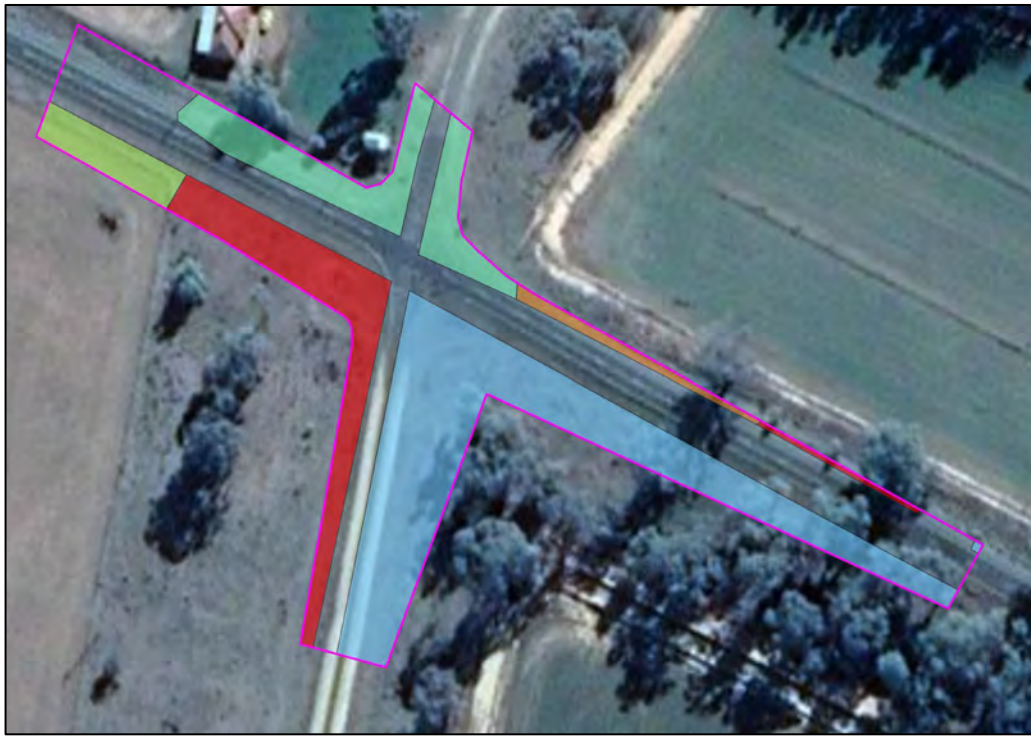
ACCENT ENVIRONMENTAL

Appendix G: Biodiversity Assessment of Intersection Upgrade



DESKTOP BIODIVERSITY ASSESSMENT REPORT

PENINSULA SOLAR FARM - INTERSECTION UPGRADE PAYTENS BRIDGE ROAD & LACHLAN VALLEY WAY

FORBES SHIRE COUNCIL LOCAL GOVERNMENT AREA

MAY 2022

Report prepared by

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DOCUMENT CONTROLS

Proponent	Edify Energy Pty Ltd		
Client	Accent Environmental		
Document description	Peninsula Solar Farm – Intersection upgrade Paytens Bridge Road & Lachlan Valley Way		
	Name	**Signed**	**Date**
Clients reviewing officer			

Clients representative managing this document	**OzArk representatives managing this document**		
	Sam Bulling (SB)		
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Acknowledgement

OzArk acknowledge Traditional Owners 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 Accent Environmental regarding proposed intersection upgrades between Paytens Bridge Road and the Lachlan Valley Way, to facilitate passage of heavy vehicles required for the construction of the proposed Peninsula Solar Farm on Paytens Bridge Road. The subject site is understood to represent the maximum potential area of disturbance associated with the intersection upgrades and the area may be reduced following further engineering assessment of upgrade requirements.

The proposed Peninsula Solar Farm development has been the subject of a separate Biodiversity Development Assessment Report (BDAR) prepared by OzArk. The current assessment has been prepared at a desktop level only and did not include a site visit. The proposal will be occurring in the Forbes Shire Council Local Government Area.

Through predictive modelling, a total of 7,161.63 m^2 of native vegetation is predicted to occur within the proposed development site. This vegetation was identified as belonging to five Plant Community Types (PCTs)

- PCT 45 – Plains Grass grassland on alluvial mainly clay soils in the Riverine Bioregion and NSW South Western Slopes Bioregion
- PCT 76 – Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions
- PCT 80 – Western Grey Box - White Cypress Pine tall woodland on loam soil on alluvial plains of NSW South Western Slopes Bioregion and Riverina Bioregion
- PCT 248 – Mixed box eucalypt woodland on low sandy-loam rises on alluvial plains in central western NSW
- PCT 251 – Mixed Eucalypt woodlands of floodplains in the southern-eastern Cobar Peneplain Bioregion

Fifty-nine species listed as threatened or migratory under the *Biodiversity Conservation Act 2016* and/or the *Environmental Protection and Biodiversity Conservation Act 1999* were assessed as having a moderate or greater likelihood of occurring at the subject site. Although predicated on predictive modelling, provided appropriate mitigation measures are implemented, no significant impacts to any threatened species are anticipated.

An *Environmental Protection and Biodiversity Conservation 1999* Protected Matters Search identified no World Heritage Properties, four Wetlands of International Importance, four Threatened Ecological Communities, 30 threatened and 10 migratory species that may be present within the subject site. However, no significant impact to any entity listed is expected, provided adequate mitigation measures are implemented, a fauna spotter-catcher is engaged during pre-clearance and clearance activities, and targeted surveys for threatened plants

(particularly *Austrostipa wakoolica*) are undertaken. The latter two activities may be undertaken during a single deployment.

The Lachlan River – a major, perennial watercourse – flows through the study area, approximately 260 m from the subject site. This watercourse is mapped as Key Fish Habitat, with the distributions of five threatened aquatic species associated with the Lachlan River falling within the search area. Mitigation measures intended to reduce any potential impacts are provided in **Section 7.**

This desktop assessment covers the current form of the proposal, with any changes potentially requiring reassessment and a field survey.

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ABBREVIATIONS AND GLOSSARY

Glossary

Term	Description
Areas of outstanding biodiversity value	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: o multiple species or at least one threatened species or ecological community o irreplaceable biological distinctiveness o ecological processes or ecological integrity o 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 population (in regard to a threatened species)	Comprises those individuals known or likely to occur in the study 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 (DECC 2007).
NSW (Mitchell) landscape	Landscapes with relatively homogeneous geomorphology, soils and broad vegetation types, mapped at a scale of 1:250,000 (OEH 2018).
Mitigation	Action to reduce the severity of an impact.
Mitigation measure	Any measure that prevents, reduce or controls adverse environmental effects of a project.
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).
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).
Search area	Is considered to 'include the lands that surround the subject site for a distance of 10 km' (DECC 2007). The study region has been used to search information sources to establish the landscape context of the subject 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 BRIEF DESCRIPTION OF THE PROPOSAL

OzArk Environment & Heritage (OzArk) has been engaged by Accent Environmental (the client), on behalf of Edify Energy (the proponent), regarding their proposed intersection upgrades at Paytens Bridge Road & the Lachlan Valley Way. The intention of this proposed upgrade will be to support the passage of heavy vehicles to Edify Energy's proposed development: Peninsula Solar Farm on Paytens Bridge Road. It must be noted that this assessment has been prepared at a desktop level only and did not include a site visit. The proposal will be occurring in the Forbes Shire Council Local Government Area (LGA). Regional Context for the proposal is given in **Table 1-1** and depicted in **Figure 1-1**.

Table 1-1: Regional context of the proposal.

Criteria	Value
Interim Biogeographic Regionalisation for Australia (IBRA Region)	NSW South Western Slopes
Interim Biogeographic Regionalisation for Australia Sub-region (IBRA Sub-Region)	Lower Slopes Inland Slopes
State	NSW
Local Government Area	Forbes Shire
Nearest town	Forbes
Nearest park, state forest or reserve	Nangar National Park
NSW (Mitchell) landscapes	Cowal Lakes, Swamps and Lunettes Eugowra Plains Lachlan – Bland Channels and Floodplains Warraderry Range
Nearest waterway (Name, Type)	Lachlan River; major, perennial
Surrounding land use	Cropping Grazing modified pasture Grazing native vegetation Irrigated cropping River
Surrounding land zone	RU1 SP2

1.2 STUDY AREA

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 maximum potential footprint of the proposal and the area potentially directly affected by the development activities.

1.3 REPORT PURPOSE

This desktop survey comprises the collection and interpretation of information collected from several online government resources to determine the likely ecological constraints of the proposed works as well as any likely significant impacts and any requirements pertaining to biodiversity that may need to be further addressed.

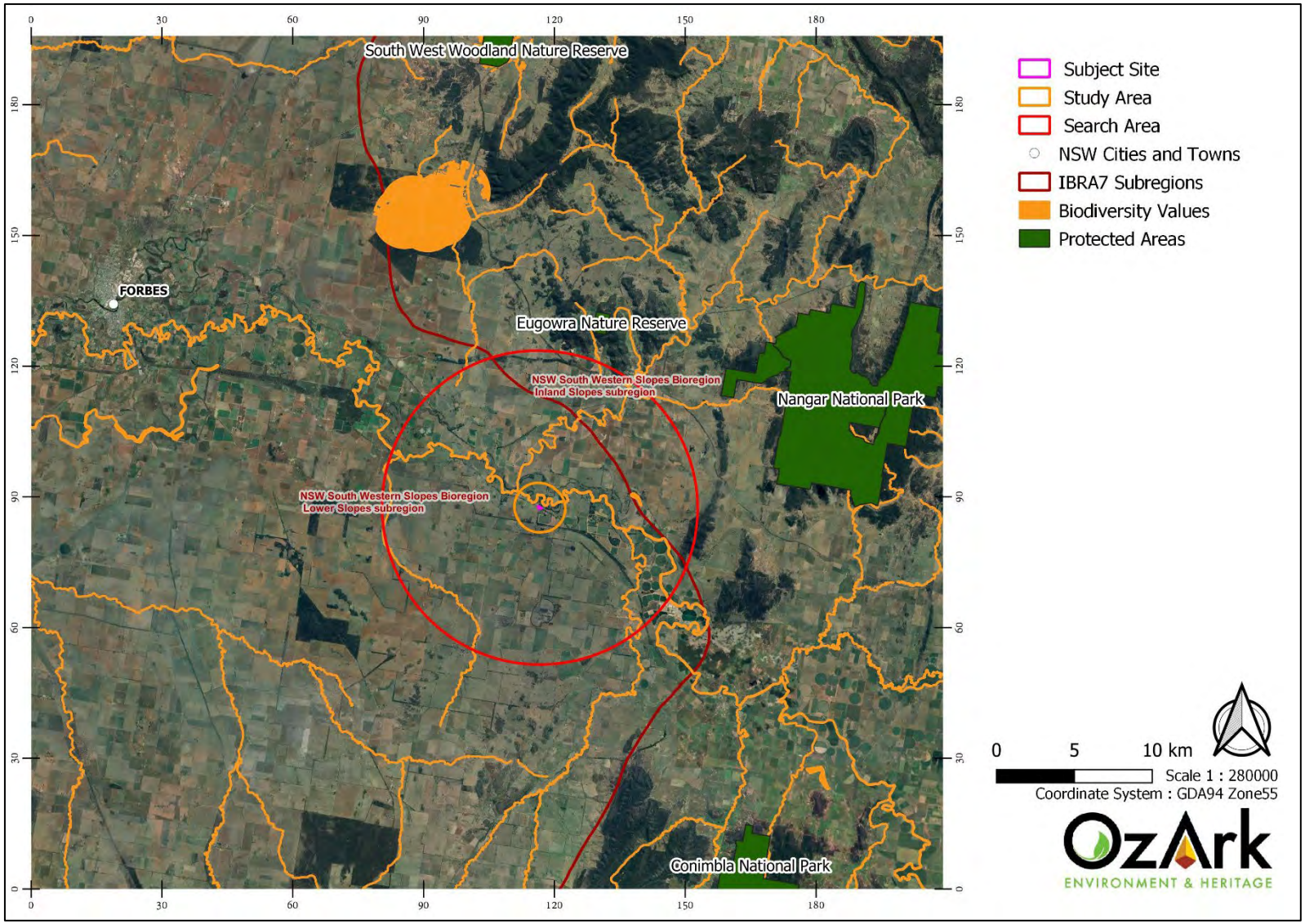

Figure 1-1: Regional context of the proposal.

2. STATUTORY AND PLANNING CONTEXT

2.1 COMMONWEALTH LEGISLATION

2.1.1 *ENVIRONMENT PROTECTION AND 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 D.**

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 by providing the framework for environmental planning and the assessment of proposals.

Part 5 of the 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, the proponent must either opt into the Biodiversity Offsets Scheme (BOS) and prepare a Biodiversity Development Assessment Report (BDAR) or prepare a Species Impact Statement (SIS) for each significantly impacted BC listed entity.

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

2.2.3 *NSW 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 subject site.

2.2.4 *LOCAL LAND SERVICES ACT 2013* (LLS ACT)

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 5.5 of the EP&A Act.

Section 201 of the FM Act states that a person other than a government authority must seek a permit from NSW Department of Primary Industries – Fisheries (DPI – Fisheries) for dredging or reclamation in a waterway. 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 4.3** for issues relating to watercourses and the FM Act.

2.2.6 *ROADS ACT 1993*

Section 88 of the Roads Act states that a roads authority may, despite any other Act or law to the contrary, remove or lop any tree or other vegetation that is on or overhanging a public road if, in its opinion, it is necessary to do so for the purposes of carrying out road work or removing a traffic hazard.

2.2.7 FORBES LEP (2013)

A Local Environmental Plan (LEP) is a legal document prepared by a Council and approved by the State Government for the regulation of 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 aims of the Forbes LEP (2013) are:

(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.

2.2.8 *STATE ENVIRONMENTAL PLANNING POLICY (BIODIVERSITY AND CONSERVATION) 2021*

The State Environmental Planning Policy (Biodiversity and Conservation) 2021 (Biodiversity and Conservation SEPP) consolidates, transfers and repeals provisions of 11 SEPPs, the following of which are relevant to the current assessment:

- SEPP (Koala Habitat Protection) 2020

- SEPP (Koala Habitat Protection) 2021

The *SEPP (Koala Habitat Protection)* aims 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'. *SEPP (Koala Habitat Protection) 2020* commenced on 30th November 2020 and *SEPP 2021* commenced on 22nd March 2021. Currently both *SEPP 2020* and *SEPP 202*1 apply within NSW, this is an interim measure until all codes are developed under *SEPP 2021*. The *SEPP 2020* applies to RU1, RU2 and RU3 zoned land, excluding 9 LGAs within the Sydney basin. The *SEPP 2021* applies to all other zoned land within the additional 74 LGAs. The Forbes Shire LGA is listed under Schedule 1 of *SEPP 2020* and therefore is an LGA to which the *SEPP* applies to the land zoned as RU1, *SEPP 2021* applies to land zones as SP2.

3. METHODOLOGY

3.1 PERSONNEL

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

Reporting components were completed by Ecologist Samuel Bulling, with quality control provided by 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	• 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
Sam Bulling	Ecologist	• Bachelor of Science (Wildlife Conservation Biology) – University of Adelaide • First Aid Training • WH&S Induction Training for Construction Work

3.2 ASSESSMENT APPROACH

This Desktop Biodiversity Assessment drew on local experience, previous reporting, and information available on appropriate governmental databases. Database search results were used to assist in identifying distributions, suitability of habitats, and known records of threatened species. Information sources reviewed included:

– NSW Government online aerial imagery (www.maps.six.nsw.gov.au).

– Critical habitat register, available on the DPE website: https://www.environment.nsw.gov.au/criticalhabitat/CriticalHabitatProtectionByDoctype.htm

– NSW Government Biodiversity Values Map which identifies land with high biodiversity value, as defined by the *Biodiversity Conservation Regulation 2022*: https://www.environment.nsw.gov.au/topics/animals-and-plants/biodiversity

– 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 Wildlife Atlas and Plant Community Type (VIS) databases: www.bionet.nsw.gov.au

– Flora of NSW (Harden 1991-2002) and Flora NSW Online: https://www.plantnet.rbgsyd.nsw.gov.au/
– Regional Scale State Vegetation Type Map: State Vegetation Type Map: Central West / Lachlan Region v1.4 VIS_ID 4468 (OEH, 2016)

Database searches were conducted to predict the occurrence of species in the Subject site. Database searches conducted are summarised below in **Table 3-2**. The results of the database searches are provided in **Appendix A**. A series of other background searches were performed to comply with legal standards (**Table 3-3**).

Table 3-2. Databases searched.

Database	Description	Date Searched
EPBC Protected Matters Report	Spatial report to determine whether matters of national environmental significance or other matters protected by the *Environment Protection and Biodiversity Conservation Act 1999* are likely to occur in the area of interest.	4/04/2022
BioNet species records	NSW BioNet is the repository for biodiversity data products managed by the Department of Planning and Environment.	4/04/2022
Ground water dependant ecosystems (GDE) registry	Defines extent of groundwater dependant ecosystems.	5/04/2022
Key fish habitat register	Defines extent of key fish habitat.	4/04/2022
CAPAD and State Forest registry	Defines extent of national parks and state forest within or adjacent to proposed site.	4/04/2022

Table 3-3: 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?	No
A World Heritage Area?	No
Environmental Protection Zones in environmental planning instruments?	No
Lands protected under SEPP (Koala Habitat Protection) 2020	No
Lands protected under SEPP (Koala Habitat Protection) 2021	Yes (**Consult Section 2.2.8**)
Lands protected under SEPP Sydney Drinking Water Catchment?	No
Land identified as wilderness under the *Wilderness Act 1987* or declared as wilderness 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?	Yes (**Figure 4-1)**
Mapped Key Fish Habitat?	Yes, study area only (**Figure 4-1**)

3.3 HABITAT ASSESSMENT

The results of the database investigation were collated and reviewed in the context of local ecological knowledge, Google Street view and aerial images of the subject site, to determine the likelihood of threatened species and ecological community occurrence, and potential impacts of the proposal (**Appendices B** and **C**). To demonstrate, a threatened species may be predicted to occur, but key habitat elements may be absent, in which case the species would be assessed as either not being impacted or not present.

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

– ‘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 B**), tests of significance were then completed for these species and ecological communities in accordance with the BC Act (**Appendix C**) and/or the assessment of significance under the EPBC Act (**Appendix D**), and the relevant guidelines for these assessments.

3.4 LIMITATIONS

The primary limitation associated with this desktop report, from which all others flow, is that a field survey was not conducted. The absence of which may have caused some, if not all, of the following:

- Potential errors regarding PCTs present, as the distribution and presence/absence of these PCTs could not be verified by field work.
- The presence/absence of species at the subject site.
- As the presence of feed tree species could not be ascertained, the Koala habitat assessment could not be completed.

To overcome these limitations, a ‘precautionary approach’ for species presence was adopted. If suitable habitat for a particular threatened species is known to occur in the study area, then the species is assumed to be present, and the impact assessment will be completed on that basis.

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

4 EXISTING ENVIRONMENTS

4.1 BIOREGION

As the search area falls across two Bioregions, there are two subregions of interest – the Bogan-Macquarie and the Lower Slopes – as per the Interim Biogeographic Regionalisation of Australia (IBRA) (Thackway & Cresswell, 1995). The Lower Slopes subregion is characterised by geology, landforms, soil types and vegetation, as described in **Table 4-1**. Note that no formal published description of the Inland Slopes subregion is available.

Table 4-1: Description of the Lower Slopes Subregion.

Bioregion	NSW South Western Slopes
Subregion	Lower Slopes
Geology	Complex series of north to north-westerly trending folded bodies of Cambrian to Early Carboniferous sedimentary and volcanic rocks. Granites are common.
Landforms	Foothills and ranges comprising the western fall of the Great Dividing Range.
Soils	Shallow, stony soils on ridges and hills. Downslope, subsoil derived from underlying weathered rock and topsoil a homogenised surface mantle of coarser material. Valley floor, drabber colours indicate poor drainage and may accumulate soluble salts.
Vegetation	In the east, woodlands of white box are dominant. In the west and north, grey box and white cypress pine. Other species include red stringybark, black cypress pine, red ironbark, white gum, yellow box and Blakely's red gum.

4.2 NSW LANDSCAPES

The landscapes of NSW (Mitchell) landscapes were mapped in 2002 to provide a framework for reporting and for determining over-cleared landscapes (Mitchell, 2002). These landscapes broadly describe areas of similar topography, geology, soils and vegetation. The subject site and study area are mapped to the Lachlan – Bland Channels and Floodplains (**Figure 4-1**).

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 (*E. microcarpa*), yellow box (*E. melliodora*) and white cypress pine (*Callitris glaucophylla*) with grasses. River red gum (*E. camaldulensis*) and river cooba (*Acacia stenohphylla*) along creeks, black box (*E. largiflorens*) lining back-plain swamp margins. Lignum (*Muehlenbeckia cunninghamii*), common reed (*Phragmites australis*) and cane grass (*Eragrostis australasica*) on lake floors and larger swamps. Bull oak (*Allocasuarina luehmannii*) and belah (*C. cristata*) on extensive gilgai.

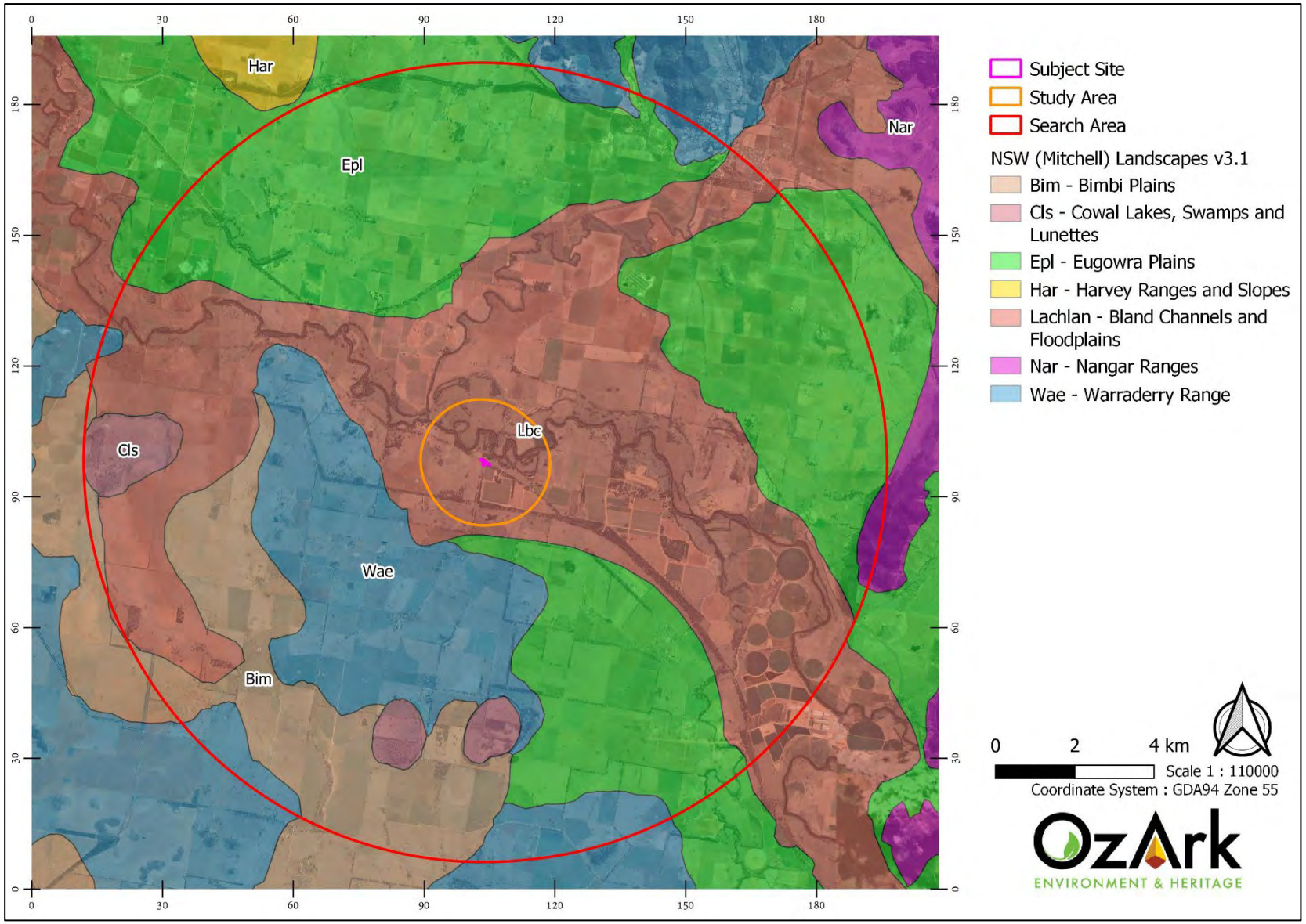

Figure 4-1. NSW (Mitchell) Landscapes within the 10 km search area.

4.3 NSW WATERCOURSES

No watercourse passes through the subject (**Figure 4-1**). The major, perennial Lachlan River is within the study area, approximately 260 m from the subject site. Key Fish Habitat, as recognised by the Department of Primary Industries – Fisheries, is present within the study area. Five threatened fish species have mapped distributed within the search area: the Eel Tailed Catfish (*Tandanus tandanus*), the Flathead Galaxias (*Galaxias rostratus*), the Olive Perchlet (*Ambassis agassizii*), the Purple Spotted Gudgeon (*Mogurnda adspersa*), and the Silver Perch (*Bidyanus bidyanus*). However, as the proposal will not interfere with any watercourse, no impacts are anticipated, provided efforts are made to minimise runoff (further to this, consult **Section 7**).

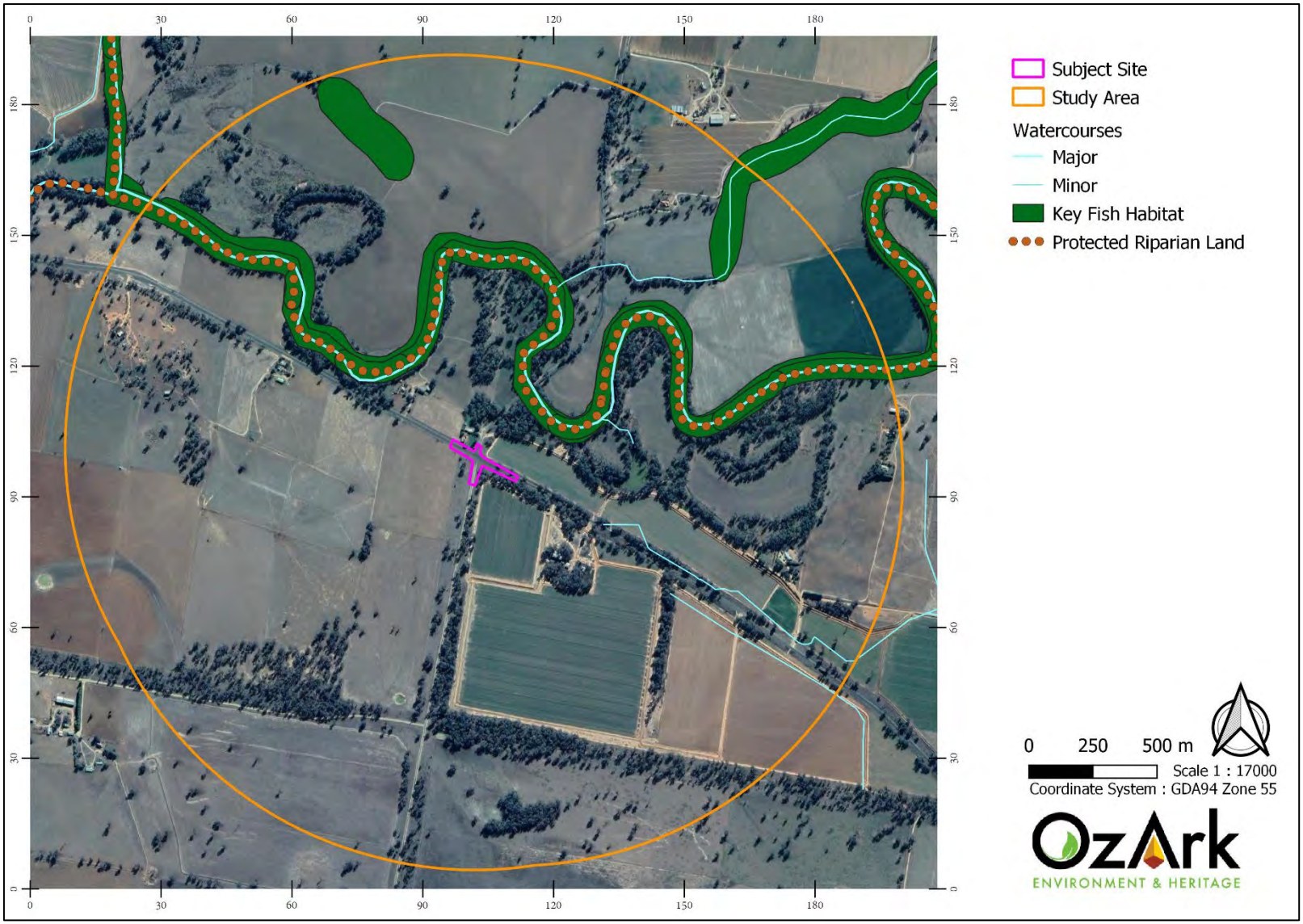

Figure 4-2: Key Fish Habitat, protected riparian land and watercourses that occur within the subject side and study area.

4.4 GROUNDWATER DEPENDENT ECOSYSTEMS

Groundwater plays an important ecological role in supporting terrestrial and aquatic ecosystems. Groundwater sustains terrestrial and aquatic ecosystems by supporting vegetation and providing discharge to channels and wetlands. Aquifer ecosystems are inherently groundwater dependent (QLD Department of Environment and Heritage Protection, 2022).

The degree of groundwater dependence of ecosystems can be categorised into three broad categories:

- Non-dependent ecosystems that occur mostly in recharge areas and have no connection with groundwater.
- Facultative Groundwater Dependant Ecosystems (GDEs) that require groundwater in some locations but not in others, particularly where an alternative source of water can be accessed to maintain ecological function. Minor changes to the groundwater regime in facultative GDEs with proportional or opportunistic groundwater dependence may not have any adverse impacts but these ecosystems can be damaged or destroyed if a lack of access to groundwater is prolonged.
- Obligate GDEs that are restricted to locations of groundwater discharge and ecosystems located within aquifers (e.g., subterranean cave and stygofauna communities (Kuginis et al. 2012). Aquifer ecosystems are inherently groundwater dependent (QLD Department of Environment and Heritage Protection, 2022).

Groundwater dependent ecosystems have been classified into seven types under two broad categories as follows (Kuginis et al. 2012):

- Subsurface ecosystems – Underground ecosystems
  - Karst systems and caves (limestone geology)
  - Subsurface aquifer (phreatic) ecosystems
  - Baseflow streams (hyporheic or subsurface component)
- Surface ecosystems – Above ground ecosystems
  - Groundwater dependent wetlands
  - Baseflow surface streams (surface/free-water component)
  - Estuarine and near shore marine ecosystems
  - Groundwater dependent terrestrial ecosystems; dependent on subsurface groundwater (phreatophytic).

The Bureau of Meteorology Atlas of Groundwater Dependent Ecosystems identified both aquatic and terrestrial GDEs within the study area (**Figure 4-2**). Specifically, aquatic GDEs with a low potential for interaction, and terrestrial GDEs with a high, moderate and low potential for interaction, were present (**Figure 4-2**). The south-western and north-eastern corners of the

subject site is mapped to a low-potential GDE. The remainder of the subject site, excluding the existing roads, is mapped to moderate-potential GDEs. Although the proposal will not involve extracting or interfering with groundwater, mitigation measures intended to reduce any potential impacts are provided in **Section 7.**

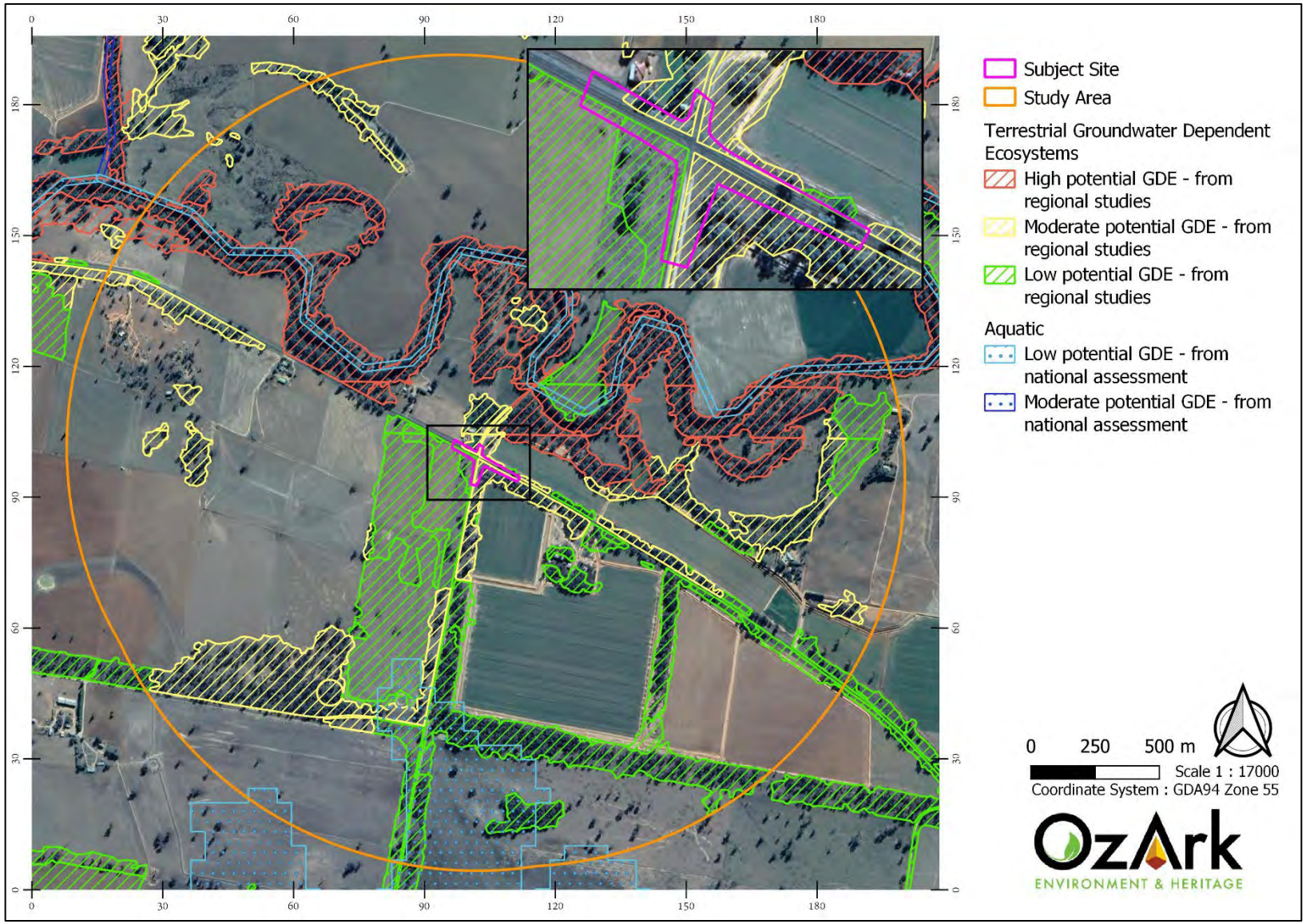

Figure 4-3: Groundwater Dependent Ecosystems (GDEs) within the study area.

4.5 CLIMATE

The nearest weather station is 31.8 km to the west of the subject site, at Forbes (station number: 065016).

The highest average maximum temperatures are in January (32.7°C), and the lowest average minimum temperatures are in July (2.7°C) (**Figure 4-3**).

The average annual rainfall at the station is 526.3 mm (1881-2022). A consistent, moderate amount of rain falls all year round; with January (49.9 mm), October (48.9 mm) and December (45.2 mm) recording the highest. The lowest monthly rainfall occurs in April and November (40.3 mm), followed by September (42.3 mm) (**Figure 4-3**).

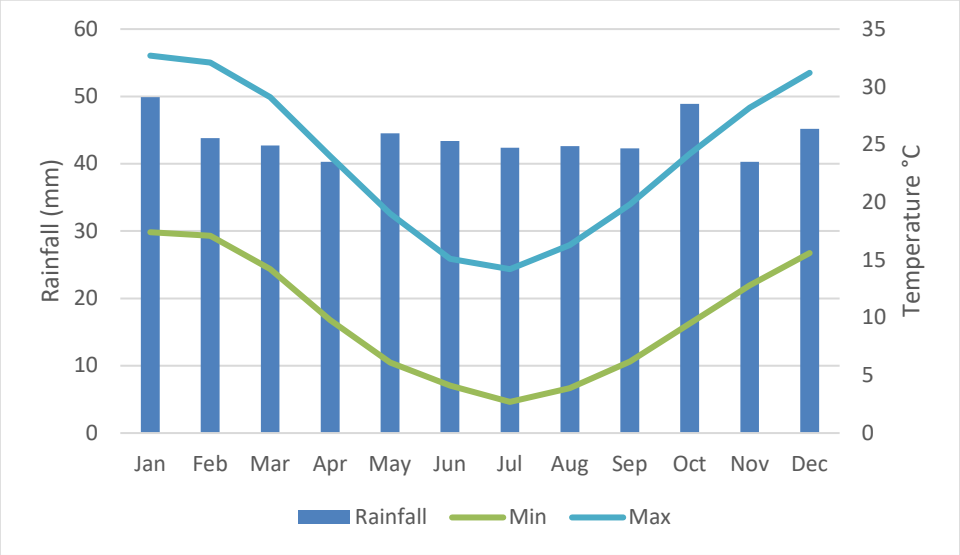

Figure 4-4: Climate Data for the Forbes weather station, showing mean monthly rainfall and minimum/maximum temperatures.

5 RESULTS

5.1 PLANT COMMUNITY TYPES (PCTS)

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 vegetation communities into vegetation Class and Formation/Sub-formation as per Keith (2004).

The Regional Scale State Vegetation Map: State Vegetation Type Map: Central West / Lachlan Region v1.4. VIS_ID 4468 (OEH, 2016) models five PCTs, as indicated in **Figure 5-1,** within the subject site:

- PCT 45 – Plains Grass grassland on alluvial mainly clay soils in the Riverine Bioregion and NSW South Western Slopes Bioregion
- PCT 76 – Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions
- PCT 80 – Western Grey Box - White Cypress Pine tall woodland on loam soil on alluvial plains of NSW South Western Slopes Bioregion and Riverina Bioregion
- PCT 248 – Mixed box eucalypt woodland on low sandy-loam rises on alluvial plains in central western NSW
- PCT 251 – Mixed Eucalypt woodlands of floodplains in the southern-eastern Cobar Peneplain Bioregion

The extent of each community is provided in **Table 5-1.** This mapping is indicative only. It is not necessarily accurate at a fine scale for the purposes of the current study. A list of threatened flora species known, or predicted to occur, within the search area has been provided in **Appendix A.**

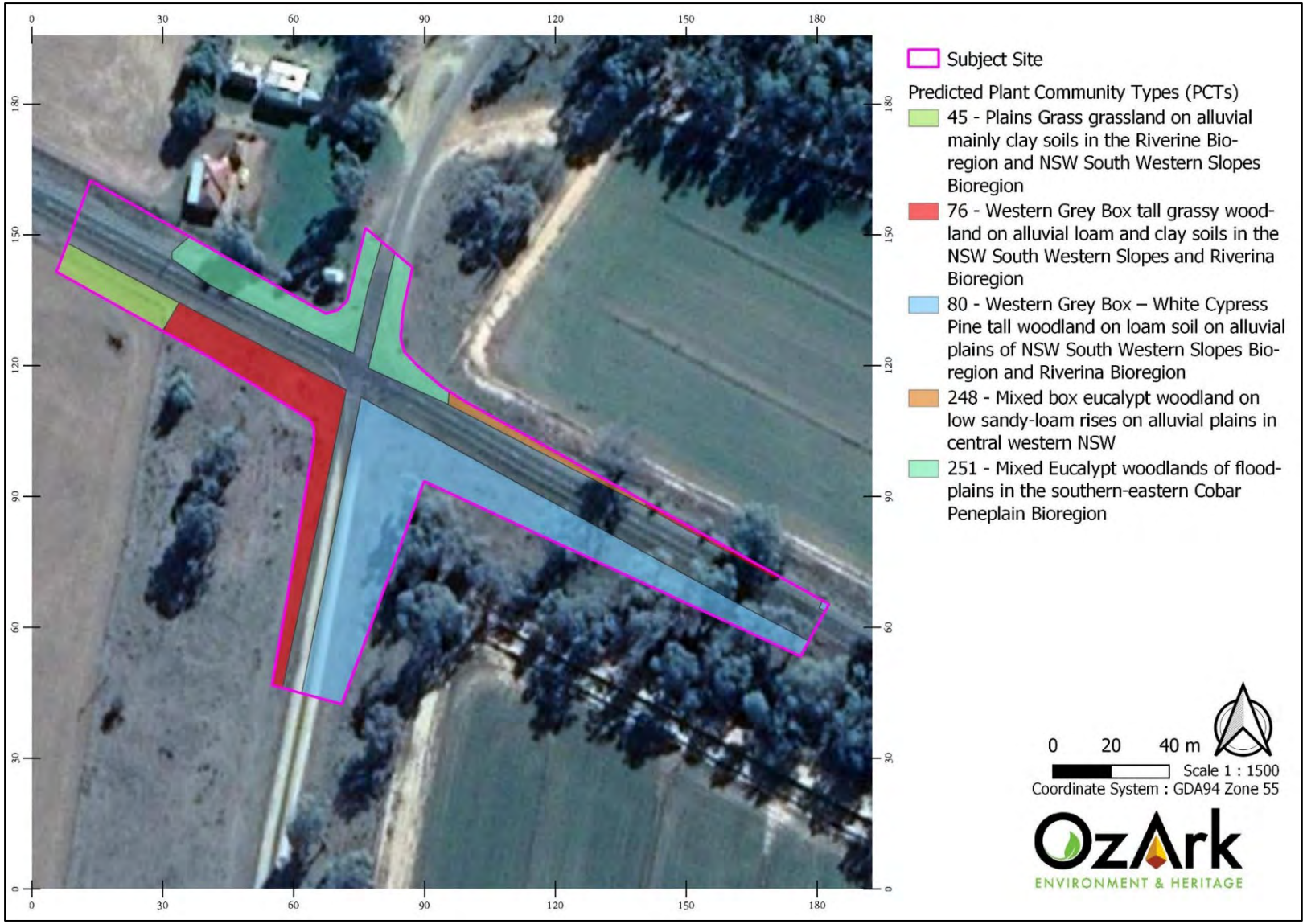

Figure 5-1. Plant Community Types (PCTs) predicted to occur within the subject site.

Table 5-1: Plant Community Types recorded within the subject site.

Plant Community Type (PCT)	Area in subject site (m^2)
PCT 45 – Plains Grass grassland on alluvial mainly clay soils in the Riverine Bioregion and NSW South Western Slopes Bioregion	464.05
PCT 76 – Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregion	1453.90
PCT 80 – Western Grey Box – White Cypress Pine tall woodland on loam soil on alluvial plains of NSW South Western Slopes Bioregion and Riverina Bioregion	3695.98
PCT 248 – Mixed box eucalypt woodland on low sandy-loam rises on alluvial plains in central western NSW	201.36
PCT 251 – Mixed Eucalypt woodlands of floodplains in the southern-eastern Cobar Peneplain Bioregion	1346.34
Total	**7161.63**

5.2 THREATENED ECOLOGICAL COMMUNITIES (TECS)

Three of the five PCTs predicted to occur within the subject site are associated with BC Act- and/or EPBC Act-listed TECs.

PCTs 76, 80 and 248 are associated with the BC Act-listed EEC *Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions.* These PCTs are also associated with the equivalent EPBC Act-listed EEC *Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia.*

PCT 80 is also associated with the BC Act-listed CEEC *Mallee and Mallee-Broombush dominated woodland and shrubland, lacking Triodia, in the NSW South Western Slopes Bioregion.* The occurrence of this community within the subject site is unlikely, as PCT 80 corresponds only poorly with the TEC description and the distribution of the TEC is considered to be bounded by Lake Cowal, c. 77 km from the subject site.

PCT 248 is also associated with the BC Act-listed CEEC *Artesian Springs Ecological Community in the Great Artesian Basin*; however, as the subject site falls outside the Great Artesian Basin, this CEEC can be assumed not to occur within the impact area.

It must be noted that a determination regarding the status of TEC presence could not be made as no field work was conducted. This report can only state their potential to occur, and not whether they satisfied requirements for listing or whether they were present or absent. Up to 5,351.24 m^2 of the BC Act- and EPBC Act-listed *Grey Box* EEC may occur within the subject site, along with up to 3695.98 m^2 of the BC Act-listed *Mallee and Mallee-Broombush* EEC.

PCTs 45 and 251 are not associated with any TEC.

5.3 THREATENED SPECIES AND POPULATIONS

A review of the Threatened Species Profiles database found 129 threatened or migratory flora and fauna species or populations that are known to, or are predicted to, occur within the Inland Slopes and Lower Slopes subregions of the NSW South Western Slopes Bioregion (**Appendices A** and **C**). Based on the proximity of past records and habitat requirements, 59 species demonstrated a moderate-high likelihood of occurrence (**Appendix B**), the relatively high number of species is a reflection of the numerous PCTs mapped as overlapping the small subject site; these species are listed in **Table 5-2**.

Table 5-2: BC and/or EPBC Act-listed threatened or migratory species with a moderate-high potential to occupy the subject site.

Scientific Name	Common Name	*NSW Status	+Comm. Status	Likelihood of Occurrence
Crinia sloanei	Sloane's Froglet	V,P	E	Moderate
Anseranas semipalmata	Magpie Goose	V,P		Moderate
Apus pacificus	Fork-tailed Swift	P	C,J,K	Moderate
Hydroprogne caspia	Caspian Tern	P	J	Moderate
Hirundapus caudacutus	White-throated Needletail	P	V,C,J,K	Moderate
Circus assimilis	Spotted Harrier	V,P		Moderate
Haliaeetus leucogaster	White-bellied Sea-Eagle	V,P		Moderate
Hieraaetus morphnoides	Little Eagle	V,P		Moderate
^^*Lophoictinia isura*	Square-tailed Kite	V,P,3		Moderate
^*Falco hypoleucos*	Grey Falcon	E1,P,2		Moderate
Falco subniger	Black Falcon	V,P		Moderate
Grus rubicunda	Brolga	V,P		Moderate
Burhinus grallarius	Bush Stone-curlew	E1,P		Moderate
^*Calyptorhynchus lathami*	Glossy Black-Cockatoo	V,P,2		Moderate
^*Lophochroa leadbeateri*	Major Mitchell's Cockatoo	V,P,2		Moderate
^^*Lathamus discolor*	Swift Parrot	E1,P,3	CE	Moderate
^^*Neophema pulchella*	Turquoise Parrot	V,P,3		High
^^*Polytelis swainsonii*	Superb Parrot	V,P,3	V	High
^^*Ninox connivens*	Barking Owl	V,P,3		Moderate
^^*Tyto novaehollandiae*	Masked Owl	V,P,3		Moderate
Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	V,P		Moderate
Chthonicola sagittata	Speckled Warbler	V,P		Moderate
Epthianura albifrons	White-fronted Chat	V,P		Moderate
Certhionyx variegatus	Pied Honeyeater	V,P		Moderate
Grantiella picta	Painted Honeyeater	V,P	V	Moderate
Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)	V,P		Moderate
Pomatostomus temporalis temporalis	Grey-crowned Babbler (eastern subspecies)	V,P		High
Daphoenositta chrysoptera	Varied Sittella	V,P		Moderate
Pachycephala inornata	Gilbert's Whistler	V,P		Moderate
Artamus cyanopterus cyanopterus	Dusky Woodswallow	V,P		Moderate
Melanodryas cucullata cucullata	Hooded Robin (south-eastern form)	V,P		Moderate
Petroica boodang	Scarlet Robin	V,P		Moderate
Petroica phoenicea	Flame Robin	V,P		Moderate
Stagonopleura guttata	Diamond Firetail	V,P		Moderate
Phascogale tapoatafa	Brush-tailed Phascogale	V,P		Moderate
Sminthopsis macroura	Stripe-faced Dunnart	V,P		Moderate

Scientific Name	Common Name	*NSW Status	+Comm. Status	Likelihood of Occurrence
Phascolarctos cinereus	Koala	V,P	E	Moderate
Cercartetus nanus	Eastern Pygmy-possum	V,P		Moderate
Petaurus norfolcensis	Squirrel Glider	V,P		Moderate
Pteropus poliocephalus	Grey-headed Flying-fox	V,P	V	Moderate
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	V,P		Moderate
Chalinolobus picatus	Little Pied Bat	V,P		Moderate
Nyctophilus corbeni	Corben's Long-eared Bat	V,P	V	Moderate
Brachyscome muelleroides	Claypan Daisy	V	V	Moderate
Brachyscome papillosa	Mossgiel Daisy	V	V	Moderate
Leptorhynchos orientalis	Lanky Buttons	E1		Moderate
Indigofera efoliata	Leafless Indigo	E1		Moderate
Lepidium monoplocoides	Winged Peppercress	E1	E	Moderate
Eleocharis obicis	Spike-Rush	V	V	Moderate
Swainsona murrayana	Slender Darling Pea	V	V	Moderate
Swainsona recta	Small Purple-pea	E1	E	Moderate
Swainsona sericea	Silky Swainson-pea	V		Moderate
^^*Pilularia novae-hollandiae*	Austral Pillwort	E1,3		Moderate
^*Caladenia arenaria*	Sand-hill Spider Orchid	E1,P	E	Moderate
Diuris sp. (Oaklands, D.L. Jones 5380)	Oaklands Diuris	E1,P,2		Moderate
^*Diuris tricolor*	Pine Donkey Orchid	V,P,2		Moderate
Austrostipa metatoris	A spear-grass	V	V	Moderate
Austrostipa wakoolica	A spear-grass	E1	E	High
Dichanthium setosum	Bluegrass	V	V	Moderate

***NSW Status:** ^^=Category 2 sensitive species, 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

5.4 WILDLIFE CONNECTIVITY CORRIDORS

The subject site offers poor connectivity to other areas of significant vegetation in the landscape. Although directly north of the subject site is significant remnant riparian vegetation along the Lachlan River, none exists to the south. Although the clearance of remnant vegetation will further erode habitat in the area, it will not significantly exacerbate fragmentation in the area.

5.5 HABITAT FEATURES

As no field survey was conducted, it is unknown what habitat features may be present at the site. Although it can be assumed that hollow-bearing trees, dead wood, and surface rock is present, it is unknown what their position is, or their abundance. From aerial imagery, few trees fall within the subject site, as such, few hollow bearing trees would be impacted.

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 Department of Agriculture, Water and the Environment (DAWE).

The EPBC Act protected matters search identified no World Heritage Properties, four Wetlands of International Importance, four Threatened Ecological Communities, 30 threatened species, and 10 migratory species, that could occur within the Subject site (**Appendices A** and **D**). No entities listed under the EPBC Act will be significantly impacted by the proposal (**Table 5-3, Appendix D**).

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

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

6 IMPACT ASSESSMENTS

6.1 CONSTRUCTION IMPACTS

It is understood that the subject site represents the maximum potential footprint of the proposal based on a preliminary assessment of potential intersection upgrade requirements by the project's traffic consultants (Impact Traffic Engineering Pty Ltd). This biodiversity assessment conservatively assumes that the subject site in full will be directly affected by the development activities. However, it is noted that the subsequent confirmation of intersection upgrade requirements and the detailed design of works may reduce the area of direct impact.

6.1.1 REMOVAL OF NATIVE VEGETATION

The subject site may contain up to 7161.63 m^2 (0.72 ha) of native vegetation belonging to five Plant Community Types: PCT 45 (464.05 m^2); PCT 76 (1453.90 m^2); PCT 80 (3695.98 m^2); PCT 248 (201.36 m^2); and PCT 251 (1346.34 m^2). Therefore, up to 7161.63 m^2 of native vegetation may be removed or disturbed by this proposal.

Two BC Act-listed TECs: *Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions* and *Mallee and Mallee-Broombush dominated woodland and shrubland, lacking Triodia, in the NSW South Western Slopes Bioregion* – and one EPBC Act-listed TEC - *Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia* – may potentially occur within the development footprint. Up to 5,351.24 m^2 of the BC Act- and EPBC Act-listed *Grey Box* EEC may occur within the subject site, along with up to 3695.98 m^2 of the BC Act-listed *Mallee and Mallee-Broombush* EEC.

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

6.1.2 IMPACTS ON THREATENED FLORA

Although 16 threatened plant species were assessed as having a moderate or greater potential of occurring at the subject site, their presence could not be verified as a field survey was not conducted. It should, however, be recognised that only one record of a threatened plant species – a spear-grass (*Austrostipa wakoolica*) – exists within the search area. Assessments of significance were carried out for all BC Act- and EPBC Act-listed threatened or migratory (**Appendices C** and **D**). These assessments determined that no significant impacts to any listed entity are likely to result from this proposal.

Nonetheless mitigation measures, as outlined in **Section 7,** should be adhered to. If followed, then it is not expected that the proposal will result in any significant impacts to any threatened flora species.

6.1.3 IMPACTS ON THREATENED FAUNA

Although 41 threatened fauna species were assessed as having a moderate or greater potential of occurring within the subject site. Their presence could not be verified as a field survey was not conducted. The high number of threatened fauna species assessed as potentially using the subject site, relative to the likely degraded condition of the site, would relate to its proximity to the Lachlan River. It is unknown what habitat features occur at the subject site.

The 5-part test of significance and EPBC test of significance (if applicable) was applied to each species (**Appendices C** and **D**). The results concluded that the proposal would not constitute a significant impact on these species or their habitats.

6.1.4 FAUNA INJURY AND MORTALITY

During the construction phase of the proposal the removal of vegetation is likely to disturb or injure fauna. Further, fauna may also become trapped by, or choose to shelter within, machinery stored at the site overnight. These animals are likely to suffer injury or mortality once the machinery is in use. Mitigation measures designed to reduce such outcomes are provided in **Section 7.**

6.2 INDIRECT/OPERATIONAL IMPACTS

6.2.1 WILDLIFE CONNECTIVITY AND HABITAT FRAGMENTATION

The subject site offers poor connectivity to other areas of significant vegetation in the landscape. Although directly north of the subject site is significant remnant riparian vegetation along the Lachlan River, none exists to the south. Although the clearance of remnant vegetation will further erode habitat in the area, it will not significantly exacerbate fragmentation in the area. 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 likely experiencing a significant level of edge effects from the roadside corridor and adjacent residential properties. The clearance of any vegetation by this development will exacerbate the impacts of this pre-existing edge effect.

6.2.3 INVASION AND SPREAD OF PESTS

The study area is likely already inhabited by a range of pest species, including: the red fox (*Vulpes vulpes*), the European rabbit (*Oryctolagus cuniculus*), the European starling (*Sturnus vulgaris*), the feral cat (*Felis catus)*, and the wild dog (*Canis lupus*). Methods designed to mitigate the impacts and spread of these pest species are provided in **Section 7.**

6.2.4 INVASION AND SPREAD OF PATHOGENS AND DISEASE

Several pathogens known from NSW have the potential to impact biodiversity as a result of their transportation during the construction phase of this proposal. Of these, three are listed as KTPs under either the EPBC Act and/or BC Act including:

– Dieback caused by *Phytophthora* (Root Rot; EPBC Act and BC Act)

– Infection of frogs by amphibian chytrid fungus causing the disease chytridiomycosis (EPBC Act and BC Act)

– Infection by Psittacine Circoviral (beak and feather) Disease (EPBC Act and BC Act)

The most likely causes of pathogen dispersal and importation include earthworks, movement of soil, and attachment of plant matter to vehicles and machinery during establishment of the clear zone. Mitigation measures designed to limit the invasion and spread of pathogens and disease are provided in **Section 7**.

6.2.5 NOISE AND VIBRATION

Some noise and vibration impacts are expected during the construction and operational phase of this proposal. Given that the proposal will be occurring within the existing road corridor, these additional sources of noise and vibration construction should not impact biodiversity. Mitigation measures designed to limit the impact of noise and vibration are provided in **Section 7** to minimise their impacts to biodiversity.

6.3 CUMULATIVE IMPACTS

The potential impacts of this proposal must be considered as part of the wider loss of biodiversity in NSW. Rather than acting in isolation, this proposal will be an additive part contributing to biodiversity loss. The incremental effects of multiple impacts – past, present, and future – are referred to as cumulative impacts. Thus, this report provides an opportunity to consider the proposal within a greater strategic context.

The landscape surrounding the subject site is highly modified, with native vegetation now persisting only in roadside and riparian corridors, on a small number of ridgetops, and as isolated paddock trees. The extensive historical clearing of the landscape – primarily for agriculture and associated infrastructure – has had profound implications for biodiversity, with many formerly

common ecological communities, such as the Grey Box woodlands, now facing functional extinction in the short or long term. Ongoing disturbance associated with new or upgraded infrastructure, which includes the present proposal, represents an ongoing cause of adverse impacts to these threatened entities. Despite this, this proposal will not, in isolation, significantly reduce biodiversity values in the region.

6.4 IMPACT SUMMARY

Based on the assessment above, the proposal is unlikely to have a significant impact on biodiversity, including on threatened species. Separate assessments of significance were undertaken under the differing impact significance criteria of the NSW BC Act and the Commonwealth EPBC Act (**Appendices C** and **D**), concluding that the proposal would not have a significant impact on threatened species. However, opportunities to avoid and minimise impacts should be considered in finalising the proposal design.

It is further noted that the subject site represents the maximum potential footprint of the proposal based on a preliminary assessment of potential intersection upgrade requirements by the project's traffic consultants and the actual area of direct impact may be less than assumed in this report.

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

The following minimization measures are proposed:

- To avoid impacts associated with weed introduction and spread, inspect all machinery before entering and exiting the subject site. Machinery must be cleaned 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. Use of previously cleared areas is recommended.
- 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.

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 recommended for implementation.

Impact	Environmental safeguards	Responsibility	Timing
General	• Any change in design outside the assessed impact footprint within the subject site will require further ecological survey and/or assessment.	Proponent	Pre-construction, construction, operation
Accidental death of fauna	• If any habitat trees (nest-bearing or hollow-bearing) are to be removed, a fauna spotter catcher should be present to ensure no animals are injured. • Where fauna is encountered, a suitably qualified fauna handler/ecologist/veterinarian will be engaged to remove the animal(s).	Contractor	During construction
Clearing and prevention of over-clearing	• Before any works take place, targeted surveys should be conducted by a qualified botanist to ensure threatened plant species are not present on the subject site. • 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 an 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 species listed in **Table 5-2.** If any threatened species are encountered, an ecologist should be consulted before proceeding with works. • Where possible, hollow-bearing trees should be avoided. If any hollow-bearing trees need to be removed a fauna spotter catcher should be present to ensure that no animals are injured. • Any hollows that are removed to be removed may be offset with the installation of an equivalent number of nest boxes in remnant trees. • 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.	Proponent / Contractor	Pre-construction, during construction

Impact	Environmental safeguards	Responsibility	Timing
	• Vegetation would be removed in such a way as to avoid damage to surrounding vegetation. • Groundcover disturbance would be kept to a minimum. • Where possible, vegetation to be removed would be mulched on-site and re-used to stabilise disturbed areas.		
Damage to native vegetation outside of impact zone	• 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 • Any stockpile and compound sites should be located using the following criteria: o At least 40 m away from the nearest waterway o In areas of low ecological conservation significance (i.e. previously disturbed land) o On relatively level ground o 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.	Contractor	Pre-construction, during construction
Soil Management	• Erosion and sediment controls are required. An Erosion and Sediment Control Plan (ESCP) shall be prepared for the work and would be in line with Landcom's Managing Urban Stormwater, Soils & Construction Guidelines (The Blue Book. Landcom 2004). • Stockpile topsoil in suitable areas for later use during rehabilitation.	Contractor	Pre-construction, during construction

Impact	Environmental safeguards	Responsibility	Timing
Introduction and spread of noxious weeds and pathogens	• Any declared noxious weeds identified during construction would be managed according to the requirements of the *Biosecurity Act 2015*. • Construction machinery (bulldozers, excavators, trucks, loaders, and graders) would be cleaned using a high-pressure washer (or other suitable device) before entering and exiting work sites. • Weed-free fill would be used for on-site earthwork. • All pesticides would be used in accordance with the requirements on the label. Any person carrying out pesticide (including herbicide) application would 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, operation
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* 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
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
Attracting fauna to the study area	• 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

8 CONCLUSION

The following summary of findings is provided to aid in ongoing planning activities.

OzArk Environment & Heritage (OzArk) has been engaged by Accent Environmental regarding proposed intersection upgrades between Paytens Bridge Road and the Lachlan Valley Way, to facilitate passage of heavy vehicles required for the construction of the proposed Peninsula Solar Farm on Paytens Bridge Road. The subject site is understood to represent the maximum potential area of disturbance associated with the intersection upgrades and the area may be reduced following further engineering assessment of upgrade requirements. The proposed Peninsula Solar Farm development has been the subject of a separate Biodiversity Development Assessment Report (BDAR) prepared by OzArk. The current assessment has been prepared at a desktop level only and did not include a site visit. The proposal will be occurring in the Forbes Shire Council Local Government Area.

Through predictive modelling, a total of 7,161.63 m^2 of native vegetation is predicted to occur within the proposed development site. This vegetation was identified as belonging to five Plant Community Types (PCTs)

- PCT 45 – Plains Grass grassland on alluvial mainly clay soils in the Riverine Bioregion and NSW South Western Slopes Bioregion
- PCT 76 – Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions
- PCT 80 – Western Grey Box - White Cypress Pine tall woodland on loam soil on alluvial plains of NSW South Western Slopes Bioregion and Riverina Bioregion
- PCT 248 – Mixed box eucalypt woodland on low sandy-loam rises on alluvial plains in central western NSW
- PCT 251 – Mixed Eucalypt woodlands of floodplains in the southern-eastern Cobar Peneplain Bioregion

Fifty-nine species listed as threatened or migratory under the *Biodiversity Conservation Act 2016* and/or the *Environmental Protection and Biodiversity Conservation Act 1999* were assessed as having a moderate or greater likelihood of occurring at the subject site. Although predicated on predictive modelling, provided appropriate mitigation measures are implemented, no significant impacts to any threatened species are anticipated.

An *Environmental Protection and Biodiversity Conservation 1999* Protected Matters Search identified no World Heritage Properties, four Wetlands of International Importance, four Threatened Ecological Communities, 30 threatened and 10 migratory species that may be present within the subject site. However, no significant impact to any entity listed is expected, provided adequate mitigation measures are implemented, a fauna spotter-catcher is engaged

during pre-clearance and clearance activities, and targeted surveys for threatened plants (particularly *Austrostipa wakoolica*) are undertaken. The latter two activities may be undertaken during a single deployment.

The Lachlan River – a major, perennial watercourse – flows through the study area, approximately 260 m from the subject site. This watercourse is mapped as Key Fish Habitat, with the distributions of five threatened aquatic species associated with the Lachlan River falling within the search area. Mitigation measures intended to reduce any potential impacts are provided in **Section 7.**

This desktop assessment covers the current form of the proposal, with any changes potentially requiring reassessment and a field survey.

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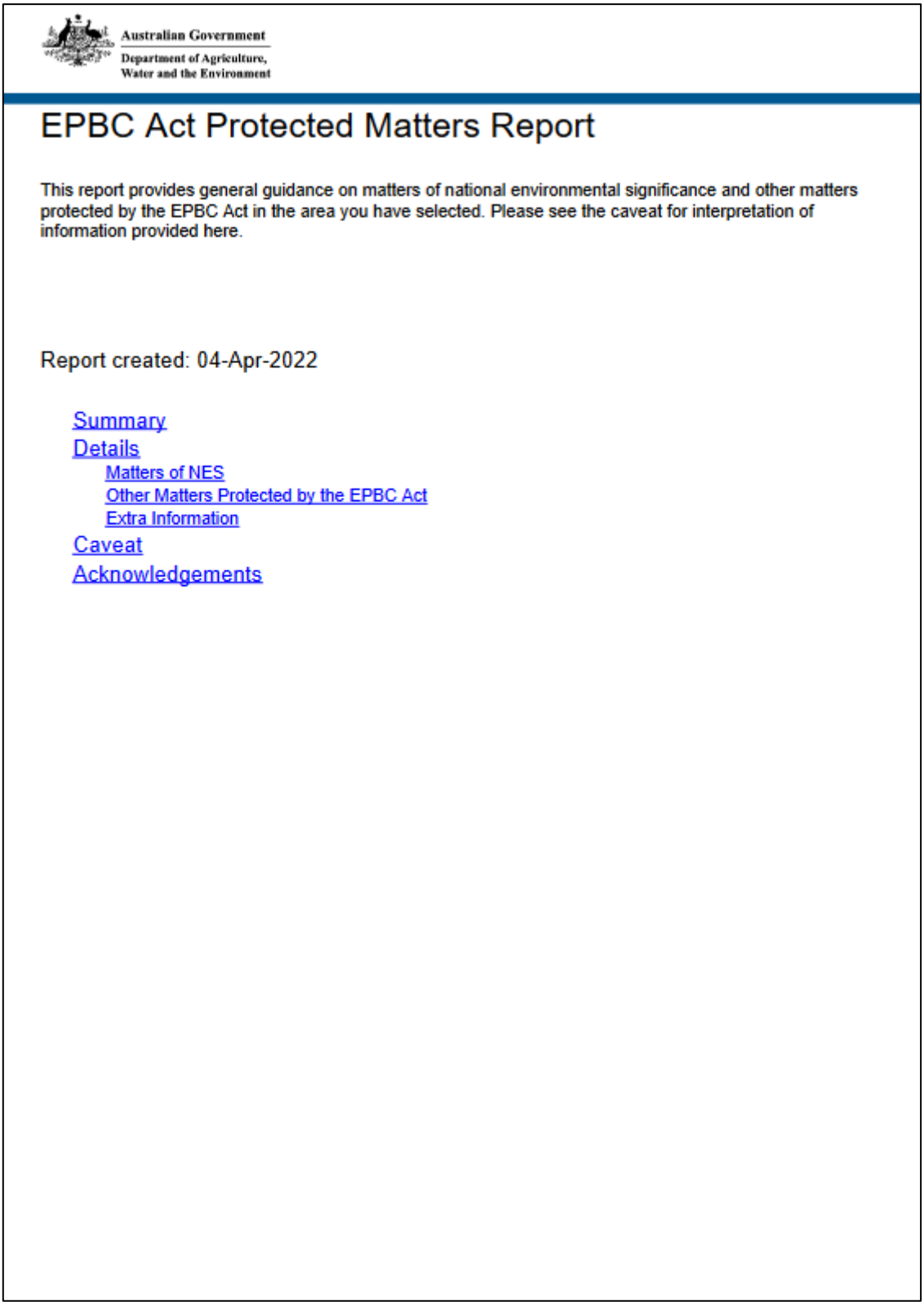
APPENDIX A - DATABASE SEARCH RESULTS

EPBC Act Protected Matters Report



Australian Government
Department of Agriculture, Water and the Environment

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: 04-Apr-2022

Summary
Details
- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat
Acknowledgements

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	4
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	4
Listed Threatened Species:	30
Listed Migratory Species:	10

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

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 http://www.environment.gov.au/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:	None
Listed Marine Species:	17
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:	1
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	1
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 may 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
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	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
Callocephalon fimbriatum Gang-gang Cockatoo [768]	Endangered	Species or species habitat may occur within area	In buffer area only
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 likely to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely 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
Leipoa ocellata Malleefowl [934]	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

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area
FISH			
Maccullochella macquariensis Trout Cod [26171]	Endangered	Species or species habitat may occur within area	In feature area
Maccullochella peelii Murray Cod [66633]	Vulnerable	Species or species habitat known to occur within area	In feature area
Macquaria australasica Macquarie Perch [66632]	Endangered	Species or species habitat may occur within area	In feature area
MAMMAL			
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat may occur within area	In feature area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat may 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
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour may occur within area	In feature area
PLANT			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Austrostipa metatoris [66704]	Vulnerable	Species or species habitat may occur within area	In feature area
Austrostipa wakoolica [66623]	Endangered	Species or species habitat known to occur within area	In feature area
Lepidium aschersonii Spiny Pepper-cress [10976]	Vulnerable	Species or species habitat may occur within area	In feature area
Lepidium monoplocoides Winged Pepper-cress [9190]	Endangered	Species or species habitat may occur within area	In feature area
Prasophyllum petilum Tarengo Leek Orchid [55144]	Endangered	Species or species habitat may occur within area	In buffer area only
Prasophyllum sp. Wybong (C.Phelps ORG 5269) a leek-orchid [81964]	Critically Endangered	Species or species habitat may occur within area	In buffer area only
Swainsona recta Small Purple-pea, Mountain Swainson-pea, Small Purple Pea [7580]	Endangered	Species or species habitat may occur within area	In buffer area only
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 likely to 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			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely 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
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 likely 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
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

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 Name	State	Buffer Status
Commonwealth Land - Telstra Corporation Limited [15126]	NSW	In buffer area only
Commonwealth Land - Telstra Corporation Limited [15137]	NSW	In feature area

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 likely to 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 likely 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 likely to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely 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]		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
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area

Extra Information

State and Territory Reserves			[Resource Information]
Protected Area Name	Reserve Type	State	Buffer Status
Eugowra	Nature Reserve	NSW	In buffer area only

EPBC Act Referrals				[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area

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 Inland and Lower Slopes IBRA Subregion of the NSW South Western Slopes Bioregion

Class	Scientific Name	Common Name	*NSW status	+Comm. Status	Records
Amphibia	*Crinia sloanei*	Sloane's Froglet	V,P	E	100
Amphibia	*Litoria booroolongensis*	Booroolong Frog	E1,P	E	34
Amphibia	*Litoria raniformis*	Southern Bell Frog	E1,P	V	12
Reptilia	*Aprasia parapulchella*	Pink-tailed Legless Lizard	V,P	V	150
Reptilia	*Delma impar*	Striped Legless Lizard	V,P	V	4
Reptilia	*Varanus rosenbergi*	Rosenberg's Goanna	V,P		6
Reptilia	*Hoplocephalus bitorquatus*	Pale-headed Snake	V,P		P
Aves	*Leipoa ocellata*	Malleefowl	E1,P	V	4
Aves	*Anseranas semipalmata*	Magpie Goose	V,P		3
Aves	*Oxyura australis*	Blue-billed Duck	V,P		13
Aves	*Stictonetta naevosa*	Freckled Duck	V,P		7
Aves	*Apus pacificus*	Fork-tailed Swift	P	C,J,K	16
Aves	*Hirundapus caudacutus*	White-throated Needletail	P	V,C,J,K	29
Aves	*Ephippiorhynchus asiaticus*	Black-necked Stork	E1,P		K
Aves	*Botaurus poiciloptilus*	Australasian Bittern	E1,P	E	3
Aves	*Ixobrychus flavicollis*	Black Bittern	V,P		1
Aves	*Circus assimilis*	Spotted Harrier	V,P		31
Aves	*Haliaeetus leucogaster*	White-bellied Sea-Eagle	V,P		37
Aves	*^^Hamirostra melanosternon*	Black-breasted Buzzard	V,P,3		2
Aves	*Hieraaetus morphnoides*	Little Eagle	V,P		152
Aves	*^^Lophoictinia isura*	Square-tailed Kite	V,P,3		9
Aves	*^^Pandion cristatus*	Eastern Osprey	V,P,3		1
Aves	*^Falco hypoleucos*	Grey Falcon	E1,P,2		3
Aves	*Falco subniger*	Black Falcon	V,P		53
Aves	*Grus rubicunda*	Brolga	V,P		7
Aves	*Ardeotis australis*	Australian Bustard	E1,P		1
Aves	*Burhinus grallarius*	Bush Stone-curlew	E1,P		15
Aves	*Pluvialis fulva*	Pacific Golden Plover	P	C,J,K	P
Aves	*Pedionomus torquatus*	Plains-wanderer	E1,P	CE	P
Aves	*Rostratula australis*	Australian Painted Snipe	E1,P	E	1
Aves	*Actitis hypoleucos*	Common Sandpiper	P	C,J,K	3
Aves	*Calidris acuminata*	Sharp-tailed Sandpiper	P	C,J,K	22

Class	Scientific Name	Common Name	*NSW status	+Comm. Status	Records
Aves	*Calidris melanotos*	Pectoral Sandpiper	P	J,K	P
Aves	*Calidris ferruginea*	Curlew Sandpiper	E1,P	CE,C,J,K	3
Aves	*Calidris ruficollis*	Red-necked Stint	P	C,J,K	6
Aves	*Gallinago hardwickii*	Latham's Snipe	P	J,K	28
Aves	*Limosa lapponica*	Bar-tailed Godwit	P	C,J,K	P
Aves	*Limosa limosa*	Black-tailed Godwit	V,P	C,J,K	P
Aves	*Numenius phaeopus*	Whimbrel	P	C,J,K	
Aves	*Tringa nebularia*	Common Greenshank	P	C,J,K	4
Aves	*Tringa glareola*	Wood Sandpiper	P	C,J,K	
Aves	*Tringa stagnatilis*	Marsh Sandpiper	P	C,J,K	5
Aves	*Glareola maldivarum*	Oriental Pratincole	P	C,J,K	
Aves	*Chlidonias leucopterus*	White-winged Black Tern	P	C,J,K	
Aves	*Gelochelidon nilotica*	Gull-billed Tern	P	C	1
Aves	*Hydroprogne caspia*	Caspian Tern	P	J	1
Aves	*Thalasseus bergii*	Crested Tern	P	J	1
Aves	*^^Callocephalon fimbriatum*	Gang-gang Cockatoo	V,P,3	E	268
Aves	*^Calyptorhynchus lathami*	Glossy Black-Cockatoo, Riverina population	E2,V,P,2		
Aves	*^Calyptorhynchus lathami*	Glossy Black-Cockatoo	V,P,2		91
Aves	*^Lophochroa leadbeateri*	Major Mitchell's Cockatoo	V,P,2		7
Aves	*^^Glossopsitta porphyrocephala*	Purple-crowned Lorikeet	V,P,3		5
Aves	*Glossopsitta pusilla*	Little Lorikeet	V,P		189
Aves	*^^Lathamus discolor*	Swift Parrot	E1,P,3	CE	154
Aves	*^^Neophema pulchella*	Turquoise Parrot	V,P,3		262
Aves	*^^Polytelis swainsonii*	Superb Parrot	V,P,3	V	1860
Aves	*Cuculus optatus*	Oriental Cuckoo	P	C,J,K	1
Aves	*^^Ninox connivens*	Barking Owl	V,P,3		55
Aves	*^^Ninox strenua*	Powerful Owl	V,P,3		15
Aves	*^^Tyto novaehollandiae*	Masked Owl	V,P,3		3
Aves	*Climacteris affinis*	White-browed Treecreeper population in Carrathool local government area south of the Lachlan River and Griffith local government area	E2,P		P

Class	Scientific Name	Common Name	*NSW status	+Comm. Status	Records
Aves	*Climacteris picumnus victoriae*	Brown Treecreeper (eastern subspecies)	V,P		2994
Aves	*Chthonicola sagittata*	Speckled Warbler	V,P		637
Aves	*Hylacola cautus*	Shy Heathwren	V,P		
Aves	*Anthochaera phrygia*	Regent Honeyeater	E4A,P	CE	132
Aves	*Certhionyx variegatus*	Pied Honeyeater	V,P		1
Aves	*Epthianura albifrons*	White-fronted Chat	V,P		54
Aves	*Grantiella picta*	Painted Honeyeater	V,P	V	20
Aves	*Melithreptus gularis gularis*	Black-chinned Honeyeater (eastern subspecies)	V,P		345
Aves	*Cinclosoma castanotum*	Chestnut Quail-thrush	V,P		P
	Pomatostomus temporalis temporalis	Grey-crowned Babbler (eastern subspecies)	V,P		560
Aves	*Daphoenositta chrysoptera*	Varied Sittella	V,P		250
Aves	*Pachycephala inornata*	Gilbert's Whistler	V,P		39
Aves	*Artamus cyanopterus cyanopterus*	Dusky Woodswallow	V,P		916
Aves	*Drymodes brunneopygia*	Southern Scrub-robin	V,P		P
Aves	*Melanodryas cucullata cucullata*	Hooded Robin (south-eastern form)	V,P		293
Aves	*Petroica boodang*	Scarlet Robin	V,P		397
Aves	*Petroica phoenicea*	Flame Robin	V,P		420
Aves	*Petroica rodinogaster*	Pink Robin	V,P		2
Aves	*Stagonopleura guttata*	Diamond Firetail	V,P		875
Mammalia	*Dasyurus maculatus*	Spotted-tailed Quoll	V,P	E	43
Mammalia	*Sminthopsis macroura*	Stripe-faced Dunnart	V,P		
Mammalia	*Phascogale tapoatafa*	Brush-tailed Phascogale	V,P		P
Mammalia	*Macrotis lagotis*	Bilby	E4,P	V	3
Mammalia	*Phascolarctos cinereus*	Koala	V,P	E	87
Mammalia	*Cercartetus nanus*	Eastern Pygmy-possum	V,P		6

Class	Scientific Name	Common Name	*NSW status	+Comm. Status	Records
Mammalia	*Petaurus australis*	Yellow-bellied Glider	V,P		2
Mammalia	*Petaurus norfolcensis*	Squirrel Glider in the Wagga Wagga Local Government Area	E2,V,P		527
Mammalia	*Petaurus norfolcensis*	Squirrel Glider	V,P		1217
Mammalia	*Petauroides volans*	Greater Glider	P	V	97
Mammalia	*Bettongia lesueur graii*	Boodie, Burrowing Bettong (mainland)	E4,P	X	1
Mammalia	*Petrogale penicillata*	Brush-tailed Rock-wallaby	E1,P	V	3
Mammalia	*Pteropus poliocephalus*	Grey-headed Flying-fox	V,P	V	262
Mammalia	*Saccolaimus flaviventris*	Yellow-bellied Sheathtail-bat	V,P		18
Mammalia	*Scoteanax rueppelli*	Greater Broad-nosed Bat	V,P		1
Mammalia	*Chalinolobus dwyeri*	Large-eared Pied Bat	V,P	V	11
Mammalia	*Chalinolobus picatus*	Little Pied Bat	V,P		15
Mammalia	*Falsistrellus tasmaniensis*	Eastern False Pipistrelle	V,P		19
Mammalia	*Myotis macropus*	Southern Myotis	V,P		14
Mammalia	*Nyctophilus corbeni*	Corben's Long-eared Bat	V,P	V	9
Mammalia	*Miniopterus orianae oceanensis*	Large Bent-winged Bat	V,P		83
Mammalia	*Pseudomys novaehollandiae*	New Holland Mouse	P	V	8
Flora	*Synemon plana*	Golden Sun Moth	E1	CE	50
Flora	*Keyacris scurra*	Key's Matchstick Grasshopper	E1		P
Flora	*Caesia parviflora var. minor*	Small Pale Grass-lily	E1		3
Flora	*Tylophora linearis*		V	E	25
Flora	*Ammobium craspedioides*	Yass Daisy	V	V	821
Flora	*Brachyscome papillosa*	Mossgiel Daisy	V	V	P
Flora	*Brachyscome muelleroides*	Claypan Daisy	V	V	1
Flora	*Kippistia suaedifolia*	Fleshy Minuria	E1		P
Flora	*Leucochrysum albicans var. tricolor*	Hoary Sunray		E	33

Class	Scientific Name	Common Name	*NSW status	+Comm. Status	Records
Flora	*Leptorhynchos orientalis*	Lanky Buttons	E1		P
Flora	*Senecio garlandii*	Woolly Ragwort	V		72
Flora	*Carex raleighii*	Raleigh Sedge	E1		1
Flora	*Bossiaea fragrans*		E4A	CE	55
Flora	*Cullen parvum*	Small Scurf-pea	E1		7
Flora	^^*Indigofera efoliata*	Leafless Indigo	E1,3	E	3
Flora	*Lepidium monoplocoides*	Winged Peppercress	E1	E	P
Flora	*Lepidium aschersonii*	Spiny Peppercress	V	V	P
Flora	*Wilsonia rotundifolia*	Round-leafed Wilsonia	E1		P
Flora	*Eleocharis obicis*	Spike-Rush	V	V	P
Flora	*Pultenaea humilis*	Dwarf Bush-pea	V		7
Flora	*Swainsona recta*	Small Purple-pea	E1	E	609
Flora	*Swainsona murrayana*	Slender Darling Pea	V	V	P
Flora	*Swainsona sericea*	Silky Swainson-pea	V		177
Flora	*Acacia ausfeldii*	Ausfeld's Wattle	V		3919
Flora	*Acacia meiantha*		E1	E	P
Flora	*Acacia phasmoides*	Phantom Wattle	V	V	91
Flora	^^*Pilularia novae-hollandiae*	Austral Pillwort	E1,3		5
Flora	*Eucalyptus aggregata*	Black Gum	V	V	1
Flora	*Eucalyptus leucoxylon subsp. pruinosa*	Yellow Gum	V		
Flora	*Eucalyptus alligatrix subsp. alligatrix*		V	V	2
Flora	*Eucalyptus cannonii*	Capertee Stringybark	V		5
Flora	^*Diuris sp. (Oaklands, D.L. Jones 5380)*	Oaklands Diuris	E1,P,2		
Flora	*Eucalyptus robertsonii subsp. hemisphaerica*	Robertson's Peppermint	V	V	P
Flora	*Homoranthus darwinioides*	Fairy Bells	V	V	P
Flora	^*Caladenia arenaria*	Sand-hill Spider Orchid	E1,P,2	E	6

Class	Scientific Name	Common Name	*NSW status	+Comm. Status	Records
Flora	^*Caladenia concolor*	Crimson Spider Orchid	E1,P,2	V	504
Flora	^*Caladenia rosella*	Rosella Spider Orchid	E4,P,2	E	1
Flora	^*Caladenia tessellata*	Thick Lip Spider Orchid	E1,P,2	V	1
Flora	^*Diuris tricolor*	Pine Donkey Orchid	V,P,2		20
Flora	^*Prasophyllum petilum*	Tarengo Leek Orchid	E1,P,2	E	24
Flora	*Prasophyllum sp. Wybong*		P	CE	P
Flora	*Euphrasia arguta*		E4A	CE	1
Flora	*Euphrasia collina subsp. muelleri*	Mueller's Eyebright	E1	E	P
Flora	*Amphibromus fluitans*	Floating Swamp Wallaby-grass	V	V	30
Flora	*Austrostipa metatoris*	A spear-grass	V	V	
Flora	*Austrostipa wakoolica*	A spear-grass	E1	E	P
Flora	*Dichanthium setosum*	Bluegrass	V	V	3
Flora	*Grevillea wilkinsonii*	Tumut Grevillea	E4A	E	17
Flora	*Persoonia marginata*	Clandulla Geebung	V,P	V	P
Flora	*Pomaderris cotoneaster*	Cotoneaster Pomaderris	E1	E	P
Flora	*Pomaderris queenslandica*	Scant Pomaderris	E1		4
Flora	*Zieria ingramii*	Keith's Zieria	E1	E	2
Flora	*Zieria obcordata*	Granite Zieria	E1	E	26
Flora	*Pimelea bracteata*		E4A		1
Flora	*Grevillea ilicifolia subsp. ilicifolia*	Holly-leaf Grevillea	E4A		P
Flora	*Pomaderris cocoparrana*	Cocoparra Pomaderris	E1	E	P
Flora	*Philotheca angustifolia subsp. angustifolia*		E4,P		

*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; K = known to occur.

BioNET Atlas search – Threatened ecological communities predicted to occur within the Inland and Lower Slopes IBRA Subregion of the NSW South Western Slopes Bioregion

Community	*NSW Status	+Common. 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
Sandhill Pine Woodland in the Riverina, Murray-Darling Depression and NSW South Western Slopes bioregions	E3		P
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=Proteced 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, K = known to occur.

BioNET Atlas search – Key Threatening Processes predicted to occur within the Inland and Lower Slopes IBRA Subregion of the NSW South Western Slopes Bioregion

Threats	NSW Status	Comm Status
Aggressive exclusion of birds from woodland and forest habitat by abundant Noisy Miners, *Manorina melanocephala* (Latham, 1802)	KTP	KTP
Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands	KTP	
Anthropogenic Climate Change	KTP	KTP
Bushrock removal	KTP	
Clearing of native vegetation	KTP	KTP
Competition and grazing by the feral European Rabbit, *Oryctolagus cuniculus* (L.)	KTP	KTP
Competition and habitat degradation by Feral Goats, *Capra hircus* Linnaeus 2258	KTP	KTP
Competition from feral honey bees, *Apis mellifera* L.	KTP	
Forest eucalypt dieback associated with over-abundant psyllids and Bell Miners	KTP	
Herbivory and environmental degradation caused by feral deer	KTP	
High frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition	KTP	
Importation of Red Imported Fire Ants *Solenopsis invicta* Buren 1972	KTP	KTP
Infection by Psittacine Circoviral (beak and feather) Disease affecting endangered psittacine species and populations	KTP	KTP
Infection of frogs by amphibian chytrid causing the disease chytridiomycosis	KTP	KTP
Infection of native plants by *Phytophthora cinnamomi*	KTP	KTP
Introduction of the Large Earth Bumblebee *Bombus terrestris* (L.)	KTP	
Invasion and establishment of exotic vines and scramblers	KTP	
Invasion and establishment of Scotch Broom (*Cytisus scoparius*)	KTP	
Invasion and establishment of the Cane Toad (Bufo marinus)	KTP	KTP
Invasion of native plant communities by African Olive *Olea europaea* subsp. *cuspidata* (Wall. ex G. Don) Cif.	KTP	
Invasion of native plant communities by *Chrysanthemoides monilifera*	KTP	
Invasion of native plant communities by exotic perennial grasses	KTP	
Invasion of the Yellow Crazy Ant, *Anoplolepis gracilipes* (Fr. Smith) into NSW	KTP	
Invasion, establishment and spread of Lantana (L*antana camara L. sens. La*t)	KTP	
Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants	KTP	KTP
Loss of Hollow-bearing Trees	KTP	
Loss or degradation (or both) of sites used for hill-topping by butterflies	KTP	
Predation and hybridisation by Feral Dogs, *Canis lupus familiaris*	KTP	
Predation by *Gambusia holbrook*i Girard, 1859 (Plague Minnow or Mosquito Fish)	KTP	
Predation by the European Red Fox *Vulpes Vulpes* (Linnaeus, 2258)	KTP	KTP
Predation by the Feral Cat *Felis catus* (Linnaeus, 2258)	KTP	KTP
Predation, habitat degradation, competition and disease transmission by Feral Pigs, *Sus scrofa* Linnaeus 2258	KTP	KTP
Removal of dead wood and dead trees	KTP	
Aggressive exclusion of birds from woodland and forest habitat by abundant Noisy Miners, *Manorina melanocephala* (Latham, 1802)	KTP	KTP

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

List generated by conducting a vegetation associations report for the and filtering the results by the PCTs present within the subject site. To determine whether any threatened species were known to occur near the subject site, BioNet Atlas records of threatened species within these subregions 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 species.

Scientific name	Common Name	NSW Status*	Comm. Status+	Record within 10 km	Likelihood of Occurrence	Test of Significance Required? (Yes / No)
Crinia sloanei	Sloane's Froglet	V,P	E	N	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 is typically associated with periodically inundated areas in grassland, woodland. **Moderate – Subject site within species distribution and associated PCTs 76 and 80 present.**	Y
Litoria booroolongensis	Booroolong Frog	E1,P	E	N	The Booroolong Frog is restricted to NSW and north-eastern Victoria, predominantly along the western-flowing streams of the Great Dividing Range. It has disappeared from much of the Northern Tablelands, however several populations have recently been recorded in the Namoi catchment. The species is rare throughout most of the remainder of its range. Live along permanent streams with some fringing vegetation cover such as ferns, sedges or grasses. **Low – Subject site within species distribution, however, no associated PCT present.**	N
Litoria raniformis	Southern Bell Frog	E1,P	V	N	In NSW the species was once distributed along the Murray and Murrumbidgee Rivers and their tributaries, the southern slopes of the Monaro district and the central southern tablelands as far north as Tarana, near Bathurst. Currently, the species is known to exist only in isolated populations in the Coleambally Irrigation Area, the Lowbidgee floodplain and around Lake Victoria. Usually found in or around permanent or ephemeral Black Box/Lignum/Nitre Goosefoot swamps, Lignum/Typha swamps and River Red Gum swamps or billabongs along floodplains and river valleys. **Low – Subject site within species distribution, however, no associated PCTs present.**	N
Aprasia parapulchella	Pink-tailed Legless Lizard	V,P	V	N	The Pink-tailed Legless Lizard is only known from the Central and Southern Tablelands, and the South Western Slopes. There is a concentration of	N

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					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*). **Low – Subject site within species distribution, however, no associated PCTs present.**	
Delma impar	Striped Legless Lizard	V,P	V	N	The Striped Legless Lizard occurs in the Southern Tablelands, the South West Slopes, the Upper Hunter and possibly on the Riverina. Populations are known in the Goulburn, Yass, Queanbeyan, Cooma, Muswellbrook and Tumut areas. Also occurs in the ACT, Victoria and south-eastern South Australia. Found mainly in Natural Temperate Grassland but has also been captured in grasslands that have a high exotic component. Also found in secondary grassland near Natural Temperate Grassland and occasionally in open Box-Gum Woodland. **Low – Subject site within species distribution, however, no associated PCTs present.**	N
Varanus rosenbergi	Rosenberg's Goanna	V,P		N	Rosenberg's Goanna occurs on the Sydney Sandstone in Wollemi National Park to the north-west of Sydney, in the Goulburn and ACT regions and near Cooma in the south. There are records from the South West Slopes near Khancoban and Tooma River. Also occurs in South Australia and Western Australia. Found in heath, open forest and woodland. **Low – Subject site within species distribution, however, no associated PCTs present.**	N
Hoplocephalus bitorquatus	Pale-headed Snake	V,P		N	A patchy distribution from north-east Queensland to the north-eastern quarter of NSW. In NSW it has historically been recorded from as far west as Mungindi and Quambone on the Darling Riverine Plains, across the north west slopes, and from the north coast from Queensland to Sydney. A small number of historical records are known for the New England Tablelands from Glenn Innes and Tenterfield; however, the majority of records appear to be from sites of relatively lower elevation. Although the Pale-headed snake distribution is very cryptic, it now appears to have contracted to a patchy and fragmented distribution. The Pale-headed Snake is a highly cryptic species that can spend weeks at a time hidden in tree hollows. Found mainly in dry eucalypt forests and woodlands, cypress forest and occasionally in rainforest or moist eucalypt forest. In drier environments, it appears to favour habitats close to riparian areas. **Low – Subject site within species distribution, however, no associated PCTs present.**	N

Scientific name	Common Name	NSW Status*	Comm. Status+	Record within 10 km	Likelihood of Occurrence	Test of Significance Required? (Yes / No)
Leipoa ocellata	Malleefowl	E1,P	V	N	The stronghold for this species in NSW is the mallee in the south west centred on Mallee Cliffs NP and extending east to near Balranald and scattered records as far north as Mungo NP. West of the Darling River a population also occurs in the Scotia mallee including Tarawi NR and Scotia Sanctuary and is part of a larger population north of the Murray River in South Australia. The population in central NSW has been significantly reduced through land clearance and fox predation and now occurs chiefly in Yathong, Nombinnie and Round Hill NRs and surrounding areas, though birds continue to survive in Loughnan NR. To the south of this area the species is probably locally extinct in such reserves as Pulletop NR (last recorded 1989), Ingalba NR (1982) and Buddigower NR (1990) and the intensely studied population at Yalgogrin was still known to have at least one active mound in 2022. Further east, a population continues to persist in the Goonoo forest near Dubbo, though the size of this population is unknown. Outside these areas, occasional records have been made in the Pilliga forests (most recently 1999), around Cobar (1991) and Goulburn River NP (1989) though the extent and status of populations in these areas are unknown. Predominantly inhabit mallee communities, preferring the tall, dense and floristically rich mallee found in higher rainfall (300 - 450 mm mean annual rainfall) areas. Utilises mallee with a spinifex understorey, but usually at lower densities than in areas with a shrub understorey. Less frequently found in other eucalypt woodlands, such as Inland Grey Box, Ironbark or Bimble Box Woodlands with thick understorey, or in other woodlands such dominated by Mulga or native Cypress Pine species. **Low – Subject site within species distribution, however, no associated PCTs present.**	N
Anseranas semipalmata	Magpie Goose	V,P		N	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. **Moderate – Subject site within species distribution and associated PCT 45 is present.**	Y
Oxyura australis	Blue-billed Duck	V,P		N	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	N

Scientific name	Common Name	NSW Status*	Comm. Status+	Record within 10 km	Likelihood of Occurrence	Test of Significance Required? (Yes / No)
					wetlands and swamps with dense aquatic vegetation. The species is completely aquatic, swimming low in the water along the edge of dense cover. **Low – Subject site within species distribution, however, no associated PCTs are present.**	
Stictonetta naevosa	Freckled Duck	V,P		N	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. **Low – Subject site within species distribution, however, no associated PCTs are present.**	N
Hirundapus caudacutus	White-throated Needletail	P	V,C,J,K	N	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. **Moderate – Subject site within species distribution and associated PCTs 45, 76, 80, 248 and 251 are present.**	Y
Ephippiorhynchus asiaticus	Black-necked Stork	E1,P		N	In Australia, Black-necked Storks are widespread in coastal and subcoastal northern and eastern Australia, as far south as central NSW (although vagrants may occur further south or inland, well away from breeding areas). In NSW, the species becomes increasingly uncommon south of the Clarence Valley, and	N

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					rarely occurs south of Sydney. Since 1995, breeding has been recorded as far south as Buladelah. Floodplain wetlands (swamps, billabongs, watercourses and dams) of the major coastal rivers are the key habitat in NSW for the Black-necked Stork. Secondary habitat includes minor floodplains, coastal sandplain wetlands and estuaries. Black-necked Storks build large nests high in tall trees close to water. Trees usually provide clear observation of the surroundings and are at low elevation (reflecting the floodplain habitat). **Low – Subject site within species distribution, however, no associated PCTs are present.**	
Botaurus poiciloptilus	Australasian Bittern	E1,P	E	N	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. **Low – Subject site within species distribution, however, no associated PCTs are present.**	N
Ixobrychus flavicollis	Black Bittern	V,P		N	The Black Bittern has a wide distribution, from southern NSW north to Cape York and along the north coast to the Kimberley region. The species also occurs in the south-west of Western Australia. In NSW, records of the species are scattered along the east coast, with individuals rarely being recorded south of Sydney or inland. Inhabits both terrestrial and estuarine wetlands, generally in areas of permanent water and dense vegetation. Where permanent water is present, the species may occur in flooded grassland, forest, woodland, rainforest and mangroves. **Low – Subject site not within species distribution and no associated PCTs are present.**	N
Circus assimilis	Spotted Harrier	V,P		N	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.	Y

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					Moderate – Subject site within species distribution and associated PCTs 45, 248 and 251 present.	
Haliaeetus leucogaster	White-bellied Sea-Eagle	V,P		N	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. **Moderate – Subject site within species distribution and associated PCTs 45, 76, 80, 248 and 251 present.**	Y
^^*Hamirostra melanosternon*	Black-breasted Buzzard	V,P,3		N	The Black-breasted Buzzard is found sparsely in areas of less than 500mm rainfall, from north-western NSW and north-eastern South Australia to the east coast at about Rockhampton, then across northern Australia south almost to Perth, avoiding only the Western Australian deserts. Lives in a range of inland habitats, especially along timbered watercourses which is the preferred breeding habitat. Also hunts over grasslands and sparsely timbered woodlands. **Low – Subject site not within species distribution and no associated PCTs are present.**	N
Hieraaetus morphnoides	Little Eagle	V,P		N	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 NSW. Occupies open eucalypt forest, woodland or open woodland. Sheoak or Acacia woodlands and riparian woodlands of interior NSW are also used.	Y

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					Moderate – Subject site within species distribution and associated PCTs 45, 76, 80, 248 and 251 present.	
^^*Lophoictinia isura*	Square-tailed Kite	V,P,3		N	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 – Subject site within species distribution and associated PCTs 45, 76 and 248 present.**	Y
^^*Pandion cristatus*	Eastern Osprey	V,P,3		N	The Osprey has a global distribution with four subspecies previously recognised throughout its range. Eastern Ospreys are found right around the Australian coastline, except for Victoria and Tasmania. They are common around the northern coast, especially on rocky shorelines, islands and reefs. The species is uncommon to rare or absent from closely settled parts of south-eastern Australia. There are a handful of records from inland areas. Favour coastal areas, especially the mouths of large rivers, lagoons and lakes. Nests are made high up in dead trees or in dead crowns of live trees, usually within one kilometre of the sea. **Low – Subject site not within species distribution and no associated PCTs are present.**	N
^*Falco hypoleucos*	Grey Falcon	E1,P,2		N	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 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. **Moderate – Subject site within species distribution and associated PCTs 45, 76, 80, 248 and 251 present.**	Y
Falco subniger	Black Falcon	V,P		N	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,	Y

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					commonly travelling hundreds of kilometres. The Black Falcon occurs as solitary individuals, in pairs, or in family groups of parents and offspring. **Moderate – Subject site within species distribution and associated PCTs 45, 76, 80, 248 and 251 present.**	
Grus rubicunda	Brolga	V,P		N	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. **Moderate – Subject site within species distribution and associated PCT 45 present.**	Y
Ardeotis australis	Australian Bustard	E1,P		N	The Australian Bustard mainly occurs in inland Australia and is now scarce or absent from southern and south-eastern Australia. In NSW, they are mainly found in the north-west corner and less often recorded in the lower western and central west plains regions. Occasional vagrants are still seen as far east as the western slopes and Riverine plain. Breeding now only occurs in the north-west region of NSW. Mainly inhabits tussock and hummock grasslands, though prefers tussock grasses to hummock grasses; also occurs in low shrublands and low open grassy woodlands; occasionally seen in pastoral and cropping country, golf courses and near dams. Breeds on bare ground on low sandy ridges or stony rises in ecotones between grassland and protective shrubland cover; roosts on ground among shrubs and long grasses or under trees. **Low – Subject site within species distribution, however, no associated PCTs are present.**	N
Burhinus grallarius	Bush Stone-curlew	E1,P		N	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 – Subject site within species distribution and associated PCTs 76, 80, 248 and 251 present.**	Y

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Pedionomus torquatus	Plains-wanderer	E1,P	CE	N	Plains-wanderers live in semi-arid, lowland native grasslands that typically occur on hard red-brown soils. These grasslands support a high diversity of plant species, including a number of state and nationally threatened species. The Plains-wanderer has declined greatly since European settlement. Areas where the species was formerly common and is now so reduced in numbers that it is effectively extinct include eastern NSW, south-western Victoria, and south-eastern South Australia. Its current stronghold is the western Riverina of southern NSW. Areas of secondary importance include north-central Victoria and central-western Queensland. The bird was formerly fairly common until about 1920 on the Slopes and Tablelands, and there are two earlier records of birds near Sydney. The main reason for the decline in the numbers and distribution of Plains-wanderers in all eastern States has been the conversion of native grasslands to dense introduced pasture or croplands. If native grasslands are not overgrazed or cultivated then Plains-wanderers are largely sedentary, though there is some recent evidence to suggest that birds may not remain sedentary during prolonged drought conditions. **Low – Subject site not within species distribution and no associated PCTs are present.**	N
Rostratula australis	Australian Painted Snipe	E1,P	E	N	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 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. Forages nocturnally on mud-flats and in shallow water. Feeds on worms, molluscs, insects and some plant-matter. **Low – Subject site not within species distribution and no associated PCTs are present.**	N

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Calidris ferruginea	Curlew Sandpiper	E1,P	CE,C,J,K	N	In Australia, Curlew Sandpipers occur around the coasts and are also quite widespread inland, though in smaller numbers. Records occur in all states during the non-breeding period, and also during the breeding season when many non-breeding one-year old birds remain in Australia rather than migrating north. In NSW, they are widespread east of the Great Divide, especially in coastal regions. They are occasionally recorded in the Tablelands and are widespread in the Riverina and south-west NSW, with scattered records elsewhere. Curlew Sandpipers mainly occur on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons, and also around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms. They are also recorded inland, though less often, including around ephemeral and permanent lakes, dams, waterholes and bore drains, usually with bare edges of mud or sand. They occur in both fresh and brackish waters. Occasionally they are recorded around floodwaters. **Low – Subject site within species distribution, however, no associated PCTs are present.**	N
Limosa limosa	Black-tailed Godwit	V,P	C,J,K	N	The Black-tailed Godwit is a migratory wading bird that breeds in Mongolia and Eastern Siberia and flies to Australia for the southern summer, arriving in August and leaving in March. In NSW, it is most frequently recorded at Kooragang Island (Hunter River estuary), with occasional records elsewhere along the coast, and inland. Records in western NSW indicate that a regular inland passage is used by the species, as it may occur around any of the large lakes in the western areas during summer, when the muddy shores are exposed. The species has been recorded within the Murray-Darling Basin, on the western slopes of the Northern Tablelands and in the far north-western corner of the state. Primarily a coastal species. **Low – Subject site within species distribution, however, no associated PCTs are present.**	N
^^*Callocephalon fimbriatum*	Gang-gang Cockatoo	V,P,3	E	N	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 – Subject site within species distribution, however, no associated PCTs are present.**	N

Scientific name	Common Name	NSW Status*	Comm. Status+	Record within 10 km	Likelihood of Occurrence	Test of Significance Required? (Yes / No)
^*Calyptorhynchus lathami*	Glossy Black-Cockatoo, Riverina population	E2,V,P,2		N	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 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. **Absent – Subject site is not in the Riverina.**	N
^*Calyptorhynchus lathami*	Glossy Black-Cockatoo	V,P,2		N	The species is uncommon although widespread throughout suitable forest and woodland habitats, from the central Queensland coast to East Gippsland in Victoria, and inland to the southern tablelands and central western plains of NSW, with a small population in the Riverina. An isolated population exists on Kangaroo Island, South Australia. Inhabits open forest and woodlands of the coast and the Great Dividing Range where stands of sheoak occur. Black Sheoak (*Allocasuarina littoralis*) and Forest Sheoak (*A. torulosa*) are important foods. Inland populations feed on a wide range of sheoaks, including Drooping Sheoak, *Allocasuaraina diminuta*, and *A. gymnathera*. Belah is also utilised and may be a critical food source for some populations. Dependent on large hollow-bearing eucalypts for nest sites. A single egg is laid between March and May. **Moderate – Subject site within species distribution and associated PCTs 76, 80, 248 and 251 are present.**	Y
^*Lophochroa leadbeateri*	Major Mitchell's Cockatoo	V,P,2		N	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 – Subject site within species distribution and associated PCTs 45, 76, 80, 248 and 251 are present.**	Y
^^*Glossopsitta porphyrocephala*	Purple-crowned Lorikeet	V,P,3		N	The Purple-crowned Lorikeet occurs across the southern parts of the continent from Victoria to south-west Western Australia. It is uncommon in NSW, with	N

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					records scattered across the box-ironbark woodlands of the Riverina and south west slopes, the River Red Gum forests and mallee of the Murray Valley as far west as the South Australian border, and, more rarely, the forests of the South Coast. The species is nomadic and most, if not all, records from NSW are associated with flowering events. Found in open forests and woodlands, particularly where there are large flowering eucalypts. Also recorded from mallee habitats. Feed primarily on nectar and pollen of flowering Eucalypts, including planted trees in urban areas. Breeds away from feeding areas, utilising hollow branches or holes in trees. Also roosts in dense vegetation up to several kilometres away from feeding areas. **Low – Subject site within species distribution, however, no associated PCTs are present.**	
Glossopsitta pusilla	Little Lorikeet	V,P		N	The Little Lorikeet is distributed widely across the coastal and Great Divide regions of eastern Australia from Cape York to South Australia. NSW provides a large portion of the species' core habitat, with lorikeets found westward as far as Dubbo and Albury. Nomadic movements are common, influenced by season and food availability, although some areas retain residents for much of the year and 'locally nomadic' movements are suspected of breeding pairs. Forages primarily in the canopy of open Eucalyptus forest and woodland, yet also finds food in Angophora, Melaleuca and other tree species. Riparian habitats are particularly used, due to higher soil fertility and hence greater productivity. **Low – Subject site within species distribution, however, no associated PCTs are present.**	N
^^*Lathamus discolor*	Swift Parrot	E1,P,3	CE	N	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 maculata*, Red Bloodwood *C. gummifera*, Forest Red Gum *E. tereticornis*, Mugga Ironbark *E. sideroxylon*, and White Box *E. albens*. **Moderate – Subject site within species distribution and associated PCTs 76, 80, 248 and 251 are present.**	Y
^^*Neophema pulchella*	Turquoise Parrot	V,P,3		Y	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.	Y

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					High – Subject site within species distribution, records within 10km, and associated PCTs 76, 80 and 248 are present.	
^^*Polytelis swainsonii*	Superb Parrot	V,P,3	V	Y	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, 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 – Subject site within species distribution, records within 10km, and associated PCTs 45, 76, 80, 248 and 251 are present.**	Y
^^*Ninox connivens*	Barking Owl	V,P,3		N	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. **Moderate – Subject site within species distribution and associated PCTs 76, 80, 248 and 251 are present.**	Y
Ninox strenua	Powerful Owl	V,P,3		N	The Powerful Owl is endemic to eastern and south-eastern Australia, mainly on the coastal side of the Great Dividing Range from Mackay to south-western Victoria. In NSW, it is widely distributed throughout the eastern forests from the	N

Scientific name	Common Name	NSW Status*	Comm. Status+	Record within 10 km	Likelihood of Occurrence	Test of Significance Required? (Yes / No)
					coast inland to tablelands, with scattered records on the western slopes and plains suggesting occupancy prior to land clearing. Now at low densities throughout most of its eastern range, rare along the Murray River and former inland populations may never recover. The Powerful Owl inhabits a range of vegetation types, from woodland and open sclerophyll forest to tall open wet forest and rainforest. The Powerful Owl requires large tracts of forest or woodland habitat but can occur in fragmented landscapes as well. The species breeds and hunts in open or closed sclerophyll forest or woodlands and occasionally hunts in open habitats. It roosts by day in dense vegetation comprising species such as Turpentine *Syncarpia glomulifera*, Black She-oak *Allocasuarina littoralis*, Blackwood *Acacia melanoxylon*, Rough-barked Apple *Angophora floribunda*, Cherry Ballart *Exocarpus cupressiformis* and a number of eucalypt species. Powerful Owls nest in large tree hollows (at least 0.5 m deep), in large eucalypts (diameter at breast height of 80-240 cm) that are at least 150 years old. While the female and young are in the nest hollow the male Powerful Owl roosts nearby (10-200 m) guarding them, often choosing a dense "grove" of trees that provide concealment from other birds that harass him. **Low – Subject site within species distribution, however, no associated PCTs are present.**	
^^*Tyto novaehollandiae*	Masked Owl	V,P,3		N	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 – Subject site within species distribution and associated PCTs 76, 80, 248 and 251 are present.**	Y
Climacteris affinis	White-browed Treecreeper population in Carrathool local government area south of the Lachlan River and Griffith local government area	E2,P		N	In NSW, occupies a broad area of western NSW, west from a line from Balranald to Lake Cargelligo then Lightning Ridge. The species appears absent in the far north west of the state with no records occurring west of a line from Broughams Gate, 100km northwest of Broken Hill to Hungerford. A small population, now recognised as isolated, occurs in Carrathool local government area south of the Lachlan River and Griffith local government areas. Occurs in a range of semi-arid and arid tall shrublands and woodlands across the southern half of Australia. In NSW, the species occupies a variety of habitats including Mulga, Brigalow, Gidgee, Belah, Buloke and White Cypress. The species may also occur in habitats adjacent to those detailed above, including Coolibah, River Red Gum and Black Box. **Absent – Subject site is not in the appropriate local government area.**	N

Scientific name	Common Name	NSW Status*	Comm. Status+	Record within 10 km	Likelihood of Occurrence	Test of Significance Required? (Yes / No)
Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	V,P		N	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. **Moderate – Subject site within species distribution and associated PCTs 76 and 248 are present.**	Y
Chthonicola sagittata	Speckled Warbler	V,P		N	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. There has been a decline in population density throughout its range, with the decline exceeding 40% where no vegetation remnants larger than 100ha survive. 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 rounded, domed, roughly built nest of dry grass and strips of bark is located in a slight hollow in the ground or the base of a low dense plant, often among fallen branches and other litter. A side entrance allows the bird to walk directly inside. A clutch of 3-4 eggs is laid, between August and January, and both parents feed the nestlings. The eggs are a glossy red-brown, giving rise to the unusual folk names ‘Blood Tit’ and ‘Chocolatebird’. Some cooperative breeding occurs. 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.	Y

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					Moderate – Subject site within species distribution and associated PCTs 76, 80 and 248 are present.	
Hylacola cautus	Shy Heathwren	V,P		N	Occurs across southern Australia extending from the wheatbelt in southern Western Australia east to central NSW, including Kangaroo Island. Two subspecies occur in NSW. The first (*macrorhyncha*) is confined to central NSW between Griffith, Roto, Nymagee and West Wyalong, with most records within OEH managed reserves (including Yathong, Nombinnie, Round Hill and The Charcoal Tank Nature Reserves and Cocoparra National Park). The nominate subspecies (*cautus*) occurs in the far south west between Balranald and Trentham Cliffs (including Mallee Cliffs National Park), north into the Scotia Mallee (including Tarawi Nature Reserve and Scotia Sanctuary). This subspecies also occurs in north west Victoria and eastern South Australia (as far west as the Flinders Ranges). Inhabits mallee woodlands with a relatively dense understorey of shrubs and heath plants. The central NSW population (for example in Cocoparra NP) also occurs at low densities in rocky hilltop vegetation with a thick shrub layer such as Broombush or Tea-tree. **Low – Subject site within species distribution, however, no associated PCTs are present.**	N
Anthochaera phrygia	Regent Honeyeater	E4A,P	CE	N	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 – Subject site within species distribution, however, no associated PCTs are present.**	N

Scientific name	Common Name	NSW Status*	Comm. Status+	Record within 10 km	Likelihood of Occurrence	Test of Significance Required? (Yes / No)
Certhionyx variegatus	Pied Honeyeater	V,P		N	Pied Honeyeater is 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 – Subject site within species distribution and associated PCT 80 is present.**	Y
Epthianura albifrons	White-fronted Chat	V,P		N	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. **Moderate – Subject site within species distribution and associated PCT 45 is present.**	Y
Grantiella picta	Painted Honeyeater	V,P	V	N	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 – Subject site within species distribution and associated PCTs 76, 80, 248 and 251 are present.**	Y
Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)	V,P		N	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	Y

Scientific name	Common Name	NSW Status*	Comm. Status+	Record within 10 km	Likelihood of Occurrence	Test of Significance Required? (Yes / No)
					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. **Moderate – Subject site within species distribution and associated PCTs 76, 80 and 248 are present.**	
Pomatostomus temporalis temporalis	Grey-crowned Babbler (eastern subspecies)	V,P		Y	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 – Subject site within species distribution, records within 10 km, and associated PCTs 76, 80, 248 and 251 are present.**	Y
Cinclosoma castanotum	Chestnut Quail-thrush	V,P		N	Throughout its distribution it occurs in a wide range of arid and semi-arid habitats; mainly in the low shrubs and undergrowth of mallee scrub, but also in *Acacia* scrubs, dry sclerophyll woodland, heath, and native pine. However, in NSW it seems to occur almost exclusively in mallee habitats, with understorey dominated by spinifex, chenopods or other shrubs including Acacia species. Only rarely, such as in Cocoparra NP, is it recorded in other types of woodland, and in these areas a dense understorey may be a prerequisite. Occupies	N

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					vegetation with a wide range of fire histories, though appears to occur at highest densities in areas two to fifteen years post fire. There is some evidence from the Victorian mallee that if the interval between fires is too short (less than fifteen years) local declines may occur. **Low – Subject site within species distribution, however, no associated PCTs are present.**	
Daphoenositta chrysoptera	Varied Sittella	V,P		N	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. **Moderate – Subject site within species distribution and associated PCTs 76, 80, 248 and 251 are present.**	Y
Pachycephala inornata	Gilbert's Whistler	V,P		N	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 – Subject site within species distribution and associated PCT 80 is present.**	Y
Artamus cyanopterus cyanopterus	Dusky Woodswallow	V,P		N	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,	Y

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					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 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 – Subject site within species distribution and associated PCTs 45, 76, 80, 248 and 251 are present.**	
Drymodes brunneopygia	Southern Scrub-robin	V,P		N	This species is restricted to mallees and shrublands across southern Australia and in NSW is confined to two main areas. The first is in central NSW and is centred on Round Hill and Nombinnie Nature Reserves, though suitable habitat probably exists on adjoining leasehold lands. This population once extended south and east to near Griffith and West Wyalong, but clearing appears to have led to its local extinction in most of this region. The final record from The Charcoal Tank NR was in 1993, while in Pulletop NR it has not been observed since 1982. The other population occurs in the far south west of NSW, mainly within the Scotia mallee centred on Tarawi NR and Scotia Sanctuary. Records east of the Darling River are more scattered, with recent confirmation in Mallee Cliffs NP, and a new population recently detected on leasehold land to the north of Euston. Other populations may still occur in other areas of mallee, particularly those with a well developed shrub layer in the south west corner of the state. **Low – Subject site within species distribution, however, no associated PCTs are present.**	N
Melanodryas cucullata cucullata	Hooded Robin (south-eastern form)	V,P		N	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. **Moderate – Subject site within species distribution and associated PCTs 76, 80, 248 and 251 are present.**	Y
Petroica boodang	Scarlet Robin	V,P		N	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	Y

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					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 – Subject site within species distribution and associated PCTs 76, 80 and 248 are present.**	
Petroica phoenicea	Flame Robin	V,P		N	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 – Subject site within species distribution and associated PCTs 76, 80 and 248 are present.**	Y
Petroica rodinogaster	Pink Robin	V,P		N	Pink Robins are endemic to (only found in) south-eastern Australia. In the breeding season (September to March) Pink Robins are seen singly or in pairs	N

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					in deep gullies in dense shrub layers of damp and wet forests or rainforests. In winter, they are found in more open and drier habitats. **Low – Subject site not within species distribution and no associated PCTs are present.**	
Stagonopleura guttata	Diamond Firetail	V,P		N	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. **Moderate – Subject site within species distribution and associated PCTs 45, 76, 80, 248 and 251 are present.**	Y
Dasyurus maculatus	Spotted-tailed Quoll	V,P	E	N	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. **Low – Subject site within species distribution, however, no associated PCTs are present.**	N
Phascogale tapoatafa	Brush-tailed Phascogale	V,P		N	Widespread across arid and semi-arid NSW but present in very low numbers. Records typically derive from captures by domestic cats or are collected after falling into steep-sided holes. Recent records have come primarily from the Cobar and Brewarrina region. A terrestrial insectivore that inhabits open country, especially claypans among Acacia woodlands. **Moderate – Subject site within species distribution and associated PCT 76 is present.**	Y

Scientific name	Common Name	NSW Status*	Comm. Status+	Record within 10 km	Likelihood of Occurrence	Test of Significance Required? (Yes / No)
Sminthopsis macroura	Stripe-faced Dunnart	V,P		N	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. **Moderate – Subject site within species distribution and associated PCT 45 is present.**	Y
Macrotis lagotis	Bilby	E4,P	V	N	Bilbies were common in many habitats throughout Australia, from the dry interior to temperate coastal regions. Changes to the Bilby's habitat have seen their numbers greatly reduced and today the species is nationally listed as vulnerable, and is presumed extinct in NSW. They now occur in fragmented populations in mulga shrublands and spinifex grasslands in the Tanami Desert of the Northern Territory; in the Gibson and Great Sandy Deserts and the Pilbara and Kimberley regions of Western Australia; and the Mitchell Grasslands of southwest Queensland. Once widespread in arid, semi-arid and relatively fertile areas, the Bilby is now restricted to arid regions and remains a threatened species. The Bilby prefers arid habitats because of the spinifex grass and acacia shrub. **Low – Extinct in NSW and no associated PCTs present**	N
Phascolarctos cinereus	Koala	V,P	E	N	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 tablelands, Blue Mountains, southern coastal forests, with some smaller populations on the plains west of the Great Dividing Range. Inhabit eucalypt woodlands and forests. Grey box (*Eucalyptus microcarpa*) is a known forage tree for koalas and was recorded on site. **Moderate – Subject site within species distribution and associated PCTs 76, 80, 248 and 251 are present.**	Y
Cercartetus nanus	Eastern Pygmy-possum	V,P		N	The Eastern Pygmy-possum is found in south-eastern Australia, from southern Queensland to eastern South Australia and in Tasmania. 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. **Moderate – Subject site within species distribution and associated PCTs 80 and 248 are present.**	Y

Scientific name	Common Name	NSW Status*	Comm. Status+	Record within 10 km	Likelihood of Occurrence	Test of Significance Required? (Yes / No)
Petaurus australis	Yellow-bellied Glider	V,P		N	The Yellow-bellied Glider is found along the eastern coast to the western slopes of the Great Dividing Range, from southern Queensland to Victoria. Occur in tall mature eucalypt forest generally in areas with high rainfall and nutrient rich soils. **Low – Subject site within species distribution, however, no associated PCTs are present.**	N
Petaurus norfolcensis	Squirrel Glider in the Wagga Wagga Local Government Area	E2,V,P		N	The extent of the endangered population is legally defined by the boundaries of the Wagga Wagga LGA. The distribution of the Squirrel Glider and its known or potential habitats within, or linked across, this boundary is not well defined. However, potential habitat occurs at low densities and is patchily distributed on public lands (TSRs, NPWS reserves, Bush Heritage Trust reserves), private lands and roadside corridors with remnant vegetation. Inhabits a wide range of open forest, woodland, and riverine forest habitats. Utilise remnants of various sizes, including small remnants and even small stands of trees within Travelling Stock Reserves, roadside reserves, or private land. Often utilise linear remnant vegetation along roadsides or rivers and streams. Eucalypt species known to provide suitable denning and foraging resources include (but are not restricted to): Blakely's Red Gum (Eucalyptus *blakelyi),* Grey Box *(E. microcarpa),* Red Box (*E. polyanthemos*), Mugga Ironbark (*E. sideroxylon*), River Red Gum (*E. camaldulensis*), White Box (*E. albens*) and Yellow Box (*E. melliodora*). **Absent – Subject site not within the Wagga Wagga LGA.**	N
Petaurus norfolcensis	Squirrel Glider	V,P		N	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 – Subject site within species distribution and associated PCTs 76, 80 and 248 are present.**	Y
Petauroides volans	Greater Glider	P	V	N	The greater glider is found in southern Queensland, eastern Australia, southeastern New South Wales, and the montane forests of the Victorian central highlands. The greater glider chooses habitat based on several factors, the dominant factor being the presence of specific species of eucalypt. Distribution levels are higher in regions of montane forest containing manna gum (*E. viminalis*) and mountain gum (*E. dalrympleana*, *E. obliqua*). Furthermore, the presence of *E. cypellocarpa* appears to improve the quality of habitat for the greater glider in forests dominated by *E. obliqua*. Another factor determining population density is elevation. Optimal levels are 845 m above sea level.[16] Within a forest of suitable habitat, they prefer overstorey basal areas in old-growth tree stands.	N

Scientific name	Common Name	NSW Status*	Comm. Status+	Record within 10 km	Likelihood of Occurrence	Test of Significance Required? (Yes / No)
					Low – Subject site within species distribution, however, no associated PCTs are present.	
Bettongia lesueur graii	Boodie, Burrowing Bettong (mainland)	E4,P	X	N	The mainland subspecies (*graii*) is now extinct; however, two subspecies occur on islands off the coast of Western Australia; one undescribed subspecies on Boodie and Barrow Islands off the Pilbara coast; the other (lesueur) on Bernier and Dorre Islands off Shark Bay. Both these subspecies are listed nationally as vulnerable. It is the latter subspecies that has been used to establish a population in feral-free enclosures at the Australian Wildlife Conservancy run Scotia Sanctuary in south western New South Wales. The Boodie once lived in a range of dry subtropical and tropical habitats, from open Eucalyptus and Acacia woodlands to arid spinifex grasslands. In its current range on the islands, it seems to prefer open *Triodia* (spinifex) and dune habitats, but will burrow anywhere except places with rocky substrate. **Absent – Subspecies is extinct**	N
Petrogale penicillata	Brush-tailed Rock-wallaby	E1,P	V	N	The range of the Brush-tailed Rock-wallaby extends from south-east Queensland to the Grampians in western Victoria, roughly following the line of the Great Dividing Range. However the distribution of the species across its original range has declined significantly in the west and south and has become more fragmented. In NSW they occur from the Queensland border in the north to the Shoalhaven in the south, with the population in the Warrumbungle Ranges being the western limit. Occupy rocky escarpments, outcrops and cliffs with a preference for complex structures with fissures, caves and ledges, often facing north. Shelter or bask during the day in rock crevices, caves and overhangs and are most active at night when foraging. Browse on vegetation in and adjacent to rocky areas eating grasses and forbs as well as the foliage and fruits of shrubs and trees. Highly territorial and have strong site fidelity with an average home range size of about 15 ha. Males tend to have larger home ranges than females. The home range consists of a refuge area and a foraging range linked by habitually used commuting routes. Females settle in or near their mother's range, while males mainly disperse between female groups within colonies, and less commonly between colonies. **Low – Subject site within species distribution, however, no associated PCTs are present.**	N
Pteropus poliocephalus	Grey-headed Flying-fox	V,P	V	N	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	Y

Scientific name	Common Name	NSW Status*	Comm. Status+	Record within 10 km	Likelihood of Occurrence	Test of Significance Required? (Yes / No)
					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 – Subject site within species distribution and associated PCT 76 is present.**	
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	V,P		N	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 – Subject site within species distribution and associated PCTs 45, 76, 80, 248 and 251 are present.**	Y
Chalinolobus dwyeri	Large-eared Pied Bat	V,P	V	N	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 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.	N

Scientific name	Common Name	NSW Status*	Comm. Status+	Record within 10 km	Likelihood of Occurrence	Test of Significance Required? (Yes / No)
					Low – Subject site is within species distribution, however, no associated PCTs are present.	
Chalinolobus picatus	Little Pied Bat	V,P		N	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 – Subject site is within species distribution and associated PCTs 76, 248 and 251 are present.**	Y
Falsistrellus tasmaniensis	Eastern False Pipistrelle	V,P		N	The Eastern False Pipistrelle is found on the south-east coast and ranges of Australia, from southern Queensland to Victoria and Tasmania. Prefers moist habitats, with trees taller than 20 m. Generally, roosts in eucalypt hollows, but has also been found under loose bark on trees or in buildings. **Low – Subject site is within species distribution, however, no associated PCTs are present.**	N
Myotis macropus	Southern Myotis	V,P		N	The Southern Myotis is found in the coastal band from the north-west of Australia, across the top-end and south to western Victoria. It is rarely found more than 100 km inland, except along major rivers. Generally roost in groups of 10 - 15 close to water in caves, mine shafts, hollow-bearing trees, storm water channels, buildings, under bridges and in dense foliage. Forage over streams and pools catching insects and small fish by raking their feet across the water surface. **Low – Subject site is within species distribution, however, no associated PCTs are present.**	N
Nyctophilus corbeni	Corben's Long-eared Bat	V,P	V	N	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 – Subject site is within species distribution and associated PCTs 80 and 248 are present.**	Y
Scoteanax rueppellii	Greater Broad-nosed Bat	V,P		N	The Greater Broad-nosed Bat is found mainly in the gullies and river systems that drain the Great Dividing Range, from north-eastern Victoria to the Atherton Tableland. It extends to the coast over much of its range. In NSW it is widespread on the New England Tablelands, however, does not occur at altitudes above 500 m. Utilises a variety of habitats from woodland through to	N

Scientific name	Common Name	NSW Status*	Comm. Status+	Record within 10 km	Likelihood of Occurrence	Test of Significance Required? (Yes / No)
					moist and dry eucalypt forest and rainforest, though it is most commonly found in tall wet forest. Although this species usually roosts in tree hollows, it has also been found in buildings. Forages after sunset, flying slowly and directly along creek and river corridors at an altitude of 3 - 6 m. Open woodland habitat and dry open forest suits the direct flight of this species as it searches for beetles and other large, slow-flying insects; this species has been known to eat other bat species. **Low – Subject site is within species distribution, however, no associated PCTs are present.**	
Miniopterus orianae oceanensis	Large Bent-winged Bat	V,P		N	Eastern Bentwing-bats occur along the east and north-west coasts of Australia. Caves are the primary roosting habitat, but also use derelict mines, storm-water tunnels, buildings and other man-made structures. **Low – Subject site is within species distribution, however, no associated PCTs are present.**	N
Pseudomys novaehollandiae	New Holland Mouse		V	N	The New Holland Mouse has a fragmented distribution across Tasmania, Victoria, New South Wales and Queensland. Genetic evidence indicates that the New Holland Mouse once formed a single continuous population on mainland Australia and the distribution of recent subfossils further suggest that the species has undergone a large range contraction since European settlement. Total population size of mature individuals is now estimated to be less than 10,000 individuals although, given the number of sites from which the species is known to have disappeared between 1999 and 2009, it is likely that the species' distribution is actually smaller than current estimates. Known to inhabit open heathlands, woodlands and forests with a heathland understorey and vegetated sand dunes. It is a social animal, living predominantly in burrows shared with other individuals. Distribution is patchy in time and space, with peaks in abundance during early to mid stages of vegetation succession typically induced by fire. **Low – Subject site is within species distribution. No associated PCTs present. No records within 10 km.**	N
Synemon plana	Golden Sun Moth	E1	CE	N	The Golden Sun Moth's NSW populations are found in the area between Queanbeyan, Gunning, Young and Tumut. The species' historical distribution extended from Bathurst (central NSW) through the NSW Southern Tablelands, through to central and western Victoria, to Bordertown in eastern South Australia. Occurs in Natural Temperate Grasslands and grassy Box-Gum Woodlands in which groundlayer is dominated by wallaby grasses *Austrodanthonia* spp. **Low – Subject site is within species distribution, however, no associated PCTs are present.**	N

Scientific name	Common Name	NSW Status*	Comm. Status+	Record within 10 km	Likelihood of Occurrence	Test of Significance Required? (Yes / No)
Keyacris scurra	Key's Matchstick Grasshopper	E1		N	Previously recorded in grassland ecosystems across the wheat-sheep belt from Victoria to Orange, unfortunately most of this habitat has now been modified or destroyed leading to the widespread decline of this little insect. The species fell into obscurity up until very recently, where surveys revealed it's now missing from most of the sites where it was once recorded. **Low – Subject site is within species distribution, however, no associated PCTs are present.**	N
Caesia parviflora var. minor	Small Pale Grass-lily	E1		N	This variety occurs uncommonly in Tasmania, southern Victoria and south-east South Australia with an outlying population in NSW, in Barcoongere State Forest, between Grafton and Coffs Harbour. This variety may be more common than currently known, as Pale Grass-lilies are often not identified to variety level. Found in damp places in open forest on sandstone. **Low – Subject site is not within species distribution and no associated PCTs are present.**	N
Tylophora linearis		V	E	N	Occurs from southern Queensland into central NSW, as far south near Temora with the majority of records occurring 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 – Subject site is within species distribution, however, no associated PCTs are present.**	N
Ammobium craspedioides	Yass Daisy	V	V	N	Found from near Crookwell on the Southern Tablelands to near Wagga Wagga on the South Western Slopes. Most populations are in the Yass region. Found in moist or dry forest communities, Box-Gum Woodland and secondary grassland derived from clearing of these communities. Grows in association with a large range of eucalypts (*Eucalyptus blakelyi, E. bridgesiana, E. dives, E. goniocalyx, E. macrorhyncha, E. mannifera, E. melliodora, E. polyanthemos, E. rubida*). **Low – Subject site is within species distribution, however, no associated PCTs are present.**	N
Brachyscome muelleroides	Claypan Daisy	V	V	N	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.*	Y

Scientific name	Common Name	NSW Status*	Comm. Status+	Record within 10 km	Likelihood of Occurrence	Test of Significance Required? (Yes / No)
					Moderate – Subject site is within species distribution and associated PCT 45 is present.	
Brachyscome papillosa	Mossgiel Daisy	V	V	N	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 – Subject site is within species distribution and associated PCT 45, 76 and 80 are present.**	Y
Kippistia suaedifolia	Fleshy Minuria	E1		N	Recorded from several collections near Conoble in the Ivanhoe district. This locality is an open-cast gypsum mine (Marlow Gypsum Mine), located 22 km north of Conoble railway siding. Also reported from the Scotia mapsheet area in far south-western NSW. **Low – Subject site is within species distribution, however, no associated PCTs are present.**	N
Leptorhynchos orientalis	Lanky Buttons	E1		N	Recorded from several Hay Plain and southern Riverina localities, including Willanthry east of Hillston, Zara-Wanganella via Hay, McKinley Road SW of Hillston, and “Morundah” navy land west of Buckingbong SF. A large population has most recently been recorded from Cowl Cowl Station SSW of Hillston along a TSR. 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 – Subject site is within species distribution and associated PCT 45, 248 and 251 are present.**	Y
Senecio garlandii	Woolly Ragwort	V		N	This daisy is found between Temora, Bethungra and Albury and possibly Burrinjuck near Yass. The largest populations are at The Rock and Mt Tabletop (and surrounds). There is a single population in Victoria at Chiltern. Woolly Ragwort occurs on sheltered slopes of rocky outcrops. **Low – Subject site is within species distribution, however, no associated PCTs are present.**	N
Carex raleighii	Raleigh Sedge	E1		N	In NSW Raleigh Sedge is found only in areas above about 1000 metres on the Southern Tablelands. Most populations are in Kosciuzsko National Park (eg. Charlottes Pass area, Muellers Pass, Tantangara area and the upper Tooma and Tumut valleys). Also occurs in vicinity of Snowy Plain (private land and	N

Scientific name	Common Name	NSW Status*	Comm. Status+	Record within 10 km	Likelihood of Occurrence	Test of Significance Required? (Yes / No)
					travelling stock reserve) and on the coastal escarpment at the headwaters of Tantawangalo Creek within South East Forests National Park. Grows in sphagnum bogs and high mountain wetlands, as well as damp grasslands and stream-edges of sub-alpine plains. **Low – Subject site is not within species distribution and no associated PCTs are present.**	
Bossiaea fragrans		E4A	CE	N	Currently only known from the Abercrombie Karst Conservation Reserve, south of Bathurst on the NSW central tablelands. It is highly restricted, with only a small number of known populations. Occurs on spilite, rhyolite or slate and volcanic substrates and is often associated with Red Stringybark (*Eucalyptus macrorhyncha*) - Red Box (*Eucalyptus polyanthemos*) woodland +/- White Box (*Eucalyptus albens*). **Low – Subject site is not within species distribution and no associated PCTs are present.**	N
^^*Indigofera efoliata*	Leafless Indigo	E1,3	E	N	Very rare and possibly now extinct, known only from a few collections in the Dubbo area. Mr E.F. Biddiscombe is the only person alive to have seen Indigofera efoliata in the wild, in August 1955. Sites were located along the Dubbo to Minore railway line and road, on Wallaringa and Geurie properties and in Goonoo State Forest. **Moderate – Subject site is within species distribution and associated PCTs 76 and 248 are present.**	Y
Lepidium monoplocoides	Winged Peppercress	E1	E	N	Widespread in the semi-arid western plains regions of NSW. Collected from widely scattered localities, with large numbers of historical records but few recent collections. There is a single collection from Broken Hill and only two collections since 1915, the most recent being 1950. Also previously recorded from Bourke, Cobar, Urana, Lake Cargelligo, Balranald, Wanganella and Deniliquin. Recorded more recently from the Hay Plain, south-eastern Riverina, and from near Pooncarie. **Moderate – Subject site is within species distribution and associated PCTs 45, 80, 248 and 251 are present.**	Y
Lepidium aschersonii	Spiny Peppercress	V	V	N	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.	N

Scientific name	Common Name	NSW Status*	Comm. Status+	Record within 10 km	Likelihood of Occurrence	Test of Significance Required? (Yes / No)
					Low – Subject site is within species distribution, however, no associated PCTs are present.	
Wilsonia rotundifolia	Round-leafed Wilsonia	E1		N	Round-leafed Wilsonia is known from several sites in the Jervis Bay area, Royal National Park, near Deniliquin and on the lakebeds of Lake George and Lake Bathurst when these are exposed during droughts. The Lake George and Lake Bathurst populations appear to be locally extensive. Also found Western Australia, South Australia and Victoria. Grows in mud in coastal saltmarsh and inland saline or brackish lake beds. **Low – Subject site is within species distribution, however, no associated PCTs are present.**	N
Eleocharis obicis	Spike-Rush	V	V	N	Found near Condobolin and Hay, as well as being known from an old collection from the Barrier Range near Broken Hill. The later collection was made on the Lachlan River floodplain at Micabil, near Condobolin. Grows in ephemerally wet situations such as roadside mitre drains and depressions, usually in low-lying grasslands. **Moderate – Subject site is within species distribution and associated PCTs 76 and 251 are present.**	Y
Cullen parvum	Small Scurf-pea	E1		N	The Small Scurf-pea is known in NSW from only two herbarium collections; one from Wagga Wagga in 1884 and the other from Jindera (near Albury) in 1967. A small population was recently reported from near Jerilderie (although it has not been relocated). In recent years, two populations have been recorded in travelling stock reserves south-west of Wagga Wagga, and a population reputedly exists on a roadside near Galong. Another population has recently been discovered on private land near Young. Large populations have been recorded in grassy gaps in the Red Gum Woodlands of Barmah State Park, just across the border in Victoria. Extensive suitable habitat probably occurs across the border in NSW. In known populations in Victoria and NSW, plants are found in grassland, River Red Gum (Eucalyptus camaldulensis) Woodland or Box-Gum Woodland, sometimes on grazed land and usually on table drains or adjacent to drainage lines or watercourses, in areas with rainfall of between 450 and 700 mm. **Low – Subject site is within species distribution, however, no associated PCTs are present.**	N
Swainsona murrayana	Slender Darling Pea	V	V	N	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.	Y

Scientific name	Common Name	NSW Status*	Comm. Status+	Record within 10 km	Likelihood of Occurrence	Test of Significance Required? (Yes / No)
					Moderate – Subject site is within predicted species distribution and associated PCTs 45, 76, 80 and 248 are present.	
Swainsona recta	Small Purple-pea	E1	E	N	Small Purple-pea was recorded historically from places such as Carcoar, Culcairn and Wagga Wagga where it is probably now extinct. Populations still exist in the Queanbeyan and Wellington-Mudgee areas. Over 80% of the southern population grows on a railway easement. It is also known from the ACT and a single population of four plants near Chiltern in Victoria. Grows in association with understorey dominants that include Kangaroo Grass *Themeda australi*s, poa tussocks *Poa* spp. and spear-grasses *Austrostipa* spp. **Moderate – Subject site is within species distribution and associated PCT 76 is present.**	Y
Swainsona sericea	Silky Swainson-pea	V		N	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 – Subject site is within predicted species distribution and associated PCTs 45, 76, 80, 248 and 251 are present.**	Y
Acacia ausfeldii	Ausfeld's Wattle	V		N	Found to the east of Dubbo in the Mudgee-Ulan-Gulgong area of the NSW South Western Slopes bioregion, with some records in the adjoining Brigalow Belt South, South Eastern Highlands and the Sydney Basin bioregions. Populations are recorded from Yarrobil National Park, Goodiman State Conservation Area and there is a 1963 record from Munghorn Gap Nature Reserve. A large population is also known from Tuckland State Forest to the northwest of Gulgong. Associated species include *Eucalyptus albens, E. blakelyi* and *Callitris* spp., with an understorey dominated by *Cassinia* spp. and grasses. **Low – Subject site is within species distribution, however, no associated PCTs are present.**	N
Acacia meiantha		E1	E	N	The species is found in three disjunct populations, all within the Central Tablelands and within 100kms of each other. These populations include Clarence, which covers an area of approximately 1 hectare; Mullions Range, covering approximately 5 hectares; and Aarons Pass, which is confined to 2.5km of road easements. **Low – Subject site is not within species distribution and no associated PCTs are present.**	N
Acacia phasmoides	Phantom Wattle	V	V	N	The species is only known from one location in NSW: Woomagarma National Park in Greater Hume Shire. It is also found at Burrowa-Pine Mountain	N

Scientific name	Common Name	NSW Status*	Comm. Status+	Record within 10 km	Likelihood of Occurrence	Test of Significance Required? (Yes / No)
					National Park in Victoria. Grows in shrubby woodland on sandy, granitic soil near creeks or in rocky crevices. **Low – Subject site is not within species distribution and no associated PCTs are present.**	
^^*Pilularia novae-hollandiae*	Austral Pillwort	E1,3		N	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 – Subject site is within species distribution and associated PCT 45 is present.**	Y
Eucalyptus leucoxylon subsp. pruinosa	Yellow Gum	V		N	Restricted to several small areas between Barham and Euston. This species is not known from any protected area within NSW, though some remnants occur within State Forests along the Murray River, particularly within Campbells Island and Euston SFs. *Eucalyptus leucoxylon* subsp. *pruinosa* is a tree species which, in New South Wales, occurs at the bases of sandy rises and on loamy clay flats on the floodplains of the Murray River and its tributaries in the Riverina Bioregion. **Low – Subject site is not within species distribution and no associated PCTs are present.**	N
Eucalyptus alligatrix subsp. alligatrix		V	V	N	Only known from a single location south-west of Rylstone; however, the species has reportedly been widely propagated and planted in the Rylstone area. The population is confined to an area of a few hectares where an estimated 3,000 to 4,500 trees survive. Most of the population consists of moderately dense regenerating stands following previous clearing, but there are also larger scattered paddock trees, probably pre-dating European settlement. Grows in dry sclerophyll woodland on shallow relatively infertile soils (grey brown loam with ironstone). It may have been part of a more-extensive open woodland community prior to the commencement of clearing and grazing. **Low – Subject site is not within species distribution and no associated PCTs are present.**	N
Eucalyptus cannonii	Capertee Stringybark	V		N	The Capertee Stringybark is predominantly restricted to the central tablelands and slopes of NSW between the Golden Highway in the north, and the Mitchell	N

Scientific name	Common Name	NSW Status*	Comm. Status+	Record within 10 km	Likelihood of Occurrence	Test of Significance Required? (Yes / No)
					Highway in the south. The species' distribution is bounded from east of Bathurst, to Wallerwang near Lithgow, north along the western edge of Wollemi National Park and north-west to Mudgee; isolated occurrences are known from a short way north of Goulburn River National Park between Dunedoo and Merriwa. Within this area the species is often locally frequent. **Low – Subject site is within species distribution, however, no associated PCTs are present.**	
^Caladenia arenaria	Sand-hill Spider Orchid	E1,P,2	E	N	*Caladenia arenaria* is found mostly on the south west plains and western south west slopes. The original description is of a plant from Nangus, west of Gundagai (1865) and there is a report of the species from Adelong near Tumut. A record near Cootamundra needs verifying. The Sand-hill Spider Orchid is currently only known to occur in the Riverina between Urana and Narranderra. Occurs in woodland with sandy soil, especially that dominated by White Cypress Pine (*Callitris glaucophylla*). **Moderate – Subject site is within species distribution and associated PCTs 76 and 80 is present.**	Y
^Diuris sp. (Oaklands, D.L. Jones 5380)	Oaklands Diuris	E1,P,2		N	Currently known only from the Oaklands-Urana region of southern NSW. Grows in White Cypress Pine (*Callitris glaucophylla*) Woodland, either among dense grasses in flat areas with associated eucalypts, or amongst sparse grasses and forbs on low sandhills. Grows mostly on sandy loam soils. **Moderate – Subject site is within species distribution and associated PCT 80 is present.**	Y
Eucalyptus robertsonii subsp. hemisphaerica	Robertson's Peppermint	V	V	N	Known only from the central tablelands of NSW, at small disjunct localities from north of Orange to Burraga. Locally frequent in grassy or dry sclerophyll woodland or forest, on lighter soils and often on granite. Usually found in closed grassy woodlands in locally sheltered sites. Habitats include quartzite ridges, upper slopes and a slight rise of shallow clay over volcanics. **Low – Subject site is within species distribution, however, no associated PCTs are present.**	N
Homoranthus darwinioides	Fairy Bells	V	V	N	Rare in the central tablelands and western slopes of NSW, occurring from Putty to the Dubbo district. It is found west of Muswellbrook between Merriwa and Bylong, and north of Muswellbrook to Goonoo SCA. The species has been collected from Lee's Pinch, but not relocated at its original locality north of Mt Coricudgy above the headwaters of Widden Brook. Grows in in various woodland habitats with shrubby understoreys, usually in gravely sandy soils. Landforms the species has been recorded growing on include flat sunny ridge tops with scrubby woodland, sloping ridges, gentle south-facing slopes, and a slight depression on a roadside with loamy sand	N

Scientific name	Common Name	NSW Status*	Comm. Status+	Record within 10 km	Likelihood of Occurrence	Test of Significance Required? (Yes / No)
					Low – Subject site is within species distribution, however, no associated PCTs are present.	
^*Caladenia concolor*	Crimson Spider Orchid	E1,P,2	V	N	The current NSW Scientific Committee listing incorporates two populations which have each been described as separate species by D.L. Jones. One of these populations comprises a few hundred plants on private property near Bethungra and the other of about 100 plants occurs in Burrinjuck Nature reserve. The other occurrences of the Crimson Spider Orchid in NSW are from the Nail Can Hill Crown Reserve near Albury. The species also occurs at two localities in Victoria near Beechworth and Chiltern. Habitat is regrowth woodland on granite ridge country that has retained a high diversity of plant species, including other orchids. **Low – Subject site is within predicted species distribution, however, no associated PCTs are present.**	N
^*Caladenia rosella*	Rosella Spider Orchid	E4,P,2	E	N	The single NSW collection of the Rosella Spider Orchid (located in Albury) is undated, but is estimated to have been collected before 1896. Today the species is found near Melbourne in Victoria, but is listed as endangered because less than 200 plants are known to exist. In Victoria, the species is found in woodlands and low forests of Red Box (*Eucalyptus polyanthemos*), Long-leafed Box *(E. goniocalyx*) and Red Stringybark (*E. macrorhyncha*) in well-drained, skeletal soils. **Low – Subject site is not within species distribution and no associated PCTs are present.**	N
^*Caladenia tessellata*	Thick Lip Spider Orchid	E1,P,2	V	N	The Thick Lip Spider Orchid is known from the Sydney area (old records), Wyong, Ulladulla and Braidwood in NSW. Populations in Kiama and Queanbeyan are presumed extinct. It was also recorded in the Huskisson area in the 1930s. The species occurs on the coast in Victoria from east of Melbourne to almost the NSW border. Generally found in grassy sclerophyll woodland on clay loam or sandy soils, though the population near Braidwood is in low woodland with stony soil. **Low – Subject site is not within species distribution and no associated PCTs are present.**	N
^*Diuris tricolor*	Pine Donkey Orchid	V,P,2		N	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.	Y

Scientific name	Common Name	NSW Status*	Comm. Status+	Record within 10 km	Likelihood of Occurrence	Test of Significance Required? (Yes / No)
					Moderate – Subject site is within species distribution and associated PCTs 76, 80 and 248 are present.	
^Prasophyllum petilum	Tarengo Leek Orchid	E1,P,2	E	N	Natural populations are known from a total of five sites in NSW. These are near Boorowa, Queanbeyan area, Ilford, Delegate and a newly recognised population c.10 km west of Muswellbrook. It also occurs at Hall in the Australian Capital Territory. This species has also been recorded at Bowning Cemetery where it was experimentally introduced, though it is not known whether this population has persisted. Grows in open sites within Natural Temperate Grassland at the Boorowa and Delegate sites. Also grows in grassy woodland in association with River Tussock *Poa labillardieri*, Black Gum *Eucalyptus aggregata* and tea-trees *Leptospermum* spp. near Queanbeyan and within the grassy groundlayer dominated by Kangaroo Grass under Box-Gum Woodland at Ilford (and Hall, ACT). **Low – Subject site is not within species distribution and no associated PCTs are present.**	N
Euphrasia arguta		E4A	CE	N	Euphrasia arguta was rediscovered in the Nundle area of the NSW north western slopes and tablelands in 2008. Prior to this, it had not been collected for 100 years. Historically, Euphrasia arguta has only been recorded from relatively few places within an area extending from Sydney to Bathurst and north to Walcha. The Royal Botanic Gardens Specimen Register records an additional location reported and vouchered in 2002 from near the Hastings River; and Euphrasia arguta was also recorded from the Barrington Tops in 2012. Historic records of the species noted the following habitats: 'in the open forest country around Bathurst in sub humid places', 'on the grassy country near Bathurst', and 'in meadows near rivers'. **Low – Subject site is not within species distribution and no associated PCTs are present.**	N
Euphrasia collina subsp. muelleri	Mueller's Eyebright	E1	E	N	Once widespread in south-eastern Australia, Mueller's Eyebright is now known only from the Mornington Peninsula near Melbourne. In NSW it was recorded more than 100 years ago in the upper Murray and McIntyre Rivers and near Dorrigo and Cootamundra. The only NSW collections in the past 50 years were made in the vicinity of the Tinderry Range between Canberra and Cooma (1970) and between Uralla and Tamorth (1987). Little is known about the habitat this species preferred, although there is a reference to "damp places" in an early von Mueller collection. Extant populations in Victoria occur in heathy woodland. **Low – Subject site is not within species distribution and no associated PCTs are present.**	N

Scientific name	Common Name	NSW Status*	Comm. Status+	Record within 10 km	Likelihood of Occurrence	Test of Significance Required? (Yes / No)
Amphibromus fluitans	Floating Swamp Wallaby-grass	V	V	N	There are many historic collections in the City of Greater Albury. It has been recorded recently in lagoons beside the Murray River near Cooks Lagoon (Shire of Greater Hume), Mungabarina Reserve, East Albury, at Ettamogah, Thurgoona (Charles Sturt University Campus), near Narranderra, and also further west along the Murray River (near Mathoura) and in Victoria. There is a recent record of this species near Laggan in Upper Lachlan Shire. It is also found in Victoria and in Tasmania. *Amphibromus fluitans* grows mostly in permanent swamps. The species needs wetlands which are at least moderately fertile and which have some bare ground, conditions which are produced by seasonally-fluctuating water levels. Habitats in south-western NSW include swamp margins in mud, dam and tank beds in hard clay and in semi-dry mud of lagoons with *Potamogeton* and *Chamaeraphis* species. **Low – Subject site is within species distribution, however, no associated PCTs are present.**	N
Austrostipa metatoris	A spear-grass	V	V	N	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 – Subject site is within species distribution and associated PCTs 248 and 251 are present.**	Y
Austrostipa wakoolica	A spear-grass	E1	E	Y	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. **High – Subject site is within species distribution, records within 10km, and associated PCTs 76, 80, 248 and 251 are present.**	Y
Dichanthium setosum	Bluegrass	V	V	N	Bluegrass occurs on the New England Tablelands, North West Slopes and Plains and the Central Western Slopes of NSW, extending to northern Queensland. It occurs widely on private property, including in the Inverell, Guyra, Armidale and Glen Innes areas. Associated species include *Eucalyptus albens, Eucalyptus melanophloia, Eucalyptus melliodora, Eucalyptus viminalis,*	Y

Scientific name	Common Name	NSW Status*	Comm. Status+	Record within 10 km	Likelihood of Occurrence	Test of Significance Required? (Yes / No)
					Myoporum debile, Aristida ramosa, Themeda triandra, Poa sieberiana, Bothriochloa ambigua, Medicago minima, Leptorhynchos squamatus, Lomandra aff. longifolia, Ajuga australis, Calotis hispidula and *Austrodanthonia, Dichopogon, Brachyscome, Vittadinia, Wahlenbergia* and *Psoralea* species. **Moderate – Subject site is within species distribution and associated PCT 45 is present.**	
Grevillea wilkinsonii	Tumut Grevillea	E4A	E	N	The Tumut Grevillea has a highly restricted distribution in the NSW South-west Slopes region. Its main occurrence is along a 6 km stretch of the Goobarragandra River approximately 20 km east of Tumut where about 1,000 plants are known. The other occurrence is a small population that straddles the boundary of two private properties at Gundagai where only eight mature plants survive. At the Goobarragandra River sites the species generally grows in close proximity to the water, at altitudes between 310 and 340 m. Most healthy adult plants occur in open sunny areas, and those plants found under the canopy of dense vegetation tend to be spindly and are sometimes subject to sooty mould infestations. **Low – Subject site is not within species distribution and no associated PCTs are present.**	N
Persoonia marginata	Clandulla Geebung			N	The Clandulla Geebung occurs between Kandos and Clarence in the western Blue Mountains. Populations are largely disjunct and include Clandulla, Ben Bullen and Sunny Corner State Forests; isolated populations have also been recorded from Turon and Gardens of Stone National Parks. Grows in dry sclerophyll forest and woodland communities on sandstone. **Low – Subject site is within species distribution, however, no associated PCTs are present.**	N
Pomaderris cotoneaster	Cotoneaster Pomaderris	E1	E	N	Cotoneaster Pomaderris has a very disjunct distribution, being known from the Nungatta area, northern Kosciuszko National Park (near Tumut), the Tantawangalo area in South-East Forests National Park and adjoining freehold land, Badgery's Lookout near Tallong, Bungonia State Conservation Area, the Yerranderie area, Kanangra-Boyd National Park, the Canyonleigh area and Ettrema Gorge in Morton National Park. The species has also been recorded along the Genoa River in Victoria. Cotoneaster Pomaderris has been recorded in a range of habitats in predominantly forested country. The habitats include forest with deep, friable soil, amongst rock beside a creek, on rocky forested slopes and in steep gullies between sandstone cliffs. **Low – Subject site is not within species distribution and no associated PCTs are present.**	N

Scientific name	Common Name	NSW Status*	Comm. Status+	Record within 10 km	Likelihood of Occurrence	Test of Significance Required? (Yes / No)
Pomaderris queenslandica	Scant Pomaderris	E1		N	Widely scattered but not common in north-east NSW and in Queensland. It is known from several locations on the NSW north coast and a few locations on the New England Tablelands and North West Slopes, including near Torrington and Coolata. Found in moist eucalypt forest or sheltered woodlands with a shrubby understorey, and occasionally along creeks. **Low – Subject site is not within species distribution and no associated PCTs are present.**	N
Zieria ingramii	Keith's Zieria	E1	E	N	Known predominately from Goonoo SCA, about 40 km north-east of Dubbo. An old record exists from a locality east of Mogriguy on the Mendooran Road, however searches of the area have not relocated the species. Grows in dry sclerophyll forest on light sandy soils. All known populations have been recorded in Eucalyptus-Callitris woodland or open forest with a shrubby to heathy understorey. **Low – Subject site is not within species distribution and no associated PCTs are present.**	N
Zieria obcordata	Granite Zieria	E1	E	N	Occurs at two sites with a geographic range of 105 km. These are in the Wuuluman area near Wellington, comprising of a single subpopulation over 3 sites comprising up to 200 plants and Crackerjack Rock/Rock Forests area NW of Bathurst, with a subpopulation comprising of 14 sites, totaling to approximately 700 adults plants after good seasons. Grows in eucalypt woodland or shrubland dominated by species of Acacia on rocky hillsides. Also occurs in Eucalyptus and Callitris dominated woodland with an open, low shrub understorey, on moderately steep, mainly west to north-facing slopes in sandy loam amongst granite boulders. The altitude range of sites is 500 to 830 metres. Associated vegetation includes *Eucalyptus blakelyi, Brachychiton populneus* and *Acacia implexa* woodland with pockets of low shrub understorey. Also in E*. goniocalyx, E. blakelyi, E. macrorhyncha, A. doratoxylon, A. vestita* and *Callitris glauc*ophylla woodland with a shrubby understorey. **Low – Subject site is not within species distribution and no associated PCTs are present.**	N
Pimelea bracteata		E4		N	*Pimelea bracteata* is endemic to New South Wales where it is currently known from the Southern Tablelands. The main areas of occurrence of *P. bracteata* are in the northern area of Kosciuszko National Park, Scabby Range Nature Reserve, neighbouring State Forests and freehold land. **Low – Subject site is not within species distribution and no associated PCTs are present.**	N
Grevillea ilicifolia subsp. ilicifolia	Holly-leaf Grevillea	E4A		N	*Grevillea ilicifolia*, commonly known as holly grevillea, is a species of the plant genus Grevillea. It is a shrub of variable form, growing to between 0.3 and 2	N

Scientific name	Common Name	NSW Status*	Comm. Status+	Record within 10 km	Likelihood of Occurrence	Test of Significance Required? (Yes / No)
					metres in height and 3 metres wide. Typically, leaves are lobed and holly like, but may also be unlobed. The flowers have perianths that have a base that is cream to green grading to grey-mauve. Styles may be pink, red, orange or yellow. The main flowering period in the species' native range is September to November. **Low – Subject site is within species distribution, however, no associated PCTs are present.**	
Pomaderris cocoparrana	Cocoparra Pomaderris	E1	E	N	Shrub 1–3 m high, stems rusty with short simple and stellate hairs. Leaves ovate to ? circular, 1–3 cm long, 8–15 mm wide, upper surface dark green, ? velvety with very short erect hairs; lower surface greyish with longer appressed rusty simple hairs, secondary veins prominent with rusty simple hairs. Flowers yellow, in small terminal panicles. Sepals not persistent in fruit. Petals usually absent. Capsule and hypanthium covered with fine stellate tomentum below fine whitish scattered simple hairs. Confined to the Cocoparra Ranges near Griffith. An isolated population also occurs 65 kilometres east of the Ranges on private land north of Ardlethan. **Low – Subject site is within species distribution, however, no associated PCTs are present.**	N
Philotheca angustifolia subsp. angustifolia		E4,P		N	Presumed to be extinct in NSW. Its current distribution is in Queensland, Victoria and South Australia. **Low – Subject site is not within species distribution and no associated PCTs are present.**	N

*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: C=CAMBA, J=JAMBA, K=ROKAMBA, CE=Critically endangered, E=Endangered, V=Vulnerable

Likelihood of occurrence table for BC Act-listed Threatened Ecological Communities.

Community	NSW Status	Comm. Status	Likelihood of Occurrence	5-part test required (Yes / No)
Fuzzy Box Woodland on alluvial Soils of the South Western Slopes, Darling Riverine Plains and Brigalow Belt South Bioregions	E3		Unlikely. No associated PCTs mapped within or near the subject site.	No
Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions	E3	E	Likely. Multiple associated PCTs (76, 80, and 248) mapped within the subject site.	Yes
Mallee and Mallee-Broombush dominated woodland and shrubland, lacking Triodia, in the NSW South Western Slopes Bioregion	E4B		Unlikely. One associated PCT (80) mapped within subject site; however, this PCT corresponds poorly to the TEC description and the community is considered to be bounded in the north by Lake Cowal, c. 77 km from the subject site.	No
Myall Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain, Murray-Darling Depression, Riverina and NSW South Western Slopes bioregions	E3	E	Unlikely. No associated PCTs mapped within or near the subject site. Site photography indicates that the characteristic species *Acacia pendula* is not present.	No
Sandhill Pine Woodland in the Riverina, Murray-Darling Depression and NSW South Western Slopes bioregions	E3		Unlikely. No associated PCTs mapped within or near the subject site.	No
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	CE	Unlikely. No associated PCTs mapped within or near the subject site.	No

APPENDIX C – 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.

BC Act Tests of Significance for Threatened Species.

Species Name	Common Name	a.	b.	c.	d.	e.	Impact Significance
Crinia sloanei	Sloane's Froglet	There are no records of this species within 10 km of the subject site. The life cycle for this species is reliant on standing bodies of water. Although the subject site is adjacent to the Lachlan River, the proposal will not directly interfere with the species access to water. If efforts are made to mitigate runoff, the proposal will not significantly increase the risk of local extinction.	N/A	i. This species is associated with PCTs 76 and 80. Consequently, up to 5,149.88 m^2 of habitat may be impacted. ii. As impacts will be confined to the pre-existing road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Anseranas semipalmata	Magpie Goose	There are no records of this species within 10 km of the subject site. Given that this species requires appropriate wetland habitat to complete its life cycle, and that this is not present, it is unlikely that the subject site is critical to the maintenance of the life cycle of this species.	N/A	i. This species is associated with PCT 45. Consequently, up 464.05 m^2 to of habitat may be impacted. ii. As impacts will be confined to the pre-existing road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Hirundapus caudacutus	White-throated Needletail	There are no records of this species within 10 km of the subject site. This species breeds in forests in south-eastern Siberia, Mongolia, the Korean Peninsula and northern Japan. As this proposal will not impact	N/A	i. This species is associated with PCTs 45, 76, 80, 248 and 251. Consequently, up to 7,161.63 m^2 of habitat may be impacted. ii. As impacts will be confined to the pre-existing road corridor, the extent of fragmentation or isolation is expected to be minor.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

		breeding habitat for this species and will impact only a small area of potential foraging habitat, it is unlikely that the proposal will adversely affect the life cycle of this species.		iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.			
Circus assimilis	Spotted Harrier	There are no records of this species within 10 km of the subject site. This species builds a twig nest in a tree in open or remnant woodland. Given the disturbed nature of the intersection, and the likely absence of large remnant trees, the subject site is unlikely to be critical to the maintenance of the life cycle of this species.	N/A	i. This species is associated with 45, 248 and 251. Consequently, 2,011.75 m^2 of habitat may be impacted. ii. As impacts will be confined to the pre-existing road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Haliaeetus leucogaster	White-bellied Sea-eagle	This species breeds in large stick nests, generally within 1 km of large watercourses. Given the subject sites proximity to the Lachlan River, it would constitute potential breeding habitat. However, as no records exist within 10 km of the subject site exist, and its disturbed fragmentary nature, it is unlikely that it is critical to the maintenance of the life cycle of the species.	N/A	i. This species is associated with PCTs 45, 76, 80, 248 and 251. Consequently, up to 7,161.63 m^2 of habitat may be impacted. ii. As impacts will be confined to the pre-existing road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	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	This species breeds in twig stick nests in large old trees in open woodland or riparian	N/A	i. This species is associated with PCTs 45, 76, 80, 248 and 251. Consequently, up to 7,161.63 m^2 of habitat may be impacted.	No, AOBV not present within or	Yes. See **Appendix E**	No significant impact will arise to the local viability of this

		vegetation. Considering the subject site has been historically cleared, few suitable large old trees would exist on the subject site for nesting purposes. Given this and the lack of records within 10 km, it is reasonable to assume that the subject site would not constitute habitat critical to the maintenance of the life cycle of the species.		ii. As impacts will be confined to the pre-existing road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	close to the subject site.		species or its habitat due to the undertaking of the proposal
^^*Lophoictinia isura*	Square-tailed Kite	This species builds nests in a fork or large horizontally reaching limb in trees near watercourses. Their life cycle dependent on timbered habitats, particularly those adjacent to watercourses. Although the subject site is adjacent to the Lachlan River, it has been heavily cleared by historical road and residential development. Considering this, and the lack of records of within 10km of the subject site, it is unlikely to be critical to the maintenance of the life cycle of the species.	N/A	i. This species is associated with PCTs 45, 248 and 251. Consequently, up to 2,011.75 m^2 of habitat may be impacted. ii. As impacts will be confined to the pre-existing road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	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	This species requires nests of other birds of prey and ravens, usually high in a living eucalypt near water, to	N/A	i. This species is associated with PCTs 45, 76, 80, 248 and 251. Consequently, up to 7,161.63 m^2 of habitat may be impacted.	No, AOBV not present within or	Yes. See **Appendix E**	No significant impact will arise to the local viability of this species or its habitat

		complete its life cycle. Given the lack of records within 10 km, and the historically cleared nature of the site, it is reasonable to assume that the subject site would not constitute habitat critical to the maintenance of the life cycle of the species.		ii. As impacts will be confined to the pre-existing road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	close to the subject site.		due to the undertaking of the proposal
Falco subniger	Black Falcon	This species requires nests of other birds of prey and ravens, usually high in a living eucalypt near water, to complete its life cycle. Given the lack of suitable nests, it is unlikely that the subject site is critical to the maintenance of the life cycle of this species. Given the lack of records within 10 km, and the historically cleared nature of the site, it is reasonable to assume that the subject site would not constitute habitat critical to the maintenance of the life cycle of the species.	N/A	i. This species is associated with PCTs 76, 80, 248 and 251. Consequently, up to 6,697.58 m^2 of habitat may be impacted. ii. As impacts will be confined to the pre-existing road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	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	Brolgas breed in ephemeral wetlands; as this habitat feature was absent, the subject site would not be suitable breeding habitat. It may instead represent minor foraging habitat. Regardless, considering the lack of records of this	N/A	i. This species is associated with PCT 45. Consequently, 464.05 m^2 of habitat may be impacted. ii. As impacts will be confined to the pre-existing road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

		species within 10 km, and the small size and disturbed nature of the subject site, it is unlikely that the subject site is critical to the maintenance of the life cycle of this species.		critical for the long-term survival of the species.			
Burhinus grallarius	Bush-stone Curlew	This species breeds on the ground, including in developed areas. Given that there are no records of this conspicuous bird within the search area, it is unlikely that the subject site is critical to the maintenance of the life cycle of this species.	N/A	i. This species is associated with PCTs 76, 80, 248 and 251. Consequently, up to 6,697.58 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
^Calyptorhynchus lathami	Glossy Black-Cockatoo	This species breeds in hollow-bearing trees, requiring hollows >15 cm in diameter and >8 m above the ground. As no field survey of the site has been conducted, it is not known whether suitable breeding habitat occurs within the subject site. The species is likely to require more extensive and more intact vegetation patches for breeding. Given that there are no local records of the species, and as the subject site consists of a modified roadside, it is unlikely that the subject site is critical to	N/A	i. This species is associated with PCTs 76, 80, 248 and 251. Consequently, up to 6,697.58 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

		the maintenance of the life cycle of this species.					
^*Lophochroa leadbeateri*	Major Mitchell's Cockatoo	The life cycle for this species is reliant on large tree hollows. As no field survey was conducted, it cannot be established how many were present on site. Nonetheless, where possible, the hollow bearing trees should be retained to reduce impacts on this species. There are no records of this species within 10 km of the subject site.	N/A	i. This species is associated with PCTs 45, 76, 80, 248 and 251. Consequently, up to 7,161.63 m^2 of habitat may be impacted. ii. As impacts will be confined to the pre-existing road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
^^*Lathamus discolor*	Swift Parrot	There are no records of this species within 10 km of the subject site. This species life cycle involves seasonal migrations between the Australian mainland and Tasmania. As breeding habitat occurs exclusively in Tasmania, only marginal foraging habitat should be impacted by the proposal. As such, the subject site is unlikely to be critical to the maintenance of the life cycle of the species.	N/A	i. This species is associated with PCTs 76, 80, 248 and 251. Consequently, up to 6,697.58 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
^^*Neophema pulchella*	Turquoise Parrot	There are records of this species within 10 km of the subject site. This species nests in proximity to, if possible, feeding areas, most typically selecting	N/A	i. This species is associated with PCTs 76, 80 and 248. Consequently, up to 5,351.24 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	No significant impact will arise to the local viability of this species or its habitat due to the

		hollows in the limb or trunk of large smooth-barked Eucalypts. As no field survey was conducted, it cannot be established how many were present on site, however Google Street view images suggest rough barked species are the primary trees present. Nonetheless, where possible, the hollow bearing trees should be retained to reduce impacts on this species.		minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.			undertaking of the proposal
^^*Polytelis swainsonii*	Superb Parrot	There are records of this species within 10 km of the subject site. This species requires hollow-bearing trees with < 20 cm to nest. As a field survey was not conducted, it cannot be established how many were present on site. Nonetheless, where possible, the hollow bearing trees should be retained to reduce impacts on this species. The subject site is outside of the known key breeding areas for this species.	N/A	i. This species is associated with PCTs 45, 76, 80, 248 and 251. Consequently, up to 7,161.63 m^2 of habitat may be impacted. ii. As impacts will be confined to the pre-existing road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	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	The species requires large hollow bearing trees (dead or alive). As no field survey was conducted, it cannot be established how many were present on site.	N/A	i. This species is associated with PCTs 76, 80, 248 and 251. Consequently, up to 6,697.58 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	No significant impact will arise to the local viability of this species or its habitat due to the

		Nonetheless, where possible, the hollow bearing trees should be retained to reduce impacts on this species. There are no records of this species within 10 km of the subject site.		fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.			undertaking of the proposal
^^*Tyto novaehollandiae*	Masked Owl	The species requires large hollow bearing trees (dead or alive). As no field survey was conducted, it cannot be established how many were present on site. Nonetheless, where possible, the hollow bearing trees should be retained to reduce impacts on this species. There are no records of this species within 10 km of the subject site.	N/A	i. This species is associated with PCTs 76, 80, 248 and 251. Consequently, up to 6,697.58 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	There are no records of this species within 10 km of the subject site. This species requires eucalypt woodland and dry open forests for breeding. As considerable vegetation will remain outside of the already disturbed area, this proposal will not significantly increase the risk of local extinction.	N/A	i. This species is associated with PCTs 76 and 248. Consequently, up to 1,655.26 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Chthonicola sagittata	Speckled Warbler	There are no records of this species within 10 km of the subject site. The species requires large, relatively	N/A	i. This species is associated with PCTs 76, 80 and 248. Consequently, up to 5,351.24 m^2 of habitat may be impacted. ii. As impacts will be confined to the already	No, AOBV not present within or	Yes. See **Appendix E**	No significant impact will arise to the local viability of this species or its habitat

		undisturbed areas of Eucalyptus dominated communities with a thick grassy understory. Given the disturbed nature of the road corridor, it is unlikely to be critical to the maintenance of the life cycle of this species.		disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	close to the subject site.		due to the undertaking of the proposal
Epthianura albifrons	White-fronted Chat	There are no records of this species within 10 km of the subject site. This species builds a cup nest in low vegetation. Given the disturbed nature of the road corridor, it is unlikely to be critical to the maintenance of the life cycle of this species.	N/A	i. This species is associated with PCT 45. Consequently, up to 464.05 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	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	The species is dependent on wattle shrubs, primarily Mulga (*Acacia aneura*), mallee, spinifex and eucalypt woodlands for nesting. As no field survey was conducted, it cannot be determined whether this vegetation was present. There are no records of this species within 10 km of the subject site. Considering the absence of records, and the relatively disturbed nature of the site, it is unlikely to be critical to the maintenance	N/A	i. This species is associated with PCT 80. Consequently, up to 3,695.98 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

		of the life cycle of this species.					
Grantiella picta	Painted Honeyeater	The species nests in the outer canopy of drooping eucalypts, she-oaks and paperbark. As no field survey was completed, it cannot be determined whether this vegetation was present. Where possible, large eucalypts and she-oaks should be retained to reduce impacts on the species.	N/A	i. This species is associated with PCTs 76, 80, 248 and 251. Consequently, up to 6,697.58 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)	The species is dependent on open forests and woodlands dominated by box and ironbark eucalypts to complete their lifecycle, particularly Mugga Ironbark. As no field survey was completed, it cannot be determined whether this vegetation was present. There are no records of this species within 10 km of the subject site. Considering the absence of records, and the relatively disturbed nature of the site, it is unlikely to be critical to the maintenance of the life cycle of this species.	N/A	i. This species is associated with PCTs 76, 80 and 248. Consequently, up to 5,351.24 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	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)	This conspicuous species lives in family groups and makes a dome-shaped stick nest. Although there are	N/A	i. This species is associated with PCTs 76, 80, 248 and 251. Consequently, up to 6,697.58 m^2 of habitat may be impacted.	No, AOBV not present within or	Yes. See **Appendix E**	No significant impact will arise to the local viability of this species or its habitat

		records from within the search area, due to the failure to conduct a field survey it is unknown whether their conspicuous nests were present. However, given the disturbed nature of the subject site, it is unlikely to be critical to the maintenance of the life cycle of this species. Provided adequate mitigation measures are employed to ensure no nests of this species are destroyed, no significant impacts are expected.		ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	close to the subject site.		due to the undertaking of the proposal
Daphoenositta chrysoptera	Varied Sittella	This species builds a cup nest in vegetation. There are no records from within the search area. Given the absence of records and the disturbed nature of the subject site, it is unlikely to be critical to the maintenance of the life cycle of this species.	N/A	i. This species is associated with PCTs 76, 80, 248 and 251. Consequently, up to 6,697.58 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	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 breeds in small cup nests located 2-6 m from the ground, usually in *Acacia* or *Callitris*. It appears to favour densely shrubby sites. As there are no records within 10 km and the subject site appears to	N/A	i. This species is associated with PCT 80 and 248. Consequently, up to 3,897.34 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

		lack a dense shrub layer (from images available), it is unlikely to be critical to the maintenance of the life cycle of this species. Note, however, that no field assessment has been undertaken.		proposal will not remove habitat likely to be critical for the long-term survival of the species.			
Artamus cyanopterus cyanopterus	Dusky Woodswallow	This species builds a cup-shaped nest in dense foliage in open eucalypt forests. There are no records of this species within 10 km. Given the disturbed nature of the subject site, it is unlikely to be critical to the maintenance of the life cycle of this species.	N/A	i. This species is associated with PCTs 45, 76, 80, 248 and 251. Consequently, up to 7,161.63 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	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)	This species builds a cup-shaped nest in a tree. There are no records of this species within 10 km. Given the disturbed nature of the subject site, it is unlikely to be critical to the maintenance of the life cycle of this species.	N/A	i. This species is associated with PCTs 76, 80, 248 and 251. Consequently, up to 6,697.58 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Petroica boodang	Scarlet Robin	This species builds a cup-shaped nest in a tree. There are no records of this species within 10 km. Given the disturbed nature of the	N/A	i. This species is associated with PCTs 76, 80 and 248. Consequently, up to 5,351.24 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	No significant impact will arise to the local viability of this species or its habitat due to the

		subject site, it is unlikely to be critical to the maintenance of the life cycle of this species.		fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.			undertaking of the proposal
Petroica phoenicea	Flame Robin	To complete their life cycle, this species requires tall moist eucalypt forests and woodlands, with breeding habitat consisting of native grasses and shrubs. As no field survey was completed, it cannot be determined whether this vegetation was present. There are no records of this species within 10 km. Given the disturbed nature of the subject site, it is unlikely to be critical to the maintenance of the life cycle of this species.	N/A	i. This species is associated with PCTs 76, 80 and 248. Consequently, up to 5,351.24 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	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	This species builds a grass nest in trees or shrubs. Considering the lack of records from within 10km of the subject site, and the disturbed nature of the subject site, it is unlikely to be critical to the maintenance of the life cycle of this species.	N/A	i. This species is associated with PCTs 45, 76, 80, 248 and 251. Consequently, up to 7,161.63 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Phascogale tapoatafa	Brush-tailed Phascogale	While this species makes use of tree hollows for nesting and shelter, it may	N/A	i. This species is associated with PCT 76. Consequently, up to 1,198.49 m^2 of habitat may be impacted.	No, AOBV not present within or	Yes. See **Appendix E**	No significant impact will arise to the local viability of this

		occur in vegetation that lacks hollow-bearing trees. While vegetation within the subject site is likely to consist of open eucalypt woodland – the preferred habitat of this species – the small extent of the vegetation and the proximity of the site to a road suggest that the subject site is unlikely to be critical to the maintenance of the life cycle of this species. There are no records of this species within 10 km.		ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	close to the subject site.		species or its habitat due to the undertaking of the proposal
Sminthopsis macroura	Stripe-faced Dunnart	This species is dependent on undisturbed native grasslands. As a field survey was not conducted, it is unknown whether native grasses were present. However, given the disturbed nature of the road corridor, it is unlikely that the subject site constitutes habitat critical to the maintenance of the lifecycle of the species. There are no records of this species within 10 km.	N/A	i. This species is associated with PCT 45. Consequently, up to 464.05 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	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	This species is dependent on the presence of its food tree species. As a field survey was not conducted, it is unknown what, if any, feed tree species were present. There are no	N/A	i. This species is associated with PCTs 76, 80, 248 and 251. Consequently, up to 6,697.58 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	No significant impact will arise to the local viability of this species or its habitat due to the

		records of this species within 10 km. Considering the relatively cleared nature of the site, and the high risk of vehicle strike or dog attack, it is unlikely that the subject site constitutes habitat critical to the maintenance of the lifecycle of the species.		minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.			undertaking of the proposal
Cercartetus nanus	Eastern Pygmy-possum	Although this species may temporarily occupy patches of vegetation within fragmented landscapes, the species requires a rich shrub understorey within woodlands to complete its life cycle. As a field survey was not completed, it is unknown whether this vegetation was present. However, given the disturbed nature of the road corridor, it is unlikely that the subject site constitutes habitat critical to the maintenance of the lifecycle of the species. There are no records of this species within 10 km.	N/A	i. This species is associated with PCT 80 and 248. Consequently, up to 3,897.34 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Petaurus norfolcensis	Squirrel Glider	This species requires large hollow bearing trees (dead or alive) containing large hollows. As a field survey was not conducted, it cannot be established how many were present on site. Nonetheless, where	N/A	i. This species is associated with PCTs 76, 80 and 248. Consequently, up to 5,351.24 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

		possible, the hollow bearing trees should be retained to reduce impacts on this species. There are no records of this species within 10 km.		iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.			
Pteropus poliocephalus	Grey-headed Flying-fox	Roosting camps for this species 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 flying fox camp is more than 50 km from the subject site and no individuals have been recorded within 10 km. Given the lack of nearby individuals or camps, it is very unlikely to be critical to the maintenance of the life cycle of this species.	N/A	i. This species is associated with PCT 76. Consequently, up to 1,198.49 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	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	This species roosts alone, or in small groups of up to 6, in tree hollows, buildings or burrows. As a field survey was not conducted, it cannot be established how many were present on site. There are no records of this species within 10 km. Nonetheless, where possible, any hollow bearing trees should be retained to reduce impacts on this species. Provided adequate mitigation measures are	N/A	i. This species is associated with PCTs 45, 76, 80, 248 and 251. Consequently, up to 7,161.63 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

		followed to ensure that no bats are injured during construction, the proposal should not interfere with the maintenance of the life cycle of this species.					
Chalinolobus picatus	Little Pied Bat	This species roosts in underground openings (e.g., caves, mine shafts), rock outcrops, buildings and tree hollows. The subject site contains 43 small hollows (in 11 trees) that would be suitable for roosting in this species. Should this species occur on the subject site, it generally roosts alone, so the proposal should not result in the removal of many individuals of this species. There are no records of this species within 10 km. Nonetheless, where possible, any hollow bearing trees should be retained to reduce impacts on this species. Provided adequate mitigation measures are followed to ensure that no bats are injured during construction, the proposal should not interfere with the maintenance of the life cycle of this species.	N/A	i. This species is associated with PCTs 76, 248 and 251. Consequently, up to 3,001.61 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	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	This species roosts in tree hollows, crevices, and beneath bark. There are no records of this species within 10 km. As a field survey was not conducted, it cannot be established whether suitable habitat was present on site. Should this species occur on the subject site, it generally roosts alone, so the proposal should not result in the removal of many individuals of this species. Nonetheless, where possible, the hollow bearing trees should be retained to reduce impacts on this species. Provided adequate mitigation measures are followed to ensure that no bats are injured during construction, the proposal should not interfere with the maintenance of the life cycle of this species.	N/A	i. This species is associated with PCTs 80 and 248. Consequently, up to 3,897.34 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	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	In NSW, this species is associated with the damp areas on the margins of claypans in moist grassland with *Pycnosorus globosus, Agrostis avenacea* and *Austrodanthonia duttoniana*. As a field survey was not conducted, it cannot be established if this vegetation was present on	N/A	i. This species is associated with PCT 45. Consequently, up to 464.05 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

		site. There are no records of this species within 10 km.		critical for the long-term survival of the species.			
Brachyscome papillosa	Mossgiel Daisy	Recorded primarily 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. As a field survey was not conducted, it cannot be established if this vegetation was present on site. There are no records of this species within 10 km.	N/A	i. This species is associated with PCT 45, 76 and 80. Consequently, up to 5,613.93 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Leptorhynchos orientalis	Lanky Buttons	In NSW, the species grows in association with communities of Bimble Box on red-brown soil, dense *Acacia pendula* woodlands with a herbaceous understory, and red clay plains at the edge of a Canegrass swamp. As a field survey was not conducted, it cannot be established if this vegetation was present on site. There are no records of this species within 10 km.	N/A	i. This species is associated with PCTs 45, 248 and 251. Consequently, up to 2,011.75 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Indigofera efoliata	Leafless Indigo	Thought to be extinct until its rediscovery in 2021. Ecological requirements are poorly known but may require significant rainfall to	N/A	i. This species is associated with PCTs 76 and 248. Consequently, up to 1,655.26 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	No significant impact will arise to the local viability of this species or its habitat due to the

		trigger vegetative growth and reproduction. The species is known from slight rises amongst ironstone formation in stony red-brown sandy loam. It is unclear whether suitable habitat for this species occurs within the subject site; however, given the small extent of the proposal, the lack of records within 10 km, and the modified condition of the impacted vegetation, it is unlikely that the subject site contains an important population of the species.		fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.			undertaking of the proposal
Lepidium monoplocoides	Winged Peppercress	This species occurs on seasonally moist to waterlogged sites, on heavy fertile soils, with a mean annual rainfall of 300-500 mm. Habitat is generally open woodland dominated by *Allocasuarina luehmannii, Eucalyptus largiflorens* or *E. populnea*. As a field survey was not conducted, it cannot be established if this vegetation was present on site. There are no records of this species within 10 km.	N/A	i. This species is associated with PCTs 45, 80, 248 and 251. Consequently, up to 5,707.73 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Eleocharis obicis	Spike-Rush	The species grows in ephemerally wet situations such as roadside mitre	N/A	i. This species is associated with PCTs 76 and 251. Consequently, up to 2,800.24 m^2 of habitat may be impacted.	No, AOBV not present within or	Yes. See **Appendix E**	No significant impact will arise to the local viability of this

		drains and depressions, usually in low-lying grasslands. Although the subject site could be potential habitat for the species, no records exist within the search area. Provided adequate mitigation measures are followed to ensure individuals of this species are not destroyed during construction, the proposal should not interfere with the maintenance of the life cycle of this species. There are no records of this species within 10 km.		ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	close to the subject site.		species or its habitat due to the undertaking of the proposal
Swainsona murrayana	Slender Darling Pea	The species grows in a variety of habitat types, including saltbush, black box, and grassland communities on level plains. Plants have been found in remnant native grasslands. Given the disturbed nature of the road corridor, and the lack of records from within 10km, it is unlikely that the subject site contains an important population of the species.	N/A	i. This species is associated with PCTs 45, 76, 80 and 248. Consequently, up to 5,815.29 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Swainsona recta	Small Purple-pea	The species grows in a variety of habitat types, including saltbush, black box, and grassland communities on level plains.	N/A	i. This species is associated with PCT 76. Consequently, up to 1,453.90 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	No significant impact will arise to the local viability of this species or its habitat due to the

		Plants have been found in remnant native grasslands. Given the disturbed nature of the road corridor, and the lack of records from within 10km, it is unlikely that the subject site contains an important population of the species.		fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.			undertaking of the proposal
Swainsona sericea	Silky Swainson-pea	The Monaro is of key importance to this species. Since the subject site is not on the Monaro, the proposal should not interfere with key populations of this species. Considering the lack of records within 10 km and the disturbed nature of the site, it is unlikely that the site is crucial for the maintenance of the life cycle of this species.	N/A	i. This species is associated with PCTs 45, 76, 80, 248 and 251. Consequently, up to 7,161.63 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	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	This species grows in shallow swamps and waterways, often among grasses and sedges. As a field survey was not conducted, it cannot be established if this vegetation was present. Given the lack of records within 10 km and that the subject site is along a disturbed road corridor however, it is unlikely that the site is critical for the maintenance of the life cycle of this species.	N/A	i. This species is associated with PCT 45. Consequently, up to 464.05 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See Appendix E	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

Caladenia arenaria	Sand-hill Spider Orchid	This species occurs mainly in White Cypress-pine (*Callitris glaucophylla*) woodland in sandy soils. Site photographs suggest that White Cypress-pine is wholly or largely absent from the site; however, soil mapping indicates that the site most likely occurs on red sodosols, which may include suitable sandy clay soils. Given that the species has not been recorded within 120 km of the subject site, it is unlikely that the site is critical to the maintenance of the life cycle of this species.	N/A	i. This species is associated with PCTs 76 and 80. Consequently, up to 5,149.88 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
^*Diuris* sp. (Oaklands, D.L. Jones 5380)	Oaklands Diuris	The species only grows in White Cypress Pine (*Callitris glaucophylla*) Woodland, either among dense grasses in flat areas with associated eucalypts, or amongst sparse grasses and forbs on low sandhills. As a field survey was not conducted, it cannot be established if this vegetation was present. The lack of records from within the search area makes it unlikely that the site is critical to the maintenance of the life cycle of this species.	N/A	i. This species is associated with PCT 80. Consequently, up to 3,695.98 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	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	This species grows in a variety of habitats, including disturbed areas. The Pine Donkey Orchid grows in sclerophyll forest among grass, often with native Cypress Pine (*Callitris* spp.). As a field survey was not conducted, it cannot be established if this vegetation was present. However, the lack of records within 10 km, and makes it unlikely that the subject site is critical to the maintenance of the life cycle of this species.	N/A	i. This species is associated with PCTs 76, 80 and 248. Consequently, up to 5,351.24 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	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	This species grows on floodplains, creek and swamp banks, and open woodland or Cypress pine forests. As a field survey was not conducted, it cannot be established if this vegetation was present. The lack of records within the search area makes it unlikely that the subject site is critical to the maintenance of the life cycle of this species.	N/A	i. This species is associated with PCTs 248 and 251. Consequently, up to 1,547.70 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Austrostipa wakoolica	A spear-grass	This species grows on floodplains, creek and swamp banks, and open woodland or Cypress pine forests. Although it cannot be determined whether associated vegetation was	N/A	i. This species is associated with PCTs 76, 80, 248 and 251. Consequently, up to 6,697.58 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

		present, there are records within the search area. Provided adequate mitigation measures are followed to ensure individuals of this species are not destroyed during construction, the proposal should not interfere with the maintenance of the life cycle of this species.		iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.			
Dichanthium setosum	Bluegrass	This species often is associated with moderately disturbed areas, such as cleared woodland, grassy roadside remnants, and highly disturbed pasture. As a field survey was not conducted, it cannot be established if this vegetation was present. However, the lack of records within 10 km, and makes it unlikely that the subject site is critical to the maintenance of the life cycle of this species.	N/A	i. This species is associated with PCT 45. Consequently, up to 464.05 m^2 of habitat may be impacted. ii. As impacts will be confined to the already disturbed road corridor, the extent of fragmentation or isolation is expected to be minor. iii. Considering the above, and point a., the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix F**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

BC Act Tests of Significance for Threatened Ecological Communities.

Community Name	a.	b.	c.	d.	e.	Impact Significance
Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions	N/A	i. This proposal will potentially remove up to 5,351.24 m^2 of this community, contingent upon the accuracy of the predictive mapping and the condition of the vegetation. While all impacts to EECs are undesirable, the small area of impact and predicted extent of similar vegetation outside the direct impact footprint suggests that this proposal is unlikely to place the local occurrence of the EEC at risk of extinction. ii. In addition to the direct impacts associated with the clearing of vegetation, this proposal is likely to result in undesirable edge effects on adjacent vegetation. These effects include weed invasion and changes in run-off dynamics, leading to a decline in vegetation condition within these areas. Again, however, the small extent of the proposal suggests that this impact will not lead to a significant risk of local extinction.	i. This proposal will remove up to 5,351.24 m^2 of this community, representing 1.01% of the total predicted extent (53.08 ha) of similar vegetation within the study area. ii. No isolation of habitat is expected to result from the proposal. Minor exacerbation of the fragmentation associated with the existing road may occur. iii. As most of the impacts are likely to be confined to an existing road verge, it is unlikely that any habitat critical to the long-term survival of this EEC in the local area will be impacted, should it indeed be present.	No, AOBV not present within or close to the subject site.	Yes. See **Appendix E.**	No significant impact will arise to the local viability of this community due to the undertaking of the proposal

APPENDIX D – 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 no World Heritage Properties, four Wetlands of International Importance, four Endangered Ecological Communities, 30 threatened species and 10 migratory species 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.
    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 population 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	Significance of Impact
Banrock Station wetland complex	700 – 800km upstream from Ramsar site	The proposal is not within close proximity **No Impact**
Hattah-Kulkyne Lakes	500 – 600km upstream from Ramsar site	The proposal is not within close proximity **No Impact**
Riverland	600 – 700km upstream from Ramsar site	The proposal is not within close proximity **No Impact**
The Coorong, and Lakes Alexandrina and Albert Wetland	800 – 900km upstream from Ramsar site	The proposal is not within close proximity **No Impact**

Listed Threatened Ecological Communities

Name	Status	Significance of Impact
Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	Endangered	TEC may occur in areas mapped to PCTs 76, 80 and 248.
Poplar Box Grassy Woodland on Alluvial Plains	Endangered	Unknown whether the TEC occurs within the subject site
Weeping Myall Woodlands	Endangered	Absent. Site photography indicates that the characteristic species *Acacia pendula* is not present.
White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Unknown whether the TEC occurs within the subject site

EPBC Act-listed Critically Endangered and Endangered Communities

Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	
Significant Impact Guideline	**Assessment**
Reduce the extent of an ecological community	This proposal would potentially remove up to 5,351.24 m^2 of this community, contingent upon the accuracy of the predictive mapping and the condition of the vegetation. While all impacts to EECs are undesirable, the small area of impact and predicted extent of similar vegetation outside the direct impact footprint suggests that any reduction in the extent of this community would be non-significant.
Fragment or increase fragmentation of an ecological community	No isolation of habitat is expected to result from the proposal. Minor exacerbation of the fragmentation associated with the existing road may occur.
Adversely affect habitat critical to the survival of an ecological community	As most of the impacts are likely to be confined to an existing road verge, it is unlikely that any habitat critical to the long-term survival of this EEC in the local area would be impacted, should it indeed be present.
Modify or destroy abiotic (non-living) factors (such as water, nutrients, or soil) necessary for an ecological community's survival	Some impacts to abiotic factors – such as drainage and run-off – would result from the alteration of the existing road. As the impacted areas are already close to the road verge, these impacts are likely to be minor.
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	In addition to the direct impacts associated with the clearing of vegetation, this proposal is likely to result in undesirable edge effects on adjacent vegetation. These effects include weed invasion and changes in run-off dynamics, leading to a decline in vegetation condition within these areas. The small extent of the proposal and the degree of existing modification to the vegetation together suggest that this would not be significant.
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.	The spread of invasive species is likely to result from edge effects associated with the extension of the road surface into previously undisturbed areas. This would result in a decline in condition of the community, should the community in fact be present. Considering the small area of impact, this is unlikely to be significant. No mobilisation of chemicals is anticipated.
Interfere with the recovery of an ecological community.	The proposal would result in minor reductions in extent and condition of a small occurrence of this community – assuming the community is present. This is unlikely to directly interfere with the recovery of this community.
Conclusion	**No significant impact.**

EPBC Act-listed Critically Endangered and Endangered Species

Sloane's Froglet - *Crinia sloanei*	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	The proposal is unlikely to have a significant impact on the species. Although up to 5,149.88 m^2 of suitable habitat is predicted to occur on the subject site, the much more significant Lachlan River will remain unaffected within the study area. The subject site is not within a priority management area for the species and there are no recorded sightings within the 10 km search area. Thus, the subject site is unlikely to contain an important population of this species.
Reduce the area of occupancy of the species	No. The subject site represents very marginal habitat for this species, a much greater quantity of superior habitat will remain along the Lachlan River.
Fragment an existing population into two or more populations	No. The proposal is the widening of an existing road, no new fragmentation will be introduced.
Adversely affect habitat critical to the survival of a species	The habitat within the subject site is unlikely critical habitat for the species.
Disrupt the breeding cycle of a population	No significant breeding habitat would be impacted by this proposal.
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 and/or modify up to 5,149.88 m^2 of potential habitat for the species. The proposal will not significantly exacerbate existing fragmentation for this species. Any reduction and fragmentation of available habitat 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; reduction of water quality; predation by introduced predators; amphibian chytrid fungus; and exotic weeds 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.**

Swift Parrot – *Lathamus discolor*	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	The proposal is unlikely to have a significant impact on the species. Although up to 6,697.58 m^2 of suitable habitat is predicted to occur on the subject site, much more significant habitat will remain unaffected along the Lachlan River, and at Nangar National Park. The subject site is not within a priority management area for the species and there are no recorded sightings within the search area. Thus, the subject site is unlikely to contain an important population of this species.
Reduce the area of occupancy of the species	No. The subject site represents very marginal habitat for this species, a much greater quantity of superior habitat will remain at nearby.
Fragment an existing population into two or more populations	No. The proposal is the widening of an existing road, no new fragmentation will be introduced.
Adversely affect habitat critical to the survival of a species	The habitat within the subject site is unlikely critical habitat for the species.
Disrupt the breeding cycle of a population	No, this species only breeds in Tasmania.
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 and/or modify up to 6,697.58 m^2 of potential habitat for the species. The proposal will not significantly exacerbate existing fragmentation for this species. Any reduction and fragmentation of available habitat 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; reduced food availability due to drought; competition with introduced bees; Psittacine Beak and Feather Disease; and inappropriate fire regimes 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.**

Koala – *Phascolarctos cinereus*	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	The proposal is unlikely to have a significant impact on the species. Although up to 6,697.58 m^2 of suitable habitat may be removed from the subject site, it is unlikely that the proposal will produce a long-term decrease in the size of the regional population as the much more significant red gum community along the Lachlan River will remain unaffected nearby. The subject site is within a priority management area, although there are no recorded sightings within the 10 km search area. It is therefore unlikely that the subject site hosts an important population of the species.
Reduce the area of occupancy of the species	No. The subject site would represent marginal habitat for this species, with a much greater quantity of superior habitat remaining nearby along the Lachlan River.
Fragment an existing population into two or more populations	No. The proposal is the widening of an existing road, no new fragmentation will be introduced.
Adversely affect habitat critical to the survival of a species	The habitat within the subject site is unlikely to be critical habitat for the species.
Disrupt the breeding cycle of a population	No significant breeding habitat would be impacted by this proposal.
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 and/or modify up to 6,697.58 m^2 of potential habitat for the species. It will not, however, significantly exacerbate existing fragmentation for this species. Any reduction and fragmentation of available habitat 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.	Fragmentation and loss of habitat from clearing; collisions with motor vehicles; predation by dogs; inappropriate fire regimes; koala disease and heat stress 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**

Winged Peppercress – *Lepidium monoplocoides*	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	The proposal is unlikely to have a significant impact on the species. Although up to 5,707.73 m^2 of potential habitat is predicted to occur within the subject site, it is not within a priority management area for the species, nor are there are recorded sightings within the search area. However, it is possible that a population exists at the subject site. It is recommended that targeted surveys be carried out to ensure that this species does not occur on the subject site. It is therefore unlikely that the subject site hosts an important population of the species.
Reduce the area of occupancy of the species	Given the lack of records from the search area, it is unlikely that a population exists at the subject site.
Fragment an existing population into two or more populations	No. The proposal is the widening of an existing road, no new fragmentation will be introduced.
Adversely affect habitat critical to the survival of a species	Given the lack of records from the search area, it is unlikely that a population exists at the subject site.
Disrupt the breeding cycle of a population	Given the lack of records from the search area, it is unlikely that a population exists at the subject site.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	Given the lack of records from the search area, it is unlikely that a population exists at the subject site.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	Up to 5,707.73 m^2 of potential habitat is predicted to occur within the subject site. 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.	Destruction and degradation of habitat are the main threats to the species. Provided targeted surveys are conducted to confirm absence of this species, the proposal is unlikely to directly interfere with the recovery of the species within the region.
Conclusion	**No significant impact**

A spear-grass - *Austrostipa wakoolica*	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	The proposal will impact up to 6,697.58 m^2 of potential habitat for this species. Two records of the species occur within 1 km of the subject site. It is thought that the species is unlikely to tolerate disturbance, including clearing and grazing by stock or rabbits. For this reason, given that the impacts will largely be confined to an existing roadside, it is unlikely that any population that may formerly have occurred within the subject site persists. Nevertheless, as it cannot confidently be stated that the species is absent, it is recommended that targeted surveys be conducted prior to clearing. This could take place during pre-clearance work and any individuals found should be avoided.
Reduce the area of occupancy of the species	The proposal will impact up to 6,697.58 m^2 of potential habitat for this species. If the species is present, it will experience a minor reduction in its area of occupancy. As similar habitat will persist outside the impact footprint, this is unlikely to be significant.
Fragment an existing population into two or more populations	The proposal may slightly exacerbate the existing fragmentation caused by the road. It will not isolate populations.
Adversely affect habitat critical to the survival of a species	Critical habitat for this species has not been formally declared. As the subject site is well outside the centres of abundance for this species, it is unlikely to be critical to its survival.
Disrupt the breeding cycle of a population	It is likely that a population, if present, would extend outside the degraded verge that will experience most of the impacts associated with this proposal. Consequently, the proposal will not impact the entirety of the population.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	Impacts associated with this proposal are concentrated in areas that are already highly modified. Additional impacts to remnant vegetation via edge effects are likely; however, considering the small impact footprint of the proposal, these are unlikely to cause the species to decline.
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.	The main identified threats to this species are: • Habitat reduction, loss of connectivity, modification, and clearing from pastoral development, irrigation, altered flooding regimes, and agricultural activities such as fence line and water storage maintenance. • Grazing. • Drought.

A spear-grass - *Austrostipa wakoolica*	
	• Weed invasion and competition, particularly from exotic grasses. • Forestry activities including snigging, road and track widening, and maintenance. • Altered flooding regimes on the Murray River floodplain.
Conclusion	**Significant impact unlikely; however, targeted surveys recommended.**

EPBC Act-listed Vulnerable Species

White-throated Needletail – *Hirundapus caudacutus*	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	Although the proposal is expected to impact up to 7,161.63 m^2 of potential habitat, the subject site is not within a priority management area for the species. There are no recorded sightings within the search area and the nearest record is 76 km to the north, from 1998. As it is unlikely that a population exists at the subject site, the proposal should not lead to a long-term decrease in the size of its population.
Reduce the area of occupancy of an important population	No. No important population is expected to occur at the site.
Fragment an existing important population into two or more populations	No. The proposal is the widening of an existing road, no new fragmentation will be introduced.
Adversely affect habitat critical to the survival of a species	The habitat within the subject site is unlikely critical habitat for the species, as no individuals are recorded within the subject site.
Disrupt the breeding cycle of an important population	No. No important population is expected to occur at 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 remove or modify up to 7,161.63 m^2 of potential habitat for the species. It will not, however, isolate any habitat. Any reduction of available habitat 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	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.	Vegetation clearing and rotor strikes from windfarms 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.**

Superb Parrot – *Polytelis swainsonii*	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	Although the proposal is expected to impact up to 7,161.63 m^2 of potential habitat, the subject site is not within a priority management area for the species. Eight records of the species are known within 10 km of the subject site. The closest of these is c. 4.6 km south of the impact area. The subject site does not fall within the main breeding territory of this species and is most likely to serve only as occasional foraging habitat. In light of this, it is unlikely that an important population occurs within the subject site and the proposal should not lead to a long-term decrease in the size of an important population.
Reduce the area of occupancy of an important population	No. No important population is expected to occur at the site.
Fragment an existing important population into two or more populations	No. The proposal is the widening of an existing road, no new fragmentation will be introduced.
Adversely affect habitat critical to the survival of a species	The habitat within the subject site is unlikely to be critical habitat for the species, as it falls outside the main breeding habitat of the species. However, efforts to retain hollow-bearing trees should be made.
Disrupt the breeding cycle of an important population	No. No important population is expected to occur at 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 remove or modify up to 7,161.63 m^2 of potential habitat for the species. It will not, however, isolate any habitat. Any reduction of available habitat 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	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.	The following threats to this species have been identified: • Loss of living and dead hollow-bearing trees. • Loss of breeding and foraging habitat. • 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. • Loss of hollows to feral bees and native and exotic hollow-nesting birds. • Illegal trapping which can also result in the destruction of hollows.

Superb Parrot – *Polytelis swainsonii*	
	• Illegal shooting of birds in orchards. • Lack of knowledge of population trends in the Superb Parrot. • Lack of knowledge of key flight paths and corridors of the Superb Parrot. • Loss of habitat trees from fire damage during hazard reduction and stubble burns. • Lack of knowledge about the breeding ecology and breeding success of this species. • Competition with Noisy Miners for breeding and foraging habitat and resources. While the present proposal is likely to exacerbate some of these threats, this contribution is unlikely to be significant.
Conclusion	**No significant impact.**

Grey Falcon – *Falco hypoleucos*	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	Although the proposal is expected to impact up to 7,161.63 m^2 of potential habitat, the subject site is not within a priority management area for the species. The species has not been recorded within the 10 km search area: The nearest record is from c. 25 km south of the subject site. The species is known to make use of open woodlands along watercourses and the subject site may offer some marginal habitat value, considering the proximity of the Lachlan River. Given the scarcity of local records, however, it is unlikely that an important population occurs within the subject site and the proposal should not lead to a long-term decrease in the size of an important population.
Reduce the area of occupancy of an important population	No. No important population is expected to occur at the site.
Fragment an existing important population into two or more populations	No. The proposal is the widening of an existing road, no new fragmentation will be introduced.
Adversely affect habitat critical to the survival of a species	The habitat within the subject site is unlikely to be critical habitat for the species.
Disrupt the breeding cycle of an important population	No. No important population is expected to occur at 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 remove or modify up to 7,161.63 m^2 of potential habitat for the species. It will not, however, isolate any habitat. Any reduction of available habitat 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	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.	The following threats to this species have been identified: • Grazing and clearing of arid and semi-arid zone rangelands. • Secondary poisoning through mouse and locust control programs. • Taking of eggs and young for collections and falconry. • Insufficient understanding of distribution. The proposal is unlikely to significantly exacerbate these threats.
Conclusion	**No significant impact.**

Painted Honeyeater – *Grantiella picta*	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	Although the proposal is expected to impact up to 6,697.58 m^2 of potential habitat, the subject site is not within a priority management area for the species. The species has not been recorded within the 10 km search area. The nearest record is from c. 28 km southeast of the subject site. It is not known whether the subject site contains a density of mistletoes sufficient to support this species. If mistletoes are present, the subject site may see occasional use as foraging habitat. Given the scarcity of local records, however, it is unlikely that an important population occurs within the subject site and the proposal should not lead to a long-term decrease in the size of an important population.
Reduce the area of occupancy of an important population	No. No important population is expected to occur at the site.
Fragment an existing important population into two or more populations	No. The proposal is the widening of an existing road, no new fragmentation will be introduced.
Adversely affect habitat critical to the survival of a species	The habitat within the subject site is unlikely to be critical habitat for the species, as it falls outside the main breeding habitat of the species.
Disrupt the breeding cycle of an important population	No. No important population is expected to occur at 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 remove or modify up to 6,697.58 m^2 of potential habitat for the species. It will not, however, isolate any habitat. Any reduction of available habitat 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	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.	Threats include habitat loss and fragmentation resulting from clearing; removal of large, mistletoe bearing trees; and inappropriate grazing and fire regimes. While the proposal is likely to exacerbate certain of these threats, the extent of this impact is unlikely to be significant. The proposal is unlikely to directly interfere with the recovery of the species within the region.
Conclusion	**No significant impact.**

Grey-headed Flying-fox – *Pteropus poliocephalus*	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	Although the proposal is expected to impact up to 3,897.34 m^2 of potential habitat, the subject site is not within a priority management area for the species. The nearest record is from c. 35 km southeast of the subject site. There are no mapped camps within 50 km of the subject site, as such, it is very unlikely that an important population relies on the subject site.
Reduce the area of occupancy of an important population	No. No important population is expected to occur at the site.
Fragment an existing important population into two or more populations	No. The proposal is the widening of an existing road, no new fragmentation will be introduced.
Adversely affect habitat critical to the survival of a species	The habitat within the subject site is unlikely to be critical habitat for the species, as no individuals or camps have been recorded nearby.
Disrupt the breeding cycle of an important population	No. No important population is expected to occur at 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 remove or modify up to 3,897.34 m^2 of potential habitat for the species. It will not, however, isolate any habitat. Any reduction of available habitat 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	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.	The main identified threats to this species are: • Loss of roosting and foraging sites. • Electrocution on powerlines, entanglement in netting and on barbed wire. • Heat stress. • Conflict with humans. • Incomplete knowledge of abundance and distribution across the species' range. • Illegal shooting. While the proposal may exacerbate certain of these threats, this is unlikely to be significant.
Conclusion	**No significant impact.**

Corben's Long-eared Bat – *Nyctophilus corbeni*	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	Although the proposal is expected to impact up to 3,897.34 m^2 of potential habitat, the subject site is not within a priority management area for the species. The nearest record is from c. 18 km northeast of the subject site. It is not known whether the subject site contains breeding habitat for this species, though it is likely that some suitable habitat occurs in the surrounding landscape. The site may see occasional use by this species for foraging or breeding. Given the scarcity of local records, however, it is unlikely that an important population occurs within the subject site and the proposal should not lead to a long-term decrease in the size of an important population.
Reduce the area of occupancy of an important population	No. No important population is expected to occur at the site.
Fragment an existing important population into two or more populations	No. The proposal is the widening of an existing road, no new fragmentation will be introduced.
Adversely affect habitat critical to the survival of a species	The habitat within the subject site is unlikely to be critical habitat for the species, as it falls outside the main breeding habitat of the species.
Disrupt the breeding cycle of an important population	No. No important population is expected to occur at 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 remove or modify up to 3,897.34 m^2 of potential habitat for the species. It will not, however, isolate any habitat. Any reduction of available habitat 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	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.	The main identified threats to this species are: • Loss of remnant semi-arid woodland and mallee habitat • Loss of hollow-bearing trees. • Application of pesticides in or adjacent to foraging areas. • Inappropriate fire regimes. • Disturbance to winter roosting and breeding sites. • Loss or modification of habitat. While the proposal is likely to exacerbate certain of these threats, this is unlikely to be significant.
Conclusion	**No significant impact.**

Small Purple-pea – *Swainsona recta*	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	Although the proposal is expected to impact up to 1,453.90 m^2 of potential habitat, the subject site is not within a priority management area for the species. There are no records within 100 km of the subject site. In light of this, it is unlikely that an important population occurs within the subject site and the proposal should not lead to a long-term decrease in the size of an important population.
Reduce the area of occupancy of an important population	No. No important population is expected to occur at the site.
Fragment an existing important population into two or more populations	No. The proposal is the widening of an existing road, no new fragmentation will be introduced.
Adversely affect habitat critical to the survival of a species	The habitat within the subject site is unlikely to be critical habitat for the species, as it falls outside the main breeding habitat of the species.
Disrupt the breeding cycle of an important population	No. No important population is expected to occur at 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 remove or modify up to 1,453.90 m^2 of potential habitat for the species. It will not, however, isolate any habitat. Any reduction of available habitat 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	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.	Identified threats to this species include: • Grazing and trampling by cattle, sheep and goats. • Loss, degradation and fragmentation of habitat and/or populations for residential and agricultural developments. • Loss and degradation of habitat and/or populations by weed invasion. • Increased competition from other native grassland species within the habitat because of reduced fire frequency. • Increased competition from black cypress pine (*Callitris endlicheri*) within the habitat possibly because of exclusion of fire from some northern sites. • Loss and degradation of habitat and/or populations from inappropriate rail reserve maintenance. • Inherent risk of loss of small populations from natural or un-natural catastrophic events. • Accidental damage at some sites from recreational vehicles such as 4WDs and trail bikes.

Small Purple-pea – *Swainsona recta*	
	• Construction of inappropriate hazard reduction control lines. • Erosion of some railway embankments. • Feral pigs. While the proposal is likely to exacerbate certain of these threats, this is unlikely to be significant.
Conclusion	**No significant impact**

A Spear-grass – *Austrostipa metatoris*	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	Although the proposal is expected to impact up to 1,547.70 m^2 of potential habitat, the subject site is not within a priority management area for the species. The nearest record of this species is an isolated observation from Condobolin, approximately 117 km west of the subject site. In light of this, it is unlikely that an important population occurs within the subject site and the proposal should not lead to a long-term decrease in the size of an important population.
Reduce the area of occupancy of an important population	No. No important population is expected to occur at the site.
Fragment an existing important population into two or more populations	No. The proposal is the widening of an existing road, no new fragmentation will be introduced.
Adversely affect habitat critical to the survival of a species	The habitat within the subject site is unlikely to be critical habitat for the species, as it falls outside the main breeding habitat of the species.
Disrupt the breeding cycle of an important population	No. No important population is expected to occur at 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 remove or modify up to 1,547.70 m^2 of potential habitat for the species. It will not, however, isolate any habitat. Any reduction of available habitat 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	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.	Major threats to this species include: • Grazing and trampling by cattle, sheep and goats. • Loss, degradation and fragmentation of habitat and/or populations for residential and agricultural developments. • Loss and degradation of habitat and/or populations by weed invasion. • Increased competition from other native grassland species within the habitat because of reduced fire frequency. • Increased competition from black cypress pine (*Callitris endlicheri*) within the habitat possibly because of exclusion of fire from some northern sites. • Loss and degradation of habitat and/or populations from inappropriate rail reserve maintenance. • Inherent risk of loss of small populations from natural or un-natural catastrophic events. • Accidental damage at some sites from recreational vehicles

A Spear-grass – *Austrostipa metatoris*	
	such as 4WDs and trail bikes. • Construction of inappropriate hazard reduction control lines. • Erosion of some railway embankments. • Feral pigs. While the proposal is likely to exacerbate certain of these threats, this is unlikely to be significant.
Conclusion	**No significant impact**

EPBC Act-listed Migratory Species

White-throated Needletail – *Hirundapus caudacutus*	
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	As the species is very widely distributed, and as the subject site contains only small areas of potential habitat for this species it is unlikely to constitute important habitat for this species; superior habitat will remain nearby.
Result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species	It is unlikely that the subject site constitutes important habitat for this 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.	It is unlikely that an ecologically significant proportion of the population occurs within or is dependent on the subject site. The proposal is unlikely to seriously disrupt the lifecycle for this species.
Conclusion	**No significant impact**

Fork-tailed Swift – *Apus pacificus*	
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	As the species is very widely distributed, and as the subject site contains only small areas of potential habitat for this species it is unlikely to constitute important habitat for this species; superior habitat will remain nearby.
Result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species	It is unlikely that the subject site constitutes important habitat for this 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.	It is unlikely that an ecologically significant proportion of the population occurs within or is dependent on the subject site. The proposal is unlikely to seriously disrupt the lifecycle for this species.
Conclusion	**No significant impact**

Caspian Tern – *Hydroprogne caspia*	
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	As the species is very widely distributed, and as the subject site contains only small areas of potential habitat for this species it is unlikely to constitute important habitat for this species; superior habitat will remain nearby.
Result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species	It is unlikely that the subject site constitutes important habitat for this 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.	It is unlikely that an ecologically significant proportion of the population occurs within or is dependent on the subject site. The proposal is unlikely to seriously disrupt the lifecycle for this species.
Conclusion	**No significant impact**

APPENDIX E – 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	**Unlikely**	**No** The proposal does not include any activities that would exacerbate this threat.
Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands	KTP		**Unlikely**	**No** The proposal does not include any activities that would exacerbate this threat
Anthropogenic Climate Change	KTP	KTP	**Likely**	**Yes** Some unavoidable emissions will occur from construction machinery and removal of native vegetation will diminish the carbon storing capacity of the subject site.
Bushrock removal	KTP		**Likely**	**Potentially** As a field survey was not conducted, it is unknown whether bushrock occurs within the assessment area. If it is, then it is recommended that rock be left in place or relocated nearby to avoid exacerbating this KTP.
Clearing of native vegetation	KTP	KTP	**Likely**	**Yes** Up to 7161.63 m^2 of native vegetation may be cleared by the proposal.
Competition and grazing by the feral European Rabbit, *Oryctolagus cuniculus* (L.)	KTP	KTP	**Likely**	**Potentially** The spread of grassy weeds that may result from these works could encourage rabbit activity.
Competition and habitat degradation by Feral Goats, *Capra hircus* Linnaeus 2258	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		**Likely**	**Potentially** The loss of tree hollows can exacerbate this threat. As a field survey was not conducted, it is unknown whether hollow-bearing trees were present within the subject site. The exacerbation of this KTP could be avoided by retaining these hollow-bearing trees.

Name	NSW status	Comm status	Likelihood of Occurrence	Exacerbated by Proposal
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.
Herbivory and environmental degradation caused by feral deer	KTP		**Unlikely**	**No** 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**	**Potentially** The loss of tree hollows can exacerbate this threat. As a field survey was not conducted, it is unknown whether hollow-bearing trees were present within the subject site. The exacerbation of this KTP could be avoided by retaining these hollow-bearing trees.
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	**Unlikely**	**Potentially** Machinery used on site can potentially act as a transport for biosecurity risks. However, the subject site is further inland than known populations of this fungal pathogen. 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.

Name	NSW status	Comm status	Likelihood of Occurrence	Exacerbated by Proposal
Invasion and establishment of exotic vines and scramblers	KTP		**Unlikely**	**Potentially** As a field survey was not conducted, it is unknown whether exotic vines and scramblers were present within the subject site. owever, 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** This species has not been recorded as far west as the subject site, 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 and establishment of the Cane Toad (Bufo marinus)	KTP	KTP	**Unlikely**	**Potentially** This species is primarily confined to wetter subtropical and tropical sites, the subject site would be colder than optimal for this species. 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		**Unlikely**	**Potentially** This species has not been recorded as far west as the subject site, 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 of native plant communities by *Chrysanthemoides monilifera*	KTP		**Unlikely**	**Potentially** This species has not been recorded as far west as the subject site, 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 of native plant communities by exotic perennial grasses	KTP		**Likely**	**Potentially** These species have been recorded in similar 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 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.

Name	NSW status	Comm status	Likelihood of Occurrence	Exacerbated by Proposal
Invasion, establishment and spread of Lantana (*Lantana camara L. sens. La*t)	KTP		**Unlikely**	**Potentially** This species has not been recorded as far west as the subject site, 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.
Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants	KTP	KTP	**Unlikely**	**No** The proposed works will not increase the likelihood of this threat.
Loss of Hollow-bearing Trees	KTP		**Likely**	**Potentially** As a field survey was not conducted, it is unknown whether hollow-bearing trees were present within the subject site. If they are present, it is recommended that they are retained to avoid exacerbating this KTP.
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 holbrook*i 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, 2258)	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, 2258)	KTP	KTP	**Unlikely**	**No** Ease of access for feral cats will not be increased by the proposal
Predation, habitat degradation, competition and disease transmission by Feral Pigs, *Sus scrofa* Linnaeus 2258	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		**Likely**	**Potentially** Some dead wood is likely to be removed. It is recommended that this wood be relocated nearby to avoid exacerbating this KTP.

APPENDIX F – TERMS AND ABBREVIATIONS

Abbreviation	Terminology	Description
BC Act	*Biodiversity Conservation Act 2016* (NSW)	The purpose of this Act is to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development. This Act contains schedules relating to the listing of threatened species, populations and communities in NSW. It also outlines the framework regulating development impact assessments in relation to biodiversity.
	Biosecurity Act 2015 (NSW)	The broad objectives for biosecurity in NSW are to manage biosecurity risks from animal and plant pests and diseases, weeds and contaminants by • Preventing their entry into NSW • Quickly finding, containing and eradicating any new entries • Effectively minimising the impacts of those pests, diseases, weeds and contaminants that cannot be eradicated through robust management arrangements. The *Biosecurity Act 2015* provides a statutory framework to help achieve these objectives.
CAMBA	China-Australia Migratory Bird Agreement	A bilateral migratory bird agreement with China entered into in 1986. It provides an important mechanism for pursuing conservation outcomes for migratory birds, including migratory waterbirds.
	Cumulative impacts	Impacts, when considered together, lead to a stronger impact than any impact in isolation.
	Direct impacts	Directly affect the habitat and individuals. They include, but are not limited to, death through predation, trampling, poisoning of the animal/plant itself and the removal of suitable habitat. When applying each factor, consideration must be given to all of the likely direct impacts of the proposed activity or development.
DoEE	Australian Government Department of Environment and Energy	The Department of the Environment designs and implements the Australian Government's policies and programmes to protect and conserve the environment, water and heritage and promote climate action.
EEC	Endangered Ecological Community	An ecological community identified by relevant legislation likely to become extinct or is in immediate danger of extinction.
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW).	Provides the legislative framework for land use planning and development assessment in NSW.
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth).	Provides for the protection of the environment, especially matters of national environmental significance, and provides a national assessment and approvals process.
FM Act	*Fisheries Management Act 1994* (NSW)	The objects of this Act are to conserve, develop and share the fishery resources of the State for the benefit of present and future generations. This Act protects aquatic habitats and species which are not protected under the BC Act.
IBRA	Interim Biogeographic Regionalisation of Australia	The Interim Biogeographic Regionalisation for Australia (IBRA) is a biogeographic regionalisation of Australia developed by the Australian Government's Department of the Environment. Each region is a land area made up of a group of interacting ecosystems repeated in similar form across the landscape.
	Indirect impacts	Occur when project-related activities affect species, populations or ecological communities in a manner other than direct loss. Indirect impacts can include loss of individuals through starvation, exposure, predation by

Abbreviation	Terminology	Description
		domestic and/or feral animals, loss of breeding opportunities, loss of shade/shelter, deleterious hydrological changes, increased soil salinity, erosion, inhibition of nitrogen fixation, weed invasion, fertiliser drift, or increased human activity within or directly adjacent to sensitive habitat areas. As with direct impacts, consideration must be given, when applying each factor, to all of the likely indirect impacts of the proposed activity or development.
JAMBA	Japan-Australia Migratory Bird Agreement	A bilateral migratory bird agreement with Japan entered into in 1974. It provides an important mechanism for pursuing conservation outcomes for migratory birds, including migratory waterbirds.
KTP	Key Threatening Process	A key threatening process is defined as a process that threatens, or may have the capability to threaten, the survival or evolutionary development of species, populations or ecological communities. A requirement of their listing on the TSC Act is that the process adversely affects two or more threatened species, populations or ecological communities, or may cause species, populations or ecological communities not threatened to become threatened.
	Local population (species)	A local population of a threatened plant species comprises those individuals occurring in a defined area or a cluster of individuals extend 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 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.
	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 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.
	Low condition (vegetation)	Vegetation in low condition means: a) woody native vegetation with native over-storey percent foliage cover less than 50% of the lower value of the over-storey 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 herbfield where either: – less than 50% of ground cover vegetation is indigenous species, or – more than 90% of ground cover vegetation is cleared If native vegetation is not in low condition, it is in moderate to good condition. The percentages for the ground cover calculations must be made in a season when the proportion of native ground cover vegetation compared to non-native ground cover vegetation in the area is likely to be at its maximum. NOTE: Clearing the habitat of threatened species, populations or communities for the purposes of reducing its condition prior to assessment under the methodology may be a breach of environmental legislation, including sections 118A and 118D of the *National Parks and Wildlife Act 1974* (NPW Act), the *Native Vegetation Act 2003* (NV Act) and/or the *Environmental Planning and Assessment Act 1979* (EP&A Act).
MNES	Matters of national environmental significance	Refers to the seven matters of national environmental significance outlined under the EPBC Act.
NPW Act	*National Parks and Wildlife Act 1974* (NSW)	The objects of this Act are as follows: • The conservation of nature, including, but not limited to, the conservation of: • habitat, ecosystems and ecosystem processes, and

Abbreviation	Terminology	Description
		• biological diversity at the community, species and genetic levels, and • landforms of significance, including geological features and processes, and • landscapes and natural features of significance including wilderness and wild rivers, The conservation of objects, places or features (including biological diversity) of cultural value within the landscape, including, but not limited to: • places, objects and features of significance to Aboriginal people, and • places of social value to the people of New South Wales, and • places of historic, architectural or scientific significance, • Fostering public appreciation, understanding and enjoyment of nature and cultural heritage and their conservation, • Providing for the management of land reserved under this Act in accordance with the management principles applicable for each type of reservation. The objects of this Act are to be achieved by applying the principles of ecologically sustainable development.
OEH	Office of Environment and Heritage	The Office of Environment and Heritage (OEH) is a separate agency within the Planning and Environment cluster. OEH was formed on 4 April 2011 and works to protect and conserve the NSW environment, including the natural environment, Aboriginal country, culture and heritage and our built heritage, and manages NSW national parks and reserves.
RAMSAR	Convention on Wetlands of International Importance	The Ramsar Convention's broad aims are to halt the worldwide loss of wetlands and to conserve, through wise use and management, those remaining. This requires international cooperation, policy making, capacity building and technology transfer.
	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.
ROKAMBA	Republic of Korea-Australia Migratory Bird Agreement	A bilateral migratory bird agreement with the Republic of Korea entered into in 2007. It provides an important mechanism for pursuing conservation outcomes for migratory birds, including migratory waterbirds.
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 order and are used to define stream size based on a hierarchy of tributaries.