



BIODIVERSITY ASSESSMENT REPORT

SOLAR FARM – CATHUNDRAL

CATHUNDRAL NSW

WARREN SHIRE COUNCIL LOCAL GOVERNMENT AREA

AUGUST 2024

Report prepared by
OzArk Environment & Heritage
for Chris Smith & Associates

The OzArk logo features the word "OzArk" in a white, sans-serif font. The letter "O" is replaced by a green circle containing a stylized green leaf. The letter "A" is replaced by a stylized flame or sun icon in orange and yellow.A large, stylized green leaf graphic is positioned on the right side of the page, partially overlapping the OzArk logo and the contact information.

OzArk
Environment & Heritage

145 Wingewarra St
(PO Box 2069)
Dubbo NSW 2830

Phone: (02) 6882 0118
Fax: (02) 6882 0630
enquiry@ozarkehm.com.au
www.ozarkehm.com.au

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Duncan Lowis	Lucca Brozler (LB), Crystal Graham (CG)		
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Prepared for	Prepared by		
Duncan Lowis Chris Smith & Associates Town Planner Level 1, 135 Fryers St Shepparton Vic 3630 P: 03 5820 7728 E: Duncan.Lowis@csmith.com.au	Lucca Brozler Ecologist OzArk Environment & Heritage 145 Wingewarra Street (PO Box 2069) Dubbo NSW 2830 P: 02 6882 0118 E: Gianlucca@ozarkehm.com.au		
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Acknowledgement

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

EXECUTIVE SUMMARY

OzArk Environment & Heritage (OzArk) has been engaged by Chris Smith & Associates, who are acting on behalf of Green Gold Energy (the proponent), to complete a Biodiversity Assessment Report (BAR) concerning the development of a solar farm at 9438 Mitchell Highway, Cathundral. Work will be occurring in the Warren Shire Local Government Area (LGA).

An onsite field survey was conducted by Senior BAM-accredited Ecologist Dr David Orchard on the 3rd of May 2024. The subject site, 15.17 hectares (ha) in size, consisted entirely of non-native vegetation (mostly a newly sown Canola crop) and bare ground. As such, no native Plant Community Types (PCTs), habitat trees, or Threatened Ecological Communities (TECs) will be impacted by the proposal.

A BAR is appropriate for this development, rather than a Biodiversity Development Assessment Report (BDAR), as no native vegetation will be impacted, the proposal does not impact a mapped area of biodiversity value on the state-wide Biodiversity Values Map, and no listed threatened entities will be significantly impacted. As such, entry into the NSW Biodiversity Offsets Scheme (BOS) is not triggered.

No watercourses occur within the subject site, though multiple canal lines pass through the study area (1.5 km radius to the subject site). These man-made watercourses lack recognition as Key Fish Habitat (KFH) or as Protected Riparian Land (PRL), through the Department of Primary Industries – Fisheries (DPI) and the NSW Department of Climate Change, Energy, the Environment and Water (NSW DCCEEW), respectively. As such, no permit is required under the FM Act.

Eight threatened fauna species and one threatened flora species, listed under the BC Act and/or the EPBC Act, were considered to have a moderate probability of occurrence at the subject site. However, no listed species or populations were encountered during the field survey. Subject to implementation of the mitigation measures proposed, it has been concluded that no significant biodiversity impacts are likely, including to any threatened or migratory species, population or ecological community, or their habitats. As such, the proposal does not require referral to the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) in respect of these matters or trigger the need for a Species Impact Statement (SIS) or a BDAR.

This assessment covers the current form of the proposal. Any change to the scope of work may require re-assessment. If entry into the NSW BOS is triggered by a changed footprint impacting additional native vegetation, then additional field work and reporting completed according to the Biodiversity Assessment Method 2020 (BAM) may be required.

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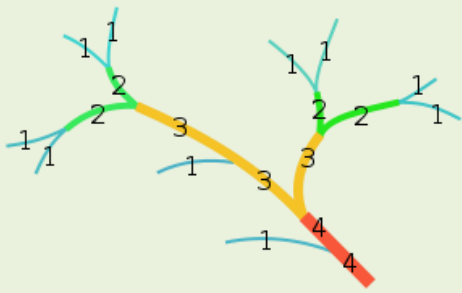
ABBREVIATIONS

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

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

GLOSSARY OF TERMS

Term	Description
Areas of outstanding biodiversity	An area of outstanding biodiversity value is: • an area important at a State, national or global scale, and • an area that makes a significant contribution to the persistence of at least one of the following: ◦ multiple species or at least one threatened species or ecological community ◦ irreplaceable biological distinctiveness ◦ ecological processes or ecological integrity ◦ outstanding ecological value for education or scientific research. The declaration of an area may relate, but is not limited, to protecting threatened species or ecological communities, connectivity, climate refuges and migratory species (BC Act).
Cumulative impact	The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Refer to Clause 171(2) of the EP&A Regulation 2021 for cumulative impact assessment requirements.
Direct impacts	Are those that directly affect the habitat of species and ecological communities and of individuals using the study area. They include, but are not limited to, death through predation, trampling, poisoning of the animal/plant itself and the removal of suitable habitat (OEH 2018).
Habitat	The area occupied or used, including areas periodically or occasionally occupied or used, by any threatened species or ecological community and includes all the different aspects (both biotic and abiotic) used by species during the different stages of their life cycle (OEH 2018).
Important population	Is a population that is necessary for a species long-term survival and recovery; this may include populations identified as such in recovery plans, and/or that are: • key source populations either for breeding or dispersal • populations that are necessary for maintaining genetic diversity, and/or • populations that are near the limit of the species range (DE 2013).
Indirect impact	Occur when project-related activities affect species or ecological communities in a manner other than direct loss within the subject site. Indirect impacts may sterilise or reduce the habitability of adjacent or connected habitats. Indirect impacts can include loss of individuals through starvation, exposure, predation by domestic and/or feral animals, loss of breeding opportunities, loss of shade/shelter, reduction in viability of adjacent habitat due to edge effects, deleterious hydrological changes, increased soil salinity, erosion, inhibition of nitrogen fixation, weed invasion, noise, light spill, fertiliser drift, or increased human activity within or directly adjacent to sensitive habitat areas (OEH 2018).
Invasive species	Is an introduced species, including an introduced (translocated) native species, which out-competes native species for space and resources, or which is a predator of native species. Introducing an invasive species into an area may result in that species becoming established. An invasive species may harm listed threatened species or ecological communities by direct competition, modification of habitat or predation.
Local occurrence (EEC)	The ecological community present within the study area. However, the local occurrence may include adjacent areas if the ecological community on the study area forms part of a larger contiguous area of the ecological community and the movement of individuals and exchange of genetic material across the boundary of the study area can be clearly demonstrated.
Local population (in regard to a threatened or migratory species)	A local population of a threatened plant species comprises those individuals occurring in a defined area or a cluster of individuals extends into habitat adjoining and contiguous with the study area where the individuals could reasonably be expected to cross-pollinate.

Term	Description
	A local population of fauna species comprises those individuals known or likely to occur in a defined area, as well as any individuals occurring in adjoining areas (contiguous or otherwise) that are known or likely to utilise habitats in the study area. The local population of migratory or nomadic fauna species comprises those individuals likely to occur in the study area from time to time (DECC 2007).
Low condition (vegetation)	Either: a) woody native vegetation with native over-storey percent foliage cover less than 50% of the lower value of the over-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 herb field where either: • less than 50% of ground cover vegetation is indigenous species, or • more than 90% of ground cover vegetation is cleared. Note: The percentages for the ground cover calculations must be made in a season when the proportion of native ground cover vegetated compared to non-native ground cover vegetation is likely to be at its maximum.
Moderate to good condition (vegetation)	If native vegetation is not in low condition (above), it is in moderate to good condition.
Mitigation	Action to reduce the severity of an impact.
Mitigation measure	Any measure that prevents, reduce or controls adverse environmental effects of a proposal.
NSW (Mitchell) landscape	Landscapes with relatively homogeneous geomorphology, soils and broad vegetation types, mapped at a scale of 1:250,000 (OEH 2018).
Proposal	Is considered to include 'all activities likely to be undertaken within the subject site to achieve the objective of the proposed development' (DECC 2007).
Risk of extinction	The likelihood that the local population will become extinct either in the short-term or in the long-term as a result of direct or indirect impacts on the viability of that population.
Search area	Is considered to 'include the lands that surround the subject site for a distance of 10 km' (DECC 2007). The search area has been used to search information sources to establish the landscape context of the subject site.
Significant impact	A 'significant impact' is an impact which is important, notable, or of consequence, having regard to its context or intensity.
Strahler stream order	Strahler stream orders are used to define stream size based on a hierarchy of tributaries, based on the diagram below. 
Study area	Means the subject site and any additional areas which are likely to be affected by the proposal, either directly or indirectly. The study area should extend as far as is necessary to take all potential impacts into account (OEH 2018). In this instance, the study area extends 1,500 m from the site.
Subject site	Means the area directly affected by the proposal. The subject site includes the footprint of the proposal and any ancillary works, facilities, accesses or hazard reduction zones that support the construction or operation of the development or activity (OEH 2018).
Target species	A species that is the focus of a study or intended beneficiary of a conservation action or connectivity measure.

1 INTRODUCTION

1.1 PROPOSAL OVERVIEW

OzArk Environment & Heritage (OzArk) has been engaged by Chris Smith & Associates (the client), who are acting on behalf of Green Gold Energy (the proponent), to complete a Biodiversity Assessment Report (BAR), concerning the development of the Cathundral Solar Farm (9438 Mitchell Highway Cathundral), within the Warren Shire Council Local Government area, New South Wales (**Error! Reference source not found.**).

This biodiversity assessment has been undertaken in accordance with Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). For this proposal, Green Gold Energy is the proponent and Warren Shire Council is the determining authority (EP&A Act s.5.1). The biodiversity assessment has been prepared in accordance with Clause 171 of the *EP&A Regulation* (2021).

In the case of this development, a BAR is appropriate, rather than a Biodiversity Development Assessment Report (BDAR), as entry into the NSW Biodiversity Offsets Scheme (BOS) is not triggered. For reference, entry into the BOS is triggered when one or more of the following conditions is met:

- The proposal exceeds the clearing threshold for the relevant lot.
- The proposal will impact a mapped area of biodiversity value on the state-wide Biodiversity Values Map.
- The proposal will result in a significant impact to one or more listed threatened entities.

The minimum lot size of the subject site is 1000 hectares (ha). Under the Biodiversity Assessment Method (DPIE, 2020b), the clearing threshold for entry into the BOS for a property with a minimum lot size of 1000 ha or more is 2 ha (**Error! Reference source not found.**). As this proposal does not require the clearing of native vegetation, it will not exceed the clearing threshold. The proposal does not impact an area mapped on the Biodiversity Values Map (**Appendix A**) and will not result in a significant impact to one or more listed threatened entities (**Section 6.4**). Therefore, this proposal will not trigger a requirement to offset or to prepare a BDAR.

Table 1-1. Minimum lot size and allowable clearing threshold under the BAM 2020.

Minimum Lot Size	Clearing Threshold
Less than 1 ha	0.25 ha or more
1 ha to less than 40 ha	0.50 ha or more
40 ha to less than 1000 ha	1 ha or more
1000 ha or more	2 ha or more

1.2 PROPOSAL LOCATION AND CONTEXT

1.2.1 Regional Context

The regional context of the proposal is explored in **Table 1-2** and depicted in **Figure 1-1**.

Table 1-2. Regional context for the proposal.

Criteria	Value
Interim Biogeographic Regionalisation for Australia (IBRA Region)	Darling Riverine Plains
Interim Biogeographic Regionalisation for Australia Sub-region (IBRA Sub-Region)	Bogan-Macquarie
State	New South Wales
Local Government Area	Warren Shire Council
Nearest town	Nevertire
Nearest park, state forest or reserve	- Cowal State Forest (~50km southeast) - Drillwarrina National Park (~66km east)
Mitchell Landscapes	Trangie Terrace
Nearest waterway (Name, Type)	- Multiple canal lines through study area 9 x 1st order Strahler minor, non-perennial watercourses (search area) - Beleringar Creek, Major, non-perennial (search area) 3 x 2nd order Strahler, minor, non-perennial watercourses (search area) - Macquarie River, Major, non-perennial (search area)
Surrounding land use	- Cropping (subject site) - Grazing native vegetation (study area) - Reservoir/dam (study area) - Irrigated cropping (study area) - Channel/aqueduct (study area) - Managed resource protection (study area) - Grazing modified pastures (study area)
Surrounding land zone	RU1 – Primary Production (subject site and study area)

1.2.2 Subject site, Study Area, and Search 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 (**Figure 1-1**). 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 (**Figure 1-1**).

Subject site

the footprint of the proposal and the area directly affected by the development activities (**Figure 1-2**).

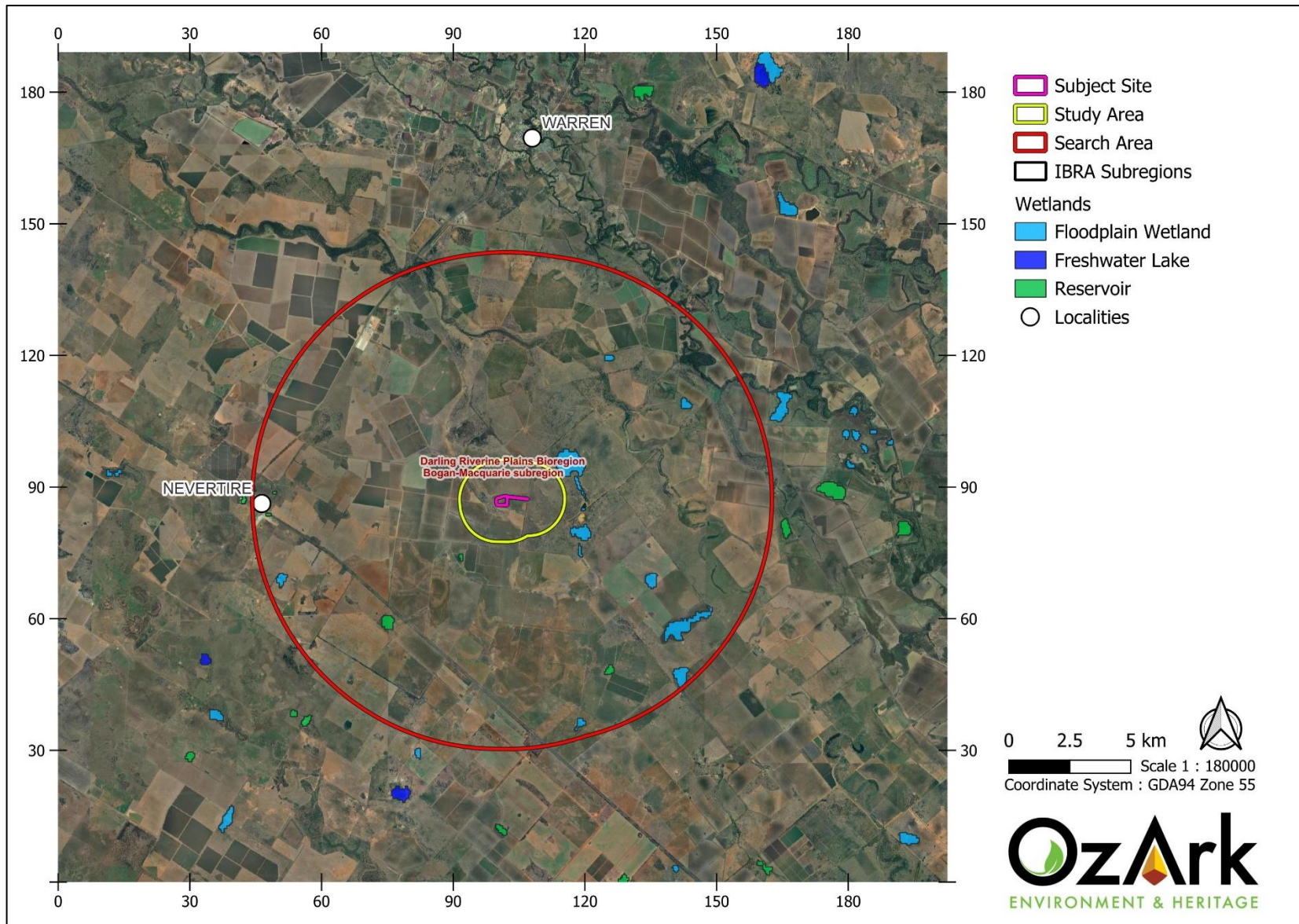


Figure 1-1. Regional Context of the Subject site.

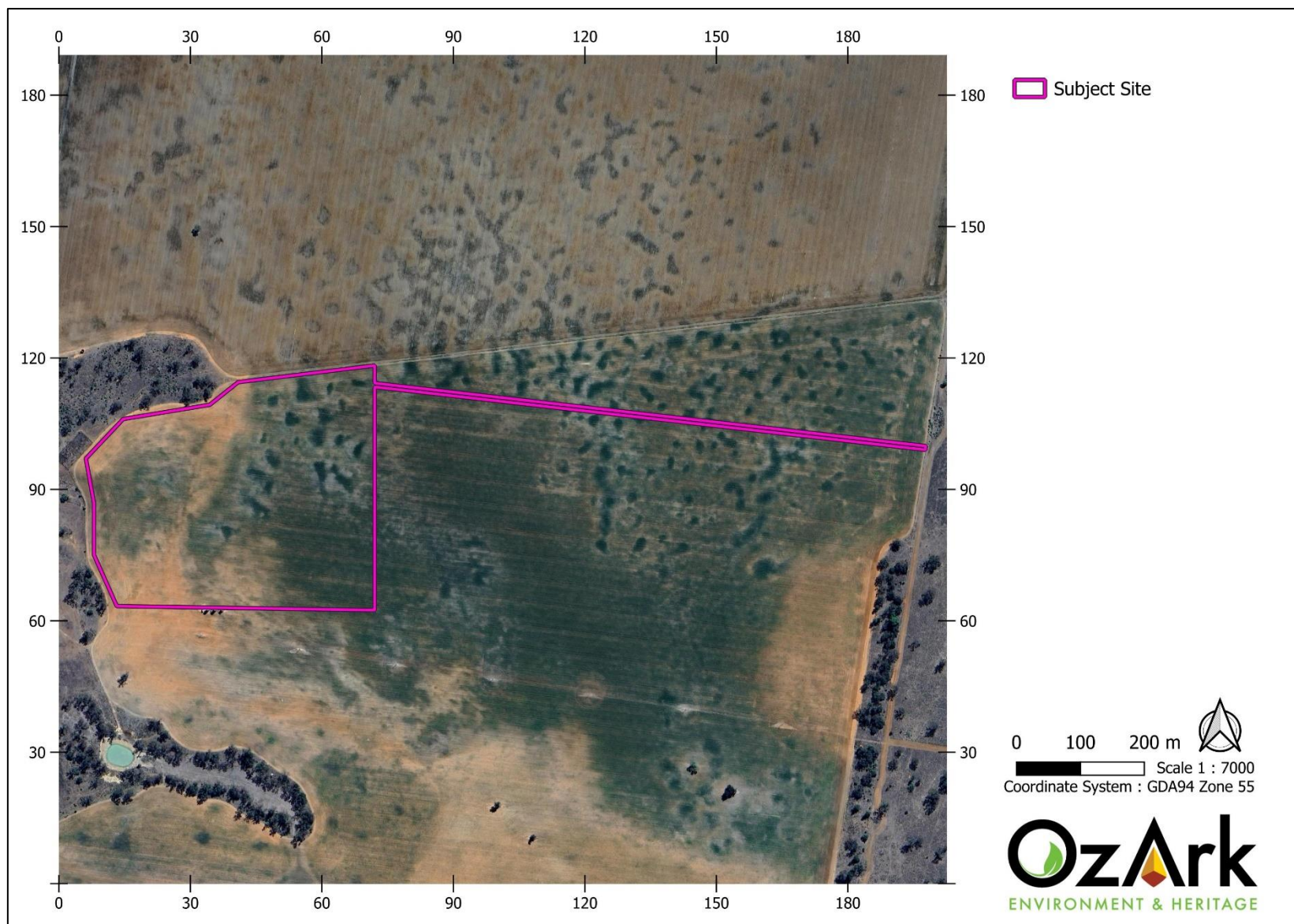


Figure 1-2. Aerial view of the Subject Site.

2 STATUTORY AND PLANNING CONTEXT

2.1 COMMONWEALTH LEGISLATION

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

Objects of the EPBC Act relevant to this proposal include:

- *to provide for the protection of the environment, especially those aspects of the environment that are matters of national environmental significance; and*
- *to promote ecologically sustainable development through the conservation and ecologically sustainable use of natural resources; and*
- *to promote the conservation of biodiversity.*

There are nine Matters of National Environmental Significance (MNES) to which the EPBC Act applies, three of which would potentially be relevant to this proposal:

- 1) wetlands of international importance (also called 'Ramsar' wetlands)
- 2) nationally threatened species and ecological communities
- 3) migratory species, comprising those listed under the:
 - Bonn Convention
 - Japan-Australia Migratory Bird Agreement (JAMBA)
 - China-Australia Migratory Bird Agreement (CAMBA)
 - Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA)

The Significant Impact Guidelines (DoE 2013) prepared under the EPBC Act are used to determine whether a proposed development or activity will have, or is likely to have, a significant impact on MNES, and therefore requires referral to the Australian Government Minister for the Environment (Minister).

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.

Matters which fall under this legislation are addressed in **Section 5.7** and **Appendix E**.

2.2 STATE LEGISLATION

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

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

Part 4 of the EP&A Act requires the proponent to examine and consider to the fullest extent possible all matters affecting or likely to affect the environment by reason of that activity. 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 ([SIS] or BDAR 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 BOS and prepare a BDAR or prepare a SIS for each significantly impacted BC listed entity. BC Act listed species and communities are addressed in **Sections 5.2 and 5.4** and **Appendices C and D**.

2.2.3 Biodiversity Conservation Regulation 2017 (BCR)

The BCR defines the triggers and entry thresholds for the BOS. It also provides the rules for meeting offset obligations, triggers for authorities to refuse development applications and compliance provisions.

2.2.4 Biosecurity Act 2015

The Biosecurity Act aims to manage biosecurity risks from animal and plant pests and diseases, weeds, and contaminants in NSW. The Biosecurity Act imposes a general biosecurity duty to ensure that, so far as is reasonably practicable, any biosecurity risk is prevented, eliminated, or minimised. The proponent is required to manage the presence of weeds in the study area (**Section 6.2.2, Section 7.2, Appendix F**).

2.2.5 Local Land Services Act 2013

The objects of the Act include 'to ensure the proper management of natural resources in the social, economic, and environmental interests of the State, consistently with the principles of ecologically sustainable development. The Act regulates the clearing of native vegetation on rural land.

2.2.6 **Fisheries Management Act 1994**

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 public or local government authority) must not carry out dredging work or reclamation work except under the authority of a permit issued by the Minister. Dredging work means any work that involves excavating water land. Reclamation work means any work that involves depositing any material on water land.

Under section 198A of the FM Act:

"water land" means land submerged by water:

(a) whether permanently or intermittently, or

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

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

Refer to **Section 4.4** for consideration of issues relating to watercourses and the FM Act.

2.2.7 **Local Environment Plans**

A Local Environmental Plan (LEP) is a legal document prepared by Council and approved by the State Government to regulate land use and development. LEPs guide planning decisions for local governments. The plan allows Council to regulate the ways in which all land both private and public may be used and protected through zoning and development controls.

The particular aims of the Warren Shire Council LEP 2012 are as follows:

(aa) to protect and promote the use and development of land for arts and cultural activity, including music and other performance arts,

(a) to realise the economic potential of rural land in Warren by following the principles of sustainable natural resource management,

(b) to encourage the proper management, development and conservation of natural and man-made resources in Warren by protecting, enhancing and conserving—

(i) agricultural land, and

(ii) timber, minerals, soil, water and other natural resources, and

(iii) the Macquarie Marshes Nature Reserve, and

(iv) areas of significance for nature conservation, and

- (v) areas of high scenic or recreational value, and
- (vi) places and buildings of archaeological or heritage significance, including relics and Aboriginal places of heritage significance,
- (c) to ensure that development is permitted on land with due regard to environmental constraints, accessibility and existing land use patterns,
- (d) to allow for the equitable provision of social services and facilities for the community,
- (e) to minimise land use conflicts and adverse environmental impacts,
- (f) to promote ecologically sustainable development.

This LEP has not identified any areas of terrestrial biodiversity sensitivity.

2.2.8 State Environmental Planning Policies under the *EP&A Act 1979*

2.2.8.1 State Environmental Planning Policy (Transport and Infrastructure) 2021

The Transport and Infrastructure SEPP aims to facilitate the effective delivery of infrastructure across the state, including hospitals, schools, energy, water, transport and telecommunications. It permits development with consent for electricity-generating facilities including solar power stations. Solar energy systems may only be developed without consent if they are ancillary to an existing infrastructure establishment or an educational establishment within the meaning of State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017.

2.2.8.2 State Environmental Planning Policy (Biodiversity and Conservation) 2021

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

- Former SEPP (Koala Habitat Protection) 2020
- Former SEPP (Koala Habitat Protection) 2021

These individual SEPPs are no longer current; however, their provisions are incorporated into the SEPPBC 2021. Through the principles contained in these amalgamated SEPPs, the SEPPBC 2021 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'.

The Warren LGA is listed in Schedule 2 of the SEPP (Biodiversity and Conservation) 2021; consequently, the provisions of Chapter 3 of the SEPP apply to rural land within the LGA, and the provisions of Chapter 4 apply to the remaining land. As the subject site is zoned RU1, Chapter 3 of the SEPP applies.

Assessment of the subject land according to the provisions of Chapter 3 of the SEPP determined that the site does not constitute potential Koala habitat as no remnant vegetation is present. No further consideration of this SEPP is required for this proposal.

3 METHODS

The ecological assessment was carried out in three stages:

1. Desktop searches and review of ecological databases and information to identify threatened species, populations or ecological communities listed in the BC, FM, and/or EPBC Acts that have the potential to occur in the study area.
2. Field survey of the subject site for the purposes of:
 - Determining the extent of the proposed impact.
 - Collating lists of those plants present these being used to assist with the identification of the site's vegetation communities.
 - Determining habitat availability for fauna species recorded or expected to occur.
 - Documenting the nature and extent of any protected matter, such as a threatened species or community or a significant habitat feature.
3. Preparation of a written BAR that describes the impacts of the proposed activity on native vegetation and threatened species, populations, and ecological communities, and provides recommendations to avoid, minimise and mitigate these impacts.

3.1 PERSONNEL

OzArk operates under NSW Department of Planning, Industry and Environment (DPIE) Scientific License 101908, NSW Department of Primary Industries (DPI) Accreditation as an Animal Research Establishment (accreditation number 53103), and the Secretary's Animal Care and Ethics Committee Animal Research Authority RVF21/954.

The field survey was completed by Senior BAM-accredited Ecologist David Orchard on the 3rd of May 2024. Reporting components were completed by Paris Hughes and Lucca Brozler, with quality control provided by Senior BAM-accredited Ecologist Dr Crystal Graham. Key details of personnel involved are available in **Table 3-1**.

Table 3-1 Summary of OzArk personnel qualifications.

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

3.2 BACKGROUND RESEARCH

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

- NSW Government Web Map Service (WMS) layers for NSW Imagery (compiled imagery, NSW Property, NSW Base Map and NSW Topographic Map) (<https://www.spatial.nsw.gov.au/>).
- EPBC Protected Matters Search Tool (<https://www.environment.gov.au/epbc/protected-matters-search-tool>)
- NSW State Vegetation Type Map C1.1.M1.1 (<https://datasets.seed.nsw.gov.au/dataset/nsw-state-vegetation-type-map>)
- NSW DPI threatened fish indicative distribution maps (www.dpi.nsw.gov.au/fishing/species-protection/threatened-species-distributions-in-nsw/freshwater-threatened-species-distribution-maps)

- NSW BioNet Wildlife Atlas Vegetation classification (<https://www.environment.nsw.gov.au/research/Visclassification.htm>)
- NSW BioNet Threatened Biodiversity Data Collection (www.bionet.nsw.gov.au/)
- NSW BioNet Atlas (www.bionet.nsw.gov.au/)
- Register of Declared Areas of Outstanding Biodiversity Value (www.environment.nsw.gov.au/topics/animals-and-plants/threatened-species/about-threatened-species/critical-habitats)
- PlantNET, NSW Flora Online (www.plantnet.rbgsyd.nsw.gov.au/)
- NSW Department of Planning and Environment *Biodiversity Values Map* (<https://www.lmbc.nsw.gov.au/Maps/index.html?viewer=BOSETMap>)
- Vulnerable Lands – Steep or Highly Erodible, Protected Riparian and Special Category land Mapping (<https://datasets.seed.nsw.gov.au/dataset/vulnerable-land-protected-riparian73a9e>)
- Acid Sulfate Soils Risk mapping (<https://datasets.seed.nsw.gov.au/dataset/acid-sulfate-soils-risk0196c>)
- Directory of Important Wetlands of Australia (DIWA) (<https://www.environment.gov.au/water/wetlands/australian-wetlands-database/directory-important-wetlands>)
- NSW wetlands mapping (<https://datasets.seed.nsw.gov.au/dataset/nsw-wetlands047c7>)

Database searches were undertaken before the field assessment to determine the predicted species and those previously recorded within 10 km of the subject site. The results of these searches led to the identification of key species for field survey effort and targeted searches. Results of the database searches are provided in **Appendix A**. A series of other background searches were performed to comply with legal standards (please refer to **Table 3-2**).

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

Environmental Considerations	In the study area?
Land identified on the Biodiversity Values Map under the NSW <i>BC Act 2016</i>	No
Area of Outstanding Biodiversity Value (AOBV) under the NSW <i>BC Act 2016</i>	No
Critical habitat nationally?	No
An area reserved or dedicated under the <i>National Parks and Wildlife Act 1974</i> ?	No
Is the proposal located within land reserved or dedicated within the meaning of the <i>Crown Lands Act 1989</i> for preservation of other environmental protection purposes?	Yes (study area only)
A World Heritage Area?	No
Environmental Protection Zones in environmental planning instruments?	No

Environmental Considerations	In the study area?
Lands protected under <i>SEPP (Biodiversity and Conservation) 2021</i> ?	Yes (see Section 2.2.8.2)
Land identified as wilderness under the <i>Wilderness Act 1987</i> or declared as wilderness under the <i>National Parks and Wildlife Act 1974</i> ?	No
Aquatic reserves dedicated under the <i>Fisheries Management Act 1994</i> ?	No
Aquatic Threatened Ecological Community?	No
Wetland areas dedicated under the Ramsar Wetlands Convention?	No
Land subject to a conservation agreement under the <i>National Parks and Wildlife Act 1974</i> ?	No
Land identified as State Forest under the <i>Forestry Act 1916</i> ?	No
Acid sulphate area?	No
Protected riparian habitat?	No
Mapped Key Fish Habitat?	No

3.3 HABITAT ASSESSMENT

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

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

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

The species known or considered to have a moderate-high likelihood of occurring at the subject site were then considered as to whether the extent and type of development would be likely to impact on them.

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

3.4 FIELD SURVEY

The objectives of the field survey were to:

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

3.4.1 Vegetation surveys

Vegetation communities were assessed across the entire subject site in accordance with the online NSW Master Plant Community Type Classification (NSW DCCEEW, 2024f), which is the current state-wide vegetation classification system for Plant Community Types (PCT). This classification system is used for vegetation mapping, development assessment and site planning purposes. It describes over 1,500 PCTs across the state, and groups the vegetation communities into vegetation Class and Formation / Sub-formation as per Keith (2004).

In this study PCTs were identified based on the following inputs:

- NSW State Vegetation Type Map: C1.1.M1.1 (DPE, 2022c), which provides predictive mapping of PCTs in and around the subject site. This mapping is indicative only. It is not necessarily accurate at a fine scale for the purposes of the current study.
- Professional ecological knowledge about locally occurring vegetation types and landscape, soil, and topographic patterns, including transitions from one community to another and potential for intergrades between plant communities.
- Field survey results confirming the flora species present, vegetation structure, landscape position and soil type at the subject site and the extent and condition of native vegetation.
- The BioNet Vegetation Classification database was used to identify the candidate vegetation communities likely to be present based on the site conditions (flora species

present, vegetation structure, bioregion, and landscape position and soil type) and the relevant published PCT descriptions.

If any of the PCTs were identified as having potential to be part of a Threatened Ecological Community (TEC), the relevant identification guidelines (NSW Scientific Committee listing criteria and Commonwealth identification guides) were consulted to determine the status of the vegetation community present on the subject site. These guidelines provide the identification criteria used to positively identify the community as being part of the TEC. The criteria include location, species present, overstorey species, weed cover, number and type of native species including whether certain 'important' native species are present. Plant identification followed nomenclature in the Royal Botanic Gardens PlantNet online database (Royal Botanic Gardens and Domain Trust, 2024).

3.4.2 Fauna surveys

The subject site was incidentally searched for fauna using a meander method while undertaking floristic and habitat surveys. Habitat trees (i.e., hollow-bearing trees or trees containing nests) were searched for and GPS tagged, if present. Potential habitat such as rocks, logs, loose bark, and coarse woody debris was examined for cryptic species. Areas of suitable substrate were searched for animal tracks. Other evidence of fauna presence on the subject site, such as scats, feathers and sloughed skins were also recorded. Any culverts, crevices and structures were examined for nocturnal roosting fauna such as microbats.

Considering the scope of works proposed, combined with the condition of observed fauna habitats, no targeted surveys such as live trapping, nocturnal searches, deployment of bat echolocation detectors and so forth, were carried out.

3.5 LIMITATIONS

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

- The field survey was completed in a single day in May 2024, when certain species may not have been present, visible, or identifiable. Therefore, the species list provided in **Appendix B** should not be considered wholly comprehensive, as a greater diversity of species is likely to make use of the site,
- Fauna trapping, frog surveys and nocturnal spotlighting were not undertaken for the current assessment, and
- Microbat ultrasonic call capture and analysis was not undertaken.

To compensate for these limitations, a 'precautionary approach' for species presence has been adopted. If suitable habitat for a particular threatened species is present at the subject site or is known to occur within the wider study area, then the species is assumed to be present, and the impact assessment is completed on that basis.

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

4 EXISTING ENVIRONMENT

4.1 BIOREGION

The study area falls within the **Bogan-Macquarie** subregion of the Darling Riverine Plains Bioregion, as per the Interim Biogeographic Regionalisation of Australia's categorisation (IBRA) (Thackway & Cresswell, 1995). This subregions geology, landforms, soil types and vegetation are described below (see **Table 4-1**).

Table 4-1. Description of the Bogan-Macquarie (NSW NPWS 2003).

Bioregion	Darling Riverine Plains
Geology	Bogan and Macquarie River alluvial fans of Quaternary age. Western margin is bedrock of the Cobar bioregion. Alluvial sediments from mixed Palaeozoic bedrock bury basement rock to 100m. Underlying sediments of Cretaceous and Jurassic age form part of the Great Artesian Basin.
Landforms	Channels, floodplains, and through flow swamps of past and present river systems.
Soils	Grey and brown clays on the plains and depressions with texture contrast soils on the low rises of former levees and channels.
Vegetation	River red gum and river cooba on the channels. White cypress pine and poplar box on coarser levees. Black box, belah, myall and lignum on floodplains. Complex patterns of common reed, cumbungi, and water couch depending on water levels in marshes. Poplar box woodland with wilga, budda, white pine, grey box, yellow box and Blakely's red gum on red soils on fan margins.

4.2 NSW LANDSCAPES

NSW (Mitchell) landscapes were mapped in 2002 to provide a framework for reporting reserve establishment and for determining over-cleared landscapes (Mitchell, 2002). These landscapes broadly describe areas of similar topography, geology, soils, and vegetation. The subject site is represented by the **Trangie Terrace**, with the **Bugwah Channels and Floodplains** occurring marginally within the study area (see **Error! Reference source not found.**).

Trangie Terrace

The oldest fluvial units recognised in the upper section of the Macquarie-Bogan alluvial fan. Slightly elevated plain with northwest slope of late Pliocene and Pleistocene fluvial sand and gravel channel facies on an abandoned meander plain with flanking silty clay with sand layers of backplain facies of the Trangie Formation. Red texture-contrast soils are widespread with red sandy loams on coarser sediments, overall relief 5 to 7m. Mostly spear grass (*Austrostipa* sp.) and wallaby grass (*Austrodanthonia* sp.) with scattered to dense patches of myall (*Acacia pendula*) or bimbale box (*Eucalyptus populnea*). The myall country probably originally carried an old man saltbush (*Atriplex nummularia*) understorey but little remains. White cypress pine (*Callitris glaucophylla*), budda (*Eremophila mitchellii*) and wilga (*Geijera parviflora*) on sandy soils. Extensively grazed and cultivated.

Bugwah Channels and Floodplains

Pleistocene fluvial sediments of channel, meander plain and crevasse splay facies of the Bugwah Formation associated with the Bugwah Cowal distributary stream system. Sinuous channels, levees and oxbows with evident scroll bar patterns and outbreaks of sediment onto the adjacent Bugwah Alluvial Plains in crevasse splay deposits, local relief 3 to 5m. Channels with light brown silty clay and plains with scalded red-brown texture-contrast soils and grey cracking clay. Channels support open woodland of fringing river red gum and river cooba. Plains have woodlands of wilga, leopardwood, bimbale box, and saltbushes with locally dense belah, whitewood, myall, coolibah, black box, river cooba, budda, lignum, saltbushes, grasses and forbs.

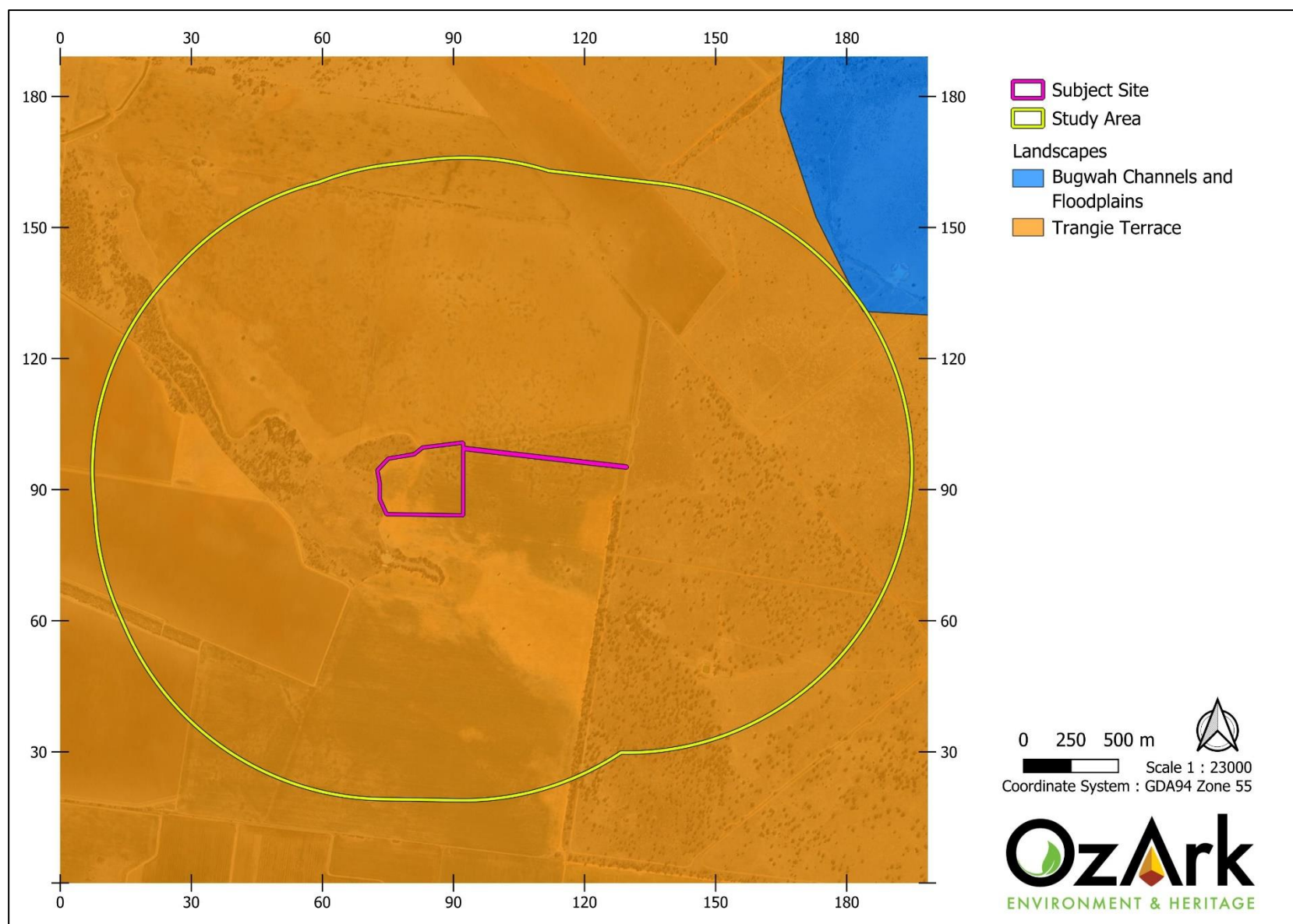


Figure 4-1. NSW Landscapes of the study area (Mitchell, 2002).

4.3 CLIMATE

The closest operating weather station to the subject site is at the Trangie Research Station AWS (ID 051049), located approximately 8.5 km to the northwest. Records at this station began in 1922.

This area experiences warm summers, with the highest mean maximum temperature of 33.6°C experienced in January. Mild minimum temperatures are experienced during this summer period (January 18.7°C). Winters are cold, with temperatures in the coolest month (July) ranging from a minimum of 3.2°C to a mean maximum of 15.5°C (Bureau of Meteorology, 2024; **Figure 4-2**).

An average of 495.2 mm of rainfall is recorded annually, with January recording the highest mean of 52.1mm, followed by February (51.2mm) and March (48.7mm). BOM statistics show that the study area experiences generally wetter summer months and drier winter months (BOM, 2024; **Figure 4-2**).

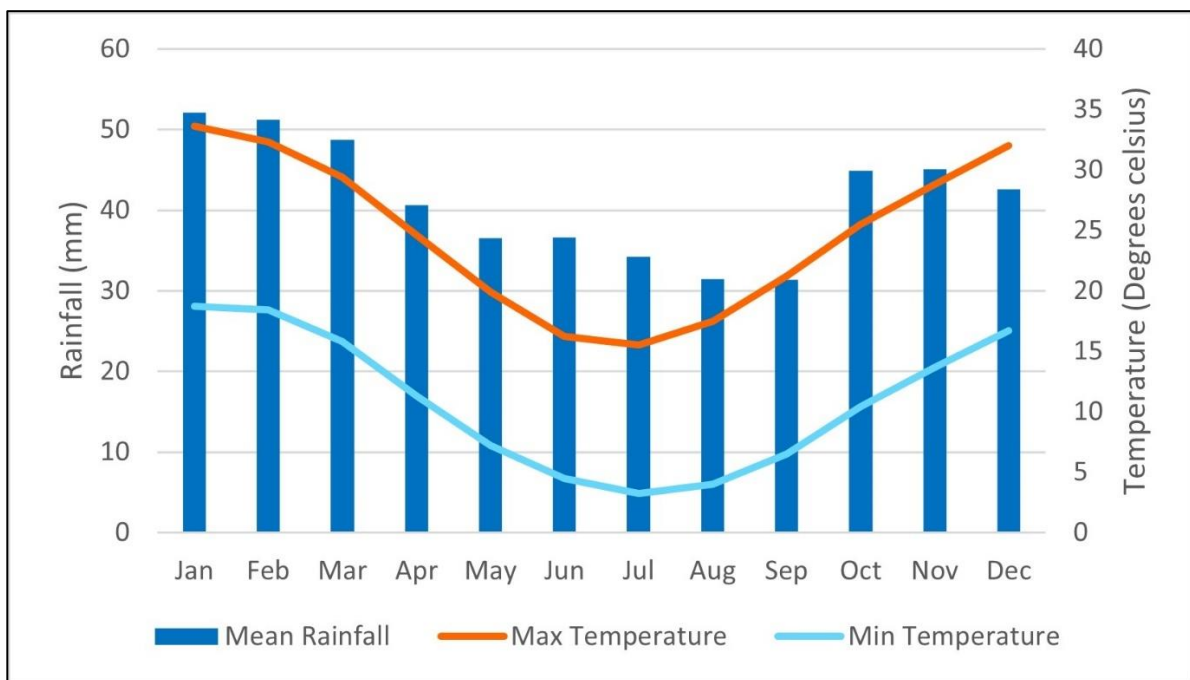


Figure 4-2. Climate statistics for the Trangie Research Station AWS (ID 051049), showing mean monthly rainfall and minimum/maximum temperatures (BOM 2024).

4.4 WATERCOURSES

No watercourses are present within the subject site, though there are multiple canal lines within the study area (see **Figure 4-3**):

Beleringar Creek (~5.5km northeast of the subject site) contains both Key Fish Habitat (KFH), as recognised by the Department of Primary Industries – Fisheries (DPI), and Protected Riparian Land (PRL), as per the NSW Department of Climate Change, Energy, the Environment and Water (NSW DCCEE). Furthermore, three threatened aquatic species (Silver Perch, Olive Perchlet, and Eel Tailed Catfish) are mapped to this watercourse. Considering the distance from this watercourse, no interaction is anticipated. As such, no permit is required under the FM Act, and no tests of significance were carried out under the FM Act.

One aquatic endangered ecological community (EEC) listed under the FM Act, occurs within the search area:

- The natural drainage system of the lowland catchment of the Darling River.

This EEC includes all native fish and aquatic invertebrates within all natural creeks, rivers, streams and associated lagoons, billabongs, lakes, anabranches, flow diversions to anabranches and floodplains of the Darling River within NSW (DPI 2007).

Excluded from this EEC are the man-made canals, off-stream reservoirs, water distribution and drainage works, and farm dams. As all watercourse within the study area are man-made canals, they do not form part of this EEC. As such, no impacts to an aquatic EEC are anticipated.

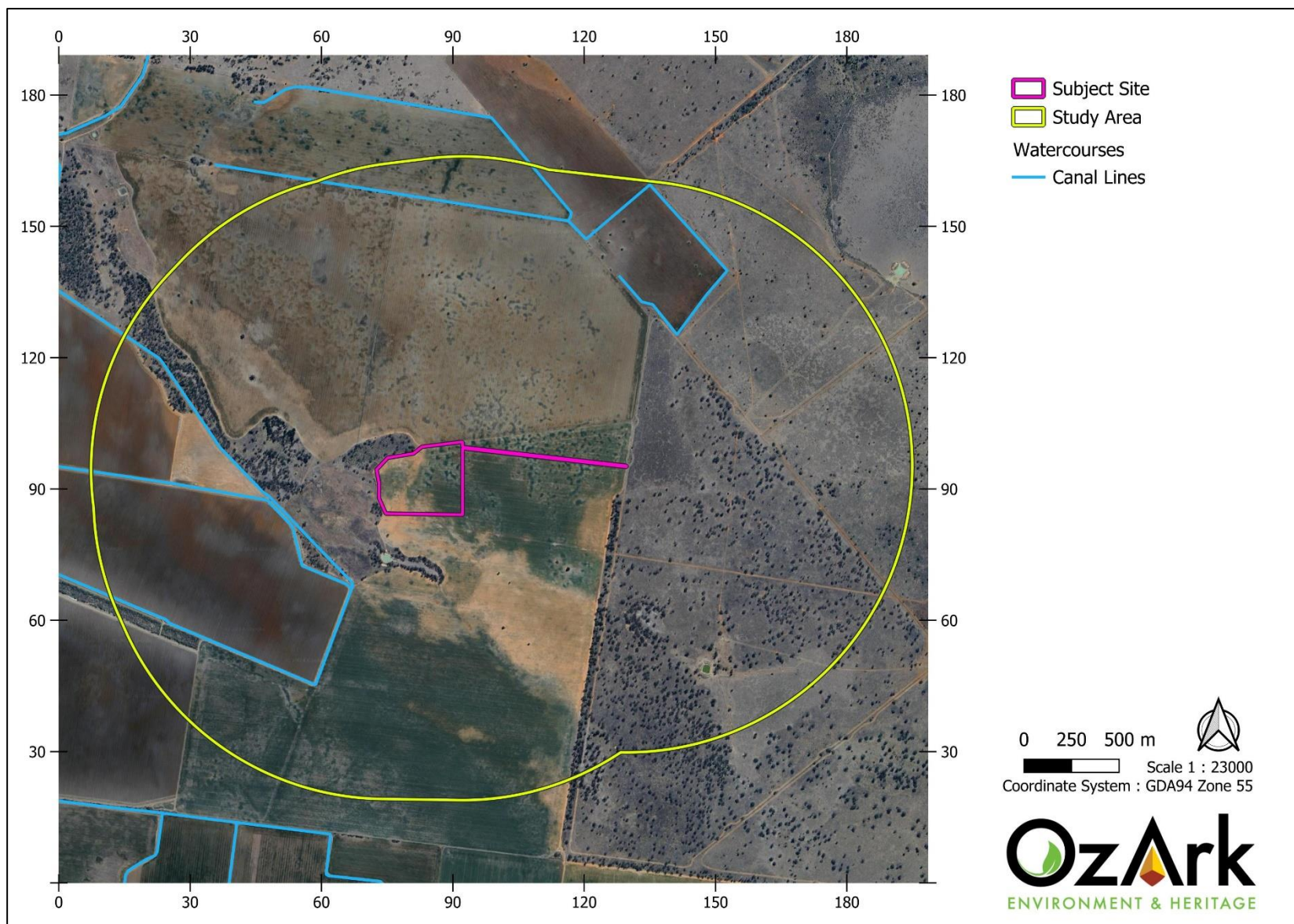


Figure 4-3. Watercourses within the study area.

4.5 GROUNDWATER DEPENDENT ECOSYSTEMS

Groundwater plays an important ecological role in directly and indirectly supporting terrestrial and aquatic ecosystems. Groundwater sustains terrestrial and aquatic ecosystems by supporting vegetation and providing discharge to channels, lacustrine and palustrine wetlands, and both the estuarine and marine environment. Aquifer ecosystems are inherently groundwater dependent (Serov, 2012).

The probable vegetation GDE mapping for the Central West region (NSW DCCEEW 2022) identified areas of low potential terrestrial GDEs within the western half of the subject site (see **Figure 4-4**). Although unlikely, the proposal may involve interaction with groundwater. As the potential for adverse interaction to ecosystems is considered to be low, no significant impacts are expected to result from this proposal. Mitigation procedures intended to reduce any potential impacts are provided in **Section 7**.



Figure 4-4. Groundwater Dependent Ecosystems within the study area.

5 RESULTS

5.1 PLANT COMMUNITY TYPES

Computer modelling, through the application of the NSW State Vegetation Type Map: C1.1.M1.1, anticipated two PCTs to be present within the study area:

- PCT 49 - Partly derived Windmill Grass – copper burr alluvial plains shrubby grassland of the Darling Riverine Plains Bioregion and Brigalow Belt South Bioregion, and
- PCT 248 - Mixed box eucalypt woodland on low sandy-loam rises on alluvial plains in central western NSW.

Three PCTs were encountered during the field survey:

- PCT 27 - Weeping Myall open woodland of the Darling Riverine Plains Bioregion and Brigalow Belt South Bioregion,
- PCT 56 - Poplar Box - Belah woodland on clay-loam soils on alluvial plains of north-central NSW, and
- PCT 98 - Poplar Box - White Cypress Pine - Wilga - Ironwood shrubby woodland on red sandy-loam soils in the Darling Riverine Plains Bioregion and Brigalow Belt South Bioregion.

However, the subject site was revised to avoid impacts to areas containing native vegetation. As such, this proposal will not impact any PCTs.

The nature of the vegetation within the subject site is described in **Table 5-1** and representative photos are provided in **Appendix B**.

Table 5-1. Plant Community Types (PCTs) within the subject site.

PCT ID	PCT Name	Area within Subject Site (ha)
-	Native vegetation	-
	Non-native vegetation and bare ground	15.17
Total		15.17

5.2 THREATENED ECOLOGICAL COMMUNITIES

No vegetation within the subject site is associated with a threatened ecological community.

5.3 THREATENED AQUATIC ECOLOGICAL COMMUNITIES

As all watercourses within the study area are man-made canals, they do not form part of a threatened aquatic ecological community. However, the EEC “The aquatic ecological community in the natural drainage system of the lowland catchment of the Darling River” does occur within

the wider search area (e.g. Beleringar Creek, and its tributaries). No impacts are expected on this EEC.

5.4 THREATENED SPECIES AND POPULATIONS

A review of the Threatened Species Profiles database found 82 threatened or migratory flora and fauna species or populations listed under the BC and/or EPBC Acts that are known or predicted to occur within the Bogan-Macquarie subregion of the Darling Riverine Plains Bioregion. Based on the proximity of past records, habitat requirements, and the results of the field survey, nine listed species were assessed as having a moderate likelihood of occurrence (**Appendix C**). These species are listed below in **Table 5-2**.

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

Scientific Name	Common Name	*NSW status	+Comm. Status	Records within 10 km
<i>Aphelocephala leucopsis</i>	Southern Whiteface	V,P	V	2
<i>Hieraaetus morphnoides</i>	Little Eagle	V,P		1
<i>Ninox connivens</i>	Barking Owl	V,P,3		1
<i>Polytelis swainsonii</i>	Superb Parrot	V,P,3	V	4
<i>Pomatostomus temporalis temporalis</i>	Grey-crowned Babbler (eastern subspecies)	V,P		7
<i>Swainsona recta</i>	Small Purple-pea	E1	E	1
<i>Chalinolobus picatus</i>	Little Pied Bat	V,P		2
<i>Myotis macropus</i>	Southern Myotis	V,P		1
<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheath-tail-bat	V,P		1

*NSW Status: P=Protected, V=Vulnerable, E1=Endangered, 3=Category 3 sensitive species.

+ Comm. Status: E=Endangered, V=Vulnerable

5.5 HABITAT TREES AND FEATURES

No habitat trees or features were recorded within the subject site.

5.6 WILDLIFE CONNECTIVITY CORRIDORS

At the time of survey, the subject site consisted entirely of non-native vegetation (mostly a newly sown Canola crop) and bare ground. As such, the subject site holds very low connectivity value.

5.7 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 DCCEEW. The EPBC Act protected matters search has identified five TECs, 25 threatened species, eight migratory species, and 15 marine species that could possibly occur in the study area (**Appendix A**). Although three Wetlands of International Importance (Ramsar) are

connected to the development area by way of watercourses, these are all several hundred kilometres from the subject site and will not be impacted by the proposal.

A summary of these matters and whether the proposal is likely to impact them is provided in **Table 5-3**.

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

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

6 IMPACT ASSESSMENT

6.1 CONSTRUCTION IMPACTS

6.1.1 Impacts to native vegetation and threatened ecological communities

The subject site, 15.17 ha in size, consists of non-native vegetation and bare earth. No native vegetation or threatened ecological communities will be impacted by the proposal.

6.1.2 Impact to threatened fauna and associated habitat

Eight threatened fauna species listed under the BC and/or EPBC Acts were considered to have a moderate probability of occurring at the subject site (**Table 5-2**). Although no threatened fauna species was encountered during the field survey, targeted surveys (e.g., trapping, spotlighting) were not performed.

At the time of survey, the subject site consisted entirely of non-native vegetation (mostly a newly sown Canola crop) and bare ground. As such, it is highly unlikely the proposal would have a significant impact on any threatened fauna species or population (**Appendices D-E**).

6.1.3 Impact to threatened flora

One threatened flora species (*Swainsona recta*), listed under the BC and EPBC Act, was considered to have a moderate probability of occurrence at the subject site. Although no threatened flora species were detected during the field survey, targeted surveys were not performed, and the time of year (3rd of May) may not have been conducive to detecting these species.

Considering the high level of disturbance at the site (newly sown Canola crop), it is highly unlikely that the proposal would have a significant impact on any threatened flora species (**Appendices D-E**).

6.1.4 Fauna injury and mortality

During the construction phase of the proposal, fauna may become trapped in or choose to shelter within machinery stored at the subject site overnight. If these animals were to remain inside the machinery, or under the wheels or tracks, they may suffer fatalities once the machinery is in use. Considering the lack of native vegetation and habitat features within the site, the likelihood of this occurrence is considered to be very low. Nonetheless, mitigation measures designed to reduce injury and mortality of fauna are provided in **Section 7**.

6.2 INDIRECT/OPERATIONAL IMPACTS

6.2.1 Edge effects on adjacent native vegetation and habitat

Considering the entire site contains non-native vegetation (mostly a newly sown Canola crop), the proposal would not generate additional habitat edges. However, it could encourage the spread of weeds into the remnant vegetation outside the direct impact footprint of the proposal. Mitigation measures designed to limit the spread of weeds are provided in **Section 7**.

6.2.2 Invasion and spread of weeds

The survey identified 23 exotic weed species within or adjacent to the subject site. Of these, four are regarded as high-threat exotics (HTEs), as per the Biodiversity Assessment Method 2020 (BAM), and one – African Boxthorn (*Lycium ferocissimum*) – is also regarded as a Weed of National Significance (WoNS) and as a Priority Weed (PW) for the Central West (see **Table 6-1**).

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

Table 6-1. Significant weeds encountered at the subject site.

Growth Form	Scientific Name	Common Name	HTE	WoNS	PW
SG	<i>Lycium ferocissimum</i>	African Boxthorn	Y	Y	N
FG	<i>Carthamus lanatus</i>	Saffron Thistle	Y	N	N
FG	<i>Heliotropium amplexicaule</i>	Blue Heliotrope	Y	N	N
GG	<i>Bromus diandrus</i>	Great Brome	Y	N	N

6.2.3 Invasion and spread of pests

The study area is likely already habitat for a range of pest species, such as European rabbits (*Oryctolagus cuniculus*), foxes (*Vulpes vulpes*), cats (*Felis catus*), feral pigs (*Sus scrofa*) and wild dogs (*Canis lupus*). Mitigation measures designed to limit the spread of pests 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 on biodiversity due to their movement and infection during construction. Of these, three are listed as a key threatening process 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)
- Introduction and establishment of exotic Rust Fungi of the order *Pucciniales* on plants of the family *Myrtaceae* (BC Act).

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

6.2.5 Noise, light and vibration

Some noise and vibration impacts will occur during the construction phase of this proposal. As the only existing nearby sources of noise and vibration impacts are from adjacent agricultural properties and roads, this may have a disruptive effect on local fauna unacclimatised to these impacts. Considering the lack of native vegetation and habitat features within the site, the likelihood of disturbance is considered to be very low. Nonetheless, mitigation measures designed to reduce injury and mortality of fauna are provided in **Section 7**. Noise, light, and vibration impacts are expected to be minimal during the operational phase of this proposal.

6.3 CUMULATIVE IMPACTS

The potential biodiversity impacts of the proposal must be considered as a component of the ongoing and, in some cases, intensifying loss of biodiversity within NSW. This proposal would not act alone in causing impacts to biodiversity. Instead, it represents just one of many sources of biodiversity loss. The incremental effects of multiple sources of impact (past, present and future) are referred to as cumulative impacts. This assessment provides an opportunity to consider the proposal within a strategic context.

Historic vegetation clearing for agriculture and infrastructure have caused significant biodiversity losses in the local area. Ongoing projects in the LGA, such as the Nevertire Solar Farm and the Western Slopes Pipeline will continue to reduce remaining biodiversity values into the future. The proposal itself, would not significantly impact regional biodiversity, given that it will not impact remnant native vegetation.

6.4 IMPACT SUMMARY

An Assessment of Significance has been conducted for each BC Act and EPBC Act-listed threatened or migratory species and community that is considered to have a moderate-high likelihood of occurring due to the presence of suitable habitat (**Appendices C-E**). Based on these assessments, the proposal is very unlikely to have a significant impact on biodiversity, including predicted populations of threatened or migratory species and threatened ecological communities.

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, and
3. Offset where residual, significant unavoidable impacts would occur

7.1 AVOIDANCE AND MINIMISATION

The following impact avoidance and minimisation methods were implemented by Green Gold Energy during the design phase of the proposal:

- The impact footprint was realigned to avoid any impacts to native vegetation.

The following impact avoidance methods are recommended to be implemented:

- To avoid impacts associated with weed introduction and spread, inspect all machinery before entering and exiting the subject site. Machinery must be clean of all mud, soil and vegetation material.

In addition, the following minimisation measures are proposed:

- The construction works and vehicle access to the construction site is to be constrained to the minimum area practical.
- Material stockpiles, equipment and machinery storage and laydown areas will be contained within the subject site 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.

Aspect	Environmental safeguards	Responsibility	Timing
General	- Any change in design outside the assessed impact footprint (subject site) will require further ecological survey and assessment. - All personnel working on site will be made aware of the environmental sensitivities of the site and safeguards/mitigations to be implemented, e.g., site induction and 'toolbox' style briefings. This includes all potential/known threatened flora and fauna (see Table 5-2).	Proponent	Pre-construction, construction, operation
Clearing of native vegetation (including habitat trees)	- All construction personnel should be inducted to be aware that any deliberate or accidental damage of a stand of native vegetation outside the subject site has legislative consequences under Part 4 or 5 of the EP&A Act. Evidence of all personnel receiving this induction would be kept on file (signed induction sheets etc.). - 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, etc. - Vegetation would be removed in such a way as to avoid damage to surrounding vegetation. - Groundcover disturbance would be kept to a minimum. - Any stockpile and compound sites should be located using the following criteria: - At least 40 m away from the nearest waterway - In areas of low ecological conservation significance (i.e., previously disturbed land) - On relatively level ground - Outside the one in 10-year Average Recurrence Interval (ARI) floodplain - Stockpiling materials and equipment and parking vehicles would be avoided within the dripline (extent of foliage cover) of any tree.	Proponent / contractor	Pre-construction, construction, operation
Accidental death of fauna	Where fauna is encountered, a fauna spotter catcher will remove the animal(s) and relocate them nearby, or if necessary, deliver them to a veterinarian or wildlife carer for rehabilitation.	Contractor	Construction
Light	Any artificial lighting to be used during construction or operation should follow the Best Practice Lighting Design within the National Light Pollution Guidelines (DoEE 2020).	Proponent, contractor	Construction
Soil Management	- Install erosion and sediment controls in line with Landcom's Managing Urban Stormwater, Soils & Construction Guidelines (The Blue Book. Landcom 2004). - Erosion and sedimentation controls are to be checked and maintained on a regular basis. This includes clearing of sediment from behind barriers and after heavy rainfall events.	Proponent, contractor	Pre-construction and construction

Aspect	Environmental safeguards	Responsibility	Timing
	13. Erosion and sediment control measures are not to be removed until the works are complete, and areas are stabilised. 14. Stockpile topsoil removed to be redistributed across site at completion of construction. 15. Implement dust suppression activities.		
Introduction and spread of priority weeds and pathogens	16. Construction crew should be briefed on the identification of significant weeds occur on site during inductions (see Table 6-1). 17. If significant weeds are identified during construction, they will be managed according to the requirements of the <i>Biosecurity Act 2015</i> . 18. Construction machinery (bulldozers, excavators, trucks, loaders, and graders) will be cleaned using a high-pressure washer or other suitable device before entering and exiting work sites. 19. Machinery will be inspected by designated personnel following washdown to ensure no soil, mud, or vegetative material remains. Records of inspections to be maintained. 20. All pesticides will be used in accordance with the requirements on the label. Any person carrying out pesticide (including herbicide) application will be trained to do so and have the proper certificate of completion/competency or statement of attainment issued by a registered training organisation. Keep records of any weed control activities that take place.	Contractor	Construction
Disturbance to fallen timber, dead wood, and bush rock	21. If detected, any fallen timber, dead wood, and bush rock encountered would be left <i>in situ</i> (where possible) or relocated to a suitable place nearby.	Contractor	Construction
Rehabilitating cleared areas	22. Revegetation of any bare soil with locally occurring native flora species typical of the original habitat types. 23. Stockpiled topsoil to be re-spread over cleared areas.	Proponent, contractor	Construction and post-construction
Exacerbating invasive fauna	24. 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	25. 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

An onsite field survey was conducted by Senior BAM-accredited Ecologist Dr David Orchard in May 2024. The subject site, 15.17 ha in size, consisted entirely of non-native vegetation (mostly a newly sown Canola crop) and bare ground. As such, no native PCTs, habitat trees, or TECs will be impacted by the proposal.

A BAR is appropriate for this development, rather than a BDAR, as no native vegetation will be impacted, the proposal does not impact a mapped area of biodiversity value on the state-wide Biodiversity Values Map, and no listed threatened entities will be significantly impacted. As such, entry into the NSW BOS is not triggered.

No watercourses occur within the subject site, though multiple canal lines pass through the study area. These man-made watercourses lack recognition as KFH or as PRL, through the DPI – Fisheries and the NSW DCCEEW, respectively. As such, no permit is required under the FM Act. Eight threatened fauna species and one threatened flora species, listed under the BC Act and/or the EPBC Act, were considered to have a moderate probability of occurrence at the subject site. However, no listed species or populations were encountered during the field survey. It has been concluded that no significant biodiversity impacts are likely, including to any threatened or migratory species, population or ecological community, or their habitats. As such, the proposal does not require referral to the DCCEEW in respect of these matters or trigger the need for a SIS or a BDAR.

This assessment covers the current form of the proposal. Any change to the scope of work may require re-assessment. If entry into the BOS is triggered by a changed footprint impacting additional native vegetation, then additional field work and reporting completed according to the BAM may be required.

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APPENDIX A – DATABASE SEARCH RESULTS

EPBC Act Protected Matters Report



Australian Government

Department of Climate Change, Energy,
the Environment and Water

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 16-Jul-2024

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar)	3
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	5
Listed Threatened Species:	25
Listed Migratory Species:	8

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <https://www.dcceew.gov.au/parks-heritage/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	15
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	1
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	1
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands) [\[Resource Information \]](#)

Ramsar Site Name	Proximity
Banrock station wetland complex	700 - 800km upstream from Ramsar site
Riverland	600 - 700km upstream from Ramsar site
The coorong, and lakes alexandrina and albert wetland	800 - 900km upstream from Ramsar site

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
Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions	Endangered	Community may occur within area
Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	Endangered	Community likely to occur within area
Poplar Box Grassy Woodland on Alluvial Plains	Endangered	Community likely to occur within area
Weeping Myall Woodlands	Endangered	Community likely to occur within area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community may occur within 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
BIRD		

Scientific Name	Threatened Category	Presence Text
<u>Aphelocephala leucopsis</u> Southern Whiteface [529]	Vulnerable	Species or species habitat likely to occur within area
<u>Calidris acuminata</u> Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
<u>Calidris ferruginea</u> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
<u>Calyptrorhynchus lathamii lathamii</u> South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat may occur within area
<u>Falco hypoleucos</u> Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
<u>Gallinago hardwickii</u> Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area
<u>Grantiella picta</u> Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area
<u>Hirundapus caudacutus</u> White-throated Needletail [682]	Vulnerable	Species or species habitat may occur within area
<u>Lathamus discolor</u> Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area
<u>Leipoa ocellata</u> Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area
<u>Lophochroa leadbeateri leadbeateri</u> Major Mitchell's Cockatoo (eastern), Eastern Major Mitchell's Cockatoo, Pink Cockatoo (eastern) [82926]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
<u>Melanodryas cucullata cucullata</u> South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat likely to occur within area
<u>Neophema chrysostoma</u> Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area
<u>Pedionomus torquatus</u> Plains-wanderer [906]	Critically Endangered	Species or species habitat may occur within area
<u>Polytelis swainsonii</u> Superb Parrot [738]	Vulnerable	Species or species habitat likely to occur within area
<u>Rostratula australis</u> Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
<u>Stagonopleura guttata</u> Diamond Firetail [59398]	Vulnerable	Species or species habitat likely to occur within area
FISH		
<u>Maccullochella peelii</u> Murray Cod [66633]	Vulnerable	Species or species habitat may occur within area
MAMMAL		
<u>Nyctophilus corbeni</u> Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat likely to occur within area
<u>Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)</u> Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat likely to occur within area
PLANT		
<u>Lepidium monoplacoides</u> Winged Pepper-cress [9190]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Swainsona murrayana Slender Darling-pea, Slender Swainson, Murray Swainson-pea [6765]	Vulnerable	Species or species habitat may occur within area
Swainsona recta Small Purple-pea, Mountain Swainson- pea, Small Purple Pea [7580]	Endangered	Species or species habitat may occur within area
REPTILE		
Anomalopus mackayi Five-clawed Worm-skink, Long-legged Worm-skink [25934]	Vulnerable	Species or species habitat may occur within area
Hemiaspis damelii Grey Snake [1179]	Endangered	Species or species habitat may occur within area
Listed Migratory Species [Resource Information]		
Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area
Other Matters Protected by the EPBC Act		
Listed Marine Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
<u>Chalcites osculans as Chrysococcyx osculans</u> Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area
<u>Gallinago hardwickii</u> Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area overfly marine area
<u>Haliaeetus leucogaster</u> White-bellied Sea-Eagle [943]		Species or species habitat may occur within area
<u>Hirundapus caudacutus</u> White-throated Needletail [682]	Vulnerable	Species or species habitat may occur within area overfly marine area
<u>Lathamus discolor</u> Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area overfly marine area
<u>Merops ornatus</u> Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area
<u>Motacilla flava</u> Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area
<u>Neophema chrysostoma</u> Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area overfly marine area
<u>Rostratula australis as Rostratula benghalensis (sensu lato)</u> Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area

Extra Information

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

Bioregional Assessments		[Resource Information]
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SubRegion	BioRegion	Website
Central West	Northern Inland Catchments	BA website

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.

Please feel free to provide feedback via the [Contact us](#) page.

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[Department of Climate Change, Energy, the Environment and Water](#)
GPO Box 3090
Canberra ACT 2601 Australia
+61 2 6274 1111

BioNET Atlas search – threatened species predicted to occur within the Bogan-Macquarie subregion of the Darling Riverine Plains Bioregion.

Class	Scientific Name	Common Name	NSW status*	Comm. status+	Records
Amphibia	<i>Crinia sloanei</i>	Sloane's Froglet	E1,P	E	2
Aves	<i>Actitis hypoleucos</i>	Common Sandpiper	P	C,J,K	5
Aves	<i>Anseranas semipalmata</i>	Magpie Goose	V,P		133
Aves	<i>Aphelocephala leucopsis</i>	Southern Whiteface	V,P	V	50
Aves	<i>Apus pacificus</i>	Fork-tailed Swift	P	C,J,K	5
Aves	<i>Ardeotis australis</i>	Australian Bustard	E1,P		21
Aves	<i>Artamus cyanopterus cyanopterus</i>	Dusky Woodswallow	V,P		36
Aves	<i>Botaurus poiciloptilus</i>	Australasian Bittern	E1,P	E	49
Aves	<i>Burhinus grallarius</i>	Bush Stone-curlew	E1,P		6
Aves	<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	P	C,J,K	55
Aves	<i>Calidris ferruginea</i>	Curlew Sandpiper	E1,P	CE,C,J,K	3
Aves	<i>Calidris melanotos</i>	Pectoral Sandpiper		C,J,K	P
Aves	<i>Calidris ruficollis</i>	Red-necked Stint	P	C,J,K	1
Aves	<i>Calyptorhynchus banksii samueli</i>	Red-tailed Black-Cockatoo (inland subspecies)	V,P,2		3
Aves	<i>Calyptorhynchus lathami lathami</i>	South-eastern Glossy Black-Cockatoo	V,P,2	V	10
Aves	<i>Circus assimilis</i>	Spotted Harrier	V,P		33
Aves	<i>Climacteris picumnus victoriae</i>	Brown Treecreeper (eastern subspecies)	V,P	V	348
Aves	<i>Daphoenositta chrysoptera</i>	Varied Sittella	V,P		9
Aves	<i>Ephippiorhynchus asiaticus</i>	Black-necked Stork	E1,P		8
Aves	<i>Epthianura albifrons</i>	White-fronted Chat	V,P		42
Aves	<i>Falco hypoleucos</i>	Grey Falcon	V,P,2	V	2
Aves	<i>Falco subniger</i>	Black Falcon	V,P		33
Aves	<i>Gallinago hardwickii</i>	Latham's Snipe	P	J,K	88
Aves	<i>Gelochelidon nilotica</i>	Gull-billed Tern	P	C	10
Aves	<i>Grantiella picta</i>	Painted Honeyeater	V,P	V	54
Aves	<i>Grus rubicunda</i>	Brolga	V,P		175
Aves	<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	V,P		66
Aves	<i>Hamirostra melanosternon</i>	Black-breasted Buzzard	V,P,3		1
Aves	<i>Hieraaetus morphnoides</i>	Little Eagle	V,P		35
Aves	<i>Hirundapus caudacutus</i>	White-throated Needletail	V,P	V,C,J,K	4
Aves	<i>Hydroprogne caspia</i>	Caspian Tern	P	J	12
Aves	<i>Lathamus discolor</i>	Swift Parrot		CE	P
Aves	<i>Leipoa ocellata</i>	Malleefowl	E1,P	V	1
Aves	<i>Limosa lapponica</i>	Bar-tailed Godwit	P	C,J,K	1
Aves	<i>Limosa limosa</i>	Black-tailed Godwit	V,P	E,C,J,K	2
Aves	<i>Lophochroa leadbeateri</i>	Pink Cockatoo	V,P,2	V	16

Class	Scientific Name	Common Name	NSW status*	Comm. status+	Records
Aves	<i>Lophoictinia isura</i>	Square-tailed Kite	V,P,3		3
Aves	<i>Melanodryas cucullata cucullata</i>	South-eastern Hooded Robin	E1,P	E	59
Aves	<i>Melithreptus gularis gularis</i>	Black-chinned Honeyeater (eastern subspecies)	V,P		5
Aves	<i>Motacilla flava</i>	Yellow wagtail		C,J,K	P
Aves	<i>Neophema chrysostoma</i>	Blue-winged Parrot		V	P
Aves	<i>Neophema pulchella</i>	Turquoise Parrot	V,P,3		5
Aves	<i>Nettapus coromandelianus</i>	Cotton Pygmy-Goose	E1,P		1
Aves	<i>Ninox connivens</i>	Barking Owl	V,P,3		35
Aves	<i>Oxyura australis</i>	Blue-billed Duck	V,P		34
Aves	<i>Pandion cristatus</i>	Eastern Osprey	V,P,3		1
Aves	<i>Pedionomus torquatus</i>	Plains-wanderer		CE	P
Aves	<i>Petroica phoenicea</i>	Flame Robin	V,P		2
Aves	<i>Polytelis swainsonii</i>	Superb Parrot	V,P,3	V	111
Aves	<i>Pomatostomus temporalis temporalis</i>	Grey-crowned Babbler (eastern subspecies)	V,P		230
Aves	<i>Rostratula australis</i>	Australian Painted Snipe	E1,P	E	13
Aves	<i>Stagonopleura guttata</i>	Diamond Firetail	V,P	V	25
Aves	<i>Stictonetta naevosa</i>	Freckled Duck	V,P		43
Aves	<i>Tringa glareola</i>	Wood Sandpiper	P	C,J,K	2
Aves	<i>Tringa nebularia</i>	Common Greenshank	P	C,J,K	63
Aves	<i>Tringa stagnatilis</i>	Marsh Sandpiper	P	C,J,K	12
Aves	<i>Tyto novaehollandiae</i>	Masked Owl	V,P,3		4
Fish	<i>Bidyanus bidyanus</i>	Silver Perch		CE	P
Fish	<i>Maccullochella macquariensis</i>	Trout Cod		E	P
Fish	<i>Maccullochella peelii</i>	Murray Cod		V	P
Fish	<i>Macquaria australica</i>	Macquarie Perch		E	P
Flora	<i>Atriplex frequens</i>	A saltbush	V	V	1
Flora	<i>Austrostipa wakoolica</i>			E	P
Flora	<i>Cheilanthes sieberi subsp. pseudovellea</i>		E1,3		22
Flora	<i>Dichanthium setosum</i>	Bluegrass	V	V	9
Flora	<i>Diuris tricolor</i>	Pine Donkey Orchid	V,P,2		33
Flora	<i>Lepidium monoplacoides</i>	Winged Peppergrass		E	P
Flora	<i>Persicaria elatior</i>	Tall Knotweed	V	V	1
Flora	<i>Pterostylis cobarensis</i>	Greenhood Orchid	V,P,2		6
Flora	<i>Swainsona murrayana</i>	Slender Darling Pea		E	P
Flora	<i>Swainsona plagiotropis</i>	Red Darling Pea	V	V	4
Flora	<i>Swainsona recta</i>	Small Purple-pea	E1	E	2
Mammalia	<i>Antechinomys laniger</i>	Kultarr	E1,P		2
Mammalia	<i>Chalinolobus picatus</i>	Little Pied Bat	V,P		28

Class	Scientific Name	Common Name	NSW status*	Comm. status+	Records
Mammalia	<i>Conilurus albipes</i>	White-footed Tree-rat	E4,P	X	2
Mammalia	<i>Dasyurus maculatus</i>	Spotted-tailed Quoll	V,P	E	2
Mammalia	<i>Myotis macropus</i>	Southern Myotis	V,P		1
Mammalia	<i>Nyctophilus corbeni</i>	Corben's Long-eared Bat	V,P	V	1
Mammalia	<i>Phascolarctos cinereus</i>	Koala	E1,P	E	11
Mammalia	<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	V,P	V	4
Mammalia	<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheath-tail-bat	V,P		21
Mammalia	<i>Sminthopsis macroura</i>	Stripe-faced Dunnart	V,P		1
Reptilia	<i>Anomalopus mackayi</i>	Five-clawed Worm-skink		V	P
Reptilia	<i>Hemiaspis damelii</i>	Grey Snake	E1,P	E	8
Reptilia	<i>Tympanocryptis lineata</i>	Canberra Grassland Earless Dragon	E4A,P	CE	3

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

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

- Number of Records: P = predicted to occur.

BioNET Atlas search – threatened ecological communities predicted to occur within the Bogan-Macquarie subregion of the Darling Riverine Plains Bioregion.

Community Name	*NSW status	+Comm. Status	Records
Artesian Springs Ecological Community in the Great Artesian Basin	E4B		K
Brigalow within the Brigalow Belt South, Nandewar and Darling Riverine Plains Bioregions	E3		K
Brigalow-Gidgee woodland/shrubland in the Mulga Lands and Darling Riverine Plains Bioregions	E3		P
Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions		E	K
Coolibah-Black Box Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain and Mulga Lands Bioregions	E3		K
Fuzzy Box Woodland on alluvial Soils of the South Western Slopes, Darling Riverine Plains and Brigalow Belt South Bioregions	E3		K
Grey Box (<i>Eucalyptus microcarpa</i>) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia		E	K
Myall Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain, Murray-Darling Depression, Riverina and NSW South Western Slopes bioregions	E3		K
Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland		CE	K
Poplar Box Grassy Woodland on Alluvial Plains		E	K
The community of native species dependent on natural discharge of groundwater from the Great Artesian Basin		E	K
Weeping Myall Woodlands		E	K
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland		CE	K

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

+Comm. Status: CE=Critically endangered, E=Endangered, V=Vulnerable.

- Number of Records: P = predicted to occur.

BioNET Atlas search – Key Threatening Processes predicted to occur within the Bogan-Macquarie subregion of the Darling Riverine Plains Bioregion.

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

Biodiversity Values Map



Department of Planning and Environment

Biodiversity Values Map and Threshold Report

This report is generated using the Biodiversity Values Map and Threshold (BMAT) tool. The BMAT tool is used by proponents to supply evidence to your local council to determine whether or not a Biodiversity Development Assessment Report (BDAR) is required under [the Biodiversity Conservation Regulation 2017 \(Cl. 7.2 & 7.3\)](#).

The report provides results for the proposed development footprint area identified by the user and displayed within the blue boundary on the map.

There are two pathways for determining whether a BDAR is required for the proposed development:

1. Is there Biodiversity Values Mapping?
2. Is the 'clearing of native vegetation area threshold' exceeded?

Biodiversity Values Map and Threshold Report

Date of Report Generation		16/07/2024 8:15 AM
1. Biodiversity Values (BV) Map - Results Summary (Biodiversity Conservation Regulation Section 7.3)		
1.1	Does the development Footprint intersect with BV mapping?	no
1.2	Was <u>ALL</u> BV Mapping within the development footprint added in the last 90 days? (dark purple mapping only, no light purple mapping present)	no
1.3	Date of expiry of dark purple 90 day mapping	N/A
1.4	Is the Biodiversity Values Map threshold exceeded?	no
2. Area Clearing Threshold - Results Summary (Biodiversity Conservation Regulation Section 7.2)		
2.1	Size of the development or clearing footprint	185,609.7 sqm
2.2	Native Vegetation Area Clearing Estimate (NVACE) (within development/clearing footprint)	58.5 sqm
2.3	Method for determining Minimum Lot Size	LEP
2.4	Minimum Lot Size (10,000sqm = 1ha)	10,000,000 sqm
2.5	Area Clearing Threshold (10,000sqm = 1ha)	20,000 sqm
2.6	Does the estimate exceed the Area Clearing Threshold? (NVACE results are an estimate and can be reviewed using the Guidance)	no
REPORT RESULT: Is the Biodiversity Offset Scheme (BOS) Threshold exceeded for the proposed development footprint area? (Your local council will determine if a BDAR is required)		no

Page 1 of 4



Department of Planning and Environment

What do I do with this report?

- If the result above indicates the BOS Threshold has been exceeded, your local council **may require** a Biodiversity Development Assessment Report with your development application. Seek further advice from Council. An accredited assessor can apply the Biodiversity Assessment Method and prepare a BDAR for you. For a list of accredited assessors go to: <https://customer.lmbc.nsw.gov.au/assessment/AccreditedAssessor>.
- If the result above indicates the BOS Threshold has not been exceeded, you may not require a Biodiversity Development Assessment Report. This BMAT report can be provided to Council to support your development application. Council can advise how the area clearing threshold results should be considered. Council will review these results and make a determination if a BDAR is required. Council may ask you to review the area clearing threshold results. You may also be required to assess whether the development is "likely to significantly affect threatened species" as determined under the test in Section 7.3 of the *Biodiversity Conservation Act 2016*.
- If a BDAR is not required by Council, you may still require a permit to clear vegetation from your local council.
- If **all** Biodiversity Values mapping within your development footprint was less than 90 days old, i.e. areas are displayed as dark purple on the BV map, a BDAR may not be required if your Development Application is submitted within that 90 day period. Any BV mapping less than 90 days old on this report will expire on the date provided in Line item 1.3 above.

For more detailed advice about actions required, refer to the **Interpreting the evaluation report** section of the [Biodiversity Values Map Threshold Tool User Guide](#).

Review Options:

- If you believe the Biodiversity Values mapping is incorrect please refer to our [BV Map Review webpage](#) for further information.
- If you or Council disagree with the area clearing threshold estimate results from the NVACE in Line Item 2.6 above (i.e. area of Native Vegetation within the Development footprint proposed to be cleared), review the results using the [Guide for reviewing area clearing threshold results from the BMAT Tool](#).

Acknowledgement

I, as the applicant for this development, submit that I have correctly depicted the area that will be impacted or likely to be impacted as a result of the proposed development.

Signature: _____

(Typing your name in the signature field will be considered as your signature for the purposes of this form)

Date: _____

16/07/2024 08:15 AM



Department of Planning and Environment

Biodiversity Values Map and Threshold Tool

The Biodiversity Values (BV) Map and Threshold Tool identifies land with high biodiversity value, particularly sensitive to impacts from development and clearing.

The BV map forms part of the Biodiversity Offsets Scheme threshold, which is one of the factors for determining whether the Scheme applies to a clearing or development proposal. You have used the Threshold Tool in the map viewer to generate this BV Threshold Report for your nominated area. This report calculates results for your proposed development footprint and indicates whether Council may require you to engage an accredited assessor to prepare a Biodiversity Development Assessment Report (BDAR) for your development.

This report may be used as evidence for development applications submitted to councils. You may also use this report when considering native vegetation clearing under the State Environmental Planning Policy (Biodiversity and Conservation) 2021 - Chapter 2 vegetation in non-rural areas.

What's new? For more information about the latest updates to the Biodiversity Values Map and Threshold Tool go to the updates section on the [Biodiversity Values Map webpage](#).

Map Review: Landholders can request a review of the BV Map where they consider there is an error in the mapping on their property. For more information about the map review process and an application form for a review go to the [Biodiversity Values Map Review webpage](#).

If you need help using this map tool see our [Biodiversity Values Map and Threshold Tool User Guide](#) or contact the Map Review Team at map.review@environment.nsw.gov.au or on 1800 001 490.

Biodiversity Values Map



346.5 0 173.24 346.5 Metres

WGS_1984_Web_Mercator_Auxiliary_Sphere

Legend

-  Biodiversity Values that have been mapped for more than 90 days
-  Biodiversity Values added within last 90 days
-  Native Vegetation Area Clearing Estimate (NVACE)
-  Development area selected by proponent

16/07/2024 08:15 AM

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

Imagery © Airbus DS/Spot Image 2016

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The results provided in this tool are generated using the best available mapping and knowledge of species habitat requirements.

This map is valid as at the date the report was generated. Checking the [Biodiversity Values Map viewer](#) for mapping updates is recommended.

APPENDIX B – FIELD SURVEY RESULTS

Flora species list

In total, 76 plant species were detected during the 3rd of May 2024 field survey. This list includes species within, and adjacent to, the subject site. Of these, 53 were native (69.74%) and 23 introduced (30.26%). Among the introduced species, four are listed as High-threat Exotic species (HTE) under the Biodiversity Assessment Method (2020). One species – African Boxthorn (*Lycium ferocissimum*) – is also considered a Weed of National Significance (WoNS). No Priority Weeds (PW) for the Central West were recorded.

¹ Growth Form	Scientific Name	Common Name	² Status	³ HTE	⁴ WoNS	⁵ PW
EG	<i>Marsilea drummondii</i>	Common Nardoo	N	No	No	No
FG	<i>Abutilon fraseri</i>	Dwarf Lantern-Flower	N	No	No	No
FG	<i>Alternanthera sp. A</i>	Joyweed	N	No	No	No
FG	<i>Brachyscome dentata</i>	Lobe-seed Daisy	N	No	No	No
FG	<i>Calotis lappulacea</i>	Yellow Burr-Daisy	N	No	No	No
FG	<i>Dianella caerulea</i>	Blue Flax-Lily	N	No	No	No
FG	<i>Dysphania pumilio</i>	Small Crumbweed	N	No	No	No
FG	<i>Einadia nutans</i>	Climbing Saltbush	N	No	No	No
FG	<i>Euphorbia dallachyana</i>	Caustic Weed	N	No	No	No
FG	<i>Goodenia fascicularis</i>	Goodenia	N	No	No	No
FG	<i>Leiocarpa panaetioides</i>	Wooly Buttons	N	No	No	No
FG	<i>Oxalis perennans</i>	Grassland Wood-sorrel	N	No	No	No
FG	<i>Portulaca oleracea</i>	Pigweed	N	No	No	No
FG	<i>Rumex tenax</i>	Shiny Dock	N	No	No	No
FG	<i>Sida corrugata</i>	Corrugated Sida	N	No	No	No
FG	<i>Sida trichopoda</i>	Hairy Sida	N	No	No	No
FG	<i>Solanum esuriale</i>	Quena	N	No	No	No
FG	<i>Vittadinia cuneata</i>	Fuzzweed	N	No	No	No
FG	<i>Zaleya galericulata</i>	Hogweed	N	No	No	No
GG	<i>Austrostipa verticillata</i>	Slender Bamboo Grass	N	No	No	No
GG	<i>Carex inversa</i>	Knob Sedge	N	No	No	No
GG	<i>Chloris ventricosa</i>	Tall Chloris	N	No	No	No
GG	<i>Cynodon dactylon</i>	Couch	N	No	No	No
GG	<i>Dactyloctenium radulans</i>	Button Grass	N	No	No	No
GG	<i>Dichanthium sericeum</i>	Queensland Bluegrass	N	No	No	No
GG	<i>Enteropogon acicularis</i>	Curly Windmill Grass	N	No	No	No
GG	<i>Eriochloa pseudoacrotricha</i>	Early Spring Grass	N	No	No	No
GG	<i>Panicum decompositum</i>	Native Millet	N	No	No	No
GG	<i>Paspalidium constrictum</i>	Knottybutt Grass	N	No	No	No
GG	<i>Paspalidium jubiflorum</i>	Warrego Grass	N	No	No	No
GG	<i>Sporobolus caroli</i>	Fairy Grass	N	No	No	No
OG	<i>Convolvulus clementii</i>	Desert Bindweed	N	No	No	No
OG	<i>Grona varians</i>	Slender Tick-Trefoil	N	No	No	No

OG	<i>Parsonsia eucalyptophylla</i>	Gargaloo	N	No	No	No
SG	<i>Apophyllum anomalum</i>	Warrior Bush	N	No	No	No
SG	<i>Atriplex semibaccata</i>	Creeping Saltbush	N	No	No	No
SG	<i>Chenopodium desertorum</i>	Desert Crumbweed	N	No	No	No
SG	<i>Enchylaena tomentosa</i>	Ruby Saltbush	N	No	No	No
SG	<i>Eremophila mitchellii</i>	Budda	N	No	No	No
SG	<i>Geijera parviflora</i>	Wilga	N	No	No	No
SG	<i>Maireana decalvans</i>	Black Cotton Bush	N	No	No	No
SG	<i>Rhagodia spinescens</i>	Spiny Saltbush	N	No	No	No
SG	<i>Sclerolaena birchii</i>	Galvanized Burr	N	No	No	No
SG	<i>Sclerolaena muricata</i>	Black Rolypoly	N	No	No	No
SG	<i>Senna artemisioides group</i>	Silver Cassia	N	No	No	No
SG	<i>Solanum ferocissimum</i>	Spiny Potato Bush	N	No	No	No
TG	<i>Acacia oswaldii</i>	Umbrella Wattle	N	No	No	No
TG	<i>Acacia pendula</i>	Weeping Myall	N	No	No	No
TG	<i>Alectryon oleifolius</i>	Western Rosewood	N	No	No	No
TG	<i>Brachychiton populneus</i>	Kurrajong	N	No	No	No
TG	<i>Callitris glaucophylla</i>	White Cypress Pine	N	No	No	No
TG	<i>Casuarina cristata</i>	Belah	N	No	No	No
TG	<i>Eucalyptus populnea subsp. bimbil</i>	Poplar Box	N	No	No	No
FG	<i>Brassica x napus</i>	Canola	E	No	No	No
FG	<i>Carthamus lanatus</i>	Saffron Thistle	E	Yes	No	No
FG	<i>Centaurea melitensis</i>	Maltese Cockspur	E	No	No	No
FG	<i>Cicer arietinum</i>	Chickpea	E	No	No	No
FG	<i>Datura ferox</i>	Fierce Thornapple	E	No	No	No
FG	<i>Echium plantagineum</i>	Paterson's Curse	E	No	No	No
FG	<i>Heliotropium amplexicaule</i>	Blue Heliotrope	E	Yes	No	No
FG	<i>Malva parviflora</i>	Small-Flowered Mallow	E	No	No	No
FG	<i>Medicago laciniata</i>	Cut-Leaved Medic	E	No	No	No
FG	<i>Medicago minima</i>	Woolly Burr Medic	E	No	No	No
FG	<i>Medicago sativa</i>	Lucerne	E	No	No	No
FG	<i>Rapistrum rugosum</i>	Turnip Weed	E	No	No	No
FG	<i>Salvia reflexa</i>	Mintweed	E	No	No	No
FG	<i>Sisymbrium erysimoides</i>	Smooth Mustard	E	No	No	No
FG	<i>Solanum nigrum</i>	Black-Berry Nightshade	E	No	No	No
FG	<i>Sonchus asper</i>	Prickly Sowthistle	E	No	No	No
FG	<i>Tribulus terrestris</i>	Caltrop	E	No	No	No
GG	<i>Bromus diandrus</i>	Great Brome	E	Yes	No	No
GG	<i>Eragrostis cilianensis</i>	Stinkgrass	E	No	No	No
GG	<i>Triticum aestivum</i>	Common Wheat	E	No	No	No
GG	<i>Urochloa panicoides</i>	Liverseed Grass	E	No	No	No
OG	<i>Citrullus amarus</i>	Camel Melon	E	No	No	No
SG	<i>Lycium ferocissimum</i>	African Boxthorn	E	Yes	Yes	No

1: FG = Forb, GG = Grass and Grass-like, SG = Shrub, TG = Tree, EG = Fern, OG = Other

2: N = Native I = Introduced,

3: HTE = High Threat Exotic under the BAM (2020)

4: Weed of National Significance

5: Priority Weed for the Central West.

Fauna species list

In total, 13 fauna species (all native) were detected during the 3rd of May 2024 field survey.

No threatened fauna species were detected.

Class	Scientific Name	Common Name	Status*
Aves	<i>Anas superciliosa</i>	Pacific Black Duck	N
Aves	<i>Cracticus nigrogularis</i>	Pied Butcherbird	N
Aves	<i>Falco berigora</i>	Brown Falcon	N
Aves	<i>Falco longipennis</i>	Australian Hobby	N
Aves	<i>Gerygone fusca</i>	Western Gerygone	N
Aves	<i>Grallina cyanoleuca</i>	Magpie-lark	N
Aves	<i>Manorina melanocephala</i>	Noisy Miner	N
Aves	<i>Philemon corniculatus</i>	Noisy Friarbird	N
Aves	<i>Pomatostomus superciliosus</i>	White-browed Babbler	N
Aves	<i>Rhipidura leucophrys</i>	Willie Wagtail	N
Aves	<i>Vaneulls miles</i>	Masked Lapwing	N
Mammalia	<i>Macropus giganteus</i>	Eastern Grey Kangaroo	N
Reptilia	<i>Ctenotus robustus</i>	Robust Ctenotus	N

*Status: N = native

Field photos

PCT	Image
Non-native vegetation	





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

List generated by conducting a vegetation associations report for the Bogan-Macquarie subregion of the Darling Riverine Plains Bioregion. 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>

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

- ‘Present’ – the species was observed or has been previously recorded on the site.
- ‘High’ – a medium to high probability that a species uses the site, based on nearby records and suitable habitat being present.
- ‘Moderate’ – suitable habitat for a species occurs on the site, but the species has not been observed or previously recorded at the site.
- ‘Low’ – a very low likelihood that the species uses the site, based on lack of the preferred type and size of habitat
- ‘Absent’ – the species does not occur at the site, due to local/global extinction, locality outside of its geographic distribution, and/or a lack of suitable habitat.

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

Scientific Name	Common Name	*NSW status	+Comm. status	Records <10 km	Likelihood of Occurrence	Test of Significance required (Yes/No)
<i>Crinia sloanei</i>	Sloane's Froglet	E1,P	E	0	Sloane's Froglet has been recorded from widely scattered sites in the floodplains of the Murray-Darling Basin, with the majority of records in the Darling Riverine Plains, NSW South Western Slopes and Riverina bioregions in New South Wales. It has not been recorded recently in the northern part of its range and has only been recorded infrequently in the southern part of its range in NSW. It is typically associated with periodically inundated areas in grassland, woodland and disturbed habitats. Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	No
<i>Actitis hypoleucos</i>	Common Sandpiper	P	C,J,K	0	Found along all coastlines of Australia and in many areas inland, the Common Sandpiper is widespread in small numbers. The population when in Australia is concentrated in northern and western Australia. The species utilises a wide range of coastal wetlands and some inland wetlands, with varying levels of salinity, and is mostly found around muddy margins or rocky shores and rarely on mudflats. The Common Sandpiper has been recorded in estuaries and deltas of streams, as well as on banks farther upstream; around lakes, pools, billabongs, reservoirs, dams and claypans, and occasionally piers and jetties. The muddy margins utilised by the species are often narrow and may be steep. The species is often associated with mangroves, and sometimes found in areas of mud littered with rocks or snags. Absent – Suitable wetland habitat does not occur within the subject site.	No
<i>Anseranas semipalmata</i>	Magpie Goose	V,P		0	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. Absent – Suitable wetland habitat does not occur within the subject site.	No
<i>Aphelocephala leucopsis</i>	Southern Whiteface	V,P	V	2	Prefers the drier habitats of southern Australia. Commonly found in dry open forests and woodland, mallee, mulga and saltbush. Prefers sites with fallen timber or dead trees and stumps Moderate – Subject site is within the species known geographic distribution and two records occur within 10 km. However, there are no associated vegetation communities present.	Yes

<i>Apus pacificus</i>	Fork-tailed Swift	P	C,J,K	0	In NSW, the Fork-tailed Swift is recorded in all regions. Many records occur east of the Great Divide; however, a few populations have been found west of the Great Divide. These are widespread but scattered further west of the line joining Bourke and Dareton. Sightings have been recorded at Milparinka, the Bulloo River and Thurloo Downs (Higgins 1999). The Fork-tailed Swift is almost exclusively aerial, flying from less than 1 m to at least 300 m above ground and probably much higher. Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	No
<i>Ardeotis australis</i>	Australian Bustard	E1,P		0	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 is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	No
<i>Artamus cyanopterus cyanopterus</i>	Dusky Woodswallow	V,P		0	Dusky woodswallows are widespread in eastern, southern and south western Australia. The species occurs throughout most of New South Wales, but is sparsely scattered in, or largely absent from, much of the upper western region. Most breeding activity occurs on the western slopes of the Great Dividing Range. Primarily inhabit dry, open eucalypt forests and woodlands, including mallee associations, with an open or sparse understorey of eucalypt saplings, acacias and other shrubs, and ground-cover of grasses or sedges and fallen woody 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. Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	No
<i>Botaurus poeciloptilus</i>	Australasian Bittern	E1,P	E	0	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 (<i>Typha spp.</i>) and spikerushes (<i>Eleocharis spp.</i>). 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	No

					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. Absent – Suitable wetland habitat does not occur within the subject site.	
<i>Burhinus grallarius</i>	Bush Stone-curlew	E1,P		0	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. Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	No
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	P	C,J,K	0	The Sharp-tailed Sandpiper spends the non-breeding season in Australia with small numbers occurring regularly in New Zealand. Most of the population migrates to Australia, mostly to the south-east and are widespread in both inland and coastal locations and in both freshwater and saline habitats. Many inland records are of birds on passage. In Australasia, the Sharp-tailed Sandpiper prefers muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation. This includes lagoons, swamps, lakes and pools near the coast, and dams, waterholes, soaks, bore drains and bore swamps, salt pans and hypersaline salt lakes inland. They also occur in saltworks and sewage farms. They use flooded paddocks, sedgeland and other ephemeral wetlands, but leave when they dry. They use intertidal mudflats in sheltered bays, inlets, estuaries or seashores, and swamps and creeks lined with mangroves. They tend to occupy coastal mudflats mainly after ephemeral terrestrial wetlands have dried out, moving back during the wet season. They may be attracted to mats of algae and water weed either floating or washed up around terrestrial wetlands. Absent – Suitable wetland habitat does not occur within the subject site.	No
<i>Calidris ferruginea</i>	Curlew Sandpiper	E1,P	CE,C,J,K	0	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	No

					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.	
					Absent – Suitable wetland habitat does not occur within the subject site.	
<i>Calidris ruficollis</i>	Red-necked Stint	P	C,J,K	0	In Australasia, the Red-necked Stint is mostly found in coastal areas, including in sheltered inlets, bays, lagoons and estuaries with intertidal mudflats, often near spits, islets and banks and, sometimes, on protected sandy or coralline shores. They also occur in saltworks and sewage farms; saltmarsh; ephemeral or permanent shallow wetlands near the coast or inland, including lagoons, lakes, swamps, riverbanks, waterholes, bore drains, dams, soaks and pools in salt flats. They sometimes use flooded paddocks or damp grasslands. They have occasionally been recorded on dry gibber plains, with little or no perennial vegetation.	No
					Absent – Suitable wetland habitat does not occur within the subject site.	
<i>Calyptorhynchus banksii samueli</i>	Red-tailed Black-Cockatoo (inland subspecies)	V,P,2		0	The Red-tailed Black-Cockatoo (inland subspecies) is known to occur around watercourses and overflows of the Darling, Paroo, Bogan, Macquarie and Barwon Rivers extending in an arc along the Darling River from Wentworth (though rare south of Menindee) in the south to Bourke and thence through to Brewarrina in the north. It extends east to Walgett and perhaps Boggabilla on the Barwon and south through to the Macquarie Marshes.	No
					Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	
<i>Calyptorhynchus lathami lathami</i>	South-eastern Glossy Black-Cockatoo	V,P,2	V	0	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 (<i>Allocasuarina littoralis</i>) and Forest Sheoak (<i>A. torulosa</i>) are important foods.	No
					Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	
<i>Certhionyx variegatus</i>	Pied Honeyeater	V,P		0	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 (<i>Acacia aneura</i>), mallee, spinifex and eucalypt woodlands, usually when shrubs are flowering; feeds on nectar, predominantly from various species of emu-bushes (<i>Eremophila spp.</i>); also from mistletoes and various other shrubs (e.g. <i>Grevillea spp.</i>); also eats saltbush fruit, berries, seed, flowers and	No

					insects. Highly nomadic, following the erratic flowering of shrubs; can be locally common at times. Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	
<i>Chthonicola sagittata</i>	Speckled Warbler	V,P		0	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. Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	No
<i>Circus assimilis</i>	Spotted Harrier	V,P		0	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. Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	No

<i>Climacteris picumnus victoriae</i>	Brown Treecreeper (eastern subspecies)	V,P	V	5	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 <i>Climacteris picumnus victoriae</i> 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 <i>Climacteris picumnus picumnus</i> 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. Low – Subject site is within the species known geographic distribution and five records occur within 10 km. However, there are no associated vegetation communities present. Considering this species required woodland habitat for breeding and foraging, the highly degraded subject site is unlikely to support this species.	No
<i>Daphoenositta chrysoptera</i>	Varied Sittella	V,P		0	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. Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	No
<i>Ephippiorhynchus asiaticus</i>	Black-necked Stork	E1,P		1	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 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).	No

					Absent – Suitable wetland habitat does not occur within the subject site. The single record within the 10 km search area is located nearby Beleringar Creek (approximately 9.7 km from the subject site).	
<i>Epthianura albifrons</i>	White-fronted Chat	V,P		0	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. Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	No
<i>Falco hypoleucos</i>	Grey Falcon	V,P,2	V	0	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. Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	No
<i>Falco subniger</i>	Black Falcon	V,P		0	The Black Falcon is widely, but sparsely, distributed in New South Wales, mostly occurring in inland regions. Some reports of 'Black Falcons' on the tablelands and coast of New South Wales are likely to be referable to the Brown Falcon. In New South Wales there is assumed to be a single population that is continuous with a broader continental population, given that falcons are highly mobile, commonly travelling hundreds of kilometres. The Black Falcon occurs as solitary individuals, in pairs, or in family groups of parents and offspring. Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	No
<i>Gallinago hardwickii</i>	Latham's Snipe	P	J,K	0	Latham's Snipe is a non-breeding visitor to south-eastern Australia and is a passage migrant through northern Australia (i.e. it travels through northern Australia to reach non-breeding areas located further south). The species has been recorded along the east coast of Australia from Cape York Peninsula through to south-eastern South Australia (including the Adelaide plains and Mount Lofty Ranges, and the Eyre Peninsula). The range extends inland over the eastern tablelands in south-eastern	No

					Queensland (and occasionally from Rockhampton in the north), and to west of the Great Dividing Range in New South. The species is widespread in Tasmania and is found in all regions of Victoria except for the north-west. Most birds spend the non-breeding period at sites located south of the Richmond River in New South Wales. In Australia, Latham's Snipe occurs in permanent and ephemeral wetlands up to 2000 m above sea-level. They usually inhabit open, freshwater wetlands with low, dense vegetation (e.g. swamps, flooded grasslands or heathlands, around bogs and other water bodies. However, they can also occur in habitats with saline or brackish water, in modified or artificial habitats, and in habitats located close to humans or human activity. Absent – Suitable wetland habitat does not occur within the subject site.	
<i>Gelochelidon nilotica</i>	Gull-billed Tern	P	C	0	The Gull-billed Tern occurs on all continents except Antarctica. Gull-billed Terns are found in freshwater swamps, brackish and salt lakes, beaches and estuarine mudflats, floodwaters, sewage farms, irrigated croplands and grasslands. They are only rarely found over the ocean. Absent – Suitable wetland habitat does not occur within the subject site.	No
<i>Grantiella picta</i>	Painted Honeyeater	V,P	V	0	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 (<i>Acacia pendula</i>), Brigalow (<i>A. harpophylla</i>) and Box-Gum Woodlands and Box-Ironbark Forests. Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	No
<i>Grus rubicunda</i>	Brolga	V,P		0	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. Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	No
<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	V,P		0	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	No

					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. Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	
<i>Hamirostra melanosternon</i>	Black-breasted Buzzard	V,P,3		0	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 is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	No
<i>Hieraaetus morphnoides</i>	Little Eagle	V,P		1	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. Moderate – Subject site is within the species known geographic distribution and a record occurs within 10 km. However, there are no associated vegetation communities present.	Yes
<i>Hirundapus caudacutus</i>	White-throated Needle-tail	V,P	V,C,J,K	0	The White-throated Needle-tail 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 Needle-tail is almost exclusively aerial, from heights of less than 1 m up to more than 1000 m above the	No

					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. Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	
<i>Hydroprogne caspia</i>	Caspian Tern	P	J	0	Within Australia, the Caspian Tern has a widespread occurrence and can be found in both coastal and inland habitat (Higgins & Davies 1996). The following table presents the distribution and breeding sites of the Caspian Tern in Australia. Widespread east of the Great Divide, mainly in coastal regions, and also in the Riverina and Lower and Upper Western Regions, with occasional records elsewhere (Higgins & Davis 1996). The Caspian Tern is mostly found in sheltered coastal embayments (harbours, lagoons, inlets, bays, estuaries and river deltas) and those with sandy or muddy margins are preferred. They also occur on near-coastal or inland terrestrial wetlands that are either fresh or saline, especially lakes (including ephemeral lakes), waterholes, reservoirs, rivers and creeks. They also use artificial wetlands, including reservoirs, sewage ponds and saltworks. In offshore areas the species prefers sheltered situations, particularly near islands, and is rarely seen beyond reefs Absent – Suitable wetland habitat does not occur within the subject site.	No
<i>Leipoa ocellata</i>	Malleefowl	E1,P	V	0	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 2017. 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	No

					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. Absent – Suitable mallee habitat does not occur within the subject site.	
<i>Limosa lapponica</i>	Bar-tailed Godwit	P	C,J,K	0	Bar-tailed Godwits arrive in Australia each year in August from breeding grounds in the northern hemisphere. Birds are more numerous in northern Australia. Bar-tailed Godwits inhabit estuarine mudflats, beaches and mangroves. They are common in coastal areas around Australia. They are social birds and are often seen in large flocks and in the company of other waders. Absent – Suitable wetland habitat does not occur within the subject site.	No
<i>Limosa limosa</i>	Black-tailed Godwit	V,P	E,C,J,K	0	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. Absent – Suitable wetland habitat does not occur within the subject site.	No
<i>Lophochroa leadbeateri</i>	Pink Cockatoo	V,P,2	V	0	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. Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	No
<i>Lophoictinia isura</i>	Square-tailed Kite	V,P,3		0	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,	No

					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. Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	
<i>Melanodryas cucullata cucullata</i>	South-eastern Hooded Robin	E1,P	E	0	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 <i>cucullata</i>) 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 <i>picata</i>. 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. Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	No
<i>Melithreptus gularis gularis</i>	Black-chinned Honeyeater (eastern subspecies)	V,P		0	The Black-chinned Honeyeater has two subspecies, with only the nominate (<i>gularis</i>) occurring in NSW. The 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 (<i>Eucalyptus sideroxylon</i>), White Box (<i>E. albens</i>), Inland Grey Box (<i>E. microcarpa</i>), Yellow Box (<i>E. melliodora</i>), Blakely's Red Gum (<i>E. blakelyi</i>) and Forest Red Gum (<i>E. tereticornis</i>). 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.	No

					Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	
<i>Neophema chrysostoma</i>	Blue-winged Parrot	V,P	V	0	Blue-winged Parrots occur in range of habitats from coastal to semi-arid and favour grasslands and grassy woodlands. Mainly found in Tasmania and Victoria but some populations can be found in Western NSW and Eastern SA. Low – Subject site is not within the species known geographic distribution, no associated vegetation communities present, and no records occur within 10 km.	No
<i>Neophema pulchella</i>	Turquoise Parrot	V,P,3		0	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. Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	No
<i>Nettapus coromandelianus</i>	Cotton Pygmy-Goose	E1,P		0	Although once found from north Queensland to the Hunter River in NSW, the Cotton Pygmy-Goose is now only a rare visitor to NSW. Uncommon in Queensland. Absent – Suitable wetland habitat does not occur within the subject site.	No
<i>Ninox connivens</i>	Barking Owl	V,P,3		1	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 is within the species known geographic distribution and a record occurs within 10 km. However, there are no associated vegetation communities present.	Yes
<i>Oxyura australis</i>	Blue-billed Duck	V,P		0	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.	No

					The Blue-billed Duck prefers deep water in large permanent wetlands and swamps with dense aquatic vegetation. The species is completely aquatic, swimming low in the water along the edge of dense cover. Absent – Suitable wetland habitat does not occur within the subject site.	
<i>Pachycephala inornata</i>	Gilbert's Whistler	V,P		0	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' (<i>Exocarpus</i> 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. Low – Subject site is within the species predicted geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	No
<i>Pandion cristatus</i>	Eastern Osprey	V,P,3		0	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. Absent – Suitable coastal habitat does not occur within the subject site.	No
<i>Petroica phoenicea</i>	Flame Robin	V,P	M	0	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	No

					dry forests, open woodlands and in pastures and native grasslands, with or without scattered trees. Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	
<i>Polytelis swainsonii</i>	Superb Parrot	V,P,3	V	4	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. Moderate – Subject site is within the species known geographic distribution and four records occur within 10 km. However, there are no associated vegetation communities present.	Yes
<i>Pomatostomus halli</i>	Hall's Babbler	V,P		0	Hall's Babbler occurs in central-eastern Australia, from Cobar north into south-western Queensland, particularly along or west of the Warrego River. These birds have been recorded from the White Cliffs area through to the Culgoa River, Nocolche Nature Reserve, Sturt National Park and Mutawintji National Park. Recently recorded in Mulga groves near Ledknapper Creek (1993) and near Mt Gunderbooka (1994). Inhabits dry Acacia scrub, mainly Mulga, with a grassy understorey including spinifex, on ridges and plains with either sandy or stony soils. Occasionally occurs in open dry Eucalyptus (Bimblebox) woodland, and mulga- or eucalypt-lined watercourses. Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	No
<i>Pomatostomus temporalis temporalis</i>	Grey-crowned Babbler (eastern subspecies)	V,P		7	The eastern subspecies (<i>temporalis</i>) 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.	Yes

					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. Moderate – Subject site is within the species known geographic distribution and seven records occur within 10 km. However, there are no associated vegetation communities present.	
<i>Rostratula australis</i>	Australian Painted Snipe	E1,P	E	0	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. Absent – Suitable wetland habitat does not occur within the subject site.	No
<i>Stagonopleura guttata</i>	Diamond Firetail	V,P	V	0	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. Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	No
<i>Stictonetta naevosa</i>	Freckled Duck	V,P		0	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.	No

					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. Absent – Suitable wetland habitat does not occur within the subject site.	
<i>Tringa glareola</i>	Wood Sandpiper	P	C,J,K	0	Wood Sandpipers are more numerous in the north than the south of Australia and are also found in New Guinea, Africa, the Indian subcontinent and South-east Asia. They breed widely across the north of Europe and Asia, mostly in Scandinavia, Baltic countries and Russia. They are the most abundant migratory wader in non-coastal areas of Asia. Wood Sandpipers are seen in small flocks or singly on inland shallow freshwater wetlands, often with other waders. They prefer ponds and pools with emergent reeds and grass, surrounded by tall plants or dead trees and fallen timber. Absent – Suitable wetland habitat does not occur within the subject site.	No
<i>Tringa nebularia</i>	Common Greenshank	P	C,J,K	0	The Common Greenshank does not breed in Australia, however, the species occurs in all types of wetlands and has the widest distribution of any shorebird in Australia. The Common Greenshank is found in a wide variety of inland wetlands and sheltered coastal habitats of varying salinity. It occurs in sheltered coastal habitats, typically with large mudflats and saltmarsh, mangroves or seagrass. Habitats include embayments, harbours, river estuaries, deltas and lagoons and are recorded less often in round tidal pools, rock-flats and rock platforms. The species uses both permanent and ephemeral terrestrial wetlands, including swamps, lakes, dams, rivers, creeks, billabongs, waterholes and inundated floodplains, claypans and saltflats. It will also use artificial wetlands, including sewage farms and saltworks dams, inundated rice crops and bores. The edges of the wetlands used are generally of mud or clay, occasionally of sand, and may be bare or with emergent or fringing vegetation, including short sedges and saltmarsh, mangroves, thickets of rushes, and dead or live trees. It was once recorded with Black-winged Stilts (<i>Himantopus himantopus</i>) in pasture, but are generally not found in dry grassland. Absent – Suitable wetland habitat does not occur within the subject site.	No
<i>Tringa stagnatilis</i>	Marsh Sandpiper	P	C,J,K	0	The Marsh Sandpiper is found on coastal and inland wetlands throughout Australia. The species is widespread in coastal Queensland, but few records exist north of Cooktown. It is recorded in all regions of NSW but especially the central and south coasts and (inland) on the western slopes of Great Divide and western plains. The	No

					Marsh Sandpiper lives in permanent or ephemeral wetlands of varying salinity, including swamps, lagoons, billabongs, salt pans, saltmarshes, estuaries, pools on inundated floodplains, and intertidal mudflats and also regularly at sewage farms and saltworks. They are recorded less often at reservoirs, waterholes, soaks, bore-drain swamps and flooded inland lakes. In north Australia they prefer intertidal mudflats (Higgins & Davies 1996), although surveys in Kakadu National Park recorded more birds around shallow freshwater lakes than in areas influenced by tide (Bamford 1988). At the Top End they often use ephemeral pools on inundated freshwater and tidal floodplains (Higgins & Davies 1996). Three of the five sites with highest recorded numbers are saltwater habitats (Hunter Estuary, NSW; Port Hedland Saltworks, Western Australia; Tullakool Evaporation Ponds, NSW) (Watkins 1993). In the south-east Gulf of Carpentaria they have been recorded round both saline and fresh waters (Garnett 1989). Elsewhere they said to avoid, or rarely occur in, tidal habitats, and rarely occur on beaches. In Western Australia they prefer freshwater to marine environments. In south-east Australia they prefer inland saline lakes and coastal saltworks. They are found infrequently around mangroves (Higgins & Davies 1996). Absent – Suitable wetland habitat does not occur within the subject site.	
<i>Turnix maculosus</i>	Red-backed Button-quail	V,P		0	Over their Australian range, Red-backed Button-quail inhabit grasslands, open and savannah woodlands with grassy ground layer, pastures and crops of warm temperate areas, typically only in regions subject to annual summer rainfall greater than 400 mm. In NSW, said to occur in grasslands, heath and crops. Said to prefer sites close to water, especially when breeding. Low – Subject site is within the species predicted geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	No
<i>Tyto novaehollandiae</i>	Masked Owl	V,P,3		0	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. Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	No
<i>Atriplex infrequens</i>	A saltbush	V	V	0	<i>Atriplex infrequens</i> is confined to the NSW far western plains. North western records recorded from east of Tibooburra, south east of Brewarrina and near Wilcannia with isolated collections from the Poongcarie area in the south. Also recorded in 1917 in South Australia. Flowering time has not been recorded; however, seeding is recorded in December.	No

					Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	
<i>Cheilanthes sieberi</i> subsp. <i>pseudovellea</i>		E1,3		0	One NSW specimen was recorded in 1952 and re-confirmed from Mount Foster North-west of Warren along with more recent records from an adjacent hill. Recent re-examination of specimens suggests a wide former distribution across NSW. Very widely distributed across Australia, e.g. Mount Olga and the Kimberley, MacDonnell and Musgrave Ranges. Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	No
<i>Dichanthium setosum</i>	Bluegrass	V	V	0	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 <i>Eucalyptus albens</i> , <i>Eucalyptus melanophloia</i> , <i>Eucalyptus melliodora</i> , <i>Eucalyptus viminalis</i> , <i>Myoporum debile</i> , <i>Aristida ramosa</i> , <i>Themeda triandra</i> , <i>Poa sieberiana</i> , <i>Bothriochloa ambigua</i> , <i>Medicago minima</i> , <i>Leptorhynchus squamatus</i> , <i>Lomandra aff. longifolia</i> , <i>Ajuga australis</i> , <i>Calotis hispidula</i> and <i>Austrodanthonia</i> , <i>Dichopogon</i> , <i>Brachyscome</i> , <i>Vittadinia</i> , <i>Wahlenbergia</i> and <i>Psoralea</i> species. Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	No
<i>Diuris tricolor</i>	Pine Donkey Orchid	V,P,2		0	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. Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	No
<i>Lepidium monolocoides</i>	Winged Peppergrass	E1	E	0	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.	No

					Low – Subject site is within the species predicted geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	
<i>Persicaria elatior</i>	Tall Knotweed	V	V	0	Tall Knotweed has been recorded in south-eastern NSW (Mt Dromedary (an old record), Moruya State Forest near Turlinjah, the Upper Avon River catchment north of Robertson, Bermagui, and Picton Lakes. In northern NSW it is known from Raymond Terrace (near Newcastle) and the Grafton area (Cherry Tree and Gibberagee State Forests). The species also occurs in Queensland. This species normally grows in damp places, especially beside streams and lakes. Occasionally in swamp forest or associated with disturbance. Low – Subject site is not within the species known geographic distribution, no associated vegetation communities are present, and no records within 10 km.	No
<i>Pterostylis cobarensis</i>	Greenhood Orchid	V,P,2		0	Recorded from Bourke, Nyngan, Cobar, Nymagee, Warren, Gilgandra, Narrabri, Coonabarabran districts. Recorded from a number of reserves and state forests including Mutawintji, Gundabooka, Culgoa, Warrumbungles National Parks, Quanda, Yathong Nature Reserves, Mt Grenfell Historic Site and Bimbilwindi and Pilliga East State Forests. There are also records from the Darling Downs district of Queensland. Habitats are eucalypt woodlands, open mallee or <i>Callitris</i> shrublands on low stony ridges and slopes in skeletal sandy-loam soils. Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	No
<i>Swainsona murrayana</i>	Slender Darling Pea	V	V	0	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. Low – Subject site is within the species predicted geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	No
<i>Swainsona plagiotropis</i>	Red Darling Pea	V	V	0	Occurs in the upper Murray River valley in the south-western plains of NSW and into Victoria. Most NSW records are from the Jerilderie area, with possible collections from the Louth-Bourke area and a disjunct record in the north-western plains from Buttabone Stud Park 35 km NW of Warren. Also rare in Victoria, restricted to a few sites in the central north, mostly between Bendigo and the Murray River south of Echuca. Grows on flat grassland and in heavy red soil, often on roadsides and especially in table drains. Soils are derived from quaternary sediments and are usually red-brown clay-loams. The species is absent from black low-lying soils.	No

					Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	
<i>Swainsona recta</i>	Small Purple-pea	E1	E	1	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 <i>Themeda triandra</i>, poa tussocks <i>Poa spp.</i> and spear-grasses <i>Austrostipa spp.</i> Moderate – Subject site is within the species known geographic distribution and a record occurs within 10 km. However, there are no associated vegetation communities present.	Yes
<i>Antechinomys laniger</i>	Kultarr	E1,P		0	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. Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	No
<i>Chalinolobus picatus</i>	Little Pied Bat	V,P		2	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 the species known geographic distribution and two records occur within 10 km. However, there are no associated vegetation communities present.	Yes
<i>Conilurus albipes</i>	White-footed Tree-rat	E4,P	X	0	The White-footed Tree-rat was endemic to Australia. Pleistocene and recent fossils from cave deposits indicate the species were distributed in south-eastern South Australia, southern Victoria, eastern New South Wales and southern Queensland. Although the species was widely distributed, it was not abundant in numbers. This species is presumed to be extinct, however it is not known exactly when the last populations died. The White-footed Tree-rat was reported as being common in Victoria in 1846, but its population appeared to decline rapidly and has not been recorded since approximately 1860 in this state. The last specimen near Sydney was recorded in 1845, however some sightings were reported in 1857 and perhaps as late as the 1930s. Absent – This species is presumed to be extinct.	No

<i>Dasyurus maculatus</i>	Spotted-tailed Quoll	V,P	E	0	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 is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	No
<i>Myotis macropus</i>	Southern Myotis	V,P		1	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. Moderate – Subject site is within the species known geographic distribution and a record occurs within 10 km. However, there are no associated vegetation communities present.	Yes
<i>Nyctophilus corbeni</i>	Corben's Long-eared Bat	V,P	V	0	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, bullocke <i>Allocasuarina leuhmanni</i> 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. Low – Subject site is within the species predicted geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	No
<i>Phascolarctos cinereus</i>	Koala	E1,P	E	0	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. Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	No
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	V,P	V	0	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	No

					of natural resource shortages, they may be found in unusual locations. Occur in subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops. Roosting camps are generally located within 20 km of a regular food source and are commonly found in gullies, close to water, in vegetation with a dense canopy. Individual camps may have tens of thousands of animals and are used for mating, and for giving birth and rearing young. Annual mating commences in January and conception occurs in April or May; a single young is born in October or November. Site fidelity to camps is high; some camps have been used for over a century. Can travel up to 50 km from the camp to forage; commuting distances are more often <20 km. Feed on the nectar and pollen of native trees, in particular Eucalyptus, Melaleuca and Banksia, and fruits of rainforest trees and vines. Also forage in cultivated gardens and fruit crops. Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	
<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheathtail-bat	V,P		1	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 is within the species known geographic distribution and a record occurs within 10 km. However, there are no associated vegetation communities present.	Yes
<i>Sminthopsis macroura</i>	Stripe-faced Dunnart	V,P		0	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, Wyallda and Ashford. Native dry grasslands and low dry shrublands, often along drainage lines where food and shelter resources tend to be better. Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	No

<i>Aspidites ramsayi</i>	Woma	V,P		0	The Woma occurs in north-western NSW, east to about Louth and Bourke. It was last recorded in these eastern districts in the late 1890s, and in 1983 from the Tibooburra region. Its range and abundance in south-eastern Australia is considered to be undergoing serious decline. Terrestrial, inhabiting subtropical to temperate deserts and sandy plains, as well as dunefields and deep cracking black soil plains in semi-arid areas. Low – Subject site is within the species predicted geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	No
<i>Hemiaspis damelii</i>	Grey Snake	E1,P	E	0	The Grey Snake has a wide overall range from inland southern NSW to central Queensland, though the distribution is not continuous across this full range and consists of several isolated subpopulations. In NSW the species occupies five geographically discrete subpopulations, predominantly associated with the lower reaches of major westerly flowing rivers, including the Gwydir, Namoi, Castlereagh, Macquarie, Lachlan, and Murrumbidgee River systems. Some NSW subpopulations occur in protected areas including Yanga National Park and Gayini Nimmie-Caira, a property under the management and ownership of the Nari Nari Tribal Council in southern NSW. Subpopulations also occur in two internationally important wetlands, the Gwydir Wetlands and the Macquarie Marshes, both of which are listed on the Ramsar Convention on Wetlands, as well as in the Great Cumbung Swamp, which is included in the Directory of Nationally Important Wetlands. Low – Subject site is within the species known geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	No
<i>Hoplocephalus bitorquatus</i>	Pale-headed Snake	V,P		0	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 is within the species predicted geographic distribution. However, there are no associated vegetation communities present or records within 10 km.	No

<i>Tympanocryptis lineata</i>	Canberra Grassland Earless Dragon	E4A,P,3	CE	0	Historically, the Grassland Earless Dragon ranged from Bathurst to Cooma, including the ACT region. The only populations now known are in the ACT and adjacent NSW at Queanbeyan, and on the Monaro Basalt Plains between Cooma and south-west of Nimmitabel. Formerly known from Victoria, though no recent records. Restricted to a small number of Natural Temperate Grassland sites dominated by wallaby grasses (<i>Nothodanthonia</i> spp.), spear grasses (<i>Austrostipa</i> spp.), Poa Tussock (<i>Poa sieberiana</i>), Red Grass (<i>Bothriochloa macra</i>), and occasionally Kangaroo Grass (<i>Themeda triandra</i>). Introduced pasture grasses occur at many of the sites supporting this species, which has also been captured in secondary grassland. Within its habitat, apparently prefers areas with a more open structure, characterised by small patches of bare ground between the grasses and herbs. Low – Subject site is not within the species known geographic distribution, no associated vegetation communities are present, and no records within 10 km.	No
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*NSW Status: P=Protected, V=Vulnerable, E1=Endangered, E4=Extinct, E4A=Critically endangered, 2=Category 2 sensitive species, 3=Category 3 sensitive species.

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

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

Community	+NSW Status	Likelihood of Occurrence	5-part test required (Yes / No)
Artesian Springs Ecological Community in the Great Artesian Basin	E4B	Naturally restricted to the artesian springs of the Great Artesian Basin in north-western NSW. The springs occur where artesian water emerges at the surface through fault-lines in the overlying rock and produce mounds from the salts and sediments as the water evaporates. The vegetation within the community frequently consists of sedges or similar vegetation, however, trees and shrubs may be adjacent to the springs or nearby. Absent – The community was not present at the subject site.	No
Brigalow within the Brigalow Belt South, Nandewar and Darling Riverine Plains Bioregions	E3	The Brigalow community is a low woodland or forest community dominated by Brigalow (<i>Acacia harpophylla</i>), with pockets of Belah (<i>Casuarina cristata</i>) and Poplar Box (<i>Eucalyptus populnea subsp. bimbil</i>). The canopy tends to be quite dense and the understorey and ground cover are only sparse. Absent – The community was not present at the subject site.	No
Brigalow-Gidgee woodland/shrubland in the Mulga Lands and Darling Riverine Plains Bioregions	E3	This community occurs north of Bourke between the Culgoa and Warrego Rivers on soft red earths and heavy grey clays on level to slightly undulating plains. The structure of Brigalow-Gidgee ranges from woodland to shrubland and scrub depending on local conditions. The canopy is dominated by either Brigalow <i>Acacia harpophylla</i> or Gidgee <i>Acacia cambagei</i> with the other species being co-dominant or part of the shrub layer, depending on site disturbance. Absent – The community was not present at the subject site.	No
Coolibah-Black Box Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain and Mulga Lands Bioregions	E3	A woodland community of flora and fauna is found on the grey, self-mulching clays of periodically waterlogged floodplains, swamp margins, ephemeral wetlands, and stream levees. The structure of the community may vary from tall riparian woodlands to very open 'savanna like' grassy woodlands with a sparse midstorey of shrubs and saplings. Typically these woodlands form mosaics with grasslands and wetlands, and are characterised by Coolibah (<i>Eucalyptus coolabah</i>) and, in some areas, Black Box (<i>E. largiflorens</i>). Other tree species may be present including River Cooba (<i>Acacia stenophylla</i>), Cooba (<i>A. salicina</i>), Belah (<i>Casuarina cristata</i>) and Eurah (<i>Eremophila bignoniiflora</i>). Absent – The community was not present at the subject site.	No
Fuzzy Box Woodland on alluvial Soils of the South Western Slopes, Darling	E3	This ecological community occurs on brown loam or clay, alluvial or colluvial soils on prior streams and abandoned channels or slight depressions on undulating plains or flats of the South West Slopes, Brigalow Belt South and Darling Riverine Plains Bioregions. Mainly in the	No

Community	+NSW Status	Likelihood of Occurrence	5-part test required (Yes / No)
Riverine Plains and Brigalow Belt South Bioregions		Dubbo-Narromine-Parkes-Forbes area. The community often occurs upslope from River Red Gum communities above frequently inundated areas of the floodplain. It also occurs on colluvium soils on lower slopes and valley flats. Absent – The community was not present at the subject site.	
Myall Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain, Murray-Darling Depression, Riverina and NSW South Western Slopes bioregions	E3	This ecological community is scattered across the eastern parts of the alluvial plains of the Murray-Darling river system. The community is also known as Boree particularly in the southern part of its distribution. Typically, it occurs on red-brown earths and heavy textured grey and brown alluvial soils within a climatic belt receiving between 375 and 500 mm mean annual rainfall. This EEC is known from parts of the Local Government Areas of Berrigan, Bland, Bogan, Carrathool, Conargo, Coolamon, Coonamble, Corowa, Forbes, Gilgandra, Griffith, Gwydir, Inverell, Jerilderee, Lachlan, Leeton, Lockhart, Moree Plains, Murray, Murrumbidgee, Narrabri, Narranderra, Narromine, Parkes, Urana, Wagga Wagga and Warren, and but may occur elsewhere in these bioregions. Absent – The community was not present at the subject site.	No

+ NSW Status: E3=Endangered, E4B=Critically Endangered.

APPENDIX D – BC ACT TESTS 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.

Information regarding the habitat requirements and lifecycles of threatened species is sourced from <https://www.environment.nsw.gov.au/threatenedSpeciesApp>

The following is to be considered 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 modify the composition of the ecological community substantially and adversely 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

Species Name	Common Name	a.	b.	c.	d.	e.	Impact Significance
<i>Aphelocephala leucopsis</i>	Southern Whiteface	The Southern Whiteface lives in a wide range of open woodlands and shrublands where there is an understorey of grasses and/or shrubs. Birds build a large bulky domed nest of grass, bark and roots, usually in a hollow or crevice, although sometimes in low bushes. The species was not detected during the field survey and no woodland or shrub habitat with suitable vegetation for nesting is present within the site. Furthermore, only two records (from 1969) occur within the 10 km search area. Both records are located approximately 9.7 km from the subject site, within an area containing remnant vegetation. Considering the above, the subject site is unlikely to be critical to the lifecycle of the species.	N/A	i. The proposal will not remove or modify associated PCT for this species. ii. At the time of survey, the subject site consisted entirely of non-native vegetation (mostly a newly sown Canola crop) and bare ground. As such, the proposal will not generate new fragments or exacerbate issues relating to existing fragments. iii. Considering the inability to detect the species during the field survey, the lack of woodland habitat with suitable vegetation for nesting within the subject site, and the low number of records within the 10 km search area, it is unlikely that the proposal will jeopardise 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.
<i>Hieraaetus morphnoides</i>	Little Eagle	The Little Eagle constructs its twig nests in the forks of large old trees, predominantly in open woodland and riparian vegetation. The species was not detected during the field survey and no woodland habitat with suitable vegetation	N/A	i. The proposal will not remove or modify associated PCT for this species. ii. At the time of survey, the subject site consisted entirely of non-native vegetation (mostly a newly sown Canola crop) and bare ground. As such, the proposal will not generate	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

		for nesting is present within the site. Furthermore, only one record (from 2002) occurs within the 10 km search area. This record is located approximately 7.4 km from the subject site, along the Beleringar Creek. Considering the above, the subject site is unlikely to be critical to the lifecycle of the species.		new fragments or exacerbate issues relating to existing fragments. iii. Considering the inability to detect the species during the field survey, the lack of woodland habitat with suitable vegetation for nesting within the subject site, and the low number of records within the 10 km search area, it is unlikely that the proposal will jeopardise the long-term survival of the species.			the undertaking of the proposal.
<i>Ninox connivens</i>	Barking Owl	The Barking Owl inhabits woodlands and open forests and can persist in areas of fragmented remnants and partly cleared farmland. Nesting requires large hollows, of which none are present within the subject site. The species was not detected during the field survey and no woodland habitat is present within the site. Furthermore, only one record (from 2002) occurs within the 10 km search area. This record is located approximately 7.4 km from the subject site, along the Beleringar Creek. Considering the above, the subject site is unlikely to be critical to the lifecycle of the species.	N/A	i. The proposal will not remove or modify associated PCT for this species. ii. At the time of survey, the subject site consisted entirely of non-native vegetation (mostly a newly sown Canola crop) and bare ground. As such, the proposal will not generate new fragments or exacerbate issues relating to existing fragments. iii. Considering the inability to detect the species during the field survey, the lack of woodland habitat with large hollows for nesting within the subject site, and the low number of records within the 10 km search area, it is unlikely that the proposal will jeopardise 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.
<i>Polytelis swainsonii</i>	Superb Parrot	The Superb Parrot inhabits Box-Gum, Box-Cypress-pine, and River Red Gum forests. Nesting occurs within small hollows, generally at least 8 cm in diameter. The species was	N/A	i. The proposal will not remove or modify associated PCT for this species. ii. At the time of survey, the subject site consisted entirely of non-native vegetation	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

		not detected during the field survey and no forest habitat containing hollow-bearing trees is present within the site. Of the four records (from 2002 to 2013) within the 10 km search area, none are located within the 1.5 km study area. Furthermore, all four records are located within areas containing remnant vegetation. Considering the above, the subject site is unlikely to be critical to the lifecycle of the species.		(mostly a newly sown Canola crop) and bare ground. As such, the proposal will not generate new fragments or exacerbate issues relating to existing fragments. iii. Considering the inability to detect the species during the field survey, the lack of woodland habitat with hollows for nesting within the subject site, and the low number of records within the 10 km search area, it is unlikely that the proposal will jeopardise the long-term survival of the species			the undertaking of the proposal.
<i>Pomatostomus temporalis temporalis</i>	Grey-crowned Babbler (eastern subspecies)	A gregarious species, the Grey-crowned Babbler inhabits open woodlands in large family groups. These family clans build and maintain several conspicuous dome-shaped nests year-round that are typically found in shrubs and sapling eucalypts. The species was not detected during the field survey and no woodland habitat with suitable vegetation for nesting is present within the site. Of the seven records (from 1969 to 2013) within the 10 km search area, none are located within the 1.5 km study area. Furthermore, all seven records are located within areas containing remnant vegetation. Considering the above, the subject site is unlikely to be	N/A	i. The proposal will not remove or modify associated PCT for this species. ii. At the time of survey, the subject site consisted entirely of non-native vegetation (mostly a newly sown Canola crop) and bare ground. As such, the proposal will not generate new fragments or exacerbate issues relating to existing fragments. iii. Considering the inability to detect the species during the field survey, the lack of woodland habitat with suitable vegetation for nesting within the subject site, and the low number of records within the 10 km search area, it is unlikely that the proposal will jeopardise 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.

		critical to the lifecycle of the species.					
<i>Swainsona recta</i>	Small Purple-pea	This species grows in association with understorey dominants that include Kangaroo Grass <i>Themeda triandra</i> , poa tussocks <i>Poa</i> spp. and spear-grasses <i>Austrostipa</i> spp. Of these, one species of spear-grass (<i>Austrostipa verticillata</i>) was detected during the field survey. However, only one record (from 2013) occurs within the 10 km search area. This record is located ~ 8.3 km from the subject site. Given the high level of disturbance within the subject site, the subject site is unlikely to be critical to the lifecycle of the species.	N/A	i. The proposal will not remove or modify associated PCT for this species. ii. At the time of survey, the subject site consisted entirely of non-native vegetation (mostly a newly sown Canola crop) and bare ground. As such, the proposal will not generate new fragments or exacerbate issues relating to existing fragments. iii. Considering the high level of disturbance within the subject site, and the low number of records within the 10 km search area, it is unlikely that the proposal will jeopardise 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.
<i>Chalinolobus picatus</i>	Little Pied Bat	The Little Pied Bat roosts in caves, rock outcrops, tunnels, and buildings, as well as small tree hollows. No suitable roosting habitat is present within the subject site. Furthermore, only two records (from 2002) occur within the 10 km search area. Both records are located > 3 km from the subject site, within areas containing dense remnant vegetation. Considering the above, the subject site is unlikely to be critical to the lifecycle of the species.	N/A	i. The proposal will not remove or modify associated PCT for this species. ii. At the time of survey, the subject site consisted entirely of non-native vegetation (mostly a newly sown Canola crop) and bare ground. As such, the proposal will not generate new fragments or exacerbate issues relating to existing fragments. iii. Considering the lack of suitable roosting sites within the subject site, and the low number of records within the 10 km search area, it is unlikely that the proposal will jeopardise 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.

<i>Myotis macropus</i>	Southern Myotis	This species generally roosts 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. No suitable roosting habitat is present within the subject site. Furthermore, only one record (from 2002) occurs within the 10 km search area. This record is located approximately 3 km from the subject site, within an area containing dense remnant vegetation. Considering the above, the subject site is unlikely to be critical to the lifecycle of the species.	N/A	i. The proposal will not remove or modify associated PCT for this species. ii. At the time of survey, the subject site consisted entirely of non-native vegetation (mostly a newly sown Canola crop) and bare ground. As such, the proposal will not generate new fragments or exacerbate issues relating to existing fragments. iii. Considering the lack of suitable roosting sites within the subject site, and the low number of records within the 10 km search area, it is unlikely that the proposal will jeopardise 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.
<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheathtail-bat	The Yellow-bellied Sheathtail-bat roosts in groups of up to six, in small tree hollows and anthropogenic structures (e.g., roof cavities). No suitable roosting habitat is present within the subject site. Furthermore, only one record (from 2002) occurs within the 10 km search area. This record is located approximately 3 km from the subject site, within an area containing dense remnant vegetation. Considering the above, the subject site is unlikely to be critical to the lifecycle of the species.	N/A	i. The proposal will not remove or modify associated PCT for this species. ii. At the time of survey, the subject site consisted entirely of non-native vegetation (mostly a newly sown Canola crop) and bare ground. As such, the proposal will not generate new fragments or exacerbate issues relating to existing fragments. iii. Considering the lack of suitable roosting sites within the subject site, and the low number of records within the 10 km search area, it is unlikely that the proposal will jeopardise 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.

APPENDIX E – 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.

The EPBC Act Protected Matters search has identified three wetlands of international importance, five TECs, 25 threatened species, eight migratory species, and 15 marine species that could possibly occur in the study area. Assessment of the subject site determined that no Ramsar wetland would be impacted by the development.

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

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

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

- a) is likely to be key source populations either for breeding or dispersal
- b) is likely to be necessary for maintaining genetic diversity
- c) is at or near the limit of the species range.

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

Wetlands of International Importance

Name	Proximity	Assessment of significance required (Yes / No)
Banrock station wetland complex	700 - 800 km upstream	No, the proposal does not occur close to the wetland.
Riverland	600 - 700 km upstream	No, the proposal does not occur close to the wetland.
The Coorong, and Lakes Alexandrina and Albert Wetland	800 - 900 km upstream	No, the proposal does not occur close to the wetland.

EPBC Act-listed Threatened Ecological Communities

Name	Status	Assessment of significance required (Yes / No)
Coolibah – Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions	Endangered	No, this community does not occur within the subject site.
Grey Box (<i>Eucalyptus microcarpa</i>) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	Endangered	No, this community does not occur within the subject site.
Poplar Box Grassy Woodland on Alluvial Plains	Endangered	No, this community does not occur within the subject site.
Weeping Myall Woodlands	Endangered	No, this community does not occur within the subject site.
White Box – Yellow Box – Blakley's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	No, this community does not occur within the subject site.

EPBC Act-listed Critically Endangered and Endangered Species

Small Purple-pea (<i>Swainsona recta</i>)	
Significant Impact Guideline	Assessment
Lead to a long-term decrease in the size of a population	The proposal will not impact associated PCTs for this species. The subject site is not within a priority management area for the species. One associated species (<i>Austrostipa verticillata</i>) was detected during the field survey. However, only one record (from 2013) occurs within the 10 km search area. This record is located ~8.3 km from the subject site. Considering the above, this proposal will not lead to the long-term decrease of any population of this species.
Reduce the area of occupancy of the species	As indicated above it is unlikely that an established population exists at the site. Therefore, the current area of occupancy will not likely be significantly reduced.
Fragment an existing population into two or more populations	As indicated above it is unlikely that an established population exists at the site. This proposal is not expected to result in any additional fragmentation for this species.
Adversely affect habitat critical to the survival of a species	Given the small number of extant populations, small area of occupancy and the reliance on in-situ protection for the conservation of the species, all populations and the habitat they occupy are critical to the survival of the Small Purple-pea. Considering the species was not detected during the field survey, the subject site consists almost entirely of a canola crop, and only one record occurs within the 10 km search area (~ 8.3 km from the subject site), the subject site is unlikely to contain critical habitat for the species.
Disrupt the breeding cycle of a population	As indicated above it is unlikely that an established population exists at the site. This proposal is not expected to disrupt the breeding cycle of a population of this species.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will not remove/modify any area of associated PCT for the species. As such, the proposal is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species habitat	There is the potential for works to introduce invasive species to the proposal 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.	Grazing and trampling by cattle, sheep and goats; loss, degradation and fragmentation of habitat and/or populations for residential and agricultural developments; weed invasion; and competition from other native grassland species within the habitat because of reduced fire frequency are the main threats for this species. The proposal is unlikely to directly interfere with the recovery of the species within the region.
Conclusion	Non-significant impact

EPBC Act-listed Vulnerable Species

Southern Whiteface (<i>Aphelocephala leucopsis</i>)	
Significant Impact Guideline	Assessment
Lead to a long-term decrease in the size of an important population of a species	The proposal will not impact associated PCTs for the Southern Whiteface. The subject site is not within a priority management area for the species, nor is it at the edge of its distribution. Southern whitefaces live in a wide range of open woodlands and shrublands where there is an understorey of grasses and/or shrubs. The species was not detected during the field survey and no woodland habitat with suitable vegetation for nesting is present within the site. Furthermore, only two records (from 1969) occur within the 10 km search area. Both records are located approximately 9.7 km from the subject site, within an area containing remnant vegetation. Nonetheless, if a population were to occur within the impact area, it would not fit the definition of an important population under the EPBC Act.
Reduce the area of occupancy of an important population	It is unlikely that an important population exists at the site, see above.
Fragment an existing important population into two or more populations	It is unlikely that an important population exists at the site, see above.
Adversely affect habitat critical to the survival of a species	Habitat critical to the survival of the Southern Whiteface includes areas of: • relatively undisturbed open woodlands and shrublands with an understorey of grasses or shrubs, or both; • habitat with low tree densities and an herbaceous understorey litter cover which provides essential foraging habitat; • living and dead trees with hollows and crevices which are essential for roosting and nesting. Considering the subject site does not contain remnant native vegetation, it is not considered habitat critical to the survival of the species.
Disrupt the breeding cycle of an important population	It is unlikely that an important population exists at the site, see above.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will not remove/modify any area of associated PCT for the species. As such, the proposal is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species habitat	There is the potential for works to introduce invasive species to the proposal 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, degradation, fragmentation and removal, climate change, predation from invasive species, invasive weeds, firewood collection and competition with noisy miners (<i>Manorina melanoccephala</i>) are the main threats for this species. The proposal is unlikely to significantly interfere with the recovery of the species within the region.
Conclusion	Non-significant impact

Superb Parrot (<i>Polytelis swainsonii</i>)	
Significant Impact Guideline	Assessment
Lead to a long-term decrease in the size of an important population of a species	The proposal will not impact associated PCTs for the Superb Parrot. The subject site is not within a priority management area for the species, nor is it at the edge of its distribution. The Superb Parrot inhabits Box-Gum, Box-Cypress-pine, and River Red Gum forests. The species was not detected during the field survey and no forest habitat containing hollow-bearing trees is present within the site. Of the four records (from 2002 to 2013) within the 10 km search area, none are located within the 1.5 km study area. Furthermore, all four records are located within areas containing remnant vegetation. Nonetheless, if a population were to occur within the impact area, it would not fit the definition of an important population under the EPBC Act.
Reduce the area of occupancy of an important population	It is unlikely that an important population exists at the site, see above.
Fragment an existing important population into two or more populations	It is unlikely that an important population exists at the site, see above.
Adversely affect habitat critical to the survival of a species	The habitat critical to the survival of the Superb Parrot can be divided into breeding and foraging habitat, as described below: The Superb Parrot usually nests in hollow limbs or holes in the trunk of large eucalypts, mainly near water. In the inland slopes, most nests are in large Blakely's Red Gums, with many nest trees either dead or suffering from dieback. After breeding, Superb Parrots generally move away from their breeding habitat in mid-January. Superb Parrots' foraging habitats vary throughout the year. After the breeding season, which ends in mid-January, some birds move to Boree <i>Acacia pendula</i> woodlands between the Murrumbidgee and Murray Rivers. However, the precise distribution and habitat use of others during mid-January to early April is not well documented. From April to August, they inhabit River Red Gum forests and box-pine woodlands in north-central NSW and similar habitats in the Riverina region. Between May and August, they return to riverine forests and nearby woodlands, forming large flocks of adults and immature birds that roam extensively for food. During winter, they are rarely found on the inland slopes, with sightings mostly limited to breeding pairs. The majority of the breeding population shifts to eucalypt-pine woodlands in west-central and north-central NSW. Considering the subject site does not contain remnant native vegetation, it is not considered habitat critical to the survival of the species.
Disrupt the breeding cycle of an important population	It is unlikely that an important population exists at the site, see above.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will not remove/modify any area of associated PCT for the species. As such, the proposal is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see Section 7).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see Section 7).

Interfere with the recovery of the species.	Loss or degradation of habitat, loss of or competition for hollows, road kills, illegal collection of wild birds, psittacine beak and feather disease, and climate change are the main identified threats to this species. The proposal is unlikely to significantly interfere with the recovery of the species within the region.
Conclusion	Non-significant impact

APPENDIX F – KEY THREATENING PROCESSES

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

Class	Name	NSW status	Comm. status	Likelihood of Occurrence	Exacerbated by Proposal?
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.
Threat	Anthropogenic Climate Change	KTP	KTP	Likely	Yes Some unavoidable emissions will occur from construction machinery.
Threat	Bushrock removal	KTP		Unlikely	Potentially No deposits of surface rock were detected during the field survey. However, if, during construction, bushrock is detected, it should be relocated nearby, rather than be removed.
Threat	Clearing of native vegetation	KTP	KTP	Unlikely	No The proposal does not include any activities that would exacerbate this threat.
Threat	Competition and grazing by the feral European Rabbit, <i>Oryctolagus cuniculus</i> (L.)	KTP	KTP	Unlikely	Potentially The spread of grassy weeds that may result from these works could encourage rabbit activity.
Threat	Competition and habitat degradation by Feral Goats, <i>Capra hircus</i> Linnaeus 1758	KTP	KTP	Unlikely	No The proposal does not include any activities that would exacerbate this threat.
Threat	Competition from feral honey bees, <i>Apis mellifera</i> L.	KTP		Unlikely	No The proposal does not include any activities that would exacerbate this threat.
Threat	Forest eucalypt dieback associated with over-abundant psyllids and Bell Miners	KTP		Unlikely	No The proposal does not include any activities that would exacerbate this threat
Threat	Habitat degradation and loss by Feral Horses (brumbies, wild horses), <i>Equus caballus</i> Linnaeus 1758	KTP		Unlikely	No The proposed development will not increase occupancy by this species.
Threat	Herbivory and environmental degradation caused by feral deer	KTP		Unlikely	No The proposed development will not increase occupancy by this species.

Class	Name	NSW status	Comm. status	Likelihood of Occurrence	Exacerbated by Proposal?
Threat	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.
Threat	Importation of Red Imported Fire Ants <i>Solenopsis invicta</i> Buren 1972	KTP	KTP	Unlikely	Potentially Machinery used on site can potentially act as a transport for biosecurity risks, however, this species is not known to occur nearby.
Threat	Infection by Psittacine Circoviral (beak and feather) Disease affecting endangered psittacine species and populations	KTP	KTP	Unlikely	No The proposal does not include any activities that would exacerbate this threat.
Threat	Infection of frogs by amphibian chytrid causing the disease chytridiomycosis	KTP	KTP	Unlikely	Potentially Machinery used on site can potentially act as a transport for biosecurity risks.
Threat	Infection of native plants by <i>Phytophthora cinnamomi</i>	KTP	KTP	Unlikely	Potentially Machinery used on site can potentially act as a transport for biosecurity risks.
Threat	Introduction of the Large Earth Bumblebee <i>Bombus terrestris</i> (L.)	KTP		Unlikely	No This species only occurs in Tasmania.
Threat	Invasion and establishment of exotic vines and scramblers	KTP		Unlikely	Potentially Machinery used on site can potentially act as a transport for biosecurity risks.
Threat	Invasion and establishment of Scotch Broom (<i>Cytisus scoparius</i>)	KTP		Unlikely	No This species is not known to occur nearby and the climate would not be conducive to establishment.
Threat	Invasion and establishment of the Cane Toad (<i>Bufo marinus</i>)	KTP	KTP	Unlikely	Potentially Machinery used on site can potentially act as a transport for biosecurity risks, however, this species is not known to occur nearby.
Threat	Invasion of native plant communities by African Olive <i>Olea europaea</i> subsp. <i>cuspidata</i> (Wall. ex G. Don) Cif.	KTP		Unlikely	Potentially Machinery used on site can potentially act as a transport for biosecurity risks.
Threat	Invasion of native plant communities by <i>Chrysanthemoides monilifera</i>	KTP		Unlikely	Potentially Machinery used on site can potentially act as a transport for biosecurity risks.
Threat	Invasion of native plant communities by exotic perennial grasses	KTP		Likely	Yes

Class	Name	NSW status	Comm. status	Likelihood of Occurrence	Exacerbated by Proposal?
					Exotic perennial grasses are already established at the site, increased disturbance could increase their spread.
Threat	Invasion of the Yellow Crazy Ant, <i>Anoplolepis gracilipes</i> (Fr. Smith) into NSW	KTP		Unlikely	No This species is not known to occur nearby and the climate would not be conducive to establishment.
Threat	Invasion, establishment and spread of Lantana (<i>Lantana camara</i> L. sens. Lat)	KTP		Unlikely	No This species is not known to occur nearby and the climate would not be conducive to establishment.
Threat	Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants	KTP	KTP	Unlikely	Potentially Machinery used on site can potentially act as a transport for biosecurity risks.
Threat	Loss of Hollow-bearing Trees	KTP		Unlikely	No No hollow-bearing trees will be impacted by the proposal.
Threat	Loss or degradation (or both) of sites used for hill-topping by butterflies	KTP		Unlikely	No No sites known or suspected to be present.
Threat	Predation and hybridisation by Feral Dogs, <i>Canis lupus familiaris</i>	KTP		Unlikely	No The proposed works would not increase the likelihood of this threat.
Threat	Predation by <i>Gambusia holbrooki</i> Girard, 1859 (Plague Minnow or Mosquito Fish)	KTP		Unlikely	No The proposal does not include any activities that would exacerbate this threat.
Threat	Predation by the European Red Fox <i>Vulpes Vulpes</i> (Linnaeus, 1758)	KTP	KTP	Unlikely	No Ease of access for feral foxes will not be increased by the proposal
Threat	Predation by the Feral Cat <i>Felis catus</i> (Linnaeus, 1758)	KTP	KTP	Unlikely	No Ease of access for feral cats will not be increased by the proposal
Threat	Predation, habitat degradation, competition and disease transmission by Feral Pigs, <i>Sus scrofa</i> Linnaeus 1758	KTP	KTP	Unlikely	No Ease of access for feral pigs will not be increased by the proposal
Threat	Removal of dead wood and dead trees	KTP		Unlikely	Unlikely No dead trees or wood were encountered during the field deployment. If, during development, dead wood is encountered it is recommended that it be relocated nearby to avoid exacerbating this KTP.