the coast. Utilises old nests from other birds in old eucalypt trees near water. All eight records for this species are ~9.5 km from the subject site and from more than 25 years prior. Considering this it is unlikely that there is a viable population in the area.		site. Consequently, up to 9.71 ha of potential habitat will be impacted by the proposal. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. Though there are associated vegetation communities, given the lack of records within the last 25 years the proposal is unlikely to remove any habitat critical for the long-term survival of the species	not present within or close to the site		arise to the local viability of this species or its habitat due to the undertaking of the proposal
Falco subniger	Black Falcon	In New South Wales there is assumed to be a single population that is continuous with a broader continental population, given that falcons are highly mobile, commonly travelling hundreds of kilometres. The Black Falcon occurs as solitary individuals, in pairs, or in family groups of parents and offspring. The subject site is within a priority management area for the species. With the only eucalypt within the subject site being considered a small to medium sized tree it is unlikely suitable for nesting. With such a highly mobile species and the subject site being on the edge of urban development it is unlikely that the proposal will affect the lifecycle of the species.	N/A	i. This species is associated with PCTs 26, 45 and 70 within the subject site. Consequently, up to 1.61 ha of potential habitat will be impacted by the proposal. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. Though there are both associated vegetation communities and records, given the mobility of the species and range of distribution it is unlikely that the proposal will remove habitat critical to the long-term survival of the species.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

Scientific Name	Common Name	a.	b.	c.	d.	e.	Impact Significance
Grantiella picta	Painted Honeyeater	This nomadic species inhabits Boree/ Weeping Myall (*Acacia pendula*), Brigalow (*A. harpophylla*) and Box-Gum Woodlands and Box-Ironbark Forests where it feeds on the fruits of mistletoe. They make hanging nests from drooping eucalypts, sheoak, paperbark and mistletoe branches. There have been no records within 10 km of the subject site. Given this it is unlikely that the subject site would have adverse effect on any populations of this species.	N/A	i. The species is associated with PCTs 26 and 70. Consequently 0.80 ha of potential habitat will be removed. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. Considering the lack of records within the study area, the proposal is unlikely to remove any habitat critical for the long-term survival of the species.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Grus rubicunda	Brolga	Though Brolgas often feed in dry grassland or ploughed paddocks or even desert claypans, they are dependent on wetlands too, especially shallow swamps, where they will forage with their head entirely submerged. Given that the subject site is not suitable breeding habitat and that the single record within the search area is from 20 years prior it is unlikely that a viable population is present within the area.	N/A	i. This species is associated with PCTs 26, 45 and 52 within the subject site. Consequently, up to 8.96 ha of habitat will be removed or modified because of this proposal. There is a single record within 10km from 23 years before. ii. The surrounding areas are heavily fragmented due to urban development, roads and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. Considering the site lacks permanent water and wetland features it is unlikely the proposal would remove any habitat critical for the long-term survival of the species.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

Scientific Name	Common Name	a.	b.	c.	d.	e.	Impact Significance
Haliaeetus leucogaster	White-bellied Sea-Eagle	The White-bellied Sea-eagle is distributed around the Australian coastline, including Tasmania, and well inland along rivers and wetlands of the Murray Darling Basin. In New South Wales it is widespread along the east coast, and along all major inland rivers and waterways. Habitats are characterised by the presence of large areas of open water including larger rivers, swamps, lakes, and the sea. Given the subject site is not home to such a body of water it is unlikely that it is utilised by a population of this species.	N/A	i. This species is associated with PCTs 26, 45 and 70 within the subject site. Consequently, up to 1.61 ha of habitat will be removed or modified because of this proposal. There are 121 records within 10km. ii. The surrounding areas are heavily fragmented due to urban development, roads and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. Considering the site lacks any permanent water bodies though preferred habitat is within close proximity with the Lachlan River, it is unlikely the proposal would remove any habitat critical for the long-term survival of the species.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Hieraaetus morphnoides	Little Eagle	The Little Eagle is found throughout the Australian mainland except in the most densely forested parts of the Dividing Range escarpment. It occurs as a single population throughout NSW. Occupies open eucalypt forest, woodland, or open woodland. Sheoak or Acacia woodlands and riparian woodlands of interior NSW are also used. The entire state is covered by a priority management area. There are no records within the study area. With such a highly mobile species it is unlikely that the subject site contains habitat critical for any population of this species.	N/A	i. This species is associated with all vegetation within the subject site. Consequently, up to 9.71 ha of potential habitat will be impacted by the proposal. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. With the species being highly mobile and no records within <3 km of the subject site it is unlikely	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

Scientific Name	Common Name	a.	b.	c.	d.	e.	Impact Significance
				that the proposal would remove any habitat critical for the long-term survival of the species.			
Lathamus discolor	Swift Parrot	The swift parrot breeds in Tasmania before migrating to southeastern Australia, in NSW mostly occurs on the coast and southwest slopes. On the mainland they occur in areas where eucalypts are flowering profusely or where there are abundant lerp (from sap-sucking bugs) infestations. Considering the lack of records within the search area and lack of feeding trees it is unlikely that the subject site contains habitat for any population of this species.	N/A	i. The species is associated with PCTs 26 and 70. Consequently 0.80 ha of potential habitat will be removed. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. Considering the lack of records within the search area, the proposal is unlikely to remove any habitat critical for the long-term survival of the species.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Lophochroa leadbeateri	Major Mitchell's Cockatoo	Inhabits a wide range of treed and treeless inland habitats, always within easy reach of water. 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. Normally found in pairs or small groups, though flocks of hundreds may be found where food is abundant. Uses tree hollows for nests. Given that the subject site contains no suitable hollow-bearing trees and that there are no records within the 10 km search area it is unlikely that the subject site contains habitat for any population for this species.	N/A	i. This species is associated with all vegetation within the subject site. Consequently, up to 9.71 ha of potential habitat will be impacted by the proposal. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. With no suitable hollow-bearing trees and no records within the search area it is unlikely that the proposal would remove any habitat	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

Scientific Name	Common Name	a.	b.	c.	d.	e.	Impact Significance
				critical for the long-term survival of the species.			
Lophoictinia isura	Square-tailed Kite	Typically a coastal species, in NSW, scattered records of the species throughout the state indicate that the species is a regular resident in the north, north-east and along the major west-flowing river systems. Found in a variety of timbered habitats including dry woodlands and open forests. Shows a particular preference for timbered watercourses. With no river system or records within the study area it is unlikely the subject site contains habitat for any population for this species.	N/A	i. This species is associated with PCTs 26, 45 and 70 within the subject site. Consequently, up to 1.61 ha of habitat will be removed or modified because of this proposal. There are no records within 10km. ii. The surrounding areas are heavily fragmented due to urban development, roads and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. Considering the site lacks any permanent water bodies and there are no records within 10km, it is unlikely the proposal would remove any habitat critical for the long-term survival of the species.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Melanodryas cucullata cucullata	Hooded Robin (south-eastern form)	It is considered a sedentary species, but local seasonal movements are possible. Prefers lightly wooded country, usually open eucalypt woodland, acacia scrub and mallee, often in or near clearings or open areas. Requires structurally diverse habitats featuring mature eucalypts, saplings, some small shrubs and a ground layer of moderately tall native grasses. Given that the species is considered sedentary and that both records are from >30 years prior it is unlikely that the proposal will have an effect on any population of this species.	N/A	i. The species is associated with PCTs 26 and 70. Consequently 0.80 ha of potential habitat will be removed. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. Considering the lack of records within the last 30 years, the	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

Scientific Name	Common Name	a.	b.	c.	d.	e.	Impact Significance
				proposal is unlikely to remove any habitat critical for the long-term survival of the species.			
Neophema pulchella	Turquoise Parrot	Lives on the edges of eucalypt woodland adjoining clearings, timbered ridges, and creeks in farmland. They are usually found in pairs or small family groups though have been reported in flock of up to 30 individuals. Thought to be quite tolerable to disturbance, they nest in tree hollows, logs, or posts. There are no records within the subject site or suitable nesting requirements, given this it is unlikely the proposal would impact any habitat critical to the maintenance of the life cycle of this species.	N/A	i. This species is associated with PCT 70. Consequently, up to 0.75 ha of potential habitat will be modified or removed. There are two records within 10km. ii. The surrounding areas are heavily fragmented due to urban development, roads and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. Given the relatively small area of potential habitat being removed and the lack of records within the study area it is unlikely that the proposal will remove habitat critical to the long-term survival of the species.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Ninox connivens	Barking Owl	Inhabits woodland and open forest, including fragmented remnants and partly cleared farmland. It is flexible in its habitat use, and hunting can extend in to closed forest and more open areas. The owls sometimes extend their home range into urban areas, hunting birds in garden trees and insects attracted to streetlights. Requires very large permanent territories in most habitats due to sparse prey densities. Monogamous pairs hunt over as much as 6000 hectares, with 2000 hectares being more typical in NSW habitats. Uses hollows of large old trees to nest. With	N/A	i. This species is associated with PCT 70. Consequently, up to 0.75 ha of potential habitat will be removed by the proposal. There have been two records within the search area. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

Scientific Name	Common Name	a.	b.	c.	d.	e.	Impact Significance
		the subject site lacking in suitable nesting areas and the species preferring a large home range in which they hunt, it is unlikely that the subject site hosts a pair of this species.		iii. Given the lack of suitable nesting trees within the study area and the few records within the search area, it is unlikely that the proposal will remove habitat critical to the long-term survival of the species.			
Oxyura australis	Blue-billed Duck	Widespread in NSW, but most common in the southern Murray-Darling Basin area. Birds disperse during the breeding season to deep swamps up to 300 km away. The Blue-billed Duck prefers deep water in large permanent wetlands and swamps with dense aquatic vegetation. The species is completely aquatic, swimming low in the water along the edge of dense cover. All 109 records are from Lachlan River, south of the site. The subject site lacks permanent water features and would not be considered as being able to support a viable population.	N/A	i. There are no associated vegetation communities within the subject area. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. Given that there are no permanent water bodies within the study area the proposal will not affect the long-term survival of the species.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Pachycephala inornata	Gilbert's Whistler	This species prefers habitat with a dense shrub layer through mallee shrublands and box-ironbark woodlands. It is currently thought to only use habitat along the Murray, Edwards and Wakool Rivers. Considering this it is likely that the two records seen within the search area were just migrants. There are no records within the study area and no known associated vegetation communities making it unlikely that the proposal will have an adverse effect on the life cycle of the species.	N/A	i. There are no associated vegetation communities within the subject area. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. Given that there are no records or associated vegetation within the study area the proposal will not	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

Scientific Name	Common Name	a.	b.	c.	d.	e.	Impact Significance
				affect the long-term survival of the species.			
Petroica boodang	Scarlet Robin	In NSW, it occurs from the coast to the inland slopes. Lives in dry eucalypt forests and woodlands. The understorey is usually open and grassy with few scattered shrubs. This species lives in both mature and regrowth vegetation. Primarily a resident in forests and woodlands, but some adults and young birds disperse to more open habitats after breeding. In autumn and winter many Scarlet Robins live in open grassy woodlands, and grasslands or grazed paddocks with scattered trees. With no records within the search area and the lack of abundant logs and fallen timber the species prefer it is unlikely the subject site is suitable habitat. Is unsuitable as a breeding area due to the species only breeding on ridges, hills and foothills of the Great Dividing Range.	N/A	i. This species is associated with PCTs 26 and 70. Consequently, 0.80 ha of potential habitat will be removed due to the proposal. There are no records within 10km. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. Given that there are no records within the search area the proposal will not affect the long-term survival of the species	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Petroica phoenicea	Flame Robin	Prefers clearings or areas with open understoreys. In winter, birds migrate to drier more open habitats in the lowlands (i.e. valleys below the ranges, and to the western slopes and plains), in dry forests, open woodlands and in pastures and native grasslands, with or without scattered trees. All three records are from ~9.5km away from the subject site. They nest near the ground in tree cavities, stumps or banks. With no associated vegetation or sign of this species it is unlikely that the proposal will have an adverse effect on the life cycle of the species.	N/A	i. There are no associated vegetation communities within the subject area. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. Given that all three records are from ~9.5 km away and that there is no associated vegetation within the study area the proposal will not	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

Scientific Name	Common Name	a.	b.	c.	d.	e.	Impact Significance
				affect the long-term survival of the species.			
Polytelis swainsonii	Superb Parrot	Inhabit Box-Gum, Box-Cypress-pine and Boree woodlands and River Red Gum Forest. Nest in tree hollows with an entrance diameter of 6 cm or wider, and that are at least 3.5 m above the ground. May forage up to 10 km from nesting sites, and feed in trees and understorey shrubs and on the ground and their diet consists mainly of grass seeds and herbaceous plants. The subject site lacked breeding hollows and there are no records within the study area, making it unlikely for the proposal to have an adverse effect on the life cycle of the species.	N/A	i. This species is associated with all vegetation within the subject site. Consequently, up to 9.71 ha of potential habitat will be impacted by the proposal. There are 31 records within the search area. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. With no suitable hollow-bearing trees and no records within the study area it is unlikely that the proposal would remove any habitat critical for the long-term survival of the species.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Pomatostomus temporalis temporalis	Grey-crowned Babbler (eastern subspecies)	Occurs in woodlands in the Hunter Valley and in several locations on the north coast of NSW. It may be extinct in the southern, central and New England tablelands. Inhabits open Box-Gum Woodlands on the slopes, and Box-Cypress-pine and open Box Woodlands on alluvial plains. Woodlands on fertile soils in coastal regions. Lives in family groups that consist of a breeding pair and young from previous breeding seasons. A group may consist of up to fifteen individuals. The subject site is within a priority management site though no record of the species is within the	N/A	i. This species is associated with PCTs 26 and 70. Consequently up to 0.80 ha of potential habitat will be removed. There are 87 records within the search area. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	**Yes, there will be an impact on the local population due to the proposal.**

Scientific Name	Common Name	a.	b.	c.	d.	e.	Impact Significance
		subject site. Though the subject site might be used for foraging or other activities, with the continuation of habitat beyond the site the proposal will likely not have an effect on the life cycle of the species to such an extent that the local population would be at risk of extinction.		iii. it is likely that the subject site is utilised by the local population for feeding or other activities. Though the proposal will be impacting the species with the continuation of habitat beyond the scope of the proposal and no records being from within the subject site it is unlikely that the proposal will lead to a long-term decrease in the viability of the local population.			
Rostratula australis	Australian Painted Snipe	In NSW many records are from the Murray-Darling Basin including the Paroo wetlands, Lake Cowal, Macquarie Marshes, Fivebough Swamp and more recently, swamps near Balldale and Wanganella. Prefers fringes of swamps, dams and nearby marshy areas where there is a cover of grasses, lignum, low scrub or open timber. Nests on the ground amongst tall vegetation, such as grasses, tussocks or reeds. Forages nocturnally on mud-flats and in shallow water. With no permanent water features within the subject site and only three records within the search area it is unlikely the proposal will have an adverse effect on the life cycle of the species.	N/A	i. This species is associated with PCT 52. Consequently, up to 8.10 ha of habitat will be removed due to the proposal. There are three records within the 10km search area. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. Considering, that there are no permanent water bodies within the study area and the very few records within the search area, the proposal will not affect the long-term survival of the species.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Stagonopleura guttata	Diamond Firetail	Found in grassy eucalypt woodlands, including Box-Gum Woodlands and Snow Gum Eucalyptus pauciflora Woodlands. Also occurs in open forest, mallee, Natural Temperate Grassland, and in secondary grassland derived from other communities. All three records within the search area are from	N/A	i. This species is associated with PCTs 26, 45 and 70. Consequently, up to 1.61 ha of potential habitat will be removed due to the current proposal. ii. The surrounding areas are heavily fragmented due to urban	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the

Scientific Name	Common Name	a.	b.	c.	d.	e.	Impact Significance
		>25 years prior to the current search, so though there are associated PCTs it is unlikely that there is a viable population within the search area.		development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. Considering there are no records of the species within the last 25 years and the preference for eucalypt woodlands it is unlikely the proposal will remove habitat critical to the long-term survival of the species.			undertaking of the proposal
Stictonetta naevosa	Freckled Duck	It breeds in large temporary swamps created by floods in the Bulloo and Lake Eyre basins and the Murray-Darling system, particularly along the Paroo and Lachlan Rivers, and other rivers within the Riverina. The duck is forced to disperse during extensive inland droughts when wetlands in the Murray River basin provide important habitat. Prefer permanent freshwater swamps and creeks with heavy growth of Cumbungi, Lignum or Tea-tree. During drier times they move from ephemeral breeding swamps to more permanent waters such as lakes, reservoirs, farm dams and sewage ponds. The majority of the 82 records within the search area are localised on Gum Swamp, supporting the species' preference for these areas. With the subject site not containing these preferred characteristics it is unlikely that the viability of this local population will be impacted by the proposal.	N/A	i. This species is not associated with any PCTs within the subject site. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. Considering, that there are no permanent water bodies within the study area and the no records within the study area, the proposal will not affect the long-term survival of the species.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Tyto novaehollandiae	Masked Owl	Extends from the coast where it is most abundant to the western plains. Overall	N/A	i. This species is associated with PCTs 26, 52 and 70 within the	No, AOBV	Yes. See **Appendix H.**	No significant impact will

Scientific Name	Common Name	a.	b.	c.	d.	e.	Impact Significance
		records for this species fall within approximately 90% of NSW, excluding the most arid north-western corner. There is no seasonal variation in its distribution. Lives in dry eucalypt forests and woodlands from sea level to 1100 m. A forest owl, but often hunts along the edges of forests, including roadsides. Uses large tree hollows or caves for nesting sites. Considering there are no records within the search area and the characteristic features for nesting are not present within the subject site it is unlikely that a viable local population is present.		subject site. Consequently, up to 8.90 ha of potential habitat will be impacted by the proposal. There are no records within the search area. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. With no suitable hollow-bearing trees and no records within the search area it is unlikely that the proposal would remove any habitat critical for the long-term survival of the species.	not present within or close to the site		arise to the local viability of this species or its habitat due to the undertaking of the proposal
Cercartetus nanus	Eastern Pygmy-possum	In NSW it extends from the coast inland as far as the Pilliga, Dubbo, Parkes and Wagga Wagga on the western slopes. Found in a broad range of habitats from rainforest through sclerophyll (including Box-Ironbark) forest and woodland to heath, but in most areas woodlands and heath appear to be preferred, except in north-eastern NSW where they are most frequently encountered in rainforest. Shelters in tree hollows, rotten stumps, holes in the ground, or abandoned bird-nests. Nest-building appears to be restricted to breeding females; tree hollows are favoured but spherical nests have been found under the bark of eucalypts and in shredded bark in tree forks. With no suitable nesting areas, no forest, woodland or heath present and no	N/A	i. This species is associated with PCT 70 within the subject site. Consequently, up to 0.75 ha of potential habitat will be removed due to the proposal. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. With no suitable hollow-bearing trees and no records within the search area it is unlikely that the proposal would remove any habitat critical for the long-term survival of the species.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

Scientific Name	Common Name	a.	b.	c.	d.	e.	Impact Significance
		records within the search area there is unlikely to be a viable local population.					
Chalinolobus dwyeri	Large-eared Pied Bat	Found mainly in areas with extensive cliffs and caves. Roosts in caves (near their entrances), crevices in cliffs, old mine workings and in the disused, bottle-shaped mud nests of the Fairy Martin. They remain loyal to the same cave over many years. Found in well-timbered areas containing gullies. Considering both site fidelity, the lack of records within the search area and the missing characteristic features of habitat, there is unlikely to be a viable local population present.	N/A	i. This species is associated with PCT 70 within the subject site. Consequently, up to 0.75 ha of potential habitat will be removed due to the proposal. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. With no suitable cliffs or caves and no records within the search area it is unlikely that the proposal would remove any habitat critical for the long-term survival of the species.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Chalinolobus picatus	Little Pied Bat	Found in inland Queensland and NSW (including Western Plains and slopes) extending slightly into South Australia and Victoria. Occurs in dry open forest, open woodland, mulga woodlands, chenopod shrublands, cypress pine forest and mallee and Bimbil box woodlands. Roosts in caves, rock outcrops, mine shafts, tunnels, tree hollows and buildings. Considering both the lack of records within the search area and the missing characteristic features of habitat, it is unlikely to be a viable local population.	N/A	i. This species is associated with PCTs 26, 52 and 70 within the subject site. Consequently, up to 8.90 ha of potential habitat will be removed due to the proposal. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. With no suitable roosting habitat and no records within the search area it is unlikely that the proposal	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

Scientific Name	Common Name	a.	b.	c.	d.	e.	Impact Significance
				would remove any habitat critical for the long-term survival of the species.			
Dasyurus maculatus	Spotted-tailed Quoll	Found in eastern NSW, eastern Victoria, south-east and north-eastern Queensland, and Tasmania. Recorded across a range of habitat types, including rainforest, open forest, woodland, coastal heath and inland riparian forest, from the sub-alpine zone to the coastline. Individual animals use hollow-bearing trees, fallen logs, small caves, rock outcrops and rocky-cliff faces as den sites. With the subject site lacking in suitable den sites and the only record being from 2004, it is unlikely that the subject site supports a viable population for this species.	N/A	i. The species is not associated with any vegetation communities within the subject site. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. With no suitable den sites and the lack of recent records it is unlikely that the proposal would remove any habitat critical for the long-term survival of the species.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Nyctophilus corbeni	Corben's Long-eared Bat	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 Queensland. Roosts in tree hollows, crevices, and under loose bark. With no records within the search area and the relatively small area of potential habitat it is unlikely that the subject site supports a viable local population.	N/A	i. This species is associated with PCT 70 within the subject site. Consequently, up to 0.75 ha of potential habitat will be removed due to the proposal. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. With no records within the search area it is unlikely that the proposal would remove any habitat critical for the long-term survival of the species.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

Scientific Name	Common Name	a.	b.	c.	d.	e.	Impact Significance
Petaurus norfolcensis	Squirrel Glider	Inhabits woodlands and dry sclerophyll forests, usually in diverse stands of shrubs and trees. Shelters and breeds in tree hollows, and is primarily an insectivorous animal but, has also been known to ingest plant exudates. With no records within the search area and the lack of nesting features, it is unlikely that the subject site supports a viable local population.	N/A	i. This species is associated with PCT 70 within the subject site. Consequently, up to 0.75 ha of potential habitat will be removed due to the proposal. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. With no records within the search area and no key habitat characteristics it is unlikely that the proposal would remove any habitat critical for the long-term survival of the species.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Phascolarctos cinereus	Koala	In New South Wales, koala populations are found on the central and north coasts, southern highlands, southern and northern tablelands, Blue Mountains, southern coastal forests, with some smaller populations on the plains west of the Great Dividing Range. Inhabit eucalypt woodlands and forests. Only two species of Eucalyptus were recorded within the subject site, neither are primary feed tree species, but one (*E. polyanthemos*) is a secondary feed tree species for the Western Slopes and Plains Koala Management Area. Considering the absence of primary feed tree species, and lack of records within the search area, it is unlikely that the subject site is of critical habitat to a viable local population.	N/A	i. This species is associated with PCTs 26, 52 and 70 within the subject site. Consequently, up to 8.90 ha of potential habitat will be removed due to the proposal. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. With no primary feed tree species and no records within the search area it is unlikely that the proposal will affect habitat critical to the long-term survival of the species.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

Scientific Name	Common Name	a.	b.	c.	d.	e.	Impact Significance
Pteropus poliocephalus	Grey-headed Flying-fox	Occur in subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops. Roosting camps are generally located within 20 km of a regular food source and are commonly found in gullies, close to water, in vegetation with a dense canopy. The nearest mapped camp is in Parkes, >30 km from the subject site. Considering the distance between the subject site and the nearest known camp, and the lack of records within the search area, it is extremely unlikely that the proposal would impact the life cycle of this species.	N/A	i. This species is associated with PCT 70 within the subject site. Consequently, up to 0.75 ha of potential habitat will be removed due to the proposal. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. With no records within the search area it is unlikely that the proposal would remove any habitat critical for the long-term survival of the species.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	Roosts singly or in groups of up to six, in tree hollows and buildings; in treeless areas they are known to utilise mammal burrows. Forages in most habitats across its very wide range, with and without trees; appears to defend an aerial territory. With no records within the search area, it is unlikely that the subject site is of critical habitat to a viable local population.	N/A	i. This species is associated with all PCTs within the subject site. Consequently, up to 9.71 ha of potential habitat will be removed due to the proposal. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. With no records within the search area it is unlikely that the proposal would remove any habitat critical for the long-term survival of the species.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

Scientific Name	Common Name	a.	b.	c.	d.	e.	Impact Significance
Sminthopsis macroura	Stripe-faced Dunnart	The habitat for these species are native dry grasslands and low dry shrublands, often along drainage lines where food and shelter resources tend to be better. They shelter in cracks in the soil, in grass tussocks or under rocks and logs. Co-occupies areas with the more common Fat-tailed Dunnart but prefers relatively ungrazed habitats with greater diversity and healthier understorey vegetation. With no records within the search area, it is unlikely that the subject site is of critical habitat to a viable local population.	N/A	i. This species is associated with PCTs 45 and 52 within the subject site. Consequently, up to 8.91 ha of potential habitat will be removed due to the proposal. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. With no records within the search area it is unlikely that the proposal would remove any habitat critical for the long-term survival of the species.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Austrostipa metatoris	A spear-grass	Grows in sandy areas of the Murray Valley; habitats include sandhills, sand ridges, undulating plains and flat open mallee country, with red to red-brown clay-loam to sandy-loam soils. With none of these microhabitats being seen during field surveys and no records within the search area it is unlikely that the subject site is supporting a viable local population.	N/A	i. This species is associated with PCT 70 within the subject site. Consequently, up to 0.75 ha of potential habitat will be removed due to the proposal. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. With no records within the search area it is unlikely that the proposal would remove any habitat critical for the long-term survival of the species.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

Scientific Name	Common Name	a.	b.	c.	d.	e.	Impact Significance
Austrostipa wakoolica	A spear-grass	Confined to the floodplains of the Murray River tributaries of central-western and south-western NSW. It grows in open woodland on grey, silty clay or sandy loam soils; habitats include the edges of a lignum swamp with box and mallee; creek banks in grey, silty clay; mallee and lignum sandy-loam flat; open Cypress Pine Forest on low sandy range; and a low, rocky rise. With none of these microhabitats being seen during field surveys and no records within the search area it is unlikely that the subject site is supporting a viable local population.	N/A	i. This species is associated with PCTs 26 and 70 within the subject site. Consequently, up to 0.80 ha of potential habitat will be removed due to the proposal. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. With no records within the search area it is unlikely that the proposal would remove any habitat critical for the long-term survival of the species.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Brachyscome muelleroides	Claypan Daisy	Grows in damp areas on the margins of claypans in moist grassland with *Pycnosorus globosus, Agrostis avenacea* and *Austrodanthonia duttoniana*. Also recorded from the margins of lagoons in mud or water, and in association with *Calotis anthemoides*. With none of these species or microhabitats being recorded during field surveys and no records within the search area it is unlikely that the subject site supports a viable local population of claypan daisy.	N/A	i. This species is associated with PCT 45 within the subject site. Consequently, up to 0.81 ha of potential habitat will be removed due to the proposal. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. With no records within the search area it is unlikely that the proposal would remove any habitat critical for the long-term survival of the species.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

Scientific Name	Common Name	a.	b.	c.	d.	e.	Impact Significance
Brachyscome papillosa	Mossgiel Daisy	The Mossgiel Daisy is endemic to NSW and chiefly occurs within the Riverina Bioregion, from Mossgiel in the north, Murrumbidgee Valley (Yanga) National Park in the south west to Urana in the south east. Recorded primarily in clay soils on Bladder Saltbush (*Atriplex vesicaria*) and Leafless Bluebush (*Maireana aphylla*) plains. Has also been recorded in grasslands and in Inland Grey Box (*Eucalyptus microcarpa*) - Cypress Pine (*Callitris* spp.) woodland. Though cypress pine was seen within the subject site, not being part of the grey box-cypress pine woodland makes it unsuitable habitat for the Mossgiel daisy. Considering this and the lack of records within the search area it is unlikely that there is a viable local population of this species.	N/A	i. This species is associated with PCT 70 within the subject site. Consequently, up to 0.75 ha of potential habitat will be removed due to the proposal. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. With no records within the search area it is unlikely that the proposal would remove any habitat critical for the long-term survival of the species.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Diuris tricolor	Pine Donkey Orchid	Associated species include *Callitris glaucophylla, Eucalyptus populnea, Eucalyptus intertexta*, Ironbark and *Acacia* shrubland. The understorey is often grassy with herbaceous plants such as *Bulbine* species. Grows in sclerophyll forest among grass, often with native Cypress Pine (*Callitris* spp.). It is found in sandy soils, either on flats or small rises. Also recorded from a red earth soil in a Bimble Box community in western NSW. With the only record within the search area from 1905 it is unlikely that the subject site supports a viable local population.	N/A	i. This species is associated with PCT 70 within the subject site. Consequently, up to 0.75 ha of potential habitat will be removed due to the proposal. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. With the only record within the search area from 1905 it is unlikely that the proposal would remove any habitat critical for the long-term survival of the species.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

Scientific Name	Common Name	a.	b.	c.	d.	e.	Impact Significance
Lepidium aschersonii	Spiny Peppercress	Occurs in periodically wet sites such as gilgai depressions and the margins of freshwater and saline marshes and shallow lakes, usually on heavy clay soil. Found on ridges of gilgai clays dominated by Brigalow (*Acacia harpophylla*), Belah (*Casuarina cristata*), Buloke (*Allocasuarina luehmanii*) and Grey Box (*Eucalyptus microcarpa*). In the south has been recorded growing in Bull Mallee (*Eucalyptus behriana*). Often the understorey is dominated by introduced plants. The species grows as a component of the ground flora, in grey loamy clays. Vegetation structure varies from open to dense, with sparse grassy understorey and occasional heavy litter. Although Buloke was present on site there was no other associated species recorded. This combined with the lack of records within the search area indicates that the proposal is unlikely to have an adverse effect on a viable local population.	N/A	i. This species is associated with PCT 26 within the subject site. Consequently, up to 0.05 ha of potential habitat will be removed due to the proposal. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. With no records within the search area it is unlikely that the proposal would remove any habitat critical for the long-term survival of the species.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Lepidium monoplocoides	Winged Peppercress	Occurs on seasonally moist to waterlogged sites, on heavy fertile soils. Predominant vegetation is usually an open woodland dominated by Buloke (*Allocasuarina luehmannii)* and/or eucalypts, particularly Black Box (*Eucalyptus largiflorens)* or Poplar Box (*Eucalyptus populnea)*. With the only associated species being Buloke and no records within the search area it is unlikely that the subject site is hosting a viable local population of the species.	N/A	i. This species is associated with PCTs 26, 45 and 52 within the subject site. Consequently, up to 8.96 ha of potential habitat will be removed due to the proposal. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

Scientific Name	Common Name	a.	b.	c.	d.	e.	Impact Significance
				iii. With no records within the search area it is unlikely that the proposal would remove any habitat critical for the long-term survival of the species.			
Leptorhynchos orientalis	Lanky Buttons	Grows in woodland or grassland, sometimes on the margins of swamps. Communities include a Bimble Box plain in red-brown soil, dense *Acacia pendula* woodland with herbaceous understorey on red clay to clay-loam, open grassland areas on red soils, and red clay plains at the edge of a Canegrass swamp. Though it seems suitable soils and vegetation communities are present the lack of records within the search area indicate that the subject site is not suitable for supporting a viable local population of this species.	N/A	i. This species is associated with PCTs 26 and 45 within the subject site. Consequently, up to 0.86 ha of potential habitat will be removed due to the proposal. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. With no records within the search area it is unlikely that the proposal would remove any habitat critical for the long-term survival of the species.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Pilularia novae-hollandiae	Austral Pillwort	A semi-aquatic fern, resembling a small fine grass. Grows in shallow swamps and waterways, often among grasses and sedges. It is most often recorded in drying mud as this is when it is most conspicuous. With the subject site lacking permanent water features and the lack of records within the search area it is unlikely the proposal will impact a local population.	N/A	i. This species is associated with PCTs 26 and 45 within the subject site. Consequently, up to 0.86 ha of potential habitat will be removed due to the proposal. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

Scientific Name	Common Name	a.	b.	c.	d.	e.	Impact Significance
				iii. With no watercourses or swamps in the subject site and no records within the search area it is unlikely that the proposal would remove any habitat critical for the long-term survival of the species.			
Swainsona murrayana	Slender Darling Pea	The species has been collected from clay-based soils, ranging from grey, red and brown cracking clays to red-brown earths and loams. Grows in a variety of vegetation types including bladder saltbush, black box and grassland communities on level plains, floodplains and depressions and is often found with *Maireana* species. Plants have been found in remnant native grasslands or grassy woodlands that have been intermittently grazed or cultivated. With no records within the search area it is unlikely that the proposal will have an adverse effect on the life cycle of the species.	N/A	i. This species is associated with PCTs 26, 45 and 52 within the subject site. Consequently, up to 8.96 ha of potential habitat will be removed due to the proposal. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development. iii. With no records within the search area it is unlikely that the proposal would remove any habitat critical for the long-term survival of the species.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Swainsona sericea	Silky Swainson-pea	There is one isolated record from the far north-west of NSW. Its stronghold is on the Monaro (>300 km South, southeast). It generates from seed after fire. Considering this and the lack of records within the search area it is unlikely the proposal will affect the lifecycle of the species.	N/A	i. This species is associated with PCTs 26, 45 and 7 within the subject site. Consequently, up to 1.61 ha of potential habitat will be removed due to the proposal. ii. The surrounding areas are heavily fragmented due to urban development, roads, and farming infrastructure. The proposal is taking place on the edge of a township, widening the existing fragmentation associated with urban development.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

Scientific Name	Common Name	a.	b.	c.	d.	e.	Impact Significance
				iii. With the distance to the only known population in the state being more than 300 km away and no records within the search area it is unlikely that the proposal would remove any habitat critical for the long-term survival of the species.			

Community	**a.**	**b.**	**c.**	**d.**	**e.**	Impact **Significance**
Weeping Myall open woodland of the Riverina Bioregion and NSW South Western Slopes Bioregion	N/A	i. The proposal would impact up to 0.05 ha of PCT 26, representing c. 8% of the observed extent of this EEC within the study area. This impact, while highly undesirable, would not place the community at risk of local extinction. ii. In addition to the direct impacts identified above, this proposal would likely result in impacts associated with edge effects (e.g. weed incursion) in areas of the community that are outside the proposal footprint. Considering the degree of existing disturbance in the landscape, however, this is unlikely to place the community at risk of local extinction.	i. Up to 0.05 ha of the TEC would be impacted and potentially removed due to the proposal. This represents c. 8% of the observed local occurrence, with additional areas likely to occur in an adjacent property that could not be directly assessed. ii. The proposal would reduce the local extent of the EEC and contribute to overall landscape fragmentation; however, no areas of this community would be isolated by the proposal and the severity of the existing fragmentation suggests that the impacts of this proposal would not, by themselves, be significant. iii. The occurrence of the EEC within the subject site is unlikely to be important to the long-term survival of the community in the local landscape as it comprises only a very small section of a larger occurrence. Opportunities to reduce the impacts of the proposal on this EEC should be considered where possible.	No, AOBV not present within or close to the site	Yes. See **Appendix H.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.

APPENDIX F – MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE

The EPBC Act protects nationally and internationally important flora, fauna, ecological communities and heritage places, which are defined in the EPBC Act as matters of national environmental significance. The EPBC Act policy Matters of National Environmental Significance: Significant Impact Guidelines 1.1 (DoE, 2013) forms the basis of determining if impact to protected matters is significant.

A Protected Matters Search identified four Endangered Ecological Communities, 38 threatened species and 12 migratory species as potentially occurring within 10 km of the subject site.

The following tables give an overview of the assessments of these threatened entities and shows that the Proposed activity:

1. Is not likely to have a significant impact on a matter of national environmental significance. The matters of national environmental significance are:
    i. World heritage properties.
    ii. National heritage places.
    iii. Wetlands of international importance.
    iv. Threatened species and ecological communities.
    v. Migratory species.
    vi. Commonwealth marine areas.
    vii. The Great Barrier Reef Marine Park. And:
    viii. Nuclear actions (including uranium mines).
    ix. A water resource, in relation to coal seam gas development and large coal mining development.
2. Is not likely to have a significant impact on the environment in general (for actions by Commonwealth agencies or actions on Commonwealth land) or the environment on Commonwealth land (for actions outside Commonwealth land).

Notes: Important Population as determined by the Environment Protection and Biodiversity Conservation Act 1999, is one that for a vulnerable species:

a) is likely to be key source populations either for breeding or dispersal.

b) is likely to be necessary for maintaining genetic diversity.

c) is at or near the limit of the species range.

A ‘significant impact’ is an impact which is important, notable, or of consequence, having regard to its context or intensity (DoE, 2013).

Wetlands of International Importance

Name	Proximity	Assessment of significance required (Yes / No)
Banrock Station Wetland Complex	700 - 800km upstream from Ramsar site	No, the proposal does not occur close to the wetland.
Hattah-Kulkyne Lakes	500 – 600km upstream from Ramsar site	No, the proposal does not occur close to the wetland.
Riverland Ramsar	600 – 700km upstream from Ramsar site	No, the proposal does not occur close to the wetland.
The Coorong	800 – 900km upstream from Ramsar site	No, the proposal does not occur close to the wetland.

Listed Threatened Ecological Communities

Name	Status	Assessment of significance required (Yes / No)
Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-east Australia	Endangered	No, the community does not occur on the subject site.
Poplar Box Grassy Woodland on Alluvial Plains	Endangered	No, the community does not occur on the subject site.
Weeping Myall Woodlands ecological community	Endangered	**Yes, community occurs on the subject site.**
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	The community does not occur on the subject site.

Information within the following tests was obtained from species profiles from both state and government levels with records being retrieved and collated from BioNet.

EPBC Act-listed Endangered Ecological Community

Weeping Myall Woodlands	
Significant Impact Guideline	**Assessment**
Reduce the extent of an ecological community	Up to 0.05 ha of this community would be removed by the proposal, comprising three mature trees and associated regrowth. While highly undesirable, the overall extent of occurrence of the community will not be substantially reduced and a larger area of the community will persist in an adjacent property.
Fragment or increase fragmentation of an ecological community, for example by clearing vegetation for roads or transmission lines	The proposal would contribute to overall landscape fragmentation but is not expected to result in increased fragmentation within the already highly fragmented EEC. Impacts would be to the southern limit of the observed patch and no additional patches occur to the south of the site within the study area; consequently, fragmentation within this EEC would not be increased by the proposal.
Adversely affect habitat critical to the survival of an ecological community	Critical habitat for this community has not been formally identified; however, considering the small extent, severe fragmentation, and marginal condition of the observed vegetation, it is highly unlikely that the local occurrence of this EEC constitutes habitat critical to the survival of this community.
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	Minor impacts to abiotic factors may result from earthworks, drainage works, and the use of chemicals such as pesticides and fertilisers. These are unlikely to significantly adversely impact the community in the adjacent property.
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	Some alterations to community composition may result from edge effects associated with the proposal. Considering the severe fragmentation of the local occurrence of the community, however, it is unlikely that the proposal would significantly exacerbate the existing edge effects in such a way that any functionally important species would be lost.
Cause a substantial reduction in the quality or integrity of an occurrence of an ecological community, including, but not limited to: • assisting invasive species, that are harmful to the listed ecological community, to become established, or • 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.	• As indicated above, some impacts to community composition are likely to result from edge effects. These are unlikely to be significant. • Residential activity may entail the application of chemicals such as fertilisers and herbicides. As most of the local occurrence of the community occurs outside the subject site and in a neighbouring property, it is expected that chemical application would have little or no impact on the community.
Interfere with the recovery of an ecological community.	Clearing and ongoing degradation are the major threats to this community, along with overgrazing, weed invasion and herbivory by caterpillars of the Bag-shelter Moth (*Ochrogaster lunifer*). This proposal would contribute to the most significant threat to this community and would also likely result in additional weed incursions. Considering the small extent of the proposed

	impact, however, this is unlikely to significantly interfere with the recovery of the community.
Conclusion	**No significant impact (provided environmental safeguards are implemented).**

EPBC Act-listed Critically Endangered and Endangered Species

Botaurus poiciloptilus – Australasian Bittern	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	This species favours permanent freshwater wetlands with tall, dense vegetation. They construct both feeding platforms and nests from reeds and breed in secluded areas. Both records within the search area are from more than 30 years prior. Considering this and the lack of permanent wetlands it is unlikely that the proposal will lead to a long-term decrease in the size of any population.
Reduce the area of occupancy of the species	Given the absence of permanent water within the subject site the proposal will not reduce the area of occupancy for the species.
Fragment an existing population into two or more populations	The surrounding area exhibits a large amount of fragmentation with the ongoing development of urban infrastructure, roads and power lines. This proposal occurs alongside an existing urban centre and will widen the fragmentation associated with that development. Mitigation measures will be implemented to reduce habitat fragmentation wherever possible (see **Section 7**).
Adversely affect habitat critical to the survival of a species	Given the lack of records and ideal freshwater habitat for this species, the habitat within the subject site is unlikely to be critical habitat for the species.
Disrupt the breeding cycle of a population	Given the absence of a local population the proposal would not disrupt the breeding cycle of any population.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	There is no associated vegetation within the subject site, ensuring that the proposal will not be affecting habitat for this species.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Drainage of wetlands and ponds, reduced water quality, predation by foxes, pigs and cats, use of herbicides and other chemicals, loss of wetland habitat and changes in water management are the biggest threats to this species. The proposal is unlikely to increase these threats to an extent where they will interfere with the recovery of the species.
Conclusion	**No significant impact**

Calyptorhynchus lathami lathami – Glossy Black-cockatoo	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	This proposal will remove up to 0.75 ha of potential habitat for this species. The subject site is not within a priority management area for this species nor are there any records within 10km. The subject site contains no hollows suitable for breeding for this species. Considering this, it is unlikely the proposal will lead to a long-term decrease in the size of any population.
Reduce the area of occupancy of the species	The potential occupancy of this species would be reduced by 0.75 ha. This reduction in available habitat is unlikely to be significant.
Fragment an existing population into two or more populations	The surrounding area exhibits a large amount of fragmentation with the ongoing development of urban infrastructure, roads and power lines. This proposal occurs alongside an existing urban centre and will widen the fragmentation associated with that development. Mitigation measures will be implemented to reduce habitat fragmentation wherever possible (see **Section 7**).
Adversely affect habitat critical to the survival of a species	Given the lack of records within the search area and the lack of their preferred feeding trees it is unlikely for the subject site to be critical habitat for this species.
Disrupt the breeding cycle of a population	Given the small amount of foraging habitat, and lack of breeding hollows, the proposal will not disrupt the breeding cycle for this species.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will remove/modify up to 0.75 ha of potential habitat for the species. This reduction/modification of available habitat is unlikely to cause the species to decline at a regional scale. The proposal will not isolate any habitat.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Reduction of habitat, decline of hollow bearing trees, excessively frequent fire, disturbance from mining activities, decline in sheoaks and illegal bird smuggling are the biggest threats to this species. The proposal will result in the loss of some feed trees, however, considering the degraded nature of the site, it is unlikely to significantly interfere with the recovery of the species within the region.
Conclusion	**No significant impact**

Lathamus discolor – Swift Parrot	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	This species occurs where eucalypts are flowering profusely or where there is abundant lerp. Neither of these preferred conditions are met within the subject site. Considering this and that there are no records within 10 km of the subject site it is unlikely the proposal will lead to a decrease in the size of any population.
Reduce the area of occupancy of the species	Due to the preferred conditions not being met it and the lack of records it is unlikely that there is a population within the subject site. The current area of occupancy will not be reduced due to the proposal.
Fragment an existing population into two or more populations	The surrounding area exhibits a large amount of fragmentation with the ongoing development of urban infrastructure, roads and power lines. This proposal occurs alongside an existing urban centre and will widen the fragmentation associated with that development. Mitigation measures will be implemented to reduce habitat fragmentation wherever possible (see **Section 7**).
Adversely affect habitat critical to the survival of a species	Given the lack of records within the search area and the lack of their preferred feeding trees it is unlikely for the subject site to be critical habitat for this species.
Disrupt the breeding cycle of a population	Since this species breeds solely in Tasmania, no breeding habitat for this species will be impacted, the proposal will not disrupt the breeding cycle of any population.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will not isolate any habitat. The modification, reduction, or removal of potential habitat associated with this proposal is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Habitat loss and fragmentation from forest harvesting, residential/ industrial development, agricultural clearing, senescence and dieback are the main threats to the species. While the proposal would slightly exacerbate some of these threats, the absence of local records suggests that this would not significantly interfere with the recovery of this species.
Conclusion	**No significant impact**

Lophochroa leadbeateri – Major Mitchell's Cockatoo	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	This species is reliant on the presence of large tree hollows and a close proximity to water. They feed on the ground on a range of seeds from saltbush, wattles and cypress pines. Although Cypress Pine was present within the site, considering the absence of suitable breeding hollows, the subject site would represent only marginal foraging habitat. Considering the above, and the lack of records within 10 km it is unlikely that the proposal will lead to a long-term decrease in the size of any population.
Reduce the area of occupancy of the species	The potential occupancy of this species would be reduced by up to 9.71 ha. Considering the degraded nature of the site, and absence of breeding habitat, this reduction in available foraging habitat is unlikely to be significant.
Fragment an existing population into two or more populations	The surrounding area exhibits a large amount of fragmentation with the ongoing development of urban infrastructure, roads and power lines. This proposal occurs alongside an existing urban centre and will widen the fragmentation associated with that development. Mitigation measures will be implemented to reduce habitat fragmentation wherever possible (see **Section 7**).
Adversely affect habitat critical to the survival of a species	Given the lack of records within the search area and the lack of their preferred feeding trees it is unlikely for the subject site to be critical habitat for this species.
Disrupt the breeding cycle of a population	This species nests in large tree hollows in proximity to water and food, with the subject site lacking this, the proposal will not disrupt the breeding cycle of a population.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will not isolate any habitat. The modification, reduction, or removal of available habitat associated with this proposal is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Clearing of woodlands, heavy grazing of feeding areas, loss of existing and future hollow-bearing trees, illegal nest-robbing and trapping are the biggest threats this species faces. The proposal is unlikely to interfere with the recovery for this species.
Conclusion	**No significant impact**

Melanodryas cucullata cucullata – Hooded Robin (south-eastern form)	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	This proposal would remove 0.80 ha of potential habitat for this species. This impact is not within the priority management area on the southeast side of Forbes. Given the small amount of vegetation that will be impacted and the two records within the search area being from 1992, it is unlikely the proposal will lead to a long-term decrease in the size of any population.
Reduce the area of occupancy of the species	This proposal would remove 0.80 ha of potential habitat for this species. However, there are no records within the study area and there is preferred habitat close by. Given this it is unlikely that the proposal would reduce the area of occupancy for this species.
Fragment an existing population into two or more populations	The surrounding area exhibits a large amount of fragmentation with the ongoing development of urban infrastructure, roads and power lines. This proposal occurs alongside an existing urban centre and will widen the fragmentation associated with that development. Mitigation measures will be implemented to reduce habitat fragmentation wherever possible (see **Section 7**).
Adversely affect habitat critical to the survival of a species	Given the lack of records within the search area and that the necessary fallen logs and timber are absent making it unsuitable for foraging behaviour. It is unlikely for the subject site to be critical habitat for this species.
Disrupt the breeding cycle of a population	This species breeding on the hills, ridges, and foot slopes of the Great Dividing Range in mature trees. The subject site does not meet the requirements. Given this, it is unlikely that the proposal will disrupt the breeding cycle of any population.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will not isolate any habitat. The modification, reduction, or removal of available habitat associated with this proposal is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Clearing of woodlands, loss and fragmentation of habitat, modification/destruction of ground habitat from stock, removal of fallen timber, introduction of exotic pasture grasses and habitat loss and degradation are the main threats to the species. The proposal is unlikely to directly interfere with the recovery of the species within the region.
Conclusion	**No significant impact**

Rostratula australis – Australian Painted Snipe	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	This species favours swamps, dams and marshy areas. The nearest priority management area for this species is >180km to the southwest. Given this and the few records within the search area it is unlikely the proposal would lead to a long-term decrease in the size of any population.
Reduce the area of occupancy of the species	Considering the lack of water features within the site, the species is unlikely to occupy the subject site. It is therefore unlikely that the proposal would reduce the area of occupancy for the species.
Fragment an existing population into two or more populations	The surrounding area exhibits a large amount of fragmentation with the ongoing development of urban infrastructure, roads and power lines. This proposal occurs alongside an existing urban centre and will widen the fragmentation associated with that development. Mitigation measures will be implemented to reduce habitat fragmentation wherever possible (see **Section 7**).
Adversely affect habitat critical to the survival of a species	Given the lack of records within the search area and the lack of their preferred aquatic habitat it is unlikely for the subject site to be critical habitat for this species.
Disrupt the breeding cycle of a population	Given the distance to the priority management area and the missing preferred habitat within the subject site it is unlikely that the proposal will disrupt the breeding cycle of a population.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will not isolate any habitat. The modification, reduction, or removal of available habitat associated with this proposal is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Drainage of breeding sites at wetlands, reduced water quality, predation by foxes and feral cats, use of herbicides, exotic weeds and invasive native plants degrading wetland habitat and grazing/burning of wetlands are the biggest threats to this species. The proposal will not directly interfere with the recovery of the species.
Conclusion	**No significant impact**

Dasyurus maculatus – Spotted-tailed Quoll	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	With the single record within the search area being from 2004 and no associated vegetation within the subject site, and the small size of the subject site, relative to the home range size of this species, it is unlikely to support a population. Considering this, it is unlikely the proposal will lead to a long-term decrease in the size of any population.
Reduce the area of occupancy of the species	With no preferred habitat within the subject site and no records within the last 19 years it is unlikely that the proposal would reduce the area of occupancy for the species.
Fragment an existing population into two or more populations	The surrounding area exhibits a large amount of fragmentation with the ongoing development of urban infrastructure, roads and power lines. This proposal occurs alongside an existing urban centre and will widen the fragmentation associated with that development. Mitigation measures will be implemented to reduce habitat fragmentation wherever possible (see **section 7**).
Adversely affect habitat critical to the survival of a species	Given the scarcity of records within the search area, the absence of potential den sites, and the small size of the subject site, relative to the home range size of this species, it is unlikely the subject site is critical habitat for this species.
Disrupt the breeding cycle of a population	The species favours hollow-bearing trees, fallen logs, other animal burrows, small caves and rock outcrops as den sites. Given the lack of suitable den sites and the ongoing disturbance within the subject site, the proposal is unlikely to disrupt the breeding cycle of this species.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will not isolate any habitat. The modification, reduction, or removal of available habitat associated with this proposal is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Degradation, fragmentation and loss of habitat, competition with introduced predators, deliberate killing and roadkill are the main threats to this species. The proposal is unlikely to directly interfere with the recovery of the species within the region.
Conclusion	**No significant impact**

Phascolarctos cinereus - Koala	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	The proposal will remove up to 8.90 ha of potential habitat for the species. However, this habitat is not ideal for Koalas, considering that trees are relatively sparse and no primary feed tree species occur. No koala records occur within 10 km of the subject site. Considering the lack of records and the relatively small amount of vegetation impacted, with only one species of secondary feed tree (*Eucalyptus polyanthemos*) it is unlikely the proposal will lead to a long-term decrease in the size of any population
Reduce the area of occupancy of the species	The proposal will remove up to 8.90 ha of potential habitat for the species. However, there are no records within the search area and the habitat would represent only marginal foraging habitat for this species. Given this it is unlikely that the proposal would reduce the area of occupancy for this species.
Fragment an existing population into two or more populations	The surrounding area exhibits a large amount of fragmentation with the ongoing development of urban infrastructure, roads and power lines. This proposal occurs alongside an existing urban centre and will widen the fragmentation associated with that development. Mitigation measures will be implemented to reduce habitat fragmentation wherever possible (see **Section 7**).
Adversely affect habitat critical to the survival of a species	Given the lack of records within the search area and the lack of primary feed feeding trees, it is unlikely for the subject site to be critical habitat for this species.
Disrupt the breeding cycle of a population	Considering the lack of records and preferred feed tress it is unlikely the site is utilised for breeding.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will not isolate any habitat. The modification, reduction, or removal of available habitat associated with this proposal is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Loss, modification and fragmentation of habitat, vehicle strike, predation by dogs, intense wildfires and droughts are the key threats to this species. Although the proposal would exacerbate these threats, given the absence of nearby records, the proposal is unlikely to directly interfere with the recovery of this species.
Conclusion	**No significant impact**

***Austrostipa wakoolica* – A spear-grass**	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	This species is confined to the floodplains of the Murray River tributaries. Given the site is not on a floodplain and there are no records within 10 km of the subject site, it is unlikely that the proposal will lead to a long-term decrease in the size of any population.
Reduce the area of occupancy of the species	The proposal would remove 0.80 ha of associated PCT, however, given the lack of records and preferred microhabitat, it is unlikely that the proposal would reduce the area of occupancy for this species.
Fragment an existing population into two or more populations	The surrounding area exhibits a large amount of fragmentation with the ongoing development of urban infrastructure, roads and power lines. This proposal occurs alongside an existing urban centre and will widen the fragmentation associated with that development. Mitigation measures will be implemented to reduce habitat fragmentation wherever possible (see **Section 7**).
Adversely affect habitat critical to the survival of a species	Given the lack of records within the search area and the lack of preferred habitat, it is unlikely for the subject site to be critical habitat for this species.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will not isolate any habitat. The modification, reduction, or removal of available habitat associated with this proposal is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Habitat reduction, loss of connectivity, modification and clearing from pastoral development, irrigation, altered flooding regimes, grazing impacts and drought are the biggest threats for this species. The proposal is unlikely to directly interfere with the recovery of this species.
Conclusion	**No significant impact**

Lepidium monoplocoides – Winged Peppercress	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	Occurs on seasonally moist to waterlogged sites, on heavy fertile soils. With the only associated species being Buloke and no records within the search area it is unlikely that the subject site is hosting a viable local population of the species.
Reduce the area of occupancy of the species	Given the lack of records and preferred habitat it is unlikely for the proposal to reduce the area of occupancy for the species.
Fragment an existing population into two or more populations	The surrounding area exhibits a large amount of fragmentation with the ongoing development of urban infrastructure, roads and power lines. This proposal occurs alongside an existing urban centre and will widen the fragmentation associated with that development. Mitigation measures will be implemented to reduce habitat fragmentation wherever possible (see **Section 7**).
Adversely affect habitat critical to the survival of a species	Given the lack of records within the search area and the lack of habitat preferred it is unlikely for the subject site to be critical habitat for this species.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will not isolate any habitat. The modification, reduction, or removal of available habitat associated with this proposal is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Agricultural development, habitat removal, grazing, disturbance, pugging and trampling by stock, recreational 4WD vehicles within habitat, are the biggest threats for this species. It is unlikely the proposal will interfere with the recovery of the species.
Conclusion	**No significant impact**

EPBC Act-listed Vulnerable Species

Falco hypoleucos – Grey Falcon	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	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. All eight records within the search area are from 1994. This species nests in the abandoned stick nests of other birds – no such nests were observed within the subject site. The subject site is not within a priority management site or at the edge of the species range. Considering this and the lack of watercourses in proximity to the subject site it is unlikely there is an important population present.
Reduce the area of occupancy of an important population	See above: It is unlikely that an important population exists within the site.
Fragment an existing important population into two or more populations	See above: It is unlikely that an important population exists within the site.
Adversely affect habitat critical to the survival of a species	While the subject site contains habitat that is broadly aligned with the requirements of this species, the habitat within the subject site is unlikely to be critical habitat for the species as it consists chiefly of highly modified vegetation within an area with extensive prior disturbance.
Disrupt the breeding cycle of an important population	See above: It is unlikely that an important population exists within the site.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will not isolate any habitat. The modification, reduction, or removal of available habitat associated with this proposal is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline, or	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Grazing and clearing of arid and semi-arid zone rangelands, secondary poisoning through mouse and locust control programs, taking of eggs and young for falconry. These are the biggest threats for the species, it is unlikely the proposal will interfere with the recovery of the species in the region.
Conclusion	**No significant impact**

Grantiella picta – Painted Honeyeater	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	This species is nomadic with breeding occurring on the inland slopes of the Great Dividing Range. There are no records within a 10 km search area, the subject site is not within a priority management area for the species or at the edge of the species range. Given this, the small extent of the proposed impact, and the nomadic nature of the species, it is unlikely that this proposal would lead to a long-term decrease in the size of any population.
Reduce the area of occupancy of an important population	See above: It is unlikely that an important population exists within the site.
Fragment an existing important population into two or more populations	See above: It is unlikely that an important population exists within the site.
Adversely affect habitat critical to the survival of a species	While the subject site contains habitat that is broadly aligned with the requirements of this species, the habitat within the subject site is unlikely to be critical habitat for the species as it consists chiefly of highly modified vegetation within an area with extensive prior disturbance.
Disrupt the breeding cycle of an important population	See above: It is unlikely that an important population exists within the site.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will not isolate any habitat. The modification, reduction, or removal of available habitat associated with this proposal is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline, or	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Clearing of woodlands and open forests, removal of trees with mistletoe infestations, degradation of open forest and woodland remnants, weed infestation, increase of noisy minor populations and inappropriate fire regimes are the key threats to this species. It is unlikely the proposal will interfere with the recovery of the species in the region.
Conclusion	**No significant impact**

Hirundapus caudacutus – White-throated Needletail	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	This migratory species is seen along eastern Australia with them being more common in coastal areas and seen less often inland. This species is not associated with any vegetation within the subject site. Though there are no priority management areas for this species the subject site is not at the edge of the distribution range. There are two records within 10 km of the subject site from 1994. Considering the broad habitat tolerances of the species, its wide distribution, the scarcity of local records, and the absence of any known associated vegetation, it is highly unlikely that any important population is dependent on the subject site.
Reduce the area of occupancy of an important population	See above: It is unlikely that an important population exists within the site.
Fragment an existing important population into two or more populations	See above: It is unlikely that an important population exists within the site.
Adversely affect habitat critical to the survival of a species	This species is almost exclusively aerial and has few conventional habitat associations. Given this and the highly mobile nature of this species it is unlikely to be affected by the proposal.
Disrupt the breeding cycle of an important population	See above: It is unlikely that an important population exists within the site.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	With this species being almost exclusively aerial, it is unlikely that the proposal will modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent 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	The proposal will not isolate any habitat. The modification, reduction, or removal of available habitat associated with this proposal is unlikely to cause the species to decline at a regional scale.
Introduce disease that may cause the species to decline, or	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Aerial collision with wires, windows and lighthouses are the biggest threats for this species while it resides in Australia. Though the reduction in invertebrate prey due to the loss of woodland habitat is also a threat. It Is unlikely that the proposal will interfere with the recovery of this species.
Conclusion	**No significant impact**

***Polytelis swainsonii* – Superb Parrot**	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The proposal will remove up to 9.71 ha of potential habitat for this species. Inhabit Box-Gum, Box-Cypress-pine and Boree woodlands and River Red Gum Forest which are not present within the subject site. The subject site is in close proximity of a management area though it is not at the edge of the species range. Considering this and the lack of records within the study area, it is unlikely for the subject site to support an important population.
Reduce the area of occupancy of an important population	See above: It is unlikely that an important population exists within the site.
Fragment an existing important population into two or more populations	See above: It is unlikely that an important population exists within the site.
Adversely affect habitat critical to the survival of a species	While the subject site contains habitat that is broadly aligned with the requirements of this species, the habitat within the subject site is unlikely to be critical habitat for the species as it consists chiefly of highly modified vegetation within an area with extensive prior disturbance.
Disrupt the breeding cycle of an important population	See above: It is unlikely that an important population exists within the site.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will not isolate any habitat. The modification, reduction, or removal of available habitat associated with this proposal is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline, or	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Loss of hollow-bearing trees, loss of breeding and foraging habitat, poor regeneration of nesting trees and food resources, loss of habitat from private native forestry activities, feeding on grain spills and subsequently being struck by vehicles, and the loss of hollows to feral bees and native and exotic hollow-nesting birds are the key threats to this species. It is unlikely the proposal will interfere with the recovery of the species in the region.
Conclusion	**No significant impact**

Chalinolobus dwyeri – Large-eared Pied Bat	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	Roosts in caves (near their entrances), crevices in cliffs, old mine workings and in the disused, bottle-shaped mud nests of the Fairy Martin. They remain loyal to the same cave over many years. Found in well-timbered areas containing gullies. There are no priority management sites for this species though the subject site is not situated at the edge of the species range. Considering site fidelity, the lack of records within the search area and the missing characteristic features of habitat, it is unlikely the subject site supports an important population for this species.
Reduce the area of occupancy of an important population	See above: It is unlikely that an important population exists within the site.
Fragment an existing important population into two or more populations	See above: It is unlikely that an important population exists within the site.
Adversely affect habitat critical to the survival of a species	Given the preferences for caves and cliffs it is extremely unlikely that the subject site is critical habitat for the species.
Disrupt the breeding cycle of an important population	See above: It is unlikely that an important population exists within the site.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will not isolate any habitat. The modification, reduction, or removal of available habitat associated with this proposal is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline, or	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Clearing and isolation of forest and woodland habitat near cliffs, caves and old mine workings, loss of foraging habitat near cliffs, damage to roosting and maternity sites, use of pesticides and goat disturbance are the biggest threats to this species. It is unlikely the proposal will interfere with the recovery of the species in the region.
Conclusion	**No significant impact**

Nyctophilus corbeni – Corben's Long-eared Bat	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The proposal will remove up to 0.75 ha of habitat for this species. The subject site is not situated within a priority management area or at the edge of the species range. There have been no records of the species within 10 km of the subject site. As such, it would be unlikely that any population is dependent on the subject site. The proposal would be unlikely to lead to a long-term decrease in the size of an important population.
Reduce the area of occupancy of an important population	See above: It is unlikely that an important population exists within the site.
Fragment an existing important population into two or more populations	See above: It is unlikely that an important population exists within the site.
Adversely affect habitat critical to the survival of a species	Due to the lack of records within a 10 km radius it is unlikely that the subject site is critical habitat for this species.
Disrupt the breeding cycle of an important population	See above: It is unlikely that an important population exists within the site.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will not isolate any habitat. The modification, reduction, or removal of available habitat associated with this proposal is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline, or	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Loss of remnant semi-arid woodland and mallee habitat, loss of hollow bearing trees, application of pesticides, inappropriate fire regimes, disturbance of breeding sites and winter roosting and loss of habitat are the biggest threats to this species. It Is unlikely that the proposal will interfere with the recovery of this species.
Conclusion	**No significant impact**

Pteropus poliocephalus – Grey-headed Flying Fox	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The proposal will remove up to 0.75 ha of potential habitat for the species. The subject site is not situated within a priority management area or at the edge of the species range. There are no records of the species occurring within 10 km of the subject site. Given the lack of records and the lack of preferred habitat (subtropical and temperate rainforests, tall sclerophyll forests and woodlands), it is unlikely that any important population is present within the subject site.
Reduce the area of occupancy of an important population	See above: It is unlikely that an important population exists within the site.
Fragment an existing important population into two or more populations	See above: It is unlikely that an important population exists within the site.
Adversely affect habitat critical to the survival of a species	Due to the lack of records within a 10 km radius it is unlikely that the subject site is critical habitat for this species.
Disrupt the breeding cycle of an important population	See above: It is unlikely that an important population exists within the site.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will not isolate any habitat. The modification, reduction, or removal of available habitat associated with this proposal is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline, or	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Loss of roosts and foraging sites, electrocution on powerlines, illegal shooting, conflict with humans and heat stress are the key threats to this species. The proposal is unlikely to directly interfere with the recovery of the species within this region.
Conclusion	**No significant impact**

***Brachyscome muelleroides* – Claypan Daisy**	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	Grows in damp areas on the margins of claypans in moist grassland with *Pycnosorus globosus, Agrostis avenacea* and *Austrodanthonia duttoniana.* The subject site is not situated within a priority management area or at the edge of the species range. With the subject site lacking these species and no records within 10 km it is unlikely that any important population is present within the subject site.
Reduce the area of occupancy of an important population	See above: It is unlikely that an important population exists within the site.
Fragment an existing important population into two or more populations	See above: It is unlikely that an important population exists within the site.
Adversely affect habitat critical to the survival of a species	Due to the lack of records within a 10 km radius it is unlikely that the subject site is critical habitat for this species.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will not isolate any habitat. The modification, reduction, or removal of available habitat associated with this proposal is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline, or	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Changes in land use on agricultural land, drainage of swamps, clearing of roadside vegetation, regulation of flow in the Murray River, recreational vehicles and there being only one significant population are the key threats for this species. The proposal is unlikely to directly interfere with the recovery of the species within this region.
Conclusion	**No significant impact**

***Brachyscome papillosa* – Mossgiel Daisy**	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	Primarily found in clay soils on Bladder Saltbush (*Atriplex vesicaria*) and Leafless Bluebush (*Maireana aphylla*) plains, but also in grassland and in Inland Grey Box (*Eucalyptus microcarpa*) - Cypress Pine (*Callitris* spp.) woodland. The subject site is not situated within a priority management area or at the edge of the species range. With the subject site lacking these species and no records within 10 km it is unlikely that any important population is present within the subject site.
Reduce the area of occupancy of an important population	See above: It is unlikely that an important population exists within the site.
Fragment an existing important population into two or more populations	See above: It is unlikely that an important population exists within the site.
Adversely affect habitat critical to the survival of a species	Due to the lack of records within a 10 km radius it is unlikely that the subject site is critical habitat for this species.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will not isolate any habitat. The modification, reduction, or removal of available habitat associated with this proposal is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline, or	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Population size, habitat requirements and threats are poorly known. Changes in agricultural practices, grazing, possible habitat disturbance and insufficient knowledge of the species are the key threats to this species. The proposal is unlikely to directly interfere with the recovery of the species within this region.
Conclusion	**No significant impact**

Lepidium aschersonii – Spiny Peppercress	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	Occurs in periodically wet sites such as gilgai depressions and the margins of freshwater and saline marshes and shallow lakes, usually on heavy clay soil. Considering these features are missing from the subject site and the lack of records within 10km it is unlikely that any important population is present within the subject site. The subject site does not occur at the edge of the species range and there are no formalised priority management areas for this species. It is unlikely an important population exists within the site.
Reduce the area of occupancy of an important population	See above: It is unlikely that an important population exists within the site.
Fragment an existing important population into two or more populations	See above: It is unlikely that an important population exists within the site.
Adversely affect habitat critical to the survival of a species	Due to the lack of records within a 10 km radius it is unlikely that the subject site is critical habitat for this species.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will not isolate any habitat. The modification, reduction, or removal of available habitat associated with this proposal is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline, or	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Invasion and spread of exotic grasses, overgrazing from domestic livestock, inappropriate application of pesticides, altered hydrological regime and soil water levels, and shrub thickening are the key threats to this species. The proposal is unlikely to directly interfere with the recovery of the species within this region.
Conclusion	**No significant impact**

Swainsona murrayana – Slender Darling Pea	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The proposal will impact up to 8.96 ha of potential habitat for this species. The subject site is not within a priority management area for the species, nor is it at the edge of the species' distribution. There are no records within 10 km of the subject site. As such, the subject site is unlikely to contain an important population of this species.
Reduce the area of occupancy of an important population	See above: It is unlikely that an important population exists within the site.
Fragment an existing important population into two or more populations	See above: It is unlikely that an important population exists within the site.
Adversely affect habitat critical to the survival of a species	Due to the lack of records within a 10 km radius it is unlikely that the subject site is critical habitat for this species.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will not isolate any habitat. The modification, reduction, or removal of available habitat associated with this proposal is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline, or	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Grazing, habitat degradation and invasion of grassland by weeds are the main threats to this species. This proposal is unlikely to directly interfere with the recovery of the species within the region.
Conclusion	**No significant impact**

EPBC Act-listed migratory/marine species

Apus pacificus – Fork-tailed swift	
Significant Impact Guideline	**Assessment**
Substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species	Non-breeding visitor to Australia where it feeds on insects in flight often in low pressure areas. There have been three records within 10 km of the subject site. Given this species feeds aerially and considering the small impact of the proposal, it is unlikely to substantially modify, destroy or isolate any area of important habitat for this migratory species.
Result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species	While there is potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species, environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.	This species breeds solely in the northern hemisphere in sheltered locations including caves, crevices in vertical rock faces, or under the eaves of houses. Migrates to Australia, PNG and Indonesia over summer. Forages on insects in flight often in low pressure areas. Given this species feeds aerially and no records occur within 1.5 km of the subject site, it is unlikely this proposal will disrupt the lifecycle or that an ecologically significant proportion of the population occurs within or is dependent on the subject site.
Conclusion	**No significant impact**

***Bubulcus ibis* – Cattle Egret**	
Significant Impact Guideline	**Assessment**
Substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species	Widespread and common according to migration movements. In south-east Australia it is found from Bundaberg, inland to Roma, and down to Swan Hill and Cobar. It uses predominately shallow, open and fresh wetlands including meadows and swamps with low emergent vegetation and abundant aquatic flora. Commonly found in cattle fields and other farm areas that contain livestock. The Cattle Egret has also been observed foraging in rubbish tips. With the subject site lacking in water and livestock it is unlikely that it is important habitat for this species.
Result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species	While there is potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species, environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.	They breed in major inland wetlands in the north, using wooded swamps and mangrove forests to breed. Nest in trees or amongst ground vegetation near lakes and swamps. Given the reliance on watercourses and livestock for breeding, feeding and resting behaviour it is unlikely the proposal will disrupt the lifecycle of this species.
Conclusion	**No significant impact**

Calidris acuminata - Sharp-tailed Sandpiper	
Significant Impact Guideline	**Assessment**
Substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species	The Sharp-tailed Sandpiper is a common, widely distributed non-breeding visitor to Australia. Owing to its wide distribution and considering the small extent and depauperate condition of the subject site, it is highly unlikely that the subject site constitutes important habitat for the species.
Result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species	While there is potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species, environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.	This species breeds in Russia and winters to Australia. Given this and the preference for freshwater marshes and coastal mudflats, it is unlikely this proposal will disrupt the lifecycle or that an ecologically significant proportion of the population occurs within or is dependent on the subject site.
Conclusion	**No significant impact**

Hirundapus caudacutus – White-throated Needletail	
Significant Impact Guideline	**Assessment**
Substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species	This species is a non-breeding migrant to Australia with a strong preference for the coast. As the species is very widely distributed, and as the subject site contains only small areas of potential foraging habitat it is unlikely to constitute important habitat for this species.
Result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species	While there is potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species, environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.	This species breeds exclusively in the Northen hemisphere and shows a strong inclination towards the coast. Considering this it us highly unlikely that the proposal will disrupt the lifecycle of an ecologically significant proportion of the population.
Conclusion	**No significant impact**

Gallinago hardwickii – Latham's Snipe	
Significant Impact Guideline	**Assessment**
Substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species	In Australia, Latham's Snipe occurs in permanent and ephemeral wetlands up to 2000 m above sea-level. They usually inhabit open, freshwater wetlands with low, dense vegetation (e.g. swamps, flooded grasslands or heathlands, around bogs and other water bodies). However, they can also occur in habitats with saline or brackish water, in modified or artificial habitats, and in habitats located close to humans or human activity. As the species is very widely distributed, and as the subject site contains no preferred wetland habitat it is unlikely to constitute important habitat for this species
Result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species	While there is potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species, environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.	Latham's Snipe is a non-breeding visitor to south-eastern Australia and is a passage migrant through northern Australia (i.e. it travels through northern Australia to reach non-breeding areas located further south).
Conclusion	**No significant impact**

APPENDIX G – KEY THREATENING PROCESSES

Key Threatening Processes (KTP) predicted as acting on the study area that may be exacerbated by the proposal.

Name	NSW Status	Comm. Status	Likelihood of Occurrence	Exacerbated by Proposal
Aggressive exclusion of birds from woodland and forest habitat by abundant Noisy Miners, *Manorina melanocephala* (Latham, 1802)	KTP	KTP	**Likely**	**Yes** The modification of woodland structure, for example by edge effects, is known to encourage occupancy by Noisy Miners. This proposal would extend the existing edge effects further into the adjacent vegetation however limited woodland/forest habitat occurs nearby.
Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands	KTP		**Unlikely**	**No** No watercourses are mapped through the subject site and no impacts to watercourses are anticipated.
Anthropogenic Climate Change	KTP	KTP	**Likely**	**Yes** Some unavoidable emissions will occur from construction machinery and removal of native vegetation will diminish the carbon storage capacity of the subject site.
Bushrock removal	KTP		**Unikely**	**No** No suitable habitat bushrock occurs within the assessment area.
Clearing of native vegetation	KTP	KTP	**Very Likely**	**Yes** Up to 9.71 ha of native vegetation may be cleared by the current proposal.
Competition and grazing by the feral European Rabbit, *Oryctolagus cuniculus* (L.)	KTP	KTP	**Likely**	**Potentially** The spread of high-biomass grassy weeds that may result from these works could encourage rabbit activity.
Competition and habitat degradation by Feral Goats, *Capra hircus* Linnaeus 1758	KTP	KTP	**Unlikely**	**No**

				The proposal does not include any activities that would exacerbate this threat.
Competition from feral honey bees, *Apis mellifera* L.	KTP		**Unlikely**	**No** No hollow trees were recorded on site, if found the removal of these trees would exacerbate this threat.
Forest eucalypt dieback associated with over-abundant psyllids and Bell Miners	KTP		**Unlikely**	**No** The proposal does not include any activities that would exacerbate this threat.
Habitat degradation and loss by Feral Horses (brumbies, wild horses), *Equus caballus* Linnaeus 1758	KTP		**Unlikely**	**No** The proposal does not include any activities that would exacerbate this threat.
Herbivory and environmental degradation caused by feral deer	KTP		**Unlikely**	**No** Feral deer are likely to occur in the landscape surrounding the subject site. The proposed development will not increase occupancy by this species.
High frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition	KTP		**Unlikely**	**No** Fire frequency will not increase due to activities undertaken as part of the proposal. Implementation of the mitigation measures in **Section 7** should reduce this risk.
Importation of Red Imported Fire Ants *Solenopsis invicta* Buren 1972	KTP	KTP	**Unlikely**	**Potentially** Machinery used on site can potentially act as a transport for biosecurity risks. Implementation of the mitigation measures in **Section 7** should reduce this risk.
Infection by Psittacine Circoviral (beak and feather) Disease affecting endangered psittacine species and populations	KTP	KTP	**Unlikely**	**No**

				No hollow trees were recorded on site, if found the removal of these trees would exacerbate this threat.
Infection of frogs by amphibian chytrid causing the disease chytridiomycosis	KTP	KTP	**Unlikely**	**Potentially** Machinery used on site can potentially act as a transport for biosecurity risks. Implementation of the mitigation measures in **Section 7** should reduce this risk.
Infection of native plants by *Phytophthora cinnamomi*	KTP	KTP	**Likely**	**Potentially** Machinery used on site can potentially act as a transport for biosecurity risks. Implementation of the mitigation measures in **Section 7** should reduce this risk.
Introduction of the Large Earth Bumblebee *Bombus terrestris* (L.)	KTP		**Unlikely**	**No** This species only occurs in Tasmania and it is unlikely that the proposal would result in its importation.
Invasion and establishment of exotic vines and scramblers	KTP		**Unlikely**	**Potentially** Exotic vine species are likely to occur in the wider landscape and machinery used on site can potentially act as a transport for biosecurity risks. Implementation of the mitigation measures in **Section 7** should reduce this risk.
Invasion and establishment of Scotch Broom (Cytisus scoparius)	KTP		**Unlikely**	**Potentially** Machinery used on site can potentially act as a transport for biosecurity risks. Implementation of the mitigation measures in **Section 7** should reduce this risk.
Invasion and establishment of the Cane Toad (Bufo marinus)	KTP	KTP	**Unlikely**	**Potentially** This species is primarily confined to wetter subtropical and tropical sites, however, isolated populations can survive elsewhere. For example, the species has been recorded around Lake Macquarie

				recently. Machinery used on site can potentially act as a transport for biosecurity risks. Implementation of the mitigation measures in **Section 7** should reduce this risk.
Invasion of native plant communities by African Olive *Olea europaea* subsp. *cuspidata* (Wall. ex G. Don) Cif.	KTP		**Likely**	**Potentially** Machinery used on site can potentially act as a transport for biosecurity risks. Implementation of the mitigation measures in **Section 7** should reduce this risk.
Invasion of native plant communities by C*hrysanthemoides monilifera*	KTP		**Likely**	**Potentially** This species has been recorded in similar inland habitat and machinery used on site can potentially act as a transport for biosecurity risks. Implementation of the mitigation measures in **Section 7** should reduce this risk.
Invasion of native plant communities by exotic perennial grasses	KTP		**Likely**	**Yes** Exotic perennial grasses already occur at the subject site and will likely spread further. Machinery used on site can potentially act as a transport for biosecurity risks. Implementation of the mitigation measures in **Section 7** should reduce this risk.
Invasion of the Yellow Crazy Ant, *Anoplolepis gracilipes* (Fr. Smith) into NSW	KTP		**Unlikely**	**Potentially** This species is not known within the area, however machinery used on site can potentially act as a transport for biosecurity risks. Implementation of the mitigation measures in **Section 7** should reduce this risk.
Invasion, establishment and spread of Lantana (*Lantana camara* L. sens. Lat)	KTP		**Unlikely**	**Potentially** Machinery used on site can potentially act as a transport for biosecurity risks. Implementation of the mitigation measures in **Section 7** should reduce this risk.

Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants	KTP	KTP	**Likely**	**Potentially** Machinery used on site can potentially act as a transport for biosecurity risks. Implementation of the mitigation measures in **Section 7** should reduce this risk.
Loss of Hollow-bearing Trees	KTP		**Unlikely**	**No** No hollow-baring trees were seen to be present within the subject site.
Loss or degradation (or both) of sites used for hill-topping by butterflies	KTP		**Unlikely**	**No** No sites known or suspected to be present.
Predation and hybridisation by Feral Dogs, *Canis lupus familiaris*	KTP		**Unlikely**	**No** The proposed works will not increase the likelihood of this threat.
Predation by *Gambusia holbrooki* Girard, 1859 (Plague Minnow or Mosquito Fish)	KTP		**Unlikely**	**No** The proposed works will not increase the likelihood of this threat.
Predation by the European Red Fox *Vulpes Vulpes* (Linnaeus, 1758)	KTP	KTP	**Unlikely**	**No** Ease of access for feral foxes will not be increased by the proposal
Predation by the Feral Cat *Felis catus* (Linnaeus, 1758)	KTP	KTP	**Likely**	**Yes** New housing subdivisions inevitably bring more house cats into the landscape.
Predation, habitat degradation, competition and disease transmission by Feral Pigs, *Sus scrofa* Linnaeus 1758	KTP	KTP	**Unlikely**	**No** Ease of access for feral pigs will not be increased by the proposal
Removal of dead wood and dead trees	KTP		**Very Likely**	**Yes** Some dead wood is likely to be removed. It is recommended that dead wood be relocated to retained habitat, where possible.