



View of the small dam within the site.

## **BIODIVERSITY ASSESSMENT REPORT**

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### **REDLEAF SUBDIVISION**

ORANGE LOCAL GOVERNMENT AREA, NSW

NOVEMBER 2025

Report prepared by  
OzArk Environment & Heritage  
for Landcom

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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 Landcom (the client), who is in partnership with Orange City Council (the proponent), to complete a Biodiversity Assessment Report (BAR) for the subdivision of Lot 1 DP 153167, Lot 6 DP 1031236, and part Lot 200 DP 1288388, Redmond Place, Orange (the proposal). The proposal occurs within the Orange Local Government Area (LGA).

A Biodiversity Development Assessment Report (BDAR) is not required for this proposal as the proposal does not impact mapped biodiversity values, does not exceed the clearing threshold for the relevant lot (0.25 hectares [ha]), and is not expected to result in significant impacts to any threatened entity. As such, the proposal will not trigger entry into the NSW Biodiversity Offsets Scheme (BOS), and a BAR is the appropriate assessment.

An initial field survey of the site was conducted on the 18<sup>th</sup> of January 2024. Follow-up targeted fauna surveys were conducted in October and December 2024. Additionally, vegetation plot data, in accordance with the Biodiversity Assessment Method 2020 (BAM), was collected in February 2025.

In total, 0.50 ha of native vegetation was detected within the subject site. This native vegetation belongs to a single Plant Community Type (PCT):

- PCT 3387 – Central West Creekflat Grassy Woodland.

Only up to 0.18 ha of this PCT would be impacted by the proposal, thus avoiding the 0.25 ha clearing threshold for entry into the BOS. Ground disturbance and vegetation removal has not been assessed within the remaining 0.32 ha of this PCT; therefore, no ground disturbance or vegetation removal is permitted in this area.

This PCT was assessed against the threshold criteria for all Threatened Ecological Communities (TECs) listed under the *Biodiversity and Conversation Act* 2016 (BC Act) and the *Environment Protection and Biodiversity Conservation Act* 1999 (EPBC Act) recorded for the relevant IBRA subregions. No TECs were found to occur within the subject site.

One unmapped watercourse, which appears to be an artificially created drainage line, and one artificial dam occur within the site. No naturally occurring watercourses occur within the subject site and no major perennial watercourses occur within the study area. As such, no areas recognised as Key Fish Habitat by the Department of Primary Industries - Fisheries, or Protected Riparian land, as mapped by the NSW Department of Climate Change, Energy the Environment and Water, occur within the subject site. Furthermore, considering the closest natural watercourse

to the (Dairy Creek) is located 220 m from the subject site, a permit under the *Fisheries Management Act* 1994 is not required.

Very few habitat features remain within the subject site. One stag (standing dead tree) with no hollows and one stag containing five small hollows are likely to be impacted by the proposal. There was a single bird's nest detected during the field survey, though this was located within the road corridor and is not expected to be impacted. Additionally, there are some boulders which have been placed within the paddocks that may provide habitat for reptiles and microbats. Although these boulders are unable to be retained in their current location, it is recommended that where possible, they are relocated to a suitable location within the subject site.

One dam surrounded by wet sedges may provide temporary habitat for a variety of water birds. However, given the site lies in the middle of two large wetlands (Suma Park and Spring Creek Reservoir), the dam likely contributes little value to the habitat of water birds within the search area.

Targeted fauna surveys were conducted in October (23<sup>rd</sup> – 26<sup>th</sup>) and December (7<sup>th</sup> – 8<sup>th</sup>) 2024. These surveys targeted:

- Booroolong Frog (*Litoria booroolongensis*) – listed as endangered under the BC and EPBC Acts
- Yellow-spotted tree frog (*Litoria castanea*) – listed as critically endangered under the BC and EPBC Acts
- Little Eagle (*Hieraaetus morphnoides*) – listed as vulnerable under the BC Act
- Superb Parrot (*Polytelis swainsonii*) – listed as vulnerable under the BC and EPBC Acts
- Koala (*Phascolarctos cinereus*) – listed as endangered under the BC and EPBC Acts
- Pygmy Possum (*Cercartetus nanus*) – listed as vulnerable under the BC Act
- Squirrel Glider (*Petaurus norfolcensis*) – listed as vulnerable under the BC Act
- Pink-tailed Legless Lizard (*Aprasia parapulchella*) – listed as vulnerable under the BC and EPBC Acts

None of the target species were observed within the subject. However, one threatened mammal species was recorded within the subject site: the Grey-headed Flying-fox (listed as vulnerable under the BC and EPBC Acts). Two individuals were observed roosting within the planted Poplar trees located directly west of the intersection of Brabham Way and Mitchell Highway. It is understood these trees will be retained. No additional threatened fauna species were recorded during the field/targeted surveys.

Sixty-three flora species were detected during the field surveys. No flora species or populations listed as threatened under the BC or EPBC Act were observed. Given the short duration of the

field survey, and the lack of targeted flora surveys, the non-detection of threatened flora species cannot be considered as confirmation of their absence. Based on the proximity of past records, habitat requirements, and the results of the field surveys, three threatened flora species were assessed as having a moderate-to-high likelihood of occurring at the subject site. Tests of significance have been conducted for these species under the BC and EPBC Act; these tests concluded that the proposal would not result in a significant impact to any threatened flora species.

Thirty-nine fauna species were detected during the initial field survey and follow up targeted surveys. One threatened mammal species was recorded within the subject site: the Grey-headed Flying-fox (listed as vulnerable under the BC and EPBC Acts). Based on the proximity of past records, habitat requirements, and the results of the field survey, 24 threatened and/or migratory fauna species were assessed as having a moderate-to-high likelihood of occurring at the subject site. Tests of significance have been conducted for these species under the BC, and/or EPBC Act; these tests concluded that the proposal would not result in a significant impact to any threatened fauna species.

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 Scheme is triggered by a changed scope, additional field work and reporting completed according to the BAM may be required.

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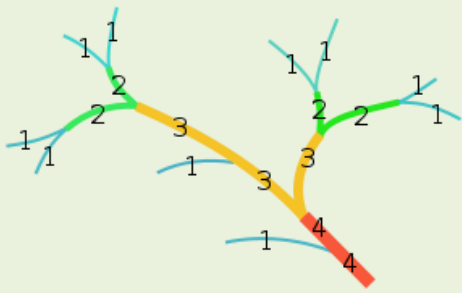
## ABBREVIATIONS

| 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                   | <i>NSW 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       |
| DoE                      | Department of Environment                                                         |
| DPI                      | NSW Department of Primary Industries                                              |
| DPIE                     | NSW Department of Planning, Industry and Environment                              |
| EEC                      | Endangered Ecological Community                                                   |
| EIS                      | Environmental Impact Statement                                                    |
| EP&A Act                 | <i>NSW Environmental Planning and Assessment Act 1979</i>                         |
| EPBC Act                 | <i>Commonwealth Environment Protection and Biodiversity Conservation Act 1999</i> |
| ESCP                     | Erosion and Sediment Control Plan                                                 |
| FM Act                   | <i>NSW 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.                               |
| 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 <sup>2</sup> /km | Millimetre/centimetre/metre/square metre/kilometre                                |
| MNES                     | Matters of National Environmental Significance                                    |
| NPW Act                  | <i>NSW 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                                                              |
| PMST                     | Protected Matters Search Tool                                                     |

| Term    | Description                                          |
|---------|------------------------------------------------------|
| 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                  |
| VEC     | Vulnerable Ecological Community                      |
| VIS     | Vegetation Information System                        |
| WoNS    | Weed of National Significance                        |

## GLOSSARY OF TERMS

| Term                                                              | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Areas of outstanding biodiversity                                 | <p>An area of outstanding biodiversity value is:</p> <ul style="list-style-type: none"> <li>• an area important at a State, national or global scale, and</li> <li>• an area that makes a significant contribution to the persistence of at least one of the following: <ul style="list-style-type: none"> <li>○ multiple species or at least one threatened species or ecological community</li> <li>○ irreplaceable biological distinctiveness</li> <li>○ ecological processes or ecological integrity</li> <li>○ outstanding ecological value for education or scientific research.</li> </ul> </li> </ul> <p>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).</p> |
| Cumulative impact                                                 | <p>The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Refer to Clause 228(2) of the <i>EP&amp;A Regulation 2000</i> for cumulative impact assessment requirements.</p>                                                                                                                                                                                                                                                                                                                                                                                    |
| Direct impacts                                                    | <p>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).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Habitat                                                           | <p>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).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Important population                                              | <p>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:</p> <ul style="list-style-type: none"> <li>• key source populations either for breeding or dispersal</li> <li>• populations that are necessary for maintaining genetic diversity, and/or</li> <li>• populations that are near the limit of the species range (DE 2013).</li> </ul>                                                                                                                                                                                                                                                                                                                                               |
| Indirect impact                                                   | <p>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).</p>                                                 |
| Invasive species                                                  | <p>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.</p>                                                                                                                                                                                                                                                                                                                                                                  |
| Local occurrence (EEC)                                            | <p>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.</p>                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Local population (in regard to a threatened or migratory species) | <p>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.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| Term                                    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                         | <p>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.</p> <p>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).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Low condition (vegetation)              | <p>Either:</p> <ul style="list-style-type: none"> <li>a) woody native vegetation with native over-storey percent foliage cover less than 50% of the lower value of the over-story percent foliage cover benchmark for that vegetation type, and where either: <ul style="list-style-type: none"> <li>• less than 50% of ground cover vegetation is indigenous species, or</li> <li>• greater than 90% of ground cover vegetation is cleared</li> </ul> </li> <li>or</li> <li>b) native grassland, wetland or herb field where either: <ul style="list-style-type: none"> <li>• less than 50% of ground cover vegetation is indigenous species, or</li> <li>• more than 90% of ground cover vegetation is cleared.</li> </ul> </li> </ul> <p>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.</p> |
| Moderate to good condition (vegetation) | If native vegetation is not in low condition (above), it is in moderate to good condition.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Mitigation                              | Action to reduce the severity of an impact.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Mitigation measure                      | Any measure that prevents, reduce or controls adverse environmental effects of a project.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| NSW (Mitchell) landscape                | Landscapes with relatively homogeneous geomorphology, soils and broad vegetation types, mapped at a scale of 1:250,000 (OEH 2018).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Proposal                                | Is considered to include 'all activities likely to be undertaken within the subject site to achieve the objective of the proposed development' (DECC 2007).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Risk of extinction                      | The likelihood that the local population will become extinct either in the short-term or in the long-term as a result of direct or indirect impacts on the viability of that population.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Search area                             | Is considered to 'include the lands that surround the subject site for a distance of 10 km' (DECC 2007). The search area has been used to search information sources to establish the landscape context of the subject site.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Significant impact                      | A 'significant impact' is an impact which is important, notable, or of consequence, having regard to its context or intensity.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Strahler stream order                   | <p>Strahler stream orders are used to define stream size based on a hierarchy of tributaries, based on the diagram below.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 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 DESCRIPTION OF THE PROPOSAL

OzArk Environment & Heritage (OzArk) has been engaged by Landcom (the client), who is in partnership with Orange City Council (the proponent), to complete a Biodiversity Assessment Report (BAR) for the subdivision of Lot 1 DP 153167, Lot 6 DP 1031236, and part Lot 200 DP 1288388, Redmond Place, Orange (the proposal). The proposal is in the Orange Local Government Area (LGA) (**Figure 1-1**).

The proposal also includes the construction of sewer and water main lead-ins to service the new development. The alignment of lead-ins will avoid trees and are therefore not expected to result in the removal of native vegetation. However, other components of the proposal will require the removal of a small area of native vegetation.

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 three conditions outlined in **Table 1-1** are met.

**Table 1-1. Triggers for entering the NSW Biodiversity Offsets Scheme (BOS).**

| BOS Trigger                                                                                             | Triggered?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The proposal exceeds the clearing threshold for the relevant property.                                  | No. In accordance with the Biodiversity Assessment Method 2020 (BAM), where there is no published minimum lot size associated with a development, the smallest actual lot size should be used when assessing this BOS trigger. According to the latest Master Plan Report, the smallest lot size is 0.03 ha (Oculus, 2025); therefore, the clearing threshold is 0.25 ha ( <b>Table 1-2</b> ). The proposal would require the clearing of 0.18 ha, below the 0.25 ha clearing threshold ( <b>Table 1-2</b> ). |
| The proposal will impact a mapped area of biodiversity value on the state-wide Biodiversity Values Map. | No. the subject site does not contain any land mapped on the Biodiversity Values Map (see <b>Appendix A</b> ).                                                                                                                                                                                                                                                                                                                                                                                                |
| The proposal will result in a significant impact to one or more listed threatened entities.             | No. Based on the tests of significance completed under the <i>Biodiversity Conservation Act</i> 2016 (BC Act) and <i>Environment Protection &amp; Biodiversity Conservation Act</i> 1999 (EPBC Act) the proposal would not significantly impact a threatened entity ( <b>Appendix D</b> and <b>F</b> ).                                                                                                                                                                                                       |

**Table 1-2. Minimum lot size and allowable clearing threshold under the Biodiversity Assessment Method (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       |

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, Landcom is the proponent and Western Regional Planning Panel 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).

## 1.2 PROJECT BACKGROUND

The site is owned by Orange City Council and Landcom prepared the planning proposal to amend the Orange Local Environmental Plan 2011 (LEP) to rezone the site from C3 - Environmental Management and B5 - Business Development (**Figure 1-2**) to R1 – General Residential, RE1 – Public Recreation, and SP2 – Infrastructure, for residential uses (**Figure 1-3**). The project is now moving to the subdivision application phase.

The key objectives of the project, as outlined in the Urban Design Report (Oculus, 2025), are:

- Supply – increase the supply of land to facilitate housing through the creation of lots to support a sustainable, innovative and affordable community.
- Diversity – promote housing diversity through supporting a diverse mix of product, including houses and townhouses.
- Affordability – increase the supply of land for affordable housing by delivering at least 20% of all residential dwelling sites for affordable housing managed by a community housing provider.
- Sustainability – develop a climate resilient, healthy and inclusive place, at the forefront of environmental and social sustainability.

The staging strategy shown in **Figure 1-4** takes into consideration infrastructure availability, delivery timing, placemaking, and entry points to the area from the Mitchell Highway. The master plan is shown in **Figure 1-5**. Note that the staging strategy and master plan figures do not include the sewer and water main lead-ins.

The urban design approach for the project focuses on socio-economic activation, innovative sustainability solutions and urban vibrancy through place-making. The master plan for the future new community of Redleaf is based on a landscape-led approach to urban design, informed by the unique qualities of the site and Connecting with Country principles (Oculus 2025). A thorough community and stakeholder engagement process, including community workshops, a Walk on Country and indigenous stakeholder interviews, has informed the urban design process.

## 1.3 PROJECT LOCATION AND CONTEXT

### 1.3.1 Regional Context

The regional context of the proposal is explored in **Table 1-3** and depicted in **Figure 1-1**.

**Table 1-3. Regional context for the project.**

| Criteria                                                                         | Value                                                                                                                                                                                                                                                                                               |
|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Interim Biogeographic Regionalisation for Australia (IBRA Region)                | <ul style="list-style-type: none"> <li>• South Eastern Highlands</li> </ul>                                                                                                                                                                                                                         |
| Interim Biogeographic Regionalisation for Australia Sub-region (IBRA Sub-Region) | <ul style="list-style-type: none"> <li>• Orange</li> </ul>                                                                                                                                                                                                                                          |
| State                                                                            | <ul style="list-style-type: none"> <li>• New South Wales</li> </ul>                                                                                                                                                                                                                                 |
| Local Government Area                                                            | <ul style="list-style-type: none"> <li>• Orange</li> </ul>                                                                                                                                                                                                                                          |
| Nearest town                                                                     | <ul style="list-style-type: none"> <li>• Orange</li> </ul>                                                                                                                                                                                                                                          |
| Nearest park, state forest or reserve                                            | <ul style="list-style-type: none"> <li>• Kinross State Forest (4.9 km northeast of subject site)</li> </ul>                                                                                                                                                                                         |
| Mitchell Landscapes                                                              | <ul style="list-style-type: none"> <li>• Canobolas Sheet Basalts (subject site)</li> <li>• Mullion Slopes (study area)</li> <li>• Carcoar Intrusives (study area)</li> </ul>                                                                                                                        |
| Nearest waterway (Name, Type)                                                    | <ul style="list-style-type: none"> <li>• Artificial dam and drainage lines within the subject site</li> <li>• Strahler 2<sup>nd</sup> order minor watercourse (220 m from the subject site)</li> </ul>                                                                                              |
| Surrounding land use                                                             | <ul style="list-style-type: none"> <li>• Grazing native vegetation (subject site)</li> <li>• Grazing modified pastures (subject site)</li> <li>• Manufacturing and Industrial (subject site)</li> <li>• Residential and farm infrastructure (subject site)</li> <li>• Roads (study area)</li> </ul> |
| Surrounding land zone                                                            | <ul style="list-style-type: none"> <li>• See <b>Figure 1-2</b> and <b>Figure 1-3</b></li> </ul>                                                                                                                                                                                                     |

### 1.3.2 Landuse and Ownership

The site is owned by Orange City Council. It is located on the southeast fringe of Orange, adjacent to the suburb of Glenroi, and 4.4 km from Orange City Centre.

The Site has a significant frontage along Mitchell Highway (A32) which runs from east to west from the M4 Motorway in Greater Sydney connecting through Penrith, Katoomba, Bathurst to Orange.

The Site lies on the southern side of Redmond Place, bounded by Bathurst Road / Mitchell Highway (on the northeast), Lone Pine Avenue (on the west) and Dairy Creek Road to the south. It is surrounded by a mixture of land uses with low density residential to the west, retail and large format retail to the north, rural farmland to the south and east, as well as a kart racing track 250 m north of the Mitchell highway.



### 1.3.3 Impact Footprint

The maximum impact footprint of the proposal is 28.63 ha (**Figure 1-2**).

### 1.3.4 Search Area, Study Area, Subject Site

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

|                     |                                                                                                                                                                                                                                                                                                                       |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Search area</b>  | the area within a 10 km radius of the subject site ( <b>Figure 1-1</b> ). This 10 km buffer has been used to search information sources to establish the landscape context of the subject site.                                                                                                                       |
| <b>Study area</b>   | the area within a 1,500 m radius of the subject site ( <b>Figure 1-1</b> ). 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. |
| <b>Subject site</b> | the footprint of the proposal and the area directly affected by the development activities ( <b>Figure 1-2</b> ). The subject site also contains vegetation retention zones which cover areas where impacts to native vegetation will be avoided ( <b>Figure 1-6</b> ).                                               |

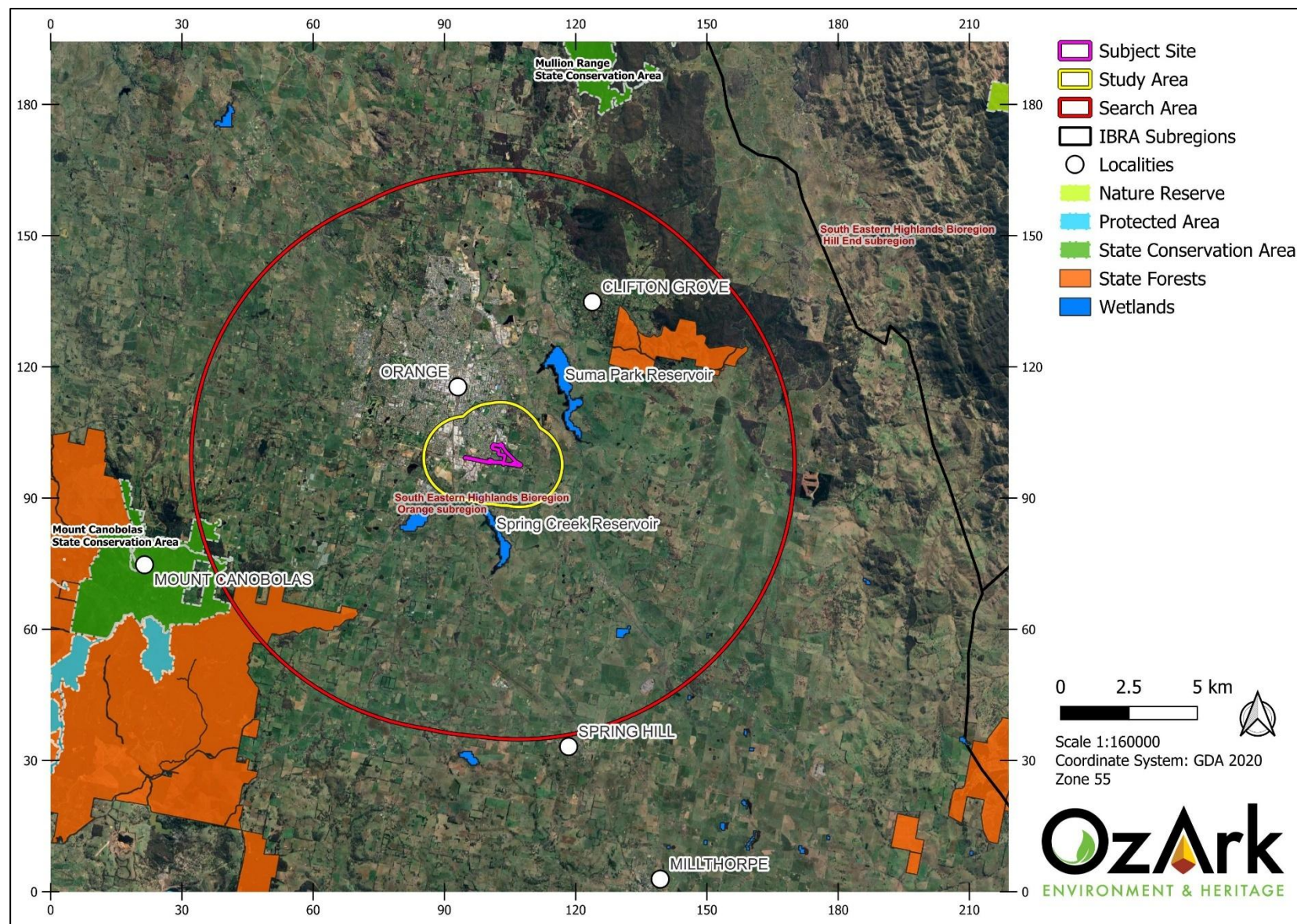


Figure 1-1. Regional location of the proposal.



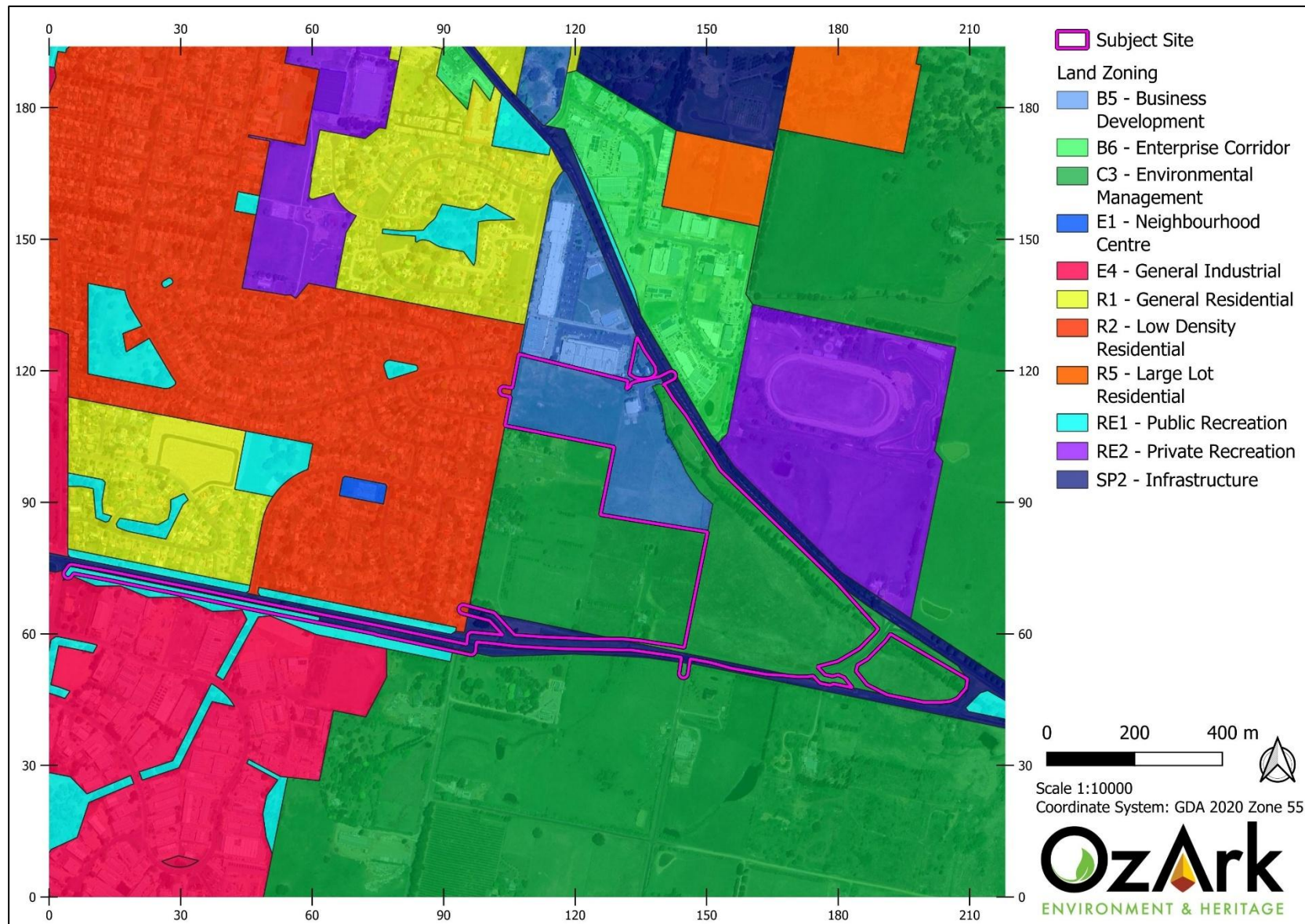


Figure 1-2. Subject site showing previous land zoning.

## 4.2 Planning

### Proposed Zoning

The proposal seeks to amend the Land Zoning Map as it applies to the Redmond Place precinct to align with the masterplan. The proposal seeks to rezone land zoned E3 Productivity Support and C3 Environmental Management as follows:

- + R1 General Residential, for the parts of the precinct proposed for residential development
- + RE1 Public Recreation for the land to be set aside for public open space and recreation
- + SP2 Infrastructure for the land where the sewer pump is to be located

#### Legend

|                                                                                     |                             |
|-------------------------------------------------------------------------------------|-----------------------------|
|  | E3 Productivity Support     |
|  | C3 Environmental Management |
|  | R1 General Residential      |
|  | R2 Low Density Residential  |
|  | RE1 Public Recreation       |
|  | RE2 Private Recreation      |
|  | SP2 Infrastructure          |



Figure 1-3. Redleaf proposed zoning master plan (Oculus, 2025).





Figure 1-4. Staging strategy (Oculus 2025).





**Figure 1-5. Master plan (Oculus 2025).**



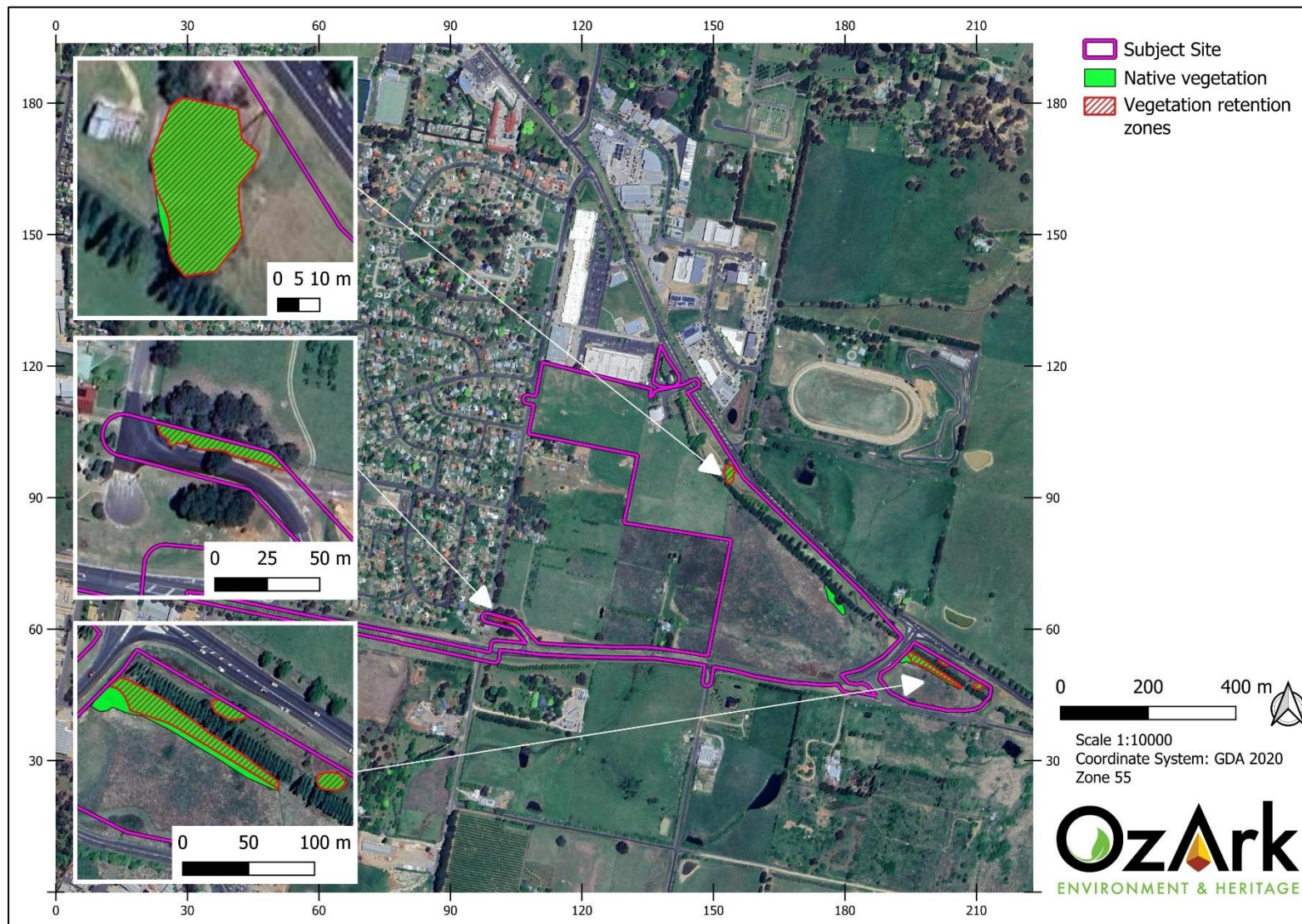


Figure 1-6. Vegetation retention zones within the subject site.

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## 2 STATUTORY AND PLANNING CONTEXT

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### 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 5.2, 5.3, 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.

### **2.2.2 Biodiversity Conservation Act 2016 (BC Act)**

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

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

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

BC Act listed species and communities are addressed in **Section 5.2, 5.3** and **Appendix D**.

### **2.2.3 Biosecurity Act 2015**

The Biosecurity Act aims to manage biosecurity risks from animal and plant pests and diseases, weeds and contaminants in NSW. The Biosecurity Act imposes a general biosecurity duty to ensure that, so far as is reasonably practicable, any biosecurity risk is prevented, eliminated or minimised. The proponent is required to manage the presence of weeds in the subject site (**Section 6.2.3, Section 7.2, Appendix F**).

### **2.2.4 Fisheries Management Act 1994 (FM Act)**

Part 7A of the FM Act along with schedules within the act, list threatened aquatic and marine species, populations and ecological communities and key threatening processes which must be considered as part of obligations under Section 5.5 of the EP&A Act.

Section 200 of the FM Act states that a local government authority must not carry out dredging work or reclamation work except under the authority of a permit issued by the Minister.

Under section 198A of the FM Act:

**dredging work** means:

- (a) any work that involves excavating water land, or
- (b) any work the involves moving material on water land or removing material from water land

**reclamation work** means any work that involves—

- (a) using any material (such as sand, soil, silt, gravel, concrete, oyster shells, tyres, timber or rocks) to fill in or reclaim water land, or

- (b) depositing any such material on water land for the purpose of constructing anything over water land (such as a bridge), or
- (c) draining water from water land for the purpose of its reclamation.

**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.

Section 219 of the FM Act prohibits the blockage of fish passage. Refer to **Section 4.4** for requirements under the FM Act.

### **2.2.5 Water Management Act 2000 (WM Act)**

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

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

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

Examples of controlled activities include:

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

Considering the subject site does not contain waterfront land, the proposal does not require approvals under the WM Act.

### **2.2.6 Orange Local Environmental Plan (2011)**

A Local Environmental Plan (LEP) is a legal document prepared by a Council and approved by the State Government for the regulation of land-use and development. LEPs guide planning

decisions for local governments. The plan allows Council to regulate the ways in which all land both private and public may be used and protected through zoning and development controls.

(1) This Plan aims to make local environmental planning provisions for land in Orange in accordance with the relevant standard environmental planning instrument under section 33A of the Act.

(2) The particular aims of this Plan are as follows:

- (a) to encourage development that complements and enhances the unique character of Orange as a major regional centre boasting a diverse economy and offering an attractive regional lifestyle,
- (b) to provide for a range of development opportunities that contribute to the social, economic and environmental resources of Orange in a way that allows the needs of present and future generations to be met by implementing the principles of ecologically sustainable development,
- (c) to conserve and enhance the water resources on which Orange depends, particularly water supply catchments,
- (d) to manage rural land as an environmental resource that provides economic and social benefits for Orange,
- (e) to provide a range of housing choices in planned urban and rural locations to meet population growth,
- (f) to recognise and manage valued environmental heritage, landscape and scenic features of Orange.

The LEP does not map any areas of the subject site as containing high biodiversity values (see **Appendix A**).

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

### **2.3.1 *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 Orange LGA is not listed in Schedule 2 of the SEPPBC 2021; consequently, the provisions of Chapter 4 of the SEPPBC 2021 do not apply to land within this LGA. Nevertheless, the proposal’s potential impacts to threatened species, including the Koala, have been considered in **Section 5.3** and **Appendices D** and **E**.

### 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 Act, FM Act or the EPBC Act that have the potential to occur in the study area.
2. Field survey of the subject site for the purposes of:
  - collating lists of those plants present, these being used to assist with the identification of the site's vegetation communities
  - determining the habitat structures present
  - determining habitat availability for fauna species recorded or expected to occur.

Where a threatened species or community or habitat feature is identified, document the nature and extent of the protected matter and describe its 'viable local population' or occurrence. Searches for fauna species were conducted by overturning logs and rocks, searching in habitat features such as culverts and traces and signs of fauna were recorded such as scat and tracks.

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 initial field survey was completed by Project Ecologist Ian Griffith and Ecologist Jeff Lewis on the 18<sup>th</sup> of January 2024. Follow up targeted fauna surveys were completed by Ecologists Lauriane Citerne (23<sup>rd</sup>-24<sup>th</sup> October) and Dr Sean Graham (26-27<sup>th</sup> October and December 7–8<sup>th</sup> 2024). Additionally, vegetation plot data, in accordance with the Biodiversity Assessment Method 2020 (BAM), was collected by Senior Ecologist Dr David Orchard on the 12<sup>th</sup> of February 2025. Following the inclusion of sewer and water main lead-ins, an additional field survey was completed by Project Ecologist Ian Griffith on the 6<sup>th</sup> of November 2025. Reporting components were completed by Ecologist Lucca Brozler with quality control provided by Senior Ecologist Dr Crystal Graham. Key details of personnel are provided in **Table 3-1**.



**Table 3-1. Summary of OzArk personnel qualifications.**

| Name              | Position           | CV Details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dr Crystal Graham | Senior Ecologist   | <ul style="list-style-type: none"> <li>• BAM-accredited Assessor #BAAS22024</li> <li>• Postdoctoral Fellow – Smithsonian Tropical Research Institute</li> <li>• Doctor of Philosophy (Biology) – University of Sydney</li> <li>• Honours in Biology – University of Sydney</li> <li>• Bachelor of Advanced Science – University of Sydney</li> <li>• 4WD Training</li> <li>• First Aid Training</li> <li>• WH&amp;S Induction Training for Construction Work</li> <li>• Worker at Heights Training</li> </ul> |
| Dr David Orchard  | Senior Ecologist   | <ul style="list-style-type: none"> <li>• BAM-accredited Assessor #BAAS21028</li> <li>• Doctor of Philosophy (Agriculture) – Charles Sturt University</li> <li>• Graduate Diploma in Science (Botany) – University of New England</li> <li>• Bachelor of Arts (Honours) – Australia National University</li> <li>• First Aid Training</li> <li>• WH&amp;S Induction Training for Construction Work</li> <li>• Rail Industry Worker Card</li> </ul>                                                             |
| Ian Griffith      | Project Ecologist  | <ul style="list-style-type: none"> <li>• Honours (Genetics) – La Trobe University</li> <li>• Bachelor of Biological Sciences – La Trobe University</li> <li>• First Aid Training</li> <li>• WH&amp;S Induction Training for Construction Work</li> <li>• Rail Industry Worker Card</li> </ul>                                                                                                                                                                                                                 |
| Jeff Lewis        | Ecologist          | <ul style="list-style-type: none"> <li>• Bachelor of Science in Ecology and Biodiversity – Victoria University of Wellington, New Zealand</li> <li>• Certificates in GIS – UC Davis</li> <li>• Certificate in Wild Animal Management – Unitec, New Zealand</li> <li>• WH&amp;S Induction Training for Construction Work</li> <li>• First Aid Training</li> </ul>                                                                                                                                              |
| Lauriane Citerne  | Ecologist          | <ul style="list-style-type: none"> <li>• Masters in Conservation Biology – Macquarie University</li> <li>• Bachelor of Biodiversity and Conservation – Macquarie University</li> <li>• First Aid Training</li> <li>• WH&amp;S Induction Training for Construction Work</li> </ul>                                                                                                                                                                                                                             |
| Lucca Brozler     | Ecologist          | <ul style="list-style-type: none"> <li>• Masters in Conservation Biology – The University of Queensland</li> <li>• Bachelor of Biological Science – The University of Queensland</li> <li>• WH&amp;S Induction Training for Construction Work</li> </ul>                                                                                                                                                                                                                                                      |
| Dr Sean Graham    | Ecologist (Casual) | <ul style="list-style-type: none"> <li>• Postdoctoral Fellow (Biology) – Pennsylvania State University</li> <li>• Doctor of Philosophy (Biology) – Auburn University</li> <li>• Master's in Biology – Georgia State University</li> <li>• Bachelor of Art (Communications – Film) – Georgia State University</li> <li>• 4WD Training</li> <li>• First Aid Training</li> <li>• WH&amp;S Induction Training for Construction Work</li> <li>• Rail Industry Worker Card</li> </ul>                               |

## 3.2 BACKGROUND RESEARCH

Database search results were used to assist in identifying distributions, suitability of habitats, and known records of threatened species to increase the effectiveness of field investigations. Information sources reviewed included:

- 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 C2.0.M2.1 (<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](http://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/](http://www.bionet.nsw.gov.au/))
- NSW BioNet Atlas ([www.bionet.nsw.gov.au/](http://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](http://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/](http://www.plantnet.rbgsyd.nsw.gov.au/))
- NSW Department of Planning and Environment *Biodiversity Values Map* (<https://www.lmhc.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>)

These searches indicated key species for field survey efforts and targeted searches. The results of the database searches are provided in **Appendix A**. A series of other background searches were performed (**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 ( <b>Appendix A</b> ) |

|                                                                                                                                                                              |                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Area of Outstanding Biodiversity Value (AOBV) under the NSW <i>BC Act 2016</i>                                                                                               | No                                                                                               |
| Critical habitat nationally?                                                                                                                                                 | No                                                                                               |
| 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                                                                                               |
| An area reserved or dedicated under the <i>National Parks and Wildlife Act 1974</i> ?                                                                                        | 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                                                                                               |
| 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? | No                                                                                               |
| A World Heritage Area?                                                                                                                                                       | No                                                                                               |
| Environmental Protection Zones in environmental planning instruments?                                                                                                        | Yes, land zoned C3 – Environmental Management though this is being rezoned ( <b>Figure 1-3</b> ) |
| Lands protected under <i>SEPP (Biodiversity and Conservation) 2021</i> ?                                                                                                     | No                                                                                               |
| Acid sulfate soils?                                                                                                                                                          | 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                                                                                               |
| Protected Riparian Land?                                                                                                                                                     | Yes ( <b>Section 4.4</b> )                                                                       |
| Mapped Key Fish Habitat?                                                                                                                                                     | Yes ( <b>Section 4.4</b> )                                                                       |

### 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 within the impact areas, but the species has not been observed or previously recorded within the search area. Or, the species has been observed or previously recorded within the search area, but no associated PCTs occur within the impact areas.
- 'Low' – a very low likelihood that the species occurs within the site, based on the species distribution, lack of records within the search area, and/or lack of the preferred habitat type.
- 'Absent' – habitat on-site and in the vicinity is unsuitable for the species.

The species and ecological communities known or considered to have a moderate-high likelihood of occurring at the site, were then considered as to whether the development would be likely to impact on them. Tests of significance were completed for these entities in accordance with the BC Act (**Appendix D**) and 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 development site.
- Determine if species, populations or ecological communities listed as threatened under the BC Act or EPBC Act are/may be present.
- Determine the significance of impact to any threatened entities present or likely to be present.

#### 3.4.1 Vegetation surveys

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

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

- NSW State Vegetation Map C2.0.M2.1 (NSW DCCEE 2024a), 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 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, 2025).

Additionally, ten floristic plots were surveyed according to the BAM (2020):

- The survey plots consisted of nested 20 m x 50 m and 20 m x 20 m plots, except where the dimensions of the vegetation patch did not allow for these plot dimensions. In particular, small roadside vegetation patches typically required narrower or shorter plots.
- Species composition and structure (species and percent cover) data were collected from within 20 m x 20 m plot (or 10 m x 40 m as required).
- Vegetation function data (size and number of trees, presence of hollow-bearing trees and woody debris) were collected from within 20 m x 50 m plot.
- Percent litter cover data were collected within five 1 m x 1 m squares positioned at 5 m, 15 m, 25 m, 35 m and 45 m points of the 50 m plot.



- Allowances were made where shorter plots were used. This generally involved collecting the same number of data points but from more closely spaced locations.
- The plots were positioned within the subject land and their GPS locations were recorded (GDA 94 / MGA Zone 55).

The data collected from each floristic plot is provided in **Appendix B**.

### 3.4.2 Terrestrial fauna and habitat surveys

During the original site assessment on the 18<sup>th</sup> of January 2024, the subject site was searched for fauna using a meander method while undertaking floristic and habitat surveys. All habitat trees (i.e., hollow-bearing trees or trees containing nests) were GPS tagged. The size, number of hollows and/or type of nest were also recorded for each tree. 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. Herpetological searches were conducted by overturning logs and rocks while traversing the site.

Follow up targeted surveys were conducted for fauna in October (four days/nights) and December (two days/nights) 2024. The methods are outlined in **Table 3-3** and results are given in **Appendix B** and **Section 5.4**.

**Table 3-3. Targeted Fauna Survey Methodology.**

| Species                                                                                                                  | Accepted Targeted Survey Period                            | Methodology Used                                                                                                                                                                                                    |
|--------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Little Eagle</b><br>( <i>Hieraaetus morphnoides</i> )                                                                 | Aug-Oct                                                    | Surveyed via habitat searches (20-min per hectare of suitable habitat) and nest tree watches over 4 days. Targeted searches for this species were undertaken at dusk, including nest tree watches at dusk (90-min). |
| <b>Superb Parrot</b><br>( <i>Polytelis swainsonii</i> )                                                                  | Sept-Nov                                                   | Surveyed by diurnal searches and stag/hollow watches for nesting birds over 4 days (12 hours total).                                                                                                                |
| <b>Pink-tailed Legless Lizard</b><br>( <i>Aprasia parapulchella</i> )                                                    | Sept-Nov                                                   | Surveyed through rock turning over 4 days.                                                                                                                                                                          |
| <b>Squirrel Glider</b><br>( <i>Petaurus norfolcensis</i> )<br>and<br><b>Pygmy Possum</b><br>( <i>Cercartetus nanus</i> ) | Year-round (Squirrel Glider)<br><br>Oct-Mar (Pygmy Possum) | 4 nights of spotlighting and stag watching.                                                                                                                                                                         |

| Species                                                                                                                         | Accepted Targeted Survey Period                                     | Methodology Used                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| <b>Koala</b><br>( <i>Phascolarctos cinereus</i> )                                                                               | Year-round                                                          | Koala SAT (scat detection) underneath suitable trees and spotlighting suitable trees on 2 nights.                        |
| <b>Booroolong Frog</b> ( <i>Litoria booroolongensis</i> )<br>and<br><b>Yellow-spotted tree frog</b> ( <i>Litoria castanea</i> ) | Oct-Dec (Booroolong Frog)<br><br>Nov-Dec (Yellow-spotted tree frog) | 2 nights of aural-visual surveys completed along the edges of suitable breeding habitat, and 2 days of tadpole searches. |

### 3.4.3 Aquatic surveys

In total, eight minnow traps were deployed in waterbodies within the subject site and a further four were deployed adjacent to the subject site. Minnow traps were deployed between the 7<sup>th</sup> – 8<sup>th</sup> of December 2024.



Figure 3-1. Location of minnow traps deployed during the field survey.

### **3.5 LIMITATIONS**

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

- The initial field survey was completed over one day in January 2024. Follow up targeted surveys were conducted over four days in October 2024 and two days in December 2024. Additionally, vegetation plot data, was collected over a single day in February 2025. These surveys may not have been conducted during the best time of year to survey some fauna or flora species. Therefore, the fauna and flora lists included within this report are considered conclusive, as a greater diversity of species are likely to occur within the site.
- Microbat ultrasonic call capture and analysis was not undertaken.
- The field survey was undertaken in or very near to the subject site and plant community type extents outside of the subject site were not confirmed.

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

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

## 4 EXISTING ENVIRONMENT

### 4.1 BIOREGION

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

**Table 4-1. Description of the Orange subregion (NSW NPWS 2003).**

| Bioregion               | Geology                                                                                                                                                                               | Landform                                                                                                                                                                           | Soils                                                                                                                                                                                                                                                                                | Vegetation                                                                                                                                                                                                                             |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| South Eastern Highlands | Ordovician acid volcanics and slates and phyllites and Silurian volcanics. Extensive Tertiary basalts from Canobolas and small stocks of granite. Limited limestone and serpentinite. | Low hilly to hilly plateau with Canobolas peaks rising above. Numerous volcanic features: plugs, dykes and domes in the Canobolas complex. Karst landscapes at Borenore and Molong | Deep structures red and brown loams on basalt and fine metasediments. Mellow texture contrast soils on any slopes with a sand component in the bedrock. Alluvial loams and black clays in swampy valley floors. Limited areas of shallow organic loams at high altitude on Canobolas | Yellow box and Blakely's red gum with red stringybark, white gum, broad-leaved peppermint across most of the plateau. Ribbon gum on lower slopes, snow gum in cold patches and high levels of Canobolas. River oak along main streams. |

### 4.2 NSW (MITCHELL) LANDSCAPES

The landscapes of NSW were mapped in 2002 to provide a framework for reporting and for determining over-cleared landscapes and are known as NSW (or Mitchell) landscapes (Mitchell, 2002). These landscapes broadly describe areas of similar topography, geology, soils, and vegetation. The subject site is represented by a single landscape, Canobolas Sheet Basalts (**Figure 4-1**). The wider study area overlaps the Carcoar Intrusives and Mullion Slopes. These landscapes are described below:

#### Canobolas Sheet Basalts

Widespread undulating high-level plains on Tertiary basalt flows. General elevation 950 to 1200m, local relief 100m. Shallow red brown to black stony loams, yellow-brown texture-contrast soils on lower slopes, alluvial loams and black clays in swampy valley floors. Woodland with; yellow box, Blakely's red gum, red stringybark, white gum, broad-leaved peppermint, grey box, and apple box with grasses.

Clearing Status – Over-cleared, 94% of this landscape has been cleared.

#### Carcoar Intrusives

Low hills with steep slopes on small intrusions of Ordovician gabbro and diorite, general elevation about 750m, local relief 50 to 100m. Red friable gradational profiles of loam and light clay. Open forest of; mountain gum (*Eucalyptus dalrympleana*) and broad-leaved peppermint (*Eucalyptus dives*) on crests, with apple box (*Eucalyptus bridgesiana*), white box (*Eucalyptus albens*) and yellow box (*Eucalyptus melliodora*) on slopes and manna gum (*Eucalyptus viminalis*) along streams.

Clearing Status – Over-cleared, 99% of this landscape has been cleared.

### **Mullion Slopes**

Steep hills and strike ridges on tightly folded Ordovician andesite, conglomerate and tuff, Silurian rhyolite and shale, Devonian quartz sandstones, slate and minor limestone, general elevation 500 to 830m, local relief 200m. Stony uniform sand and loam in extensive rock outcrop along crests, stony red and brown texture-contrast soil on slopes, yellow harsh texture contrast soil in valleys with some evidence of salinity. Gravel and sand in streambeds. Open forest to woodland of; white gum, brittle gum, broad-leaved peppermint, red box, mountain grey gum, white box with yellow box on lower slopes and river oak along the streams.

Clearing Status – Over-cleared, 93% of this landscape has been cleared.

## **4.3 CLIMATE**

The nearest weather station is at the Orange Airport (063303). Rainfall and temperatures have been monitored at this station since 1996 (**Figure 4-2**).

The area experiences a cool temperate climate, with the highest average maximum temperature of 27.4°C experienced in January. Temperatures in winter are mild to cool with the coldest temperatures being recorded in July, having an average minimum of 0.6°C and an average maximum of 9.9°C.

The average annual rainfall at this station is 892.8 mm. November records the highest average rainfall of 95.0 mm, followed by December (86.2 mm). The lowest monthly rainfall occurs in May (50.0 mm), followed by April (50.1 mm).

## **4.4 WATERCOURSES**

One unmapped watercourse, which appears to be an artificially created drainage line (**Figure 4-3**), and one artificial dam (**Figure 4-4**) occur within the site. No naturally occurring watercourses occur within the subject site and no major perennial watercourses occur within the study area (**Figure 4-5**). Eighteen minor watercourses occur within the wider study area:

- Fifteen Strahler 1<sup>st</sup> order - Minor, non-perennial waterways (including East Orange Creek)
- Two Strahler 2<sup>nd</sup> order - Minor, non-perennial waterways (including Dairy Creek)
- One Strahler 4<sup>th</sup> order - Minor, perennial waterway (Gosling Creek)

One wetland, Spring Creek Reservoir slightly overlaps the study area (**Figure 4-5**). This wetland is known habitat for the BC Act-listed vulnerable species: the Freckled duck (*Stictonetta naevosa*) and the Blue-billed duck (*Oxyura australis*). However, the artificial watercourse and dam within the subject site are too small for these species.

No areas recognised as Key Fish Habitat (KFH) by the Department of Primary Industries (Fisheries), or Protected Riparian land (PRL), as mapped by the NSW DCCEEW, occur within the subject site (**Figure 4-5**). Furthermore, considering the closest natural watercourse to the subject site (Dairy Creek) is located 220 m from the subject site, a permit under the FM Act is not required.

No threatened fish species or populations have been mapped as potentially occurring within the search area.

The subject site is not part of any endangered aquatic ecological community listed under the FM Act.

#### **4.5 GROUNDWATER DEPENDENT ECOSYSTEMS**

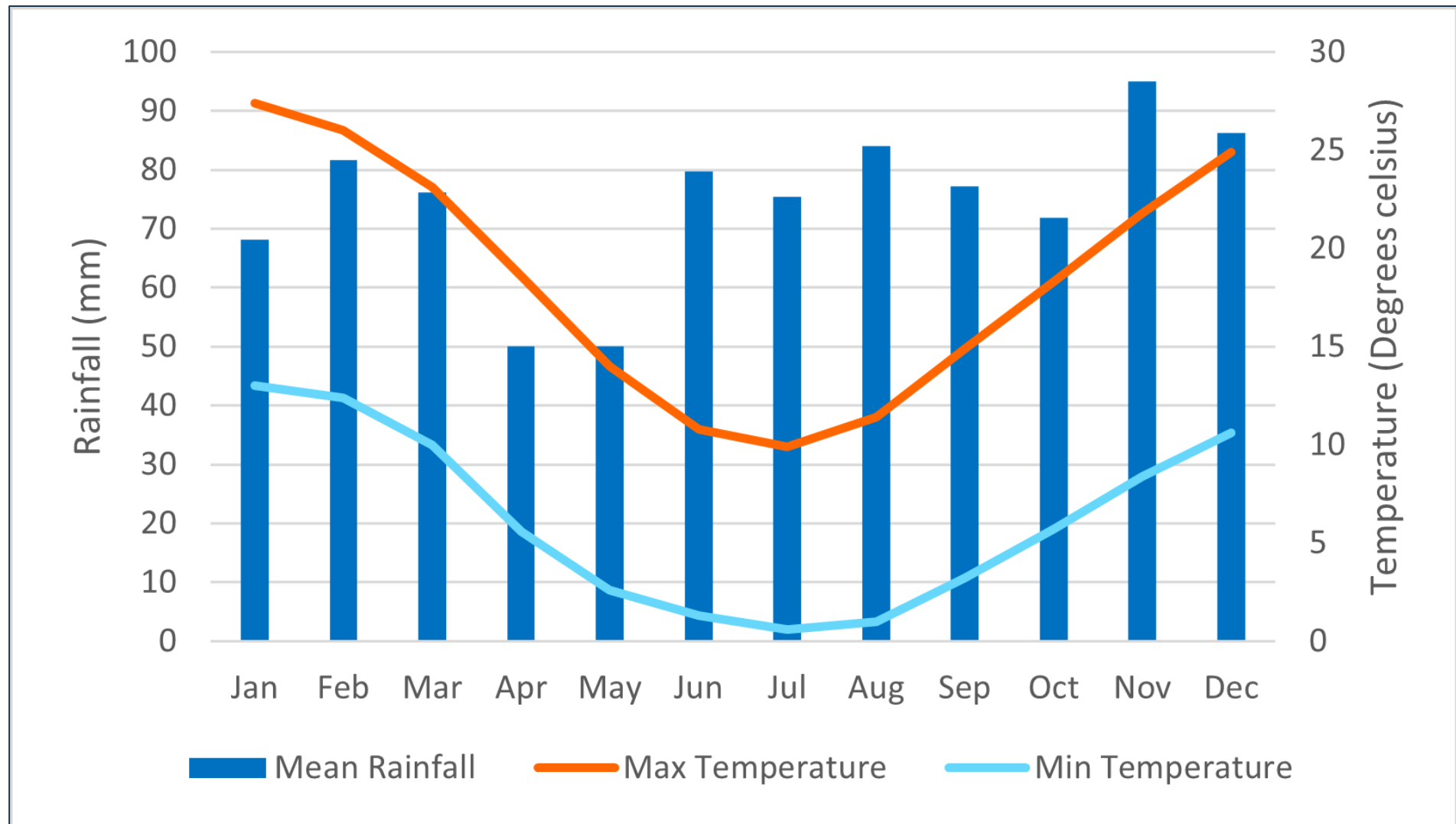
Groundwater plays an important ecological role in directly and indirectly supporting terrestrial and aquatic ecosystems. Groundwater sustains terrestrial and aquatic ecosystems by supporting vegetation and providing discharge to channels, lacustrine and palustrine wetlands, and both the estuarine and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

The probable vegetation GDE mapping for the Central Tablelands region (NSW DCCEEW 2021) identified small areas with a medium potential for GDE interaction in the northwestern section of the subject site (**Figure 4-6**). Areas with a low, medium, and high potential for GDE interaction are also predicted to occur within the wider study area. The proposal does not include the extraction of groundwater. As such, no significant impacts to GDEs are expected to result from this proposal. Mitigation measures to reduce the proposal's impact on groundwater-dependent ecosystems have been provided in **Section 7**.





Figure 4-1. NSW landscapes within the study area.



**Figure 4-2. Climate data for Orange Airport (station number: 063303), showing mean monthly rainfall and minimum/maximum temperatures (Bureau of Meteorology, 2025).**





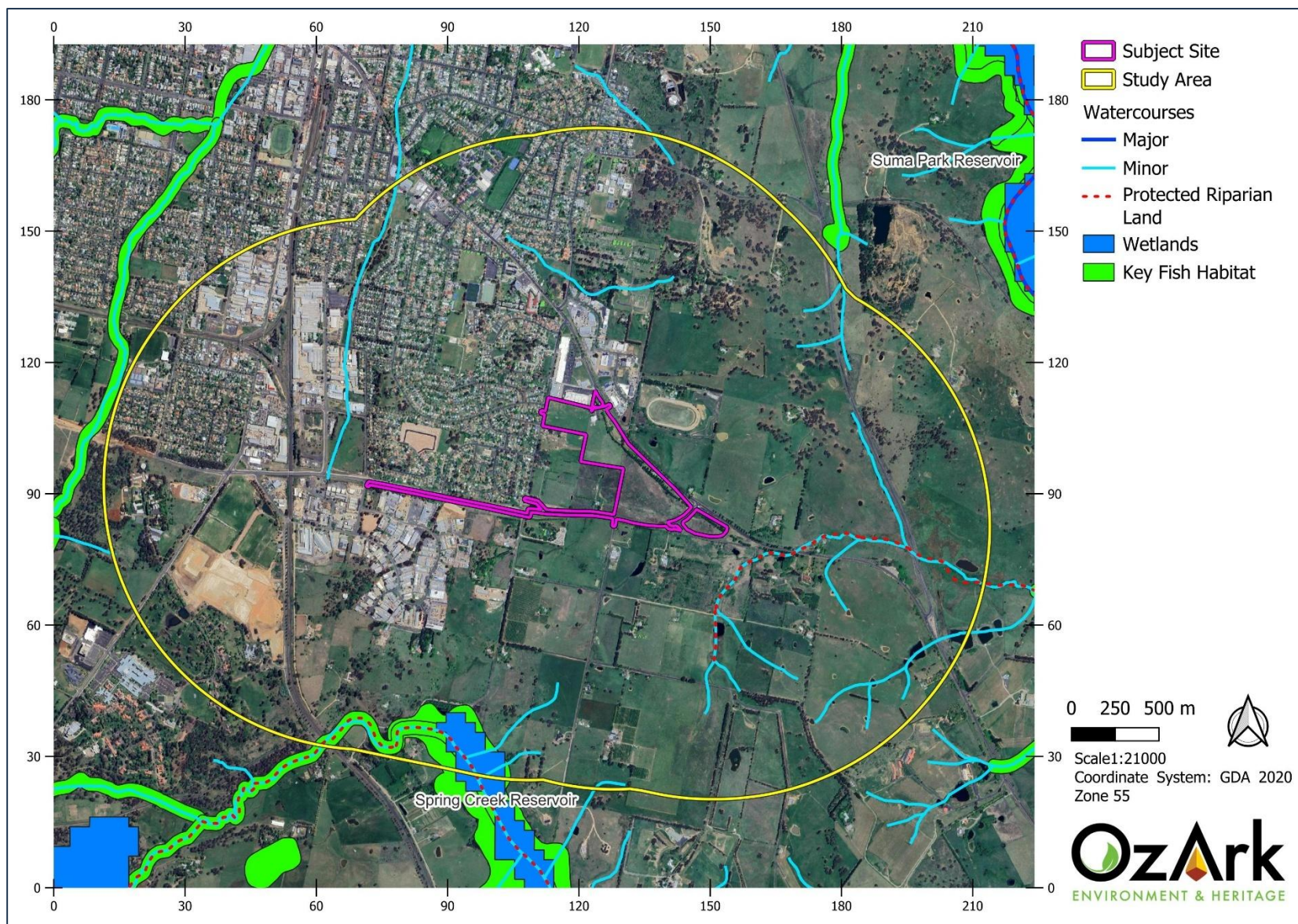
**Figure 4-3. Photograph of unmapped watercourse within the subject site.**





**Figure 4-4. Photograph of dam within the subject site.**





**Figure 4-5. Watercourses, Wetlands, Key Fish Habitat, and Protected Riparian Land within the study area.**



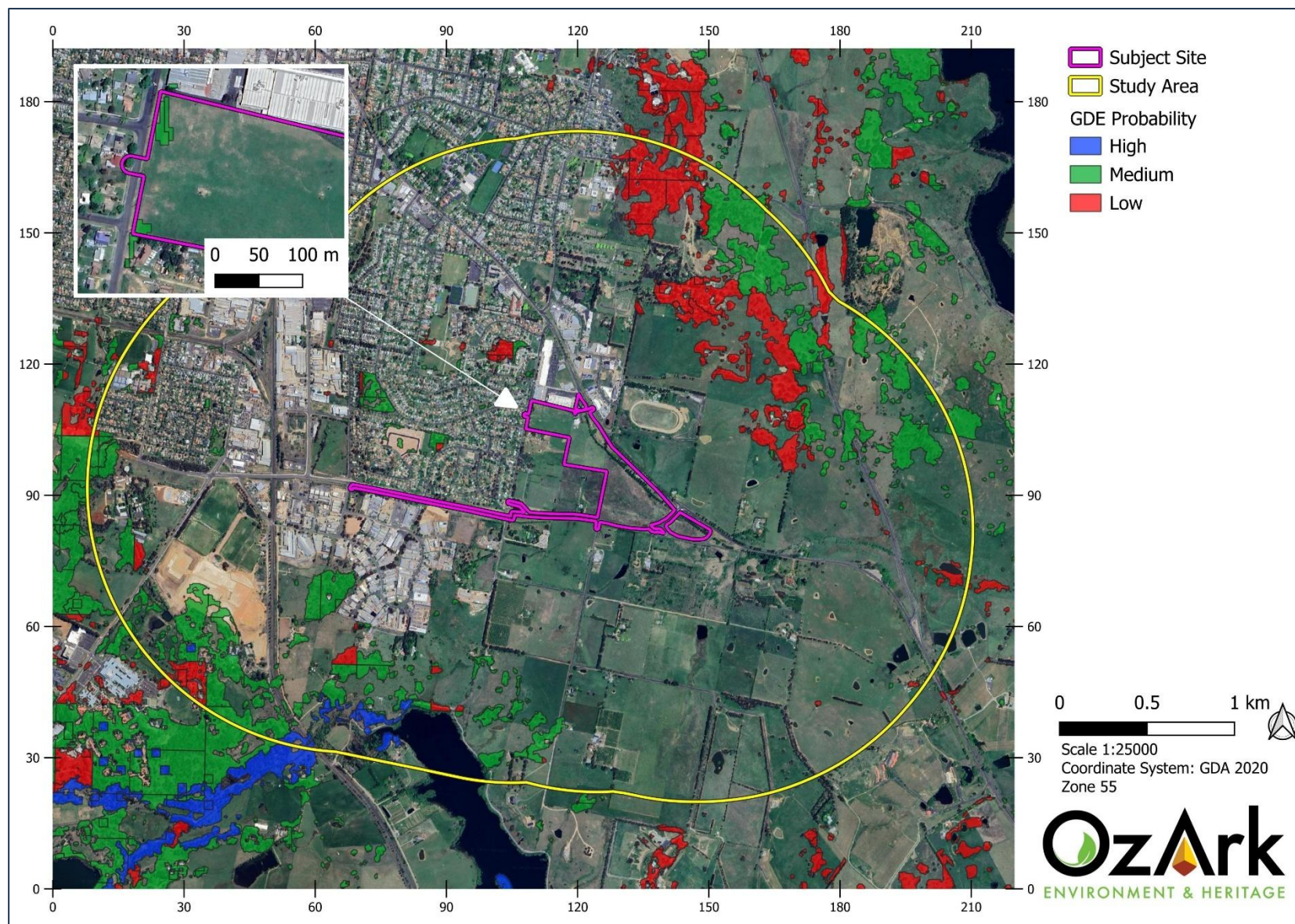


Figure 4-6. Groundwater Dependent Ecosystems (GDEs) within the study area.



## 5 RESULTS

### 5.1 PLANT COMMUNITY TYPES

Computer modelling, through the application of the NSW State Vegetation Type Map: C2.0.M2.1, predicted two PCTs within the subject site:

- PCT 3366 – Central Tableland Clay Apple Box Grassy Forest, and
- PCT 3376 – Southern Tableland Grassy Box Woodland.

Field survey results found the Regional Scale State Vegetation Mapping to be incorrect. Instead, a single PCT, which is not predictively mapped to the subject site, was recorded:

- PCT 3387 – Central West Creekflat Grassy Woodland.

In total, 0.50 ha of this PCT was recorded within the subject site. The extent of this PCT within the subject site is shown in **Table 5-1** and mapped in **Figure 5-1**. Only up to 0.18 ha of this PCT would be impacted by the proposal, thus avoiding the 0.25 ha clearing threshold for entry into the BOS. Ground disturbance and vegetation removal has not been assessed for the remaining 0.32 ha of this PCT; therefore, no ground disturbance or vegetation removal is permitted in this area (see vegetation retention zones as red hashed areas in **Figure 5-1**).

In total, 63 flora species (20 native and 43 introduced) were observed during the field surveys. No threatened flora species were detected. A list of all flora species encountered during the field survey, representative photos of the PCT, and BAM plot data (species richness and abundance) are all provided in **Appendix B**.

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

| Plant community type (PCT)                        | Threatened Ecological Community? | Area (ha) in Subject Site |
|---------------------------------------------------|----------------------------------|---------------------------|
| PCT 3387 – Central West Creekflat Grassy Woodland | Yes                              | 0.50                      |
| Total native vegetation                           |                                  | 0.50                      |
| Native vegetation to be impacted by the proposal  |                                  | 0.18                      |
| Native vegetation to be avoided                   |                                  | 0.32                      |
| Non-native vegetation                             |                                  | 28.13                     |
| <b>Total</b>                                      |                                  | <b>28.63</b>              |

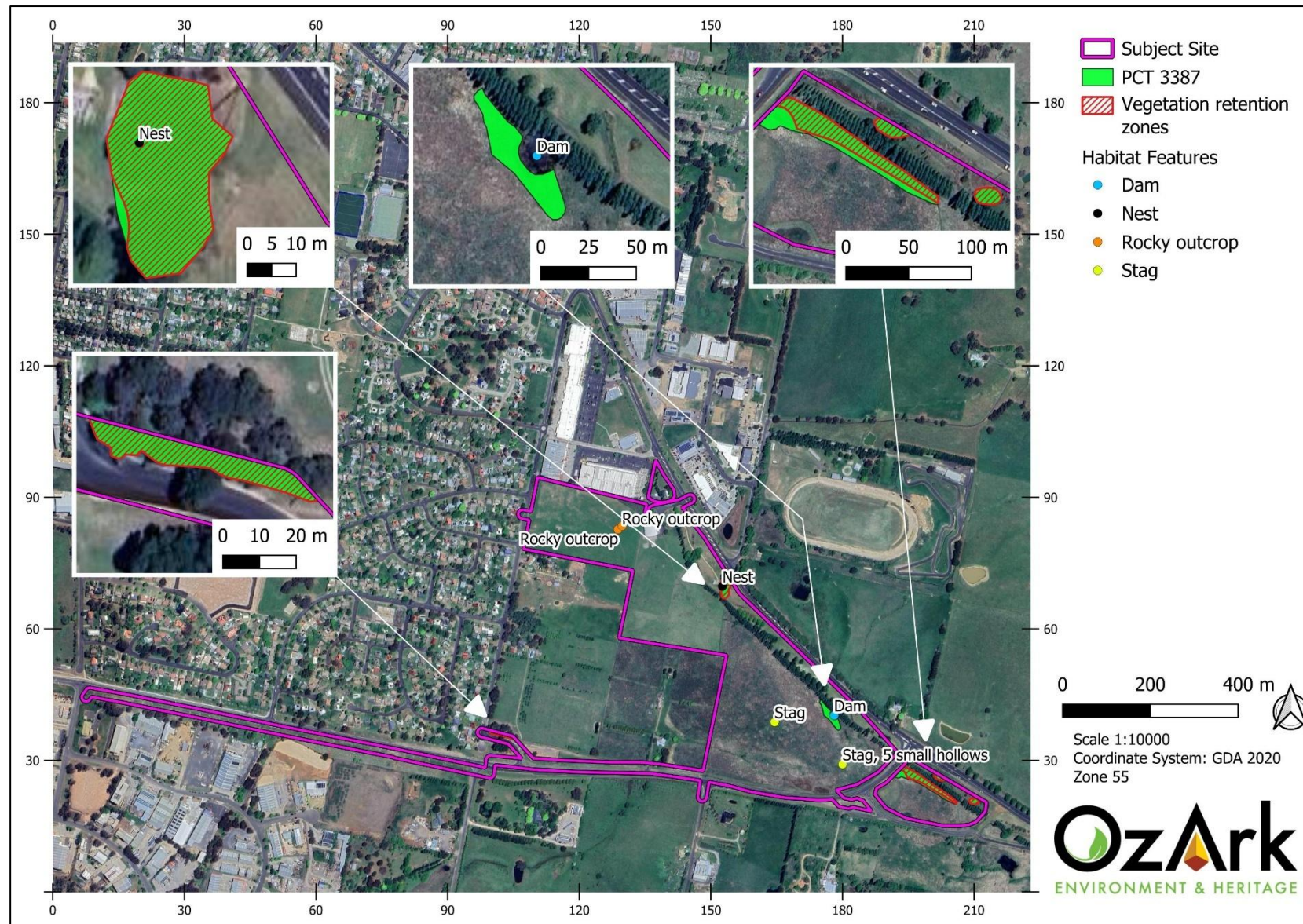


Figure 5-1. Plant Community Types and habitat features confirmed within the subject site.

## 5.2 THREATENED ECOLOGICAL COMMUNITIES

Vegetation within the subject site was assessed against the conditional criteria for each BC Act- or EPBC Act-listed TEC known, or predicted, to occur within the Orange Subregion. No TECs were found to occur within the subject site.

## 5.3 THREATENED SPECIES AND POPULATIONS

Review of the Threatened Species Profiles database has found that 69 threatened flora and fauna species listed under the BC, FM, and/or EPBC Act are predicted or are known to occur in the Orange Subregion of the South Eastern Highlands Bioregion (**Appendix A**). Based on proximity of past records, habitat requirements, and the results of the field survey (**Appendix B**), 27 species were assessed as having a moderate-to-high likelihood of occurring within the subject site. These are listed in **Table 5-2**.

In total, 39 fauna species (34 native and 5 introduced) were recorded during the initial field survey and follow up targeted surveys (**Appendix B**). One threatened mammal species was recorded within the subject site (**Figure 5-2**): the Grey-headed Flying-fox (listed as vulnerable under the BC and EPBC Acts). Two individuals were observed roosting within the planted Poplar trees located directly west of the intersection of Brabham Way and Mitchell Highway. No additional threatened fauna species were recorded during the field/targeted surveys.

In total, 63 flora species (20 native and 43 introduced) were recorded during the field survey (**Appendix B**), none of which were threatened. Due to the short duration of the survey, and the lack of detailed targeted surveys for threatened flora species, non-detection of a species cannot be considered as confirmation of the absence of that species from the subject site.

**Table 5-2. Threatened species with potential to be impacted by the proposal.**

| Scientific Name                        | Common Name                            | *NSW Status | +Comm. Status | Records within 10km |
|----------------------------------------|----------------------------------------|-------------|---------------|---------------------|
| <i>Anthochaera phrygia</i>             | Regent Honeyeater                      | E4A,P,2     | CE            | 0                   |
| <i>Aphelocephala leucopsis</i>         | Southern Whiteface                     | V,P         | V             | 1                   |
| <i>Apus pacificus</i>                  | Fork-tailed Swift                      | P           | C,J,K         | 2                   |
| <i>Artamus cyanopterus cyanopterus</i> | Dusky Woodswallow                      | V,P         |               | 136                 |
| <i>Calidris acuminata</i>              | Sharp-tailed Sandpiper                 | P           | C,J,K         | 4                   |
| <i>Climacteris picumnus victoriae</i>  | Brown Treecreeper (eastern subspecies) | V,P         | V             | 17                  |
| <i>Daphoenositta chrysoptera</i>       | Varied Sittella                        | V,P         |               | 7                   |
| <i>Gallinago hardwickii</i>            | Latham's Snipe                         | P           | J,K           | 7                   |
| <i>Hirundapus caudacutus</i>           | White-throated Needletail              | V,P         | V,C,J,K       | 0                   |

| Scientific Name                        | Common Name                    | *NSW Status | +Comm. Status | Records within 10km |
|----------------------------------------|--------------------------------|-------------|---------------|---------------------|
| <i>Melanodryas cucullata cucullata</i> | South-eastern Hooded Robin     | E1,P        | E             | 2                   |
| <i>Neophema pulchella</i>              | Turquoise Parrot               | V,P,3       |               | 3                   |
| <i>Ninox connivens</i>                 | Barking Owl                    | V,P,3       |               | 2                   |
| <i>Ninox strenua</i>                   | Powerful Owl                   | V,P,3       |               | 1                   |
| <i>Petroica boodang</i>                | Scarlet Robin                  | V,P         |               | 10                  |
| <i>Petroica phoenicea</i>              | Flame Robin                    | V,P         |               | 8                   |
| <i>Pyrrholaemus sagittatus</i>         | Speckled Warbler               | V,P         |               | 10                  |
| <i>Rostratula australis</i>            | Australian Painted Snipe       | E1,P        | E             | 1                   |
| <i>Stagonopleura guttata</i>           | Diamond Firetail               | V,P         | V             | 12                  |
| <i>Cercartetus nanus</i>               | Eastern Pygmy-possum           | V,P         |               | 0                   |
| <i>Chalinolobus dwyeri</i>             | Large-eared Pied Bat           | V,P         | E             | 1                   |
| <i>Dasyurus maculatus</i>              | Spotted-tailed Quoll           | V,P         | E             | 2                   |
| <i>Miniopterus orianae oceanensis</i>  | Large Bent-winged Bat          | V,P         |               | 5                   |
| <i>Pteropus poliocephalus</i>          | Grey-headed Flying-fox         | V,P         | V             | 55                  |
| <i>Varanus rosenbergi</i>              | Rosenberg's Goanna             | V,P         |               | 0                   |
| <i>Eucalyptus aggregata</i>            | Black Gum                      | V           | V             | 4                   |
| <i>Eucalyptus canobolensis</i>         | Silver-Leaf Candlebark         | E1          | E             | 4                   |
| <i>Eucalyptus nicholii</i>             | Narrow-leaved Black Peppermint | V           | V             | 1                   |

\*Listed under the BC Act, where P = Protected, V = Vulnerable, E1 = Endangered, and E4A = Critically Endangered

+Listed under the EPBC Act, where V = Vulnerable, E = Endangered, and CE = Critically Endangered





Figure 5-2. Location of the Grey-headed Flying-fox recorded during the field surveys.

## **5.4 AQUATIC ECOLOGICAL COMMUNITIES**

Endangered aquatic ecological communities are determined by the NSW Fisheries Scientific Committee and listed under the FM Act as aquatic systems that have undergone a very large reduction in ecological function, geographic distribution or genetic diversity, and continue to be affected by a threatening process (NSW Department of Primary Industries, 2016).

The subject site is not located within the distribution of any endangered aquatic communities.

## **5.5 HABITAT TREES AND FEATURES**

Very few habitat features remain within the subject site. One stag (standing dead tree) with no hollows and one stag containing five small hollows are likely to be impacted by the proposal. There was a single bird's nest detected during the field survey, though this was located within the road corridor and is not expected to be impacted. Additionally, there are some boulders which have been placed within the paddocks that may provide habitat for reptiles and microbats. Although these boulders are unable to be retained in their current location, it is recommended that where possible, they are relocated to a suitable location within the subject site.

One dam surrounded by wet sedges may provide temporary habitat for a variety of water birds. However, given the site lies in the middle of two large wetlands (Suma Park and Spring Creek Reservoir), the dam likely contributes little value to the habitat of water birds within the search area.

Habitat features are mapped in **Figure 5-1** and pictured in **Figure 5-3**.





**Figure 5-3. Photographs of habitat features within the subject site. Top: boulders and surface rock. Bottom left: hollow-bearing stag. Bottom right: dam.**

## **5.6 WILDLIFE CONNECTIVITY CORRIDORS**

The subject site consists of largely degraded and fragmented land already cleared for farming. The surrounding areas have already been cleared for urban, rural, and industrial industries, and do not connect to any remnant vegetation.

The subject site is situated in the middle of two wetlands (Suma Park and Spring Creek Reservoirs). Therefore, the small area of wetland vegetation may provide temporary refuge for species traversing between the two wetlands. However, numerous farm dams (most of which are larger than the dam within the subject site) also occur between these wetlands.

## 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 four wetlands of international importance, two TECs, 41 threatened species, eight migratory species and 17 marine species that could possibly occur in the study area (**Appendix A**). A summary of these matters and whether the proposal is likely to impact them is provided in **Table 5-3**.

**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, <b>Appendix E</b> ) |
| Any impacts on listed migratory species?                                                                    | Yes (non-significant, <b>Appendix E</b> ) |
| 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                                        |

### 5.7.1 EPBC Listed Critically Endangered and Endangered Species

Critically endangered and endangered species with the potential to be impacted by the proposal are listed below in **Table 5-4**. See **Appendix A** for a full list of species and **Appendix E** for a full analysis of potential species.

**Table 5-4. EPBC Listed Critically Endangered and Endangered Species**

| Class | Scientific Name                        | Common Name                | Comm. status+ | Records within 10 km |
|-------|----------------------------------------|----------------------------|---------------|----------------------|
| Aves  | <i>Anthochaera phrygia</i>             | Regent Honeyeater          | CE            | 0                    |
| Aves  | <i>Melanodryas cucullata cucullata</i> | South-eastern Hooded Robin | E             | 2                    |
| Aves  | <i>Rostratula australis</i>            | Australian Painted Snipe   | E             | 1                    |
| Aves  | <i>Chalinolobus dwyeri</i>             | Large-eared Pied Bat       | E             | 1                    |
| Aves  | <i>Dasyurus maculatus</i>              | Spotted-tailed Quoll       | E             | 2                    |
| Flora | <i>Eucalyptus canobolensis</i>         | Silver-Leaf Candlebark     | E             | 4                    |

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



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## 6 IMPACT ASSESSMENT

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### 6.1 DIRECT IMPACTS

#### 6.1.1 Impacts on native vegetation and threatened ecological communities

The subject site is 28.63 ha in area, of which 28.13 ha is free from native vegetation (non-native vegetation and bare ground). The remaining 0.50 ha consists of native vegetation (PCT 3387), of which 0.18 ha would be removed or disturbed by the proposal and the remainder would be retained. No patches of vegetation within the subject site meet the conditional criteria to be considered a TEC.

Clearing of native vegetation is a Key Threatening Process (KTP) under the BC Act (see **Appendix F**). However, due to the relatively low magnitude of clearing required for this proposal, the impact is not considered to be significant. Nonetheless, efforts should be made to reduce the removal of native vegetation where possible (see **Section 7**).

#### 6.1.2 Impact to threatened fauna and associated habitat

Twenty-four threatened or migratory fauna species or populations listed under the BC, FM and/or EPBC Act were considered to have a moderate, or greater, potential of occurring on the subject site (**Table 5-2**). One threatened mammal species was recorded within the subject site: the Grey-headed Flying-fox (listed as vulnerable under the BC and EPBC Acts).

Very few habitat features remain within the subject site (**Figure 5-1**). One stag with no hollows and one stag containing five small hollows are likely to be impacted by the proposal. There was a single bird's nest detected during the field survey, though this was located within the road corridor and is not expected to be impacted. There are some boulders within the paddocks that may provide habitat for reptiles and microbats. One dam surrounded by wet sedges may provide temporary habitat for a variety of water birds.

It is recommended that the boulders are relocated to a suitable location within the subject site in the case they are unable to be retained in their current location. Additionally, where possible, any smaller bushrock and deadwood should be left in situ or relocated to a suitable place nearby.

BC and EPBC tests of significance (if applicable) were applied to all 24 species (**Appendices D-E**). Based on these assessments, and provided the mitigation measures outlined in **Section 7** are adhered to, the results concluded that the proposal would not constitute a significant impact on these fauna species/populations or their habitats.

#### 6.1.3 Impact to threatened flora

Three threatened plant species or populations were assessed as having a moderate, or greater, potential of occurring within the subject site (**Table 5-2**), though none were detected during the

field survey. Due to the lack of detailed flora targeted surveys, non-detection cannot be considered as confirmation of their absence. However, due to the high level of disturbance within the site, it is not expected that any significant impacts to threatened flora will occur as a result of the proposal (**Appendices D-E**).

BC and EPBC tests of significance (if applicable) were applied to each species. Based on these assessments and provided the mitigation measures outlined in **Section 7** are adhered to, the results concluded that the proposal would not constitute a significant impact on these flora species/populations or their habitats.

#### **6.1.4 Injury and mortality of protected species**

During the construction phase of the proposal, the removal of rocks, logs, and trees (live or dead) is likely to disturb or injure fauna. In addition, fauna may become trapped in or may choose to shelter in machinery that is stored in the study area overnight. If these animals were to remain inside the machinery, or under the wheels or tracks, they may be injured or die once the machinery is in use.

Mitigation measures designed to reduce an injury and mortality of fauna are provided in **Section 7**.

### **6.2 INDIRECT IMPACTS**

#### **6.2.1 Wildlife connectivity and habitat fragmentation**

The subject site consists of largely degraded and fragmented land already cleared for farming. The surrounding areas have already been cleared for urban, rural, and industrial industries, and do not connect to any remnant vegetation.

The subject site is situated in the middle of two wetlands (Suma Park and Spring Creek Reservoirs). Therefore, the small area of wetland vegetation may provide temporary refuge for species traversing between the two wetlands. However, numerous farm dams (most of which are larger than the dam within the subject site) also occur between these wetlands.

Mitigation measures designed to reduce the impact of the proposal on wildlife connectivity and habitat fragmentation are provided in **Section 7**.

#### **6.2.2 Edge effects on adjacent native vegetation and habitat**

The subject site occurs within an area that is currently subject to a high level of edge effects from historical land clearing, residential development, and the construction and maintenance of infrastructure. The clearance of vegetation will further increase the impacts of edge effects on the adjacent native vegetation. This may result from changes in abiotic factors (e.g., the microclimate)

or from biotic factors associated with colonisation. Weed encroachment, which is a significant edge effect, is considered further below.

### 6.2.3 Invasion and spread of weeds

Proliferation of weed species is an indirect impact (i.e. not a direct result) of proposal activities. The most likely causes of weed dispersal and importation associated with the proposal include earthworks, movement of soil, and attachment of seed (and other propagules) to vehicles and machinery.

'Invasion and establishment of exotic vines and scramblers', 'Invasion and establishment of Scotch Broom (*Cytisus scoparius*)', 'Invasion of native plant communities by African Olive *Olea europaea subsp. cuspidata*', 'Invasion of native plant communities by *Chrysanthemoides monilifera*', 'Invasion of native plant communities by exotic perennial grasses' and 'Invasion, establishment and spread of Lantana' are Key Threatening Processes under the BC Act (see **Appendix H**).

In total, nine significant weeds were recorded during the field survey (**Table 6-1**); all nine species are listed as high-threat exotic species (HTE) under the Biodiversity Assessment Method (2020), two are listed Weeds of National Significance (WoNS) and two as priority weeds (PW) for the Central Tablelands. See **Appendix B** for a full list of exotic species recorded on site.

**Table 6-1. Significant weeds recorded during the site survey.**

| Scientific Name             | Common Name        | HTE | WoNS | PW  |
|-----------------------------|--------------------|-----|------|-----|
| <i>Carthamus lanatus</i>    | Saffron thistle    | Yes | No   | No  |
| <i>Crataegus monogyna</i>   | Hawthorn           | Yes | No   | No  |
| <i>Hypericum perforatum</i> | St. Johns Wort     | Yes | No   | Yes |
| <i>Paspalum dilatatum</i>   |                    | Yes | No   | No  |
| <i>Populus nigra</i>        | Green poplar       | Yes | No   | No  |
| <i>Rosa rubiginosa</i>      | Sweet Briar        | Yes | No   | No  |
| <i>Rubus fruticosus</i>     | Blackberry complex | Yes | Yes  | Yes |
| <i>Salix fragilis</i>       | Crack Willow       | Yes | Yes  | No  |
| <i>Xanthium spinosum</i>    | Bathurst Burr      | Yes | No   | No  |

Mitigation measures designed to limit the spread of weeds are provided in **Section 7**. If these mitigation measures are followed, the likelihood of invasion and spread of weeds is low.

### 6.2.4 Invasion and spread of pests

The study area is likely already inhabited by numerous pest species such as the red fox (*Vulpes vulpes*), the European rabbit (*Oryctolagus cuniculus*), and the feral cat (*Felis catus*). Methods designed to mitigate the impacts and spread of pest species are provided in **Section 7**.

### 6.2.5 Invasion and spread of pathogens and disease

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

- Infection of frogs by amphibian chytrid fungus causing the disease chytridiomycosis (BC and EPBC Act).
- Infection of native plants by *Phytophthora cinnamomi* (BC and EPBC Act)
- Introduction and establishment of exotic rust fungi of the order Pucciniales pathogenic 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 during establishment of the pipeline. Mitigation measures designed to limit the invasion and spread of pathogens and disease are provided in **Section 7**. If these mitigation measures are followed, the likelihood of invasion and spread of pathogens and disease is low.

### 6.2.6 Noise, light and vibration

Some noise and vibration impacts will occur during the construction and operational phase of this proposal, however given the proposal's proximity to the town of Orange and the Mitchell Highway and Brabham Way, any additional sources of noise and vibration resulting from construction will likely not impact local biodiversity. Several mitigation measures are provided in **Section 7**.

## 6.3 CUMULATIVE IMPACTS

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

In general, the accumulating impacts of historic vegetation clearing for agriculture, rural development, and development and maintenance of infrastructure have contributed to the loss of biodiversity in the South Eastern Highlands Bioregion. Ongoing projects in the region such as the construction of the Brown's Creek to Orange Gas pipeline and the Macquarie River Water Pipeline, will continue to reduce remaining biodiversity values into the future. These development projects, in conjunction with the Redleaf proposal, have the potential to impact biodiversity within the region. However, given the relatively small scale of the proposal (0.18 ha of native vegetation) its contribution to the regional decline in biodiversity would be negligible.



## **6.4 IMPACT SUMMARY**

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

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## 7 AVOID, MINIMISE AND MITIGATE IMPACTS

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

1. Avoid and minimise impacts as the highest priority
2. Mitigate impacts where avoidance is not feasible or practicable in the circumstance
3. Offset where residual, significant unavoidable impacts would occur

### 7.1 AVOIDANCE AND MINIMISATION

The following impact avoidance and minimisation measures were implemented during the design phase:

- To avoid exceeding the clearing threshold and triggering entry into the BOS, Landcom reduced the proposed impact on native vegetation from 0.50 ha to 0.18 ha.

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 consolidated within a defined impact area to minimise the overall impact footprint.
- The impact footprint will be minimised by restricting access across the site to the defined development footprint, including avoiding unnecessary vehicle and personnel movements across unused land.

### 7.2 MITIGATION MEASURES

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

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

**Table 7-1. Mitigation measures and environmental safeguards.**

| Aspect                        | Environmental safeguards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Responsibility         | Timing                         |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|--------------------------------|
| General                       | <ul style="list-style-type: none"> <li>Any change in design outside the assessed impact footprint (subject site) will require further ecological survey and assessment.</li> <li>All personnel working on site will be made aware of the environmental sensitivities of the site and safeguards/mitigations to be implemented, e.g., site induction and 'toolbox' style briefings. This includes all native vegetation and potential threatened flora and fauna that may be present (see <b>Table 5-2</b><b>Table 5-3</b>). Evidence of all personnel receiving an induction will be kept on file (e.g., signed induction sheets).</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Proponent              | Pre-construction, construction |
| Clearing of native vegetation | <ul style="list-style-type: none"> <li>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&amp;A Act. Evidence of all personnel receiving this induction would be kept on file (signed induction sheets etc.).</li> <li>All construction personnel should be inducted to be aware of the potential presence of those threatened flora species listed in <b>Table 5-2</b>. If any threatened flora species are encountered, construction must stop in the immediate area and an ecologist should be consulted for advice and guidance before proceeding with works.</li> <li>Where possible, the hollow-bearing stag should be avoided. If it needs to be removed a fauna spotter catcher should be present to ensure that no animals are injured.</li> <li>Any hollows that are removed may be offset with the installation of an equivalent number of nest boxes in remnant trees.</li> <li>Before starting work, a physical vegetation clearing boundary at the approved clearing limit is to be demarcated and implemented. The delineation of such a boundary may include the use of temporary fencing, parawebbing or similar. This boundary will ensure areas of PCT 3387 which are to be avoided (<b>Figure 5-1</b>), will not be impacted by the proposal.</li> <li>Vegetation would be removed in such a way as to avoid damage to surrounding vegetation.</li> <li>Groundcover disturbance would be kept to a minimum.</li> <li>Any stockpile and compound sites should be located using the following criteria: <ul style="list-style-type: none"> <li>At least 40 m away from the nearest waterway</li> <li>In areas of low ecological conservation significance (i.e. previously disturbed land)</li> <li>On relatively level ground</li> <li>Outside the one in 10-year Average Recurrence Interval (ARI) floodplain</li> </ul> </li> <li>Stockpiling materials and equipment and parking vehicles would be avoided within the dripline (extent of foliage cover) of any tree.</li> </ul> | Proponent / contractor | Pre-construction, construction |

| Aspect                                                  | Environmental safeguards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Responsibility | Timing                            |
|---------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----------------------------------|
|                                                         | <ul style="list-style-type: none"> <li>Where possible, vegetation to be removed would be mulched on-site and re-used to stabilise disturbed areas.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                |                                   |
| Accidental death of fauna                               | <ul style="list-style-type: none"> <li>A fauna spotter catcher should be present during the clearing of any habitat features to ensure that no animals are injured. The fauna spotter catcher should conduct a preclearance check of all fallen timber, bushrock, surface debris, and habitat trees to be removed.</li> <li>Where fauna is encountered, the 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.</li> </ul>                                                                                                                                                                                                                                          | Contractor     | Construction                      |
| Threatened Species                                      | <ul style="list-style-type: none"> <li>Provide identification resources for personnel to enable identification of threatened species that might occur on the work site, i.e. those species listed in <b>Table 5-2</b>.</li> <li>Construction work to occur only during daylight hours to avoid indirect impacts on threatened fauna such as vehicle strikes.</li> <li>If threatened fauna or flora species are discovered, stop works immediately and contact a suitably qualified ecologist for advice.</li> </ul>                                                                                                                                                                                                                                                             | Contractor     | Pre-construction and construction |
| Light                                                   | <ul style="list-style-type: none"> <li>Any artificial lighting to be used during construction or operation should follow the Best Practice Lighting Design within the National Light Pollution Guidelines (DoEE 2020). In particular, all lighting should be kept close to the ground, directed, and shielded to avoid light spill.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                  | Contractor     | Construction                      |
| Soil Management                                         | <ul style="list-style-type: none"> <li>Install erosion and sediment controls in line Best Practice Erosion and Sediment Control (IECA, 2008).</li> <li>Where practicable, spread mulch made from vegetation cleared on site on areas of bare soil to stabilise, preventing dust and erosion.</li> <li>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.</li> <li>Erosion and sediment control measures are not to be removed until the works are complete and areas are stabilised.</li> <li>Stockpile topsoil removed to be redistributed across site at completion of construction.</li> <li>Implement dust suppression activities.</li> </ul> | Contractor     | Pre-construction and construction |
| Introduction and spread of priority weeds and pathogens | <ul style="list-style-type: none"> <li>Construction crew should be briefed on the identification of priority weeds that occur on site during inductions (see <b>Table 6-1</b>).</li> <li>If declared priority weeds are identified during construction they will be managed according to the requirements of the <i>Biosecurity Act 2015</i>.</li> <li>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.</li> </ul>                                                                                                                                                                                                                    | Contractor     | Construction                      |



| Aspect                                                 | Environmental safeguards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Responsibility        | Timing                         |
|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------|
|                                                        | <ul style="list-style-type: none"> <li>Machinery will be inspected by designated personnel following washdown to ensure no soil, mud, or vegetative material remains. Records of inspections to be maintained.</li> <li>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.</li> <li>Keep records of any weed control activities that take place.</li> </ul> |                       |                                |
| Disturbance to fallen timber, dead wood, and bush rock | <ul style="list-style-type: none"> <li>Any fallen timber, dead wood, and bush rock encountered on site would be left <i>in situ</i> (where possible) or relocated to a suitable place nearby.</li> <li>Rock would be removed with suitable machinery so as not to damage the underlying rock or result in excessive soil disturbance.</li> </ul>                                                                                                                                                                                                                                                                      | Contractor            | Construction                   |
| Exacerbating invasive fauna                            | <ul style="list-style-type: none"> <li>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.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                         | Contractor            | Construction                   |
| Increased risk of fire                                 | <ul style="list-style-type: none"> <li>If any "hot works" are to be undertaken, these activities will not take place on days of extreme fire danger (where possible).</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                      | Contractor            | Construction                   |
| Aquatic habitat                                        | <ul style="list-style-type: none"> <li>Consideration will be given to undertaking the works during low (or no) flow conditions where possible, to minimise impacts on aquatic organisms.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                   | Proponent, contractor | Pre-construction, construction |

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## 8 CONCLUSION

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In total, 0.50 ha of native vegetation was detected within the subject site. This native vegetation belongs to a single PCT:

- PCT 3387 – Central West Creekflat Grassy Woodland.

Only up to 0.18 ha of this PCT would be impacted by the proposal, thus avoiding the 0.25 ha clearing threshold for entry into the BOS. Ground disturbance and vegetation removal has not been assessed within the remaining 0.32 ha of this PCT; therefore, no ground disturbance or vegetation removal is permitted in this area.

This PCT was assessed against the threshold criteria for all TECs listed under the BC and EPBC Acts recorded for the relevant IBRA subregions. No TECs were found to occur within the subject site.

One unmapped watercourse, which appears to be an artificially created drainage line, and one artificial dam occur within the site. No naturally occurring watercourses occur within the subject site and no major perennial watercourses occur within the study area. As such, no areas recognised as KFH by the DPI - Fisheries, or PRL, as mapped by the NSW DCCEEW, occur within the subject site. Furthermore, considering the closest natural watercourse to the (Dairy Creek) is located 220 m from the subject site, a permit under the FM Act is not required.

Very few habitat features remain within the subject site. One stag (standing dead tree) with no hollows and one stag containing five small hollows are likely to be impacted by the proposal. There was a single bird's nest detected during the field survey, though this was located within the road corridor and is not expected to be impacted. Additionally, there are some boulders which have been placed within the paddocks that may provide habitat for reptiles and microbats. Although these boulders are unable to be retained in their current location, it is recommended that where possible, they are relocated to a suitable location within the subject site. One dam surrounded by wet sedges may provide temporary habitat for a variety of water birds. However, given the site lies in the middle of two large wetlands (Suma Park and Spring Creek Reservoir), the dam likely contributes little value to the habitat of water birds within the search area.

Targeted fauna surveys were conducted in October and December 2024. These surveys targeted:

- Booroolong Frog (*Litoria booroolongensis*) – listed as endangered under the BC and EPBC Acts
- Yellow-spotted tree frog (*Litoria castanea*) – listed as critically endangered under the BC and EPBC Acts

- Little Eagle (*Hieraaetus morphnoides*) – listed as vulnerable under the BC Act
- Superb Parrot (*Polytelis swainsonii*) – listed as vulnerable under the BC and EPBC Acts
- Koala (*Phascolarctos cinereus*) – listed as endangered under the BC and EPBC Acts
- Pygmy Possum (*Cercartetus nanus*) – listed as vulnerable under the BC Act
- Squirrel Glider (*Petaurus norfolcensis*) – listed as vulnerable under the BC Act
- Pink-tailed Legless Lizard (*Aprasia parapulchella*) – listed as vulnerable under the BC and EPBC Acts

None of the target species were observed within the subject. However, one threatened mammal species was recorded within the subject site: the Grey-headed Flying-fox (listed as vulnerable under the BC and EPBC Acts). Two individuals were observed roosting within the planted Poplar trees located directly west of the intersection of Brabham Way and Mitchell Highway. No additional threatened fauna species were recorded during the field/targeted surveys.

Sixty-three flora species were detected during the field surveys. No flora species or populations listed as threatened under the BC or EPBC Act were observed. Given the short duration of the field survey, and the lack of targeted surveys, the non-detection of threatened flora species cannot be considered as confirmation of their absence. Based on the proximity of past records, habitat requirements, and the results of the field surveys, three threatened flora species were assessed as having a moderate-to-high likelihood of occurring at the subject site. Tests of significance have been conducted for these species under the BC and EPBC Act; these tests concluded that the proposal would not result in a significant impact to any threatened flora species.

Thirty-nine fauna species were detected during the initial field survey and follow up targeted surveys. One threatened mammal species was recorded on the edge of the subject site: the Grey-headed Flying-fox (listed as vulnerable under the BC and EPBC Acts). Based on the proximity of past records, habitat requirements, and the results of the field survey, 24 threatened and/or migratory fauna species were assessed as having a moderate-to-high likelihood of occurring at the subject site. Tests of significance have been conducted for these species under the BC, and/or EPBC Act; these tests concluded that the proposal would not result in a significant impact to any threatened fauna species.

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 Scheme is triggered by a changed scope, additional field work and reporting completed according to the BAM may be required.

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## APPENDIX A – DATABASE SEARCH RESULTS

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### EPBC ACT PROTECTED MATTERS REPORT

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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: 17-Nov-2025

[Summary](#)

[Details](#)

[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

## Summary

### Matters of National Environment Significance

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

|                                                               |      |
|---------------------------------------------------------------|------|
| <a href="#">World Heritage Properties:</a>                    | None |
| <a href="#">National Heritage Places:</a>                     | None |
| <a href="#">Wetlands of International Importance (Ramsar)</a> | 4    |
| <a href="#">Great Barrier Reef Marine Park:</a>               | None |
| <a href="#">Commonwealth Marine Area:</a>                     | None |
| <a href="#">Listed Threatened Ecological Communities:</a>     | 2    |
| <a href="#">Listed Threatened Species:</a>                    | 41   |
| <a href="#">Listed Migratory Species:</a>                     | 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.

|                                                                     |      |
|---------------------------------------------------------------------|------|
| <a href="#">Commonwealth Lands:</a>                                 | None |
| <a href="#">Commonwealth Heritage Places:</a>                       | None |
| <a href="#">Listed Marine Species:</a>                              | 17   |
| <a href="#">Whales and Other Cetaceans:</a>                         | None |
| <a href="#">Critical Habitats:</a>                                  | None |
| <a href="#">Commonwealth Reserves Terrestrial:</a>                  | None |
| <a href="#">Australian Marine Parks:</a>                            | None |
| <a href="#">Habitat Critical to the Survival of Marine Turtles:</a> | None |

### Extra Information

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

|                                                         |      |
|---------------------------------------------------------|------|
| <a href="#">State and Territory Reserves:</a>           | None |
| <a href="#">Regional Forest Agreements:</a>             | None |
| <a href="#">Nationally Important Wetlands:</a>          | None |
| <a href="#">EPBC Act Referrals:</a>                     | 1    |
| <a href="#">Key Ecological Features (Marine):</a>       | None |
| <a href="#">Biologically Important Areas:</a>           | None |
| <a href="#">Bioregional Assessments:</a>                | None |
| <a href="#">Geological and Bioregional Assessments:</a> | None |



## Details

### Matters of National Environmental Significance

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

| Ramsar Site Name                                                      | Proximity                              |
|-----------------------------------------------------------------------|----------------------------------------|
| <a href="#">Banrock station wetland complex</a>                       | 800 - 900km upstream from Ramsar site  |
| <a href="#">Riverland</a>                                             | 700 - 800km upstream from Ramsar site  |
| <a href="#">The coorong, and lakes alexandrina and albert wetland</a> | 900 - 1000km upstream from Ramsar site |
| <a href="#">The macquarie marshes</a>                                 | 200 - 300km 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                         |
|-----------------------------------------------------------------------------------------------------|-----------------------|---------------------------------------|
| <a href="#">Natural Temperate Grassland of the South Eastern Highlands</a>                          | Critically Endangered | Community likely to occur within area |
| <a href="#">White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland</a> | 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                                    |
|-------------------------------------|-----------------------|--------------------------------------------------|
| <b>BIRD</b>                         |                       |                                                  |
| <a href="#">Anthochaera phrygia</a> |                       |                                                  |
| Regent Honeyeater [82338]           | Critically Endangered | Species or species habitat may occur within area |

| Scientific Name                                                                                          | Threatened Category   | Presence Text                                          |
|----------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------|
| <a href="#"><u>Aphelocephala leucopsis</u></a><br>Southern Whiteface [529]                               | Vulnerable            | Species or species habitat likely to occur within area |
| <a href="#"><u>Calidris acuminata</u></a><br>Sharp-tailed Sandpiper [874]                                | Vulnerable            | Species or species habitat may occur within area       |
| <a href="#"><u>Calidris ferruginea</u></a><br>Curlew Sandpiper [856]                                     | Critically Endangered | Species or species habitat may occur within area       |
| <a href="#"><u>Callocephalon fimbriatum</u></a><br>Gang-gang Cockatoo [768]                              | Endangered            | Species or species habitat may occur within area       |
| <a href="#"><u>Calyptrorhynchus lathamii lathamii</u></a><br>South-eastern Glossy Black-Cockatoo [67036] | Vulnerable            | Species or species habitat may occur within area       |
| <a href="#"><u>Climacteris picumnus victoriae</u></a><br>Brown Treecreeper (south-eastern) [67062]       | Vulnerable            | Species or species habitat likely to occur within area |
| <a href="#"><u>Falco hypoleucos</u></a><br>Grey Falcon [929]                                             | Vulnerable            | Species or species habitat may occur within area       |
| <a href="#"><u>Gallinago hardwickii</u></a><br>Latham's Snipe, Japanese Snipe [863]                      | Vulnerable            | Species or species habitat likely to occur within area |
| <a href="#"><u>Grantiella picta</u></a><br>Painted Honeyeater [470]                                      | Vulnerable            | Species or species habitat likely to occur within area |
| <a href="#"><u>Hirundapus caudacutus</u></a><br>White-throated Needle-tail [682]                         | Vulnerable            | Species or species habitat known to occur within area  |
| <a href="#"><u>Lathamus discolor</u></a><br>Swift Parrot [744]                                           | Critically Endangered | Species or species habitat may occur within area       |

| Scientific Name                                                                                                                                 | Threatened Category   | Presence Text                                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------|
| <a href="#">Leipoa ocellata</a><br>Malleefowl [934]                                                                                             | Vulnerable            | Species or species habitat may occur within area       |
| <a href="#">Melanodryas cucullata cucullata</a><br>South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]                             | Endangered            | Species or species habitat likely to occur within area |
| <a href="#">Neophema chrysostoma</a><br>Blue-winged Parrot [726]                                                                                | Vulnerable            | Species or species habitat may occur within area       |
| <a href="#">Polytelis swainsonii</a><br>Superb Parrot [738]                                                                                     | Vulnerable            | Species or species habitat known to occur within area  |
| <a href="#">Pycnoptilus floccosus</a><br>Pilotbird [525]                                                                                        | Vulnerable            | Species or species habitat may occur within area       |
| <a href="#">Rostratula australis</a><br>Australian Painted Snipe [77037]                                                                        | Endangered            | Species or species habitat likely to occur within area |
| <a href="#">Stagonopleura guttata</a><br>Diamond Firetail [59398]                                                                               | Vulnerable            | Species or species habitat likely to occur within area |
| <b>FISH</b>                                                                                                                                     |                       |                                                        |
| <a href="#">Macquaria australasica</a><br>Macquarie Perch [66632]                                                                               | Endangered            | Species or species habitat may occur within area       |
| <b>FROG</b>                                                                                                                                     |                       |                                                        |
| <a href="#">Litoria booroolongensis</a><br>Booroolong Frog [1844]                                                                               | Endangered            | Species or species habitat likely to occur within area |
| <a href="#">Litoria castanea</a><br>Yellow-spotted Tree Frog, Yellow-spotted Bell Frog [1848]                                                   | Critically Endangered | Species or species habitat likely to occur within area |
| <a href="#">Litoria raniformis</a><br>Southern Bell Frog, Growling Grass Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog [1828] | Vulnerable            | Species or species habitat may occur within area       |
| <b>INSECT</b>                                                                                                                                   |                       |                                                        |

| Scientific Name                                                                                                                                                                                   | Threatened Category | Presence Text                                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------------------------------------------------|
| <a href="#">Synemon plana</a><br>Golden Sun Moth [25234]                                                                                                                                          | Vulnerable          | Species or species habitat may occur within area             |
| <b>MAMMAL</b>                                                                                                                                                                                     |                     |                                                              |
| <a href="#">Chalinolobus dwyeri</a><br>Large-eared Pied Bat, Large Pied Bat [183]                                                                                                                 | Endangered          | Species or species habitat may occur within area             |
| <a href="#">Dasyurus maculatus maculatus (SE mainland population)</a><br>Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]                            | Endangered          | Species or species habitat likely to occur within area       |
| <a href="#">Petauroides volans</a><br>Greater Glider (southern and central) [254]                                                                                                                 | Endangered          | Species or species habitat likely to occur within area       |
| <a href="#">Petaurus australis australis</a><br>Yellow-bellied Glider (south-eastern) [87600]                                                                                                     | Vulnerable          | Species or species habitat likely to occur within area       |
| <a href="#">Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)</a><br>Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104] | Endangered          | Species or species habitat likely to occur within area       |
| <a href="#">Pteropus poliocephalus</a><br>Grey-headed Flying-fox [186]                                                                                                                            | Vulnerable          | Foraging, feeding or related behaviour may occur within area |
| <b>PLANT</b>                                                                                                                                                                                      |                     |                                                              |
| <a href="#">Ammobium craspedioides</a><br>Yass Daisy [20758]                                                                                                                                      | Vulnerable          | Species or species habitat may occur within area             |
| <a href="#">Eucalyptus aggregata</a><br>Black Gum [20890]                                                                                                                                         | Vulnerable          | Species or species habitat likely to occur within area       |
| <a href="#">Eucalyptus pulverulenta</a><br>Silver-leaved Mountain Gum, Silver-leaved Gum [21537]                                                                                                  | Vulnerable          | Species or species habitat likely to occur within area       |

| Scientific Name                                                                                                     | Threatened Category   | Presence Text                                          |
|---------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------|
| <a href="#">Euphrasia arguta</a><br>[4325]                                                                          | Critically Endangered | Species or species habitat may occur within area       |
| <a href="#">Lepidium hyssopifolium</a><br>Basalt Pepper-cress, Peppercress, Rubble Pepper-cress, Pepperweed [16542] | Endangered            | Species or species habitat may occur within area       |
| <a href="#">Leucochrysum albicans subsp. tricolor</a><br>Hoary Sunray, Grassland Paper-daisy [89104]                | Endangered            | Species or species habitat may occur within area       |
| <a href="#">Swainsona recta</a><br>Small Purple-pea, Mountain Swainson-pea, Small Purple Pea [7580]                 | Endangered            | Species or species habitat may occur within area       |
| <a href="#">Thesium australe</a><br>Austral Toadflax, Toadflax [15202]                                              | Vulnerable            | Species or species habitat may occur within area       |
| <b>REPTILE</b>                                                                                                      |                       |                                                        |
| <a href="#">Aprasia parapulchella</a><br>Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]                 | Vulnerable            | Species or species habitat likely to occur within area |
| <a href="#">Delma impar</a><br>Striped Legless Lizard, Striped Snake-lizard [1649]                                  | Vulnerable            | Species or species habitat may occur within area       |
| <a href="#">Tympanocryptis mccartneyi</a><br>Bathurst Grassland Earless Dragon [90478]                              | Critically Endangered | Species or species habitat may occur within area       |
| <b>Listed Migratory Species [ Resource Information ]</b>                                                            |                       |                                                        |
| Scientific Name                                                                                                     | Threatened Category   | Presence Text                                          |
| <b>Migratory Marine Birds</b>                                                                                       |                       |                                                        |
| <a href="#">Apus pacificus</a><br>Fork-tailed Swift [678]                                                           |                       | Species or species habitat likely to occur within area |
| <b>Migratory Terrestrial Species</b>                                                                                |                       |                                                        |
| <a href="#">Hirundapus caudacutus</a><br>White-throated Needletail [682]                                            | Vulnerable            | Species or species habitat known to occur within area  |



| Scientific Name                                                              | Threatened Category   | Presence Text                                                              |
|------------------------------------------------------------------------------|-----------------------|----------------------------------------------------------------------------|
| <a href="#">Motacilla flava</a><br>Yellow Wagtail [644]                      |                       | Species or species habitat may occur within area                           |
| <b>Migratory Wetlands Species</b>                                            |                       |                                                                            |
| <a href="#">Actitis hypoleucos</a><br>Common Sandpiper [59309]               |                       | Species or species habitat may occur within area                           |
| <a href="#">Calidris acuminata</a><br>Sharp-tailed Sandpiper [874]           | Vulnerable            | Species or species habitat may occur within area                           |
| <a href="#">Calidris ferruginea</a><br>Curlew Sandpiper [856]                | Critically Endangered | Species or species habitat may occur within area                           |
| <a href="#">Calidris melanotos</a><br>Pectoral Sandpiper [858]               |                       | Species or species habitat may occur within area                           |
| <a href="#">Gallinago hardwickii</a><br>Latham's Snipe, Japanese Snipe [863] | Vulnerable            | Species or species habitat likely to occur within area                     |
| <b>Other Matters Protected by the EPBC Act</b>                               |                       |                                                                            |
| <b>Listed Marine Species</b>                                                 |                       | <b>[ Resource Information ]</b>                                            |
| Scientific Name                                                              | Threatened Category   | Presence Text                                                              |
| <b>Bird</b>                                                                  |                       |                                                                            |
| <a href="#">Actitis hypoleucos</a><br>Common Sandpiper [59309]               |                       | Species or species habitat may occur within area                           |
| <a href="#">Apus pacificus</a><br>Fork-tailed Swift [678]                    |                       | Species or species habitat likely to occur within area overfly marine area |
| <a href="#">Bubulcus ibis as Ardea ibis</a><br>Cattle Egret [66521]          |                       | Species or species habitat may occur within area overfly marine area       |

| Scientific Name                                                                           | Threatened Category   | Presence Text                                                              |
|-------------------------------------------------------------------------------------------|-----------------------|----------------------------------------------------------------------------|
| <a href="#">Calidris acuminata</a><br>Sharp-tailed Sandpiper [874]                        | Vulnerable            | Species or species habitat may occur within area                           |
| <a href="#">Calidris ferruginea</a><br>Curlew Sandpiper [856]                             | Critically Endangered | Species or species habitat may occur within area overfly marine area       |
| <a href="#">Calidris melanotos</a><br>Pectoral Sandpiper [858]                            |                       | Species or species habitat may occur within area overfly marine area       |
| <a href="#">Chalcites osculans as Chrysococcyx osculans</a><br>Black-eared Cuckoo [83425] |                       | Species or species habitat likely to occur within area overfly marine area |
| <a href="#">Gallinago hardwickii</a><br>Latham's Snipe, Japanese Snipe [863]              | Vulnerable            | Species or species habitat likely to occur within area overfly marine area |
| <a href="#">Haliaeetus leucogaster</a><br>White-bellied Sea-Eagle [943]                   |                       | Species or species habitat likely to occur within area                     |
| <a href="#">Hirundapus caudacutus</a><br>White-throated Needletail [682]                  | Vulnerable            | Species or species habitat known to occur within area overfly marine area  |
| <a href="#">Lathamus discolor</a><br>Swift Parrot [744]                                   | Critically Endangered | Species or species habitat may occur within area overfly marine area       |
| <a href="#">Merops ornatus</a><br>Rainbow Bee-eater [670]                                 |                       | Species or species habitat may occur within area overfly marine area       |
| <a href="#">Motacilla flava</a><br>Yellow Wagtail [644]                                   |                       | Species or species habitat may occur within area overfly marine area       |

| Scientific Name                                                                                                  | Threatened Category | Presence Text                                                              |
|------------------------------------------------------------------------------------------------------------------|---------------------|----------------------------------------------------------------------------|
| <a href="#">Myiagra cyanoleuca</a><br>Satin Flycatcher [612]                                                     |                     | Species or species habitat likely to occur within area overfly marine area |
| <a href="#">Neophema chrysostoma</a><br>Blue-winged Parrot [726]                                                 | Vulnerable          | Species or species habitat may occur within area overfly marine area       |
| <a href="#">Rhipidura rufifrons</a><br>Rufous Fantail [592]                                                      |                     | Species or species habitat likely to occur within area overfly marine area |
| <a href="#">Rostratula australis as Rostratula benghalensis (sensu lato)</a><br>Australian Painted Snipe [77037] | Endangered          | Species or species habitat likely to occur within area overfly marine area |
| Extra Information                                                                                                |                     |                                                                            |
| EPBC Act Referrals                                                                                               |                     | [ Resource Information ]                                                   |
| Title of referral                                                                                                | Reference           | Referral Outcome Assessment Status                                         |
| Not controlled action                                                                                            |                     |                                                                            |
| <a href="#">Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia</a>     | 2015/7522           | Not Controlled Action Completed                                            |

# Caveat

## 1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

## 2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

## 3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

## 4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.



## Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [Office of Environment and Heritage, New South Wales](#)
- [Department of Environment and Primary Industries, Victoria](#)
- [Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [Department of Environment, Water and Natural Resources, South Australia](#)
- [Department of Land and Resource Management, Northern Territory](#)
- [Department of Environmental and Heritage Protection, Queensland](#)
- [Department of Parks and Wildlife, Western Australia](#)
- [Environment and Planning Directorate, ACT](#)
- [Birdlife Australia](#)
- [Australian Bird and Bat Banding Scheme](#)
- [Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [Museum Victoria](#)
- [Australian Museum](#)
- [South Australian Museum](#)
- [Queensland Museum](#)
- [Online Zoological Collections of Australian Museums](#)
- [Queensland Herbarium](#)
- [National Herbarium of NSW](#)
- [Royal Botanic Gardens and National Herbarium of Victoria](#)
- [Tasmanian Herbarium](#)
- [State Herbarium of South Australia](#)
- [Northern Territory Herbarium](#)
- [Western Australian Herbarium](#)
- [Australian National Herbarium, Canberra](#)
- [University of New England](#)
- [Ocean Biogeographic Information System](#)
- [Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [Geoscience Australia](#)
- [CSIRO](#)
- [Australian Tropical Herbarium, Cairns](#)
- [eBird Australia](#)
- [Australian Government – Australian Antarctic Data Centre](#)
- [Museum and Art Gallery of the Northern Territory](#)
- [Australian Government National Environmental Science Program](#)
- [Australian Institute of Marine Science](#)
- [Reef Life Survey Australia](#)
- [American Museum of Natural History](#)
- [Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.



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

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## BIONET ATLAS SEARCHES

**BioNET Atlas search – threatened and migratory species and populations predicted to occur within the Orange Subregion of the South Eastern Highlands Bioregion.**

| Class    | Scientific Name                        | Common Name                            | NSW status | Comm. status | Records |
|----------|----------------------------------------|----------------------------------------|------------|--------------|---------|
| Amphibia | <i>Litoria aurea</i>                   | Green and Golden Bell Frog             | E1,P       | V            | 1       |
| Amphibia | <i>Litoria booroolongensis</i>         | Booroolong Frog                        | E1,P       | E            | P       |
| Amphibia | <i>Litoria castanea</i>                | Yellow-spotted Tree Frog               | E4A,P      | CE           | 1       |
| Aves     | <i>Anthochaera phrygia</i>             | Regent Honeyeater                      | E4A,P,2    | CE           | 1       |
| Aves     | <i>Aphelocephala leucopsis</i>         | Southern Whiteface                     | V,P        | V            | 6       |
| Aves     | <i>Apus pacificus</i>                  | Fork-tailed Swift                      | P          | C,J,K        | 2       |
| Aves     | <i>Artamus cyanopterus cyanopterus</i> | Dusky Woodswallow                      | V,P        |              | 232     |
| Aves     | <i>Botaurus poeciloptilus</i>          | Australasian Bittern                   | E1,P       | E            | P       |
| Aves     | <i>Burhinus grallarius</i>             | Bush Stone-curlew                      | E1,P       |              | 2       |
| Aves     | <i>Calidris acuminata</i>              | Sharp-tailed Sandpiper                 | P          | C,J,K        | 4       |
| Aves     | <i>Callocephalon fimbriatum</i>        | Gang-gang Cockatoo                     | E1,P,3     | E            | 25      |
| Aves     | <i>Calyptorhynchus lathami lathami</i> | South-eastern Glossy Black-Cockatoo    | V,P,2      | V            | 3       |
| Aves     | <i>Certhionyx variegatus</i>           | Pied Honeyeater                        | V,P        |              | 3       |
| Aves     | <i>Circus assimilis</i>                | Spotted Harrier                        | V,P        |              | 1       |
| Aves     | <i>Climacteris picumnus victoriae</i>  | Brown Treecreeper (eastern subspecies) | V,P        | V            | 46      |
| Aves     | <i>Daphoenositta chrysoptera</i>       | Varied Sittella                        | V,P        |              | 41      |
| Aves     | <i>Epthianura albifrons</i>            | White-fronted Chat                     | V,P        |              | 1       |
| Aves     | <i>Falco subniger</i>                  | Black Falcon                           | V,P        |              | 2       |
| Aves     | <i>Gallinago hardwickii</i>            | Latham's Snipe                         | V,P        | V,J,K        | 8       |
| Aves     | <i>Grantiella picta</i>                | Painted Honeyeater                     | V,P        | V            | 4       |
| Aves     | <i>Haliaeetus leucogaster</i>          | White-bellied Sea-Eagle                | V,P        |              | 11      |
| Aves     | <i>Hieraaetus morphnoides</i>          | Little Eagle                           | V,P        |              | 46      |
| Aves     | <i>Hirundapus caudacutus</i>           | White-throated Needletail              | V,P        | V,C,J,K      | 7       |
| Aves     | <i>Lathamus discolor</i>               | Swift Parrot                           | E1,P       | CE           | 1       |
| Aves     | <i>Limosa limosa</i>                   | Black-tailed Godwit                    | V,P        | E,C,J,K      | P       |
| Aves     | <i>Lophoictinia isura</i>              | Square-tailed Kite                     | V,P,3      |              | 2       |

| Class    | Scientific Name                           | Common Name                                   | NSW status | Comm. status | Records |
|----------|-------------------------------------------|-----------------------------------------------|------------|--------------|---------|
| Aves     | <i>Melanodryas cucullata cucullata</i>    | South-eastern Hooded Robin                    | E1,P       | E            | 5       |
| Aves     | <i>Melithreptus gularis gularis</i>       | Black-chinned Honeyeater (eastern subspecies) | V,P        |              | 3       |
| Aves     | <i>Neophema pulchella</i>                 | Turquoise Parrot                              | V,P,3      |              | 3       |
| Aves     | <i>Ninox connivens</i>                    | Barking Owl                                   | V,P,3      |              | 4       |
| Aves     | <i>Ninox strenua</i>                      | Powerful Owl                                  | V,P,3      |              | 8       |
| Aves     | <i>Oxyura australis</i>                   | Blue-billed Duck                              | V,P        |              | 88      |
| Aves     | <i>Parvipsitta pusilla</i>                | Little Lorikeet                               | V,P        |              | 8       |
| Aves     | <i>Petroica boodang</i>                   | Scarlet Robin                                 | V,P        |              | 69      |
| Aves     | <i>Petroica phoenicea</i>                 | Flame Robin                                   | V,P        |              | 71      |
| Aves     | <i>Polytelis swainsonii</i>               | Superb Parrot                                 | V,P,3      | V            | 646     |
| Aves     | <i>Pomatostomus temporalis temporalis</i> | Grey-crowned Babbler (eastern subspecies)     | V,P        |              | 2       |
| Aves     | <i>Pyrrholaemus sagittatus</i>            | Speckled Warbler                              | V,P        |              | 18      |
| Aves     | <i>Rostratula australis</i>               | Australian Painted Snipe                      | E1,P       | E            | 1       |
| Aves     | <i>Stagonopleura guttata</i>              | Diamond Firetail                              | V,P        | V            | 26      |
| Aves     | <i>Stictonetta naevosa</i>                | Freckled Duck                                 | V,P        |              | 40      |
| Insecta  | <i>Keyacris scurra</i>                    | Key's Matchstick Grasshopper                  | E1         | E            | 1       |
| Mammalia | <i>Cercartetus nanus</i>                  | Eastern Pygmy-possum                          | V,P        |              | P       |
| Mammalia | <i>Chalinolobus dwyeri</i>                | Large-eared Pied Bat                          | E1,P       | E            | 5       |
| Mammalia | <i>Dasyurus maculatus</i>                 | Spotted-tailed Quoll                          | V,P        | E            | 7       |
| Mammalia | <i>Miniopterus orianae oceanensis</i>     | Large Bent-winged Bat                         | V,P        |              | 45      |
| Mammalia | <i>Myotis macropus</i>                    | Southern Myotis                               | V,P        |              | 3       |
| Mammalia | <i>Petauroides volans</i>                 | Southern Greater Glider                       | E1,P       | E            | 61      |
| Mammalia | <i>Petaurus australis</i>                 | Yellow-bellied Glider                         | V,P        | V            | 1       |
| Mammalia | <i>Petaurus norfolcensis</i>              | Squirrel Glider                               | V,P        |              | 21      |
| Mammalia | <i>Phascogale tapoatafa</i>               | Brush-tailed Phascogale                       | V,P        |              | P       |
| Mammalia | <i>Phascolarctos cinereus</i>             | Koala                                         | E1,P       | E            | 99      |
| Mammalia | <i>Pteropus poliocephalus</i>             | Grey-headed Flying-fox                        | V,P        | V            | 65      |
| Mammalia | <i>Saccolaimus flaviventris</i>           | Yellow-bellied Sheath-tail-bat                | V,P        |              | 5       |

| Class    | Scientific Name                                           | Common Name                       | NSW status | Comm. status | Records |
|----------|-----------------------------------------------------------|-----------------------------------|------------|--------------|---------|
| Reptilia | <i>Aprasia parapulchella</i>                              | Pink-tailed Legless Lizard        | V,P        | V            | P       |
| Reptilia | <i>Tympanocryptis mcartneyi</i>                           | Bathurst Grassland Earless Dragon | E4A,P,3    | CE           | P       |
| Reptilia | <i>Varanus rosenbergi</i>                                 | Rosenberg's Goanna                | V,P        |              | 1       |
| Flora    | <i>Acacia meiantha</i>                                    |                                   | E1         | E            | 1312    |
| Flora    | <i>Eucalyptus aggregata</i>                               | Black Gum                         | V          | V            | 10      |
| Flora    | <i>Eucalyptus canobolensis</i>                            | Silver-Leaf Candlebark            | E1         | E            | 185     |
| Flora    | <i>Eucalyptus nicholii</i>                                | Narrow-leaved Black Peppermint    | V          | V            | 1       |
| Flora    | <i>Eucalyptus robertsonii</i> subsp. <i>hemisphaerica</i> | Robertson's Peppermint            | V          | V            | 17      |
| Flora    | <i>Isotoma fluviatilis</i> subsp. <i>fluviatilis</i>      |                                   | 3          | X            | 2       |
| Flora    | <i>Leucochrysum albicans</i> subsp. <i>tricolor</i>       | Hoary Sunray                      | E1         | E            | P       |
| Flora    | <i>Prostanthera gilesii</i>                               |                                   | E4A,2      | CE           | 3       |
| Flora    | <i>Swainsona recta</i>                                    | Small Purple-pea                  | E1         | E            | 1       |

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

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

- Number of Records: P = predicted to occur.

**BioNET Atlas search – threatened ecological communities predicted to occur within the Orange Subregion of the South Eastern Highlands Bioregion.**

| Community Name                                                                                                                                                                                                                                               | NSW Status | Comm. Status | Records |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------|---------|
| Grey Box ( <i>Eucalyptus microcarpa</i> ) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia                                                                                                                                          |            | E            | K       |
| Monaro Tableland Cool Temperate Grassy Woodland in the South Eastern Highlands Bioregion                                                                                                                                                                     | E4B        |              | P       |
| Mt Canobolas Xanthoparmelia Lichen Community                                                                                                                                                                                                                 | E3         |              | K       |
| Tableland Basalt Forest in the Sydney Basin and South Eastern Highlands Bioregions                                                                                                                                                                           | E3         |              | K       |
| Werriwa Tablelands Cool Temperate Grassy Woodland in the South Eastern Highlands and South East Corner Bioregions                                                                                                                                            | E4B        |              | P       |
| White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and | E4B        |              | K       |
| White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland                                                                                                                                                                          |            | CE           | K       |

\*NSW Status: E3=Endangered, E4B=Critically endangered.

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

- Number of Records: K=Known to occur, P=Predicted to occur.



**BioNET Atlas search – Key Threatening Processes predicted to occur within the Orange Subregion of the South Eastern Highlands Bioregion.**

| Threats                                                                                                                                        | NSW Status | Comm. Status | Records |
|------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------|---------|
| Aggressive exclusion of birds from woodland and forest habitat by abundant Noisy Miners, <i>Manorina melanocephala</i> (Latham, 1802)          | KTP        | KTP          | P       |
| Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands                                                | KTP        |              | P       |
| Anthropogenic Climate Change                                                                                                                   | KTP        | KTP          | P       |
| Bushrock removal                                                                                                                               | KTP        |              | P       |
| Clearing of native vegetation                                                                                                                  | KTP        | KTP          | P       |
| Competition and grazing by the feral European Rabbit, <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       |

| Threats                                                                                                                | NSW Status | Comm. Status | Records |
|------------------------------------------------------------------------------------------------------------------------|------------|--------------|---------|
| 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       |

## BIODIVERSITY VALUES MAP AND THRESHOLD TOOL



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                                                                                                                                                           |                                                                                                                                                   | 17/11/2025 7:15 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                                                                                                     | 283,994.3 sqm      |
| 2.2                                                                                                                                                                                 | Native Vegetation Area Clearing Estimate (NVACE)<br>(within development/clearing footprint)                                                       | 51,562.0 sqm       |
| 2.3                                                                                                                                                                                 | Method for determining Minimum Lot Size                                                                                                           | Lot size           |
| 2.4                                                                                                                                                                                 | Minimum Lot Size (10,000sqm = 1ha)                                                                                                                | 9,538 sqm          |
| 2.5                                                                                                                                                                                 | Area Clearing Threshold (10,000sqm = 1ha)                                                                                                         | 2,500 sqm          |
| 2.6                                                                                                                                                                                 | Does the estimate exceed the Area Clearing Threshold?<br>(NVACE results are an estimate and can be reviewed using the <a href="#">Guidance</a> )  | yes                |
| REPORT RESULT: Is the Biodiversity Offset Scheme (BOS) Threshold exceeded for the proposed development footprint area?<br>(Your local council will determine if a BDAR is required) |                                                                                                                                                   | yes                |

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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: \_\_\_\_\_

17/11/2025 07:15 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](mailto:map.review@environment.nsw.gov.au) or on 1800 001 490.



Biodiversity Values Map



1,299.5 0 649.75 1,299.5 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

17/11/2025 07:15 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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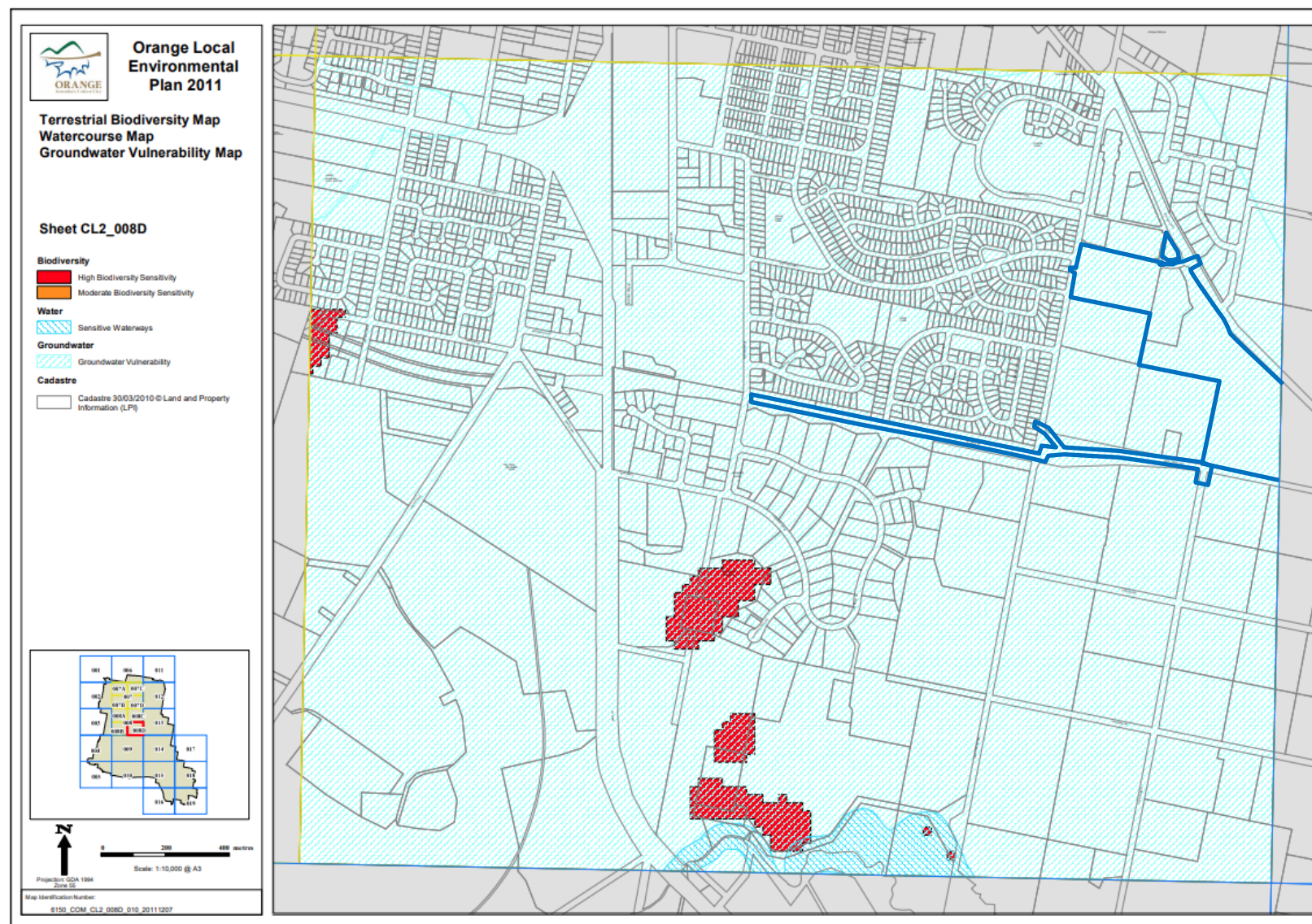
© NSW Department of Planning and Environment

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

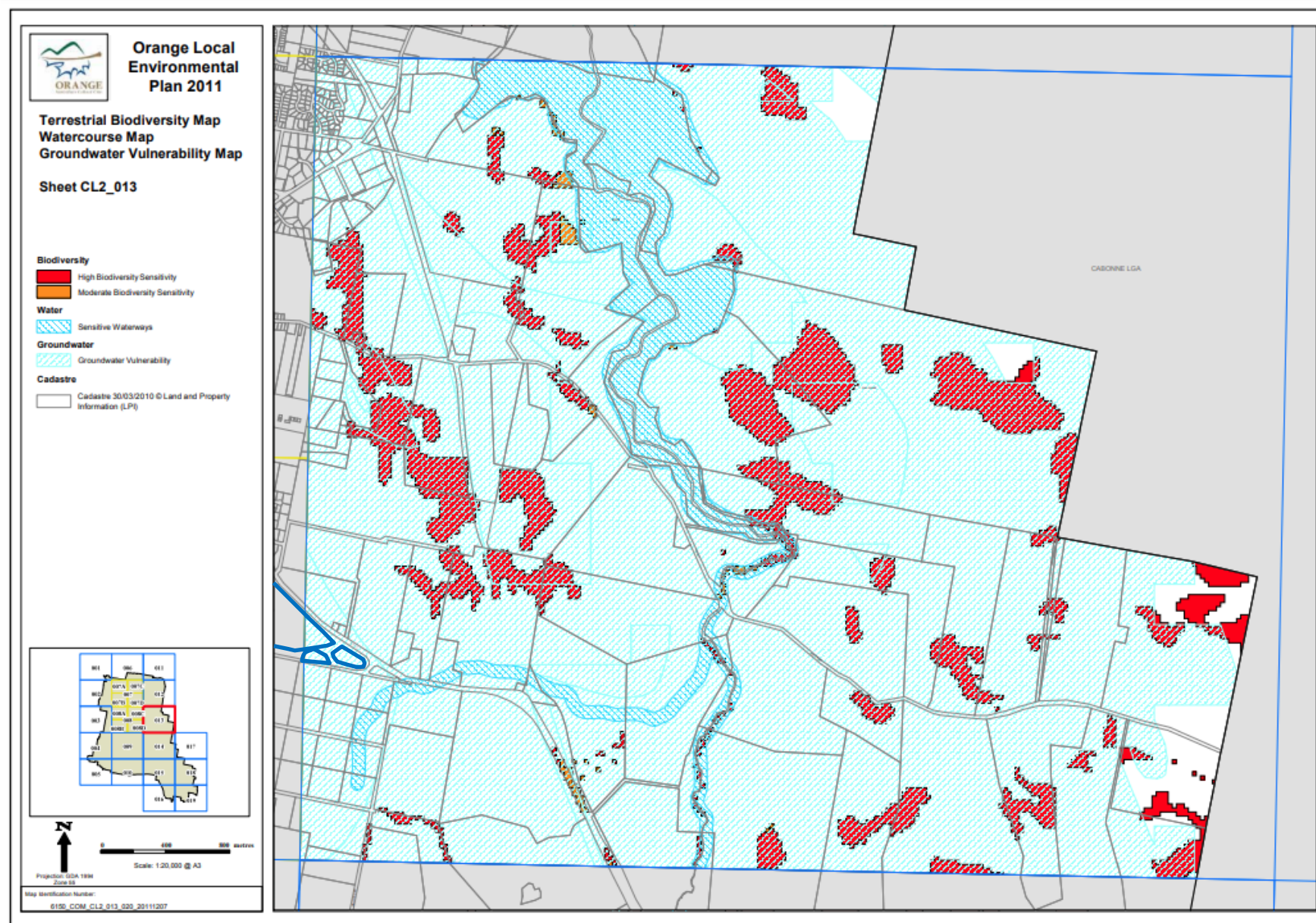
This map is valid as at the date the report was generated. Checking the [Biodiversity Values Map viewer](#) for mapping updates is recommended.

## Orange Local Environmental Plan 2011

Areas shaded red represent areas of high biodiversity sensitivity. The blue polygon represents the approximate area of the subject site (continued overleaf).







## APPENDIX B – FIELD SURVEY RESULTS

### FLORA SPECIES LIST

The following table lists all 63 flora species recorded within, or immediately adjacent to the subject site. Of these, 20 (31.75%) were native and 43 (68.25%) were introduced.

| Growth Form <sup>1</sup> | Scientific Name                | Common Name          | Status <sup>2</sup> | HTE <sup>3</sup> | WoNS <sup>4</sup> | PW <sup>5</sup> |
|--------------------------|--------------------------------|----------------------|---------------------|------------------|-------------------|-----------------|
| GG                       | <i>Agrostis viridis</i>        | Water Bent           | I                   | No               | No                | No              |
| GG                       | <i>Bothriochloa macra</i>      | Red Grass            | N                   | -                | -                 | -               |
| TG                       | <i>Brachychiton populneus</i>  | Kurrajong            | N                   | -                | -                 | -               |
| FG                       | <i>Brassica sp.</i>            |                      | I                   | No               | No                | No              |
| GG                       | <i>Bromus catharticus</i>      | Prairie Grass        | I                   | No               | No                | No              |
| FG                       | <i>Carex appressa</i>          | Tall Sedge           | N                   | -                | -                 | -               |
| FG                       | <i>Carex inversa</i>           | Knob Sedge           | N                   | -                | -                 | -               |
| FG                       | <i>Carthamus lanatus</i>       | Saffron thistle      | I                   | Yes              | No                | No              |
| FG                       | <i>Centaurea calcitrapa</i>    | Star Thistle         | I                   | No               | No                | No              |
| FG                       | <i>Centaurium erythraea</i>    | Common Centaury      | I                   | No               | No                | No              |
| FG                       | <i>Chondrilla juncea</i>       | Skeleton Weed        | I                   | No               | No                | No              |
| FG                       | <i>Cichorium intybus</i>       | Chicory              | I                   | No               | No                | No              |
| FG                       | <i>Cirsium vulgare</i>         | Spear Thistle        | I                   | No               | No                | No              |
| FG                       | <i>Conyza sumatrensis</i>      | Tall fleabane        | I                   | No               | No                | No              |
| SG                       | <i>Crataegus monogyna</i>      | Hawthorn             | I                   | Yes              | No                | No              |
| GG                       | <i>Cynodon dactylon</i>        | Common Couch         | N                   | -                | -                 | -               |
| GG                       | <i>Dactylis glomerata</i>      | Cocksfoot            | I                   | No               | No                | No              |
| GG                       | <i>Dianella longifolia</i>     | Blueberry Lily       | N                   | -                | -                 | -               |
| FG                       | <i>Echium plantagineum</i>     | Patterson's Curse    | I                   | No               | No                | No              |
| FG                       | <i>Echium vulgare</i>          | Viper's Bugloss      | I                   | No               | No                | No              |
| GG                       | <i>Eleusine tristachya</i>     | Goose Grass          | I                   | No               | No                | No              |
| GG                       | <i>Eragrostis leptostachya</i> | Paddock Lovegrass    | N                   | -                | -                 | -               |
| TG                       | <i>Eucalyptus bridgesiana</i>  | Apple Box            | N                   | -                | -                 | -               |
| TG                       | <i>Ficus carica</i>            | Fig                  | I                   | No               | No                | No              |
| FG                       | <i>Fimbristylis sp.</i>        | Fringe Sedge         | N                   | -                | -                 | -               |
| FG                       | <i>Geranium solanderi</i>      | Native Geranium      | N                   | -                | -                 | -               |
| FG                       | <i>Gonocarpus tetragynus</i>   | Poverty Raspwort     | N                   | -                | -                 | -               |
| GG                       | <i>Holcus lanatus</i>          | Yorkshire Fog        | I                   | No               | No                | No              |
| FG                       | <i>Hypericum gramineum</i>     | Small St John's Wort | N                   | -                | -                 | -               |
| FG                       | <i>Hypericum perforatum</i>    | St. Johns Wort       | I                   | Yes              | No                | Yes             |
| FG                       | <i>Hypochaeris radicata</i>    | Catsear              | I                   | No               | No                | No              |
| FG                       | <i>Juncus sp</i>               |                      | N                   | -                | -                 | -               |
| GG                       | <i>Lolium perenne</i>          | Perennial Ryegrass   | I                   | No               | No                | No              |
| FG                       | <i>Modiola caroliniana</i>     | Red Flowered Mallow  | I                   | No               | No                | No              |
| GG                       | <i>Paspalum dilatatum</i>      |                      | I                   | Yes              | No                | No              |

| Growth Form <sup>1</sup> | Scientific Name                | Common Name                  | Status <sup>2</sup> | HTE <sup>3</sup> | WoNS <sup>4</sup> | PW <sup>5</sup> |
|--------------------------|--------------------------------|------------------------------|---------------------|------------------|-------------------|-----------------|
| GG                       | <i>Paspalum distichum</i>      | Water Couch                  | N                   | -                | -                 | -               |
| GG                       | <i>Phalaris aquatica</i>       | Phalaris                     | I                   | No               | No                | No              |
| FG                       | <i>Plantago lanceolata</i>     | Lamb's Tongues               | I                   | No               | No                | No              |
| GG                       | <i>Poa labillardierei</i>      | Tussock                      | N                   | -                | -                 | -               |
| FG                       | <i>Polygonum aviculare</i>     | Wireweed                     | I                   | No               | No                | No              |
| TG                       | <i>Populus nigra</i>           | Green poplar                 | I                   | Yes              | No                | No              |
| TG                       | <i>Populus simonii</i>         | Chinese cottonwood (planted) | I                   | No               | No                | No              |
| TG                       | <i>Quercus robur</i>           | English Oak                  | I                   | No               | No                | No              |
| SG                       | <i>Rosa rubiginosa</i>         | Sweet Briar                  | I                   | Yes              | No                | No              |
| SG                       | <i>Rubus fruticosus</i>        | Blackberry complex           | I                   | Yes              | Yes               | Yes             |
| FG                       | <i>Rumex brownii</i>           | Swamp Dock                   | N                   | -                | -                 | -               |
| FG                       | <i>Rumex crispus</i>           | Curled Dock                  | I                   | No               | No                | No              |
| TG                       | <i>Salix fragilis</i>          | Crack Willow                 | I                   | Yes              | Yes               | No              |
| FG                       | <i>Salvia verbenaca</i>        | Vervain                      | I                   | No               | No                | No              |
| GG                       | <i>Schoenus apogon</i>         | Fluke Bogrush                | N                   | -                | -                 | -               |
| FG                       | <i>Senecio quadridentatus</i>  | Cotton Fireweed              | N                   | -                | -                 | -               |
| GG                       | <i>Setaria parviflora</i>      | Pigeon Grass                 | I                   | No               | No                | No              |
| FG                       | <i>Sonchus asper</i>           | Prickly Sowthistle           | I                   | No               | No                | No              |
| GG                       | <i>Sporobolus creber</i>       | Slender Rat's Tail Grass     | N                   | -                | -                 | -               |
| FG                       | <i>Taraxacum officinale</i>    | Dandelion                    | I                   | No               | No                | No              |
| FG                       | <i>Trifolium angustifolium</i> | Narrow-leaved Clover         | I                   | No               | No                | No              |
| FG                       | <i>Trifolium arvense</i>       | Haresfoot Clover             | I                   | No               | No                | No              |
| FG                       | <i>Trifolium glomeratum</i>    | Clustered Clover             | I                   | No               | No                | No              |
| FG                       | <i>Trifolium repens</i>        | White Clover                 | I                   | No               | No                | No              |
| GG                       | <i>Typha orientalis</i>        | Broad-leaved Cumbungi        | N                   | -                | -                 | -               |
| FG                       | <i>Verbena bonariensis</i>     | Purpletop                    | I                   | No               | No                | No              |
| FG                       | <i>Vicia sativa</i>            | Common vetch                 | I                   | No               | No                | No              |
| FG                       | <i>Xanthium spinosum</i>       | Bathurst Burr                | I                   | Yes              | No                | No              |

<sup>1</sup>**Growth form:** FG = Forb, GG = Grass and Grass-like, SG = Shrub, TG = Tree, EG = Fern, OG = Other. <sup>2</sup>**Status:** N = Native, I = Introduced. <sup>3</sup>**High-Threat Exotic** (Yes/No). <sup>4</sup>**Weed of National Significance** (Yes/No). <sup>5</sup>**Priority Weed** for the LLS region (Yes/No).



## FAUNA SPECIES LIST

The following table lists all 39 fauna species recorded within, or immediately adjacent to the subject site. Of these, 31 (87.2%) were native and 5 (12.8%) were introduced. One threatened species was recorded:

- Grey-headed Flying-fox (*Pteropus poliocephalus*) – listed as vulnerable under the BC and EPBC Acts.

| Class          | Scientific Name                   | Common Name              | Status <sup>1</sup> |
|----------------|-----------------------------------|--------------------------|---------------------|
| Actinopterygii | <i>Galaxias olidus</i>            | Marbled Galaxias         | N                   |
| Actinopterygii | <i>Retropinna semoni</i>          | Australian Smelt         | N                   |
| Amphibia       | <i>Crinia signifera</i>           | Common Eastern Froglet   | N                   |
| Amphibia       | <i>Limnodynastes tasmaniensis</i> | Spotted Marsh Frog       | N                   |
| Amphibia       | <i>Limnodynastes dumerilii</i>    | Eastern Banjo Frog       | N                   |
| Aves           | <i>Acanthiza chrysorrhoa</i>      | Yellow-rumped Thornbill  | N                   |
| Aves           | <i>Acridotheres tristis</i>       | Common Myna              | I                   |
| Aves           | <i>Acrocephalus scirpaceus</i>    | Australian Reed Warbler  | N                   |
| Aves           | <i>Anus superciliosa</i>          | Pacific Black Duck       | N                   |
| Aves           | <i>Cacatua galerita</i>           | Sulphur-crested Cockatoo | N                   |
| Aves           | <i>Caligavis chrysops</i>         | Yellow-faced Honeyeater  | N                   |
| Aves           | <i>Carduelis carduelis</i>        | European Goldfinch       | I                   |
| Aves           | <i>Cisticola exilis</i>           | Golden-headed Cisticola  | N                   |
| Aves           | <i>Columba livia</i>              | Rock Dove                | I                   |
| Aves           | <i>Corvus coronoides</i>          | Australian Raven         | N                   |
| Aves           | <i>Egretta novaehollandiae</i>    | White-faced Heron        | N                   |
| Aves           | <i>Elanus axillaris</i>           | Black-shouldered Kite    | N                   |
| Aves           | <i>Eolophus roseicapilla</i>      | Galah                    | N                   |
| Aves           | <i>Eopsaltria australis</i>       | Eastern Yellow Robin     | N                   |
| Aves           | <i>Grallina cyanoleuca</i>        | Australian Magpie-lark   | N                   |
| Aves           | <i>Gymnorhina tibicen</i>         | Australian Magpie        | N                   |
| Aves           | <i>Hirundo neoxena</i>            | Welcome Swallow          | N                   |
| Aves           | <i>Lichenostomus penicillatus</i> | White-plumed Honeyeater  | N                   |
| Aves           | <i>Malurus cyaneus</i>            | Superb Fairywren         | N                   |
| Aves           | <i>Manorina melanocephala</i>     | Noisy Miner              | N                   |
| Aves           | <i>Ocyphaps lophotes</i>          | Crested Pigeon           | N                   |
| Aves           | <i>Pachycephala rufiventris</i>   | Rufous Whistler          | N                   |
| Aves           | <i>Platycercus elegans</i>        | Crimson Rosella          | N                   |
| Aves           | <i>Platycercus eximius</i>        | Eastern Rosella          | N                   |
| Aves           | <i>Psephotus haematonotus</i>     | Red-rumped Parrot        | N                   |
| Aves           | <i>Rhipidura albiscapa</i>        | Grey Fantail             | N                   |
| Aves           | <i>Rhipidura leucophrys</i>       | Willie Wagtail           | N                   |
| Aves           | <i>Sturnus vulgaris</i>           | Common Starling          | I                   |
| Aves           | <i>Threskiornis molucca</i>       | Australian White Ibis    | N                   |

| Class    | Scientific Name                | Common Name                       | Status <sup>1</sup> |
|----------|--------------------------------|-----------------------------------|---------------------|
| Aves     | <i>Vanellus miles</i>          | Masked Lapwing                    | N                   |
| Mammalia | <i>Oryctolagus cuniculus</i>   | Rabbit                            | I                   |
| Mammalia | <i>Pteropus poliocephalus</i>  | Grey-headed Flying-fox            | N                   |
| Reptilia | <i>Egernia cunninghami</i>     | Cunningham's Spiny-tailed Skink   | N                   |
| Reptilia | <i>Hemiergis talbingoensis</i> | Victoria Three-toed Earless Skink | N                   |

<sup>1</sup>**Status:** N = Native, I = Introduced.



## REPRESENTATIVE PCT PHOTOGRAPHS

| PCT ID | Image                                                                               |
|--------|-------------------------------------------------------------------------------------|
| 3387   |  |



Non-Native  
Grazed Paddock





Non-Native  
Ungrazed  
Paddock





## BAM PLOT DATA

## BAM Plot - Field Survey Sheet

Page 1 of ( 2 )

|           |               |                                                      |                       |
|-----------|---------------|------------------------------------------------------|-----------------------|
| Date      | 12/02/2025    | Survey Name                                          | Redmond Place, Orange |
| Recorders | David Orchard | Plot ID #                                            | RP01                  |
| Photo #   |               | Zone ID                                              | 3387_Der.             |
| Datum     | GDA2020       | Plot dimensions                                      | 20 x 50               |
| Easting   | 698049        | Plot bearing along midline                           | 111                   |
| Northing  | 6312527       | Record magnetic bearing along midline from 0 m point |                       |

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

|                         |                                 |
|-------------------------|---------------------------------|
| IBRA region             | South Eastern Highlands         |
| Subregion               | Orange                          |
| Likely Vegetation Class | Western Slopes Grassy Woodlands |
| Plant Community Type    | 3387                            |
| Condition state         | Derived                         |

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

| BAM Composition / Structure plot (400m <sup>2</sup> ) |                      |             |
|-------------------------------------------------------|----------------------|-------------|
| Dimensions (circle applicable size)                   |                      |             |
| 20 x 20 m                                             | <del>40 x 40 m</del> | Sum values* |
| Native Richness<br>(count of native species)          | Trees                | 0           |
|                                                       | Shrubs               | 0           |
|                                                       | Grasses etc          | 6           |
|                                                       | Forbs                | 1           |
|                                                       | Ferns                | 0           |
| Cover<br>(sum of cover of natives species)            | Other                | 0           |
|                                                       | Trees                | 0           |
|                                                       | Shrubs               | 0           |
|                                                       | Grasses etc          | 69.1        |
|                                                       | Forbs                | 0.1         |
| High threat weed cover                                | Ferns                | 0           |
|                                                       | Other                | 0           |
| 6.4                                                   |                      |             |

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

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

| BAM Function plot (1000m <sup>2</sup> ) |                       |                                                         |
|-----------------------------------------|-----------------------|---------------------------------------------------------|
| Dimensions (circle applicable size)     |                       |                                                         |
| 20 x 50 m                               | <del>40 x 100 m</del> |                                                         |
| Tree stem DBH (cm)                      |                       | Notes on function attributes:                           |
| >80                                     | 0                     | Stem size class records # large trees (cf. benchmark)   |
| 50 - 79                                 | 0                     | Record stems for living trees only, and for all species |
| 30 - 49                                 | -                     | For multistemmed trees, record only the largest stem    |
| 20 - 29                                 | -                     | Presence of <5cm stems records regeneration             |
| 10 - 19                                 | -                     | Record # trees with hollows, not number of hollows      |
| 5 - 9                                   | -                     | Count as one stem where tree is multistemmed            |
| < 5                                     | -                     | Hollow bearing stem may be a dead stem (incl. stag)     |
| # Trees with hollows                    | <20cm                 | Total #                                                 |
|                                         | >20cm**               | 0                                                       |
| Length of logs                          |                       | Total (m)                                               |
|                                         |                       | 0                                                       |

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

\*\*Hollows of &gt;20cm are recorded for habitat for some threatened species

| BAM Litter/ Groundcover (1 x 1 m plots)                                                           |             |    |   |   |   |   |         |
|---------------------------------------------------------------------------------------------------|-------------|----|---|---|---|---|---------|
| Litter cover is used for BAM, other attributes are useful for recording site condition in general |             |    |   |   |   |   |         |
| Sub-plot score<br>(% cover)                                                                       |             | 1  | 2 | 3 | 4 | 5 | Average |
|                                                                                                   | Litter      | 10 | 5 | 3 | 2 | 5 | 5       |
|                                                                                                   | Bare ground |    |   |   |   |   |         |
|                                                                                                   | Cryptogam   |    |   |   |   |   |         |
|                                                                                                   | Rock        |    |   |   |   |   |         |

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

## Other plot information (not essential for BAM)

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

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

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

## Notes

[illegible]

## BAM Plot - Field Survey Sheet

Page 1 of ( 2 )

|           |               |                                                      |                       |
|-----------|---------------|------------------------------------------------------|-----------------------|
| Date      | 12/02/2025    | Survey Name                                          | Redmond Place, Orange |
| Recorders | David Orchard | Plot ID #                                            | RP02                  |
| Photo #   |               | Zone ID                                              | 0_NN                  |
| Datum     | GDA2020       | Plot dimensions                                      | 20 x 50               |
| Easting   | 698052        | Plot bearing along midline                           | 294                   |
| Northing  | 6312481       | Record magnetic bearing along midline from 0 m point |                       |

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

|                         |                         |
|-------------------------|-------------------------|
| IBRA region             | South Eastern Highlands |
| Subregion               | Orange                  |
| Likely Vegetation Class | Non-native              |
| Plant Community Type    | 0                       |
| Condition state         | Non-native              |

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

| BAM Composition / Structure plot (400m <sup>2</sup> ) |                      |             |
|-------------------------------------------------------|----------------------|-------------|
| Dimensions (circle applicable size)                   |                      | Sum values* |
| 20 x 20 m                                             | <del>10 x 40 m</del> |             |
| Native Richness<br>(count of native species)          | Trees                | 0           |
|                                                       | Shrubs               | 0           |
|                                                       | Grasses etc          | 2           |
|                                                       | Forbs                | 2           |
|                                                       | Ferns                | 0           |
| Cover<br>(sum of cover of natives species)            | Other                | 0           |
|                                                       | Trees                | 0           |
|                                                       | Shrubs               | 0           |
|                                                       | Grasses etc          | 1.1         |
|                                                       | Forbs                | 0.2         |
|                                                       | Ferns                | 0           |
|                                                       | Other                | 0           |
| High threat weed cover                                |                      | 0           |

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

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

| BAM Function plot (1000m <sup>2</sup> ) |                       |                                                         |
|-----------------------------------------|-----------------------|---------------------------------------------------------|
| Dimensions (circle applicable size)     |                       |                                                         |
| 20 x 50 m                               | <del>10 x 100 m</del> |                                                         |
| Tree stem DBH (cm)                      |                       | Notes on function attributes:                           |
| >80                                     | 0                     | Stem size class records # large trees (cf. benchmark)   |
| 50 - 79                                 | 0                     | Record stems for living trees only, and for all species |
| 30 - 49                                 | -                     | For multistemmed trees, record only the largest stem    |
| 20 - 29                                 | -                     | Presence of <5cm stems records regeneration             |
| 10 - 19                                 | -                     | Record # trees with hollows, not number of hollows      |
| 5 - 9                                   | -                     | Count as one stem where tree is multistemmed            |
| < 5                                     | -                     | Hollow bearing stem may be a dead stem (incl. stag)     |
| # Trees with hollows                    | <20cm                 | Total #                                                 |
|                                         | >20cm**               | 0                                                       |
| Length of logs                          |                       | Total (m)                                               |
|                                         |                       | 0                                                       |

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

\*\*Hollows of &gt;20cm are recorded for habitat for some threatened species

| BAM Litter/ Groundcover (1 x 1 m plots) |             |   | Litter cover is used for BAM, other attributes are useful for recording site condition in general |   |   |   |         |
|-----------------------------------------|-------------|---|---------------------------------------------------------------------------------------------------|---|---|---|---------|
| Sub-plot score<br>(% cover)             | Litter      | 1 | 2                                                                                                 | 3 | 4 | 5 | Average |
|                                         | Bare ground | 0 | 1                                                                                                 | 0 | 0 | 1 | 0.4     |
|                                         | Cryptogam   |   |                                                                                                   |   |   |   |         |
|                                         | Rock        |   |                                                                                                   |   |   |   |         |
|                                         |             |   |                                                                                                   |   |   |   |         |

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

## Other plot information (not essential for BAM)

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

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

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

|       |
|-------|
| Notes |
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**BAM Plot - Field Survey Sheet**

Page 1 of ( 2 )

|           |               |                                                      |                       |
|-----------|---------------|------------------------------------------------------|-----------------------|
| Date      | 12/02/2025    | Survey Name                                          | Redmond Place, Orange |
| Recorders | David Orchard | Plot ID #                                            | RP03                  |
| Photo #   |               | Zone ID                                              | 0_NN                  |
| Datum     | GDA2020       | Plot dimensions                                      | 20 x 50               |
| Easting   | 697773        | Plot bearing along midline                           | 328                   |
| Zone      | 55            | Record magnetic bearing along midline from 0 m point |                       |
| Northing  | 6312520       |                                                      |                       |

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

|                         |                         |
|-------------------------|-------------------------|
| IBRA region             | South Eastern Highlands |
| Subregion               | Orange                  |
| Likely Vegetation Class | Non-native              |
| Plant Community Type    | 0                       |
| Condition state         | Non-native              |

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

| BAM Composition / Structure plot (400m <sup>2</sup> ) |             |             |
|-------------------------------------------------------|-------------|-------------|
| Dimensions (circle applicable size)                   |             | Sum values* |
| 20 x 20 m                                             | 10 x 40 m   |             |
| Native Richness<br>(count of native species)          | Trees       | 0           |
|                                                       | Shrubs      | 0           |
|                                                       | Grasses etc | 1           |
|                                                       | Forbs       | 1           |
|                                                       | Ferns       | 0           |
| Cover<br>(sum of cover of natives species)            | Other       | 0           |
|                                                       | Trees       | 0           |
|                                                       | Shrubs      | 0           |
|                                                       | Grasses etc | 0.1         |
|                                                       | Forbs       | 0.1         |
| High threat weed cover                                | Ferns       | 0           |
|                                                       | Other       | 0           |
|                                                       |             | 3.1         |

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

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

| BAM Function plot (1000m <sup>2</sup> ) |            |                                                         |
|-----------------------------------------|------------|---------------------------------------------------------|
| Dimensions (circle applicable size)     |            |                                                         |
| 20 x 50 m                               | 10 x 100 m |                                                         |
| Tree stem DBH (cm)                      |            | Notes on function attributes:                           |
| >80                                     | 0          | Stem size class records # large trees (cf. benchmark)   |
| 50 - 79                                 | 0          | Record stems for living trees only, and for all species |
| 30 - 49                                 | -          | For multistemmed trees, record only the largest stem    |
| 20 - 29                                 | -          | Presence of <5cm stems records regeneration             |
| 10 - 19                                 | -          | Record # trees with hollows, not number of hollows      |
| 5 - 9                                   | -          | Count as one stem where tree is multistemmed            |
| < 5                                     | -          | Hollow bearing stem may be a dead stem (incl. stag)     |
| # Trees with hollows                    | <20cm      | Total #                                                 |
|                                         | >20cm**    | 0                                                       |
| Length of logs                          |            | Total (m)                                               |
|                                         |            | 0                                                       |

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

\*\*Hollows of &gt;20cm are recorded for habitat for some threatened species

| BAM Litter/ Groundcover (1 x 1 m plots) |             |   | Litter cover is used for BAM, other attributes are useful for recording site condition in general |   |   |   |         |
|-----------------------------------------|-------------|---|---------------------------------------------------------------------------------------------------|---|---|---|---------|
| Sub-plot score<br>(% cover)             | Litter      | 1 | 2                                                                                                 | 3 | 4 | 5 | Average |
|                                         | Bare ground | 1 | 1                                                                                                 | 0 | 0 | 1 | 0.6     |
|                                         | Cryptogam   |   |                                                                                                   |   |   |   |         |
|                                         | Rock        |   |                                                                                                   |   |   |   |         |
|                                         |             |   |                                                                                                   |   |   |   |         |

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

**Other plot information (not essential for BAM)**

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

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

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

|       |
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| Notes |
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## BAM Plot - Field Survey Sheet

Page 1 of ( 2 )

|           |               |                                                      |                       |
|-----------|---------------|------------------------------------------------------|-----------------------|
| Date      | 12/02/2025    | Survey Name                                          | Redmond Place, Orange |
| Recorders | David Orchard | Plot ID #                                            | RP04                  |
| Photo #   |               | Zone ID                                              | 3387_Poor             |
| Datum     | GDA2020       | Plot dimensions                                      | 20 x 50               |
| Easting   | 697643        | Plot bearing along midline                           | 359                   |
| Northing  | 6312932       | Record magnetic bearing along midline from 0 m point |                       |

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

|                         |                                 |
|-------------------------|---------------------------------|
| IBRA region             | South Eastern Highlands         |
| Subregion               | Orange                          |
| Likely Vegetation Class | Western Slopes Grassy Woodlands |
| Plant Community Type    | 3387                            |
| Condition state         | Poor                            |

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

| BAM Composition / Structure plot (400m <sup>2</sup> ) |                      |             |
|-------------------------------------------------------|----------------------|-------------|
| Dimensions (circle applicable size)                   |                      | Sum values* |
| 20 x 20 m                                             | <del>10 x 40 m</del> |             |
| Native Richness<br>(count of native species)          | Trees                | 1           |
|                                                       | Shrubs               | 1           |
|                                                       | Grasses etc          | 1           |
|                                                       | Forbs                | 2           |
|                                                       | Ferns                | 0           |
|                                                       | Other                | 0           |
| Cover<br>(sum of cover of natives species)            | Trees                | 25          |
|                                                       | Shrubs               | 0.1         |
|                                                       | Grasses etc          | 3           |
|                                                       | Forbs                | 0.3         |
|                                                       | Ferns                | 0           |
|                                                       | Other                | 0           |
| High threat weed cover                                |                      | 0.1         |

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

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

| BAM Function plot (1000m <sup>2</sup> ) |                       |                                                         |
|-----------------------------------------|-----------------------|---------------------------------------------------------|
| Dimensions (circle applicable size)     |                       |                                                         |
| 20 x 50 m                               | <del>10 x 100 m</del> |                                                         |
| Tree stem DBH (cm)                      |                       | Notes on function attributes:                           |
| >80                                     | 3                     | Stem size class records # large trees (cf. benchmark)   |
| 50 - 79                                 | 0                     | Record stems for living trees only, and for all species |
| 30 - 49                                 | -                     | For multistemmed trees, record only the largest stem    |
| 20 - 29                                 | -                     | Presence of <5cm stems records regeneration             |
| 10 - 19                                 | -                     | Record # trees with hollows, not number of hollows      |
| 5 - 9                                   | -                     | Count as one stem where tree is multistemmed            |
| < 5                                     | +                     | Hollow bearing stem may be a dead stem (incl. stag)     |
| # Trees with hollows                    | <20cm                 | Total #                                                 |
|                                         | >20cm**               | 0                                                       |
| Length of logs                          |                       | Total (m)                                               |
|                                         |                       | 4.3                                                     |

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

\*\*Hollows of &gt;20cm are recorded for habitat for some threatened species

| BAM Litter/ Groundcover (1 x 1 m plots) |             |     | Litter cover is used for BAM, other attributes are useful for recording site condition in general |     |    |    |         |
|-----------------------------------------|-------------|-----|---------------------------------------------------------------------------------------------------|-----|----|----|---------|
|                                         |             | 1   | 2                                                                                                 | 3   | 4  | 5  | Average |
| Sub-plot score<br>(% cover)             | Litter      | 100 | 90                                                                                                | 100 | 80 | 90 | 92      |
|                                         | Bare ground |     |                                                                                                   |     |    |    |         |
|                                         | Cryptogam   |     |                                                                                                   |     |    |    |         |
|                                         | Rock        |     |                                                                                                   |     |    |    |         |

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

## Other plot information (not essential for BAM)

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

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

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

## Notes

[illegible]



## BAM Plot - Field Survey Sheet

Page 1 of ( 2 )

|           |               |                                                      |                       |
|-----------|---------------|------------------------------------------------------|-----------------------|
| Date      | 12/02/2025    | Survey Name                                          | Redmond Place, Orange |
| Recorders | David Orchard | Plot ID #                                            | RP05                  |
| Photo #   |               | Zone ID                                              | 0_NN                  |
| Datum     | GDA2020       | Plot dimensions                                      | 20 x 50               |
| Easting   | 697597        | Plot bearing along midline                           | 234                   |
| Northing  | 6312953       | Record magnetic bearing along midline from 0 m point |                       |

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

|                         |                         |
|-------------------------|-------------------------|
| IBRA region             | South Eastern Highlands |
| Subregion               | Orange                  |
| Likely Vegetation Class | Non-native              |
| Plant Community Type    | 0                       |
| Condition state         | Non-native              |

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

| BAM Composition / Structure plot (400m <sup>2</sup> ) |             |             |
|-------------------------------------------------------|-------------|-------------|
| Dimensions (circle applicable size)                   |             |             |
| 20 x 20 m                                             | 10 x 40 m   | Sum values* |
| Native Richness<br>(count of native species)          | Trees       | 0           |
|                                                       | Shrubs      | 0           |
|                                                       | Grasses etc | 2           |
|                                                       | Forbs       | 2           |
|                                                       | Ferns       | 0           |
| Cover<br>(sum of cover of natives species)            | Other       | 0           |
|                                                       | Trees       | 0           |
|                                                       | Shrubs      | 0           |
|                                                       | Grasses etc | 10.1        |
|                                                       | Forbs       | 0.2         |
| High threat weed cover                                | Ferns       | 0           |
|                                                       | Other       | 0           |

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

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

| BAM Function plot (1000m <sup>2</sup> ) |            |                                                         |
|-----------------------------------------|------------|---------------------------------------------------------|
| Dimensions (circle applicable size)     |            |                                                         |
| 20 x 50 m                               | 10 x 100 m |                                                         |
| Tree stem DBH (cm)                      |            | Notes on function attributes:                           |
| >80                                     | 0          | Stem size class records # large trees (cf. benchmark)   |
| 50 - 79                                 | 0          | Record stems for living trees only, and for all species |
| 30 - 49                                 | -          | For multistemmed trees, record only the largest stem    |
| 20 - 29                                 | -          | Presence of <5cm stems records regeneration             |
| 10 - 19                                 | -          | Record # trees with hollows, not number of hollows      |
| 5 - 9                                   | -          | Count as one stem where tree is multistemmed            |
| < 5                                     | -          | Hollow bearing stem may be a dead stem (incl. stag)     |
| # Trees with hollows                    | <20cm      | Total #                                                 |
|                                         | >20cm**    | 0                                                       |
| Length of logs                          |            | Total (m)                                               |
|                                         |            | 0                                                       |

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

\*\*Hollows of &gt;20cm are recorded for habitat for some threatened species

| BAM Litter/ Groundcover (1 x 1 m plots)                                                           |             |   |   |   |   |   |         |
|---------------------------------------------------------------------------------------------------|-------------|---|---|---|---|---|---------|
| Litter cover is used for BAM, other attributes are useful for recording site condition in general |             |   |   |   |   |   |         |
| Sub-plot score<br>(% cover)                                                                       | Litter      | 1 | 2 | 3 | 4 | 5 | Average |
|                                                                                                   | Bare ground | 0 | 1 | 2 | 0 | 0 | 0.6     |
|                                                                                                   | Cryptogam   |   |   |   |   |   |         |
|                                                                                                   | Rock        |   |   |   |   |   |         |

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

## Other plot information (not essential for BAM)

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

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

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

## Notes



**BAM Plot - Field Survey Sheet**

Page 1 of ( 2 )

|           |               |                                                      |                       |
|-----------|---------------|------------------------------------------------------|-----------------------|
| Date      | 12/02/2025    | Survey Name                                          | Redmond Place, Orange |
| Recorders | David Orchard | Plot ID #                                            | RP06                  |
| Photo #   |               | Zone ID                                              | 3387_Pla.             |
| Datum     | GDA2020       | Plot dimensions                                      | 20 x 50               |
| Easting   | 697516        | Plot bearing along midline                           | 318                   |
| Zone      | 55            | Record magnetic bearing along midline from 0 m point |                       |
| Northing  | 6313172       |                                                      |                       |

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

|                         |                                 |
|-------------------------|---------------------------------|
| IBRA region             | South Eastern Highlands         |
| Subregion               | Orange                          |
| Likely Vegetation Class | Western Slopes Grassy Woodlands |
| Plant Community Type    | 3387                            |
| Condition state         | Planted                         |

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

| BAM Composition / Structure plot (400m <sup>2</sup> ) |                      |             |
|-------------------------------------------------------|----------------------|-------------|
| Dimensions (circle applicable size)                   |                      |             |
| 20 x 20 m                                             | <del>10 x 40 m</del> | Sum values* |
| Native Richness<br>(count of native species)          | Trees                | 1           |
|                                                       | Shrubs               | 0           |
|                                                       | Grasses etc          | 1           |
|                                                       | Forbs                | 0           |
|                                                       | Ferns                | 0           |
| Cover<br>(sum of cover of natives species)            | Other                | 0           |
|                                                       | Trees                | 70          |
|                                                       | Shrubs               | 0           |
|                                                       | Grasses etc          | 1           |
|                                                       | Forbs                | 0           |
| High threat weed cover                                | Ferns                | 0           |
|                                                       | Other                | 0           |

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

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

| BAM Function plot (1000m <sup>2</sup> ) |                       |                                                         |
|-----------------------------------------|-----------------------|---------------------------------------------------------|
| Dimensions (circle applicable size)     |                       |                                                         |
| 20 x 50 m                               | <del>10 x 100 m</del> |                                                         |
| Tree stem DBH (cm)                      |                       | Notes on function attributes:                           |
| >80                                     | 0                     | Stem size class records # large trees (cf. benchmark)   |
| 50 - 79                                 | 2                     | Record stems for living trees only, and for all species |
| 30 - 49                                 | -                     | For multistemmed trees, record only the largest stem    |
| 20 - 29                                 | -                     | Presence of <5cm stems records regeneration             |
| 10 - 19                                 | -                     | Record # trees with hollows, not number of hollows      |
| 5 - 9                                   | -                     | Count as one stem where tree is multistemmed            |
| < 5                                     | -                     | Hollow bearing stem may be a dead stem (incl. stag)     |
| # Trees with hollows                    | <20cm                 | Total #                                                 |
|                                         | >20cm**               | 0                                                       |
| Length of logs                          |                       | Total (m)                                               |
|                                         |                       | 0                                                       |

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

\*\*Hollows of &gt;20cm are recorded for habitat for some threatened species

| BAM Litter/ Groundcover (1 x 1 m plots) |             | Litter cover is used for BAM, other attributes are useful for recording site condition in general |    |    |    |    |         |
|-----------------------------------------|-------------|---------------------------------------------------------------------------------------------------|----|----|----|----|---------|
|                                         |             | 1                                                                                                 | 2  | 3  | 4  | 5  | Average |
| Sub-plot score<br>(% cover)             | Litter      | 60                                                                                                | 30 | 20 | 50 | 20 | 36      |
|                                         | Bare ground |                                                                                                   |    |    |    |    |         |
|                                         | Cryptogam   |                                                                                                   |    |    |    |    |         |
|                                         | Rock        |                                                                                                   |    |    |    |    |         |

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

**Other plot information (not essential for BAM)**

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

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

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

**Notes**





## BAM Plot - Field Survey Sheet

Page 1 of ( 2 )

|           |               |                                                      |                       |
|-----------|---------------|------------------------------------------------------|-----------------------|
| Date      | 12/02/2025    | Survey Name                                          | Redmond Place, Orange |
| Recorders | David Orchard | Plot ID #                                            | RP07                  |
| Photo #   |               | Zone ID                                              | 3387_Mod              |
| Datum     | GDA2020       | Plot dimensions                                      | 20 x 50               |
| Easting   | 698211        | Plot bearing along midline                           | 91                    |
| Northing  | 6312460       | Record magnetic bearing along midline from 0 m point |                       |

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

|                         |                                 |
|-------------------------|---------------------------------|
| IBRA region             | South Eastern Highlands         |
| Subregion               | Orange                          |
| Likely Vegetation Class | Western Slopes Grassy Woodlands |
| Plant Community Type    | 3387                            |
| Condition state         | Moderate                        |

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

| BAM Composition / Structure plot (400m <sup>2</sup> ) |                      |             |
|-------------------------------------------------------|----------------------|-------------|
| Dimensions (circle applicable size)                   |                      |             |
| 20 x 20 m                                             | <del>10 x 40 m</del> | Sum values* |
| Native Richness<br>(count of native species)          | Trees                | 2           |
|                                                       | Shrubs               | 0           |
|                                                       | Grasses etc          | 3           |
|                                                       | Forbs                | 1           |
|                                                       | Ferns                | 0           |
| Cover<br>(sum of cover of natives species)            | Other                | 1           |
|                                                       | Trees                | 20          |
|                                                       | Shrubs               | 0           |
|                                                       | Grasses etc          | 43          |
|                                                       | Forbs                | 0.1         |
| High threat weed cover                                | Ferns                | 0           |
|                                                       | Other                | 0.1         |

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

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

| BAM Function plot (1000m <sup>2</sup> ) |                       |                                                         |
|-----------------------------------------|-----------------------|---------------------------------------------------------|
| Dimensions (circle applicable size)     |                       |                                                         |
| 20 x 50 m                               | <del>10 x 100 m</del> |                                                         |
| Tree stem DBH (cm)                      |                       | Notes on function attributes:                           |
| >80                                     | 0                     | Stem size class records # large trees (cf. benchmark)   |
| 50 - 79                                 | 0                     | Record stems for living trees only, and for all species |
| 30 - 49                                 | +                     | For multistemmed trees, record only the largest stem    |
| 20 - 29                                 | +                     | Presence of <5cm stems records regeneration             |
| 10 - 19                                 | +                     | Record # trees with hollows, not number of hollows      |
| 5 - 9                                   | -                     | Count as one stem where tree is multistemmed            |
| < 5                                     | +                     | Hollow bearing stem may be a dead stem (incl. stag)     |
| # Trees with hollows                    | <20cm                 | Total #                                                 |
|                                         | >20cm**               | 0                                                       |
| Length of logs                          |                       | Total (m)                                               |
|                                         |                       | 7.1                                                     |

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

\*\*Hollows of &gt;20cm are recorded for habitat for some threatened species

| BAM Litter/ Groundcover (1 x 1 m plots)                                                           |             |    |    |    |    |    |         |
|---------------------------------------------------------------------------------------------------|-------------|----|----|----|----|----|---------|
| Litter cover is used for BAM, other attributes are useful for recording site condition in general |             |    |    |    |    |    |         |
| Sub-plot score<br>(% cover)                                                                       | Litter      | 1  | 2  | 3  | 4  | 5  | Average |
|                                                                                                   | Bare ground | 70 | 60 | 30 | 50 | 10 | 44      |
|                                                                                                   | Cryptogam   |    |    |    |    |    |         |
|                                                                                                   | Rock        |    |    |    |    |    |         |

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

## Other plot information (not essential for BAM)

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

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

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

## Notes

[illegible]

## BAM Plot - Field Survey Sheet

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|           |               |                                                      |                       |
|-----------|---------------|------------------------------------------------------|-----------------------|
| Date      | 12/02/2025    | Survey Name                                          | Redmond Place, Orange |
| Recorders | David Orchard | Plot ID #                                            | RP08                  |
| Photo #   |               | Zone ID                                              | 0_NN                  |
| Datum     | GDA2020       | Plot dimensions                                      | 20 x 50               |
| Easting   | 697754        | Plot bearing along midline                           | 271                   |
| Zone      | 55            | Record magnetic bearing along midline from 0 m point |                       |
| Northing  | 6312692       |                                                      |                       |

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

|                         |                         |
|-------------------------|-------------------------|
| IBRA region             | South Eastern Highlands |
| Subregion               | Orange                  |
| Likely Vegetation Class | Non-native              |
| Plant Community Type    | 0                       |
| Condition state         | Non-native              |

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

| BAM Composition / Structure plot (400m <sup>2</sup> ) |             |             |
|-------------------------------------------------------|-------------|-------------|
| Dimensions (circle applicable size)                   |             | Sum values* |
| 20 x 20 m                                             | 10 x 40 m   |             |
| Native Richness<br>(count of native species)          | Trees       | 0           |
|                                                       | Shrubs      | 0           |
|                                                       | Grasses etc | 1           |
|                                                       | Forbs       | 1           |
|                                                       | Ferns       | 0           |
| Cover<br>(sum of cover of natives species)            | Other       | 0           |
|                                                       | Trees       | 0           |
|                                                       | Shrubs      | 0           |
|                                                       | Grasses etc | 0.1         |
|                                                       | Forbs       | 0.1         |
| High threat weed cover                                | Ferns       | 0           |
|                                                       | Other       | 0           |

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

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

| BAM Function plot (1000m <sup>2</sup> ) |            |                                                         |
|-----------------------------------------|------------|---------------------------------------------------------|
| Dimensions (circle applicable size)     |            |                                                         |
| 20 x 50 m                               | 10 x 100 m |                                                         |
| Tree stem DBH (cm)                      |            | Notes on function attributes:                           |
| >80                                     | 0          | Stem size class records # large trees (cf. benchmark)   |
| 50 - 79                                 | 0          | Record stems for living trees only, and for all species |
| 30 - 49                                 | -          | For multistemmed trees, record only the largest stem    |
| 20 - 29                                 | -          | Presence of <5cm stems records regeneration             |
| 10 - 19                                 | -          | Record # trees with hollows, not number of hollows      |
| 5 - 9                                   | -          | Count as one stem where tree is multistemmed            |
| < 5                                     | -          | Hollow bearing stem may be a dead stem (incl. stag)     |
| # Trees with hollows                    | <20cm      | Total #                                                 |
|                                         | >20cm**    | 0                                                       |
| Length of logs                          |            | Total (m)                                               |
|                                         |            | 0                                                       |

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

\*\*Hollows of &gt;20cm are recorded for habitat for some threatened species

| BAM Litter/ Groundcover (1 x 1 m plots) |             |   | Litter cover is used for BAM, other attributes are useful for recording site condition in general |   |     |   |         |
|-----------------------------------------|-------------|---|---------------------------------------------------------------------------------------------------|---|-----|---|---------|
| Sub-plot score<br>(% cover)             | Litter      | 1 | 2                                                                                                 | 3 | 4   | 5 | Average |
|                                         | Bare ground | 1 | 1                                                                                                 | 1 | 0.5 | 1 | 0.72    |
|                                         | Cryptogam   |   |                                                                                                   |   |     |   |         |
|                                         | Rock        |   |                                                                                                   |   |     |   |         |
|                                         |             |   |                                                                                                   |   |     |   |         |

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

## Other plot information (not essential for BAM)

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

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

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

## Notes

[illegible]

**BAM Plot - Field Survey Sheet**

Page 1 of ( 2 )

|                  |               |                                                      |                       |
|------------------|---------------|------------------------------------------------------|-----------------------|
| <b>Date</b>      | 12/02/2025    | <b>Survey Name</b>                                   | Redmond Place, Orange |
| <b>Recorders</b> | David Orchard | <b>Plot ID #</b>                                     | RP09                  |
| <b>Photo #</b>   |               | <b>Zone ID</b>                                       | 4063_Pla.             |
| <b>Datum</b>     | GDA2020       | <b>Plot dimensions</b>                               | 20 x 50               |
| <b>Easting</b>   | 697984        | <b>Plot bearing along midline</b>                    | 298                   |
| <b>Zone</b>      | 55            | Record magnetic bearing along midline from 0 m point |                       |
| <b>Northing</b>  | 6312617       |                                                      |                       |

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

|                                |                          |
|--------------------------------|--------------------------|
| <b>IBRA region</b>             | South Eastern Highlands  |
| <b>Subregion</b>               | Orange                   |
| <b>Likely Vegetation Class</b> | Eastern Riverine Forests |
| <b>Plant Community Type</b>    | 4063                     |
| <b>Condition state</b>         | Planted                  |

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

| <b>BAM Composition / Structure plot (400m<sup>2</sup>)</b> |                      |                    |
|------------------------------------------------------------|----------------------|--------------------|
| <b>Dimensions</b> (circle applicable size)                 |                      |                    |
| 20 x 20 m                                                  | <del>10 x 40 m</del> | <b>Sum values*</b> |
| <b>Native Richness</b><br>(count of native species)        | <b>Trees</b>         | 1                  |
|                                                            | <b>Shrubs</b>        | 0                  |
|                                                            | <b>Grasses etc</b>   | 0                  |
|                                                            | <b>Forbs</b>         | 2                  |
|                                                            | <b>Ferns</b>         | 0                  |
| <b>Cover</b><br>(sum of cover of natives species)          | <b>Other</b>         | 0                  |
|                                                            | <b>Trees</b>         | 25                 |
|                                                            | <b>Shrubs</b>        | 0                  |
|                                                            | <b>Grasses etc</b>   | 0                  |
|                                                            | <b>Forbs</b>         | 0.2                |
|                                                            | <b>Ferns</b>         | 0                  |
|                                                            | <b>Other</b>         | 0                  |
| <b>High threat weed cover</b>                              |                      | 73                 |

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

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

| <b>BAM Function plot (1000m<sup>2</sup>)</b> |                       |                                                         |
|----------------------------------------------|-----------------------|---------------------------------------------------------|
| <b>Dimensions</b> (circle applicable size)   |                       |                                                         |
| 20 x 50 m                                    | <del>10 x 100 m</del> |                                                         |
| <b>Tree stem DBH (cm)</b>                    |                       | <b>Notes on function attributes:</b>                    |
| >80                                          | 0                     | Stem size class records # large trees (cf. benchmark)   |
| 50 - 79                                      | 2                     | Record stems for living trees only, and for all species |
| 30 - 49                                      | -                     | For multistemmed trees, record only the largest stem    |
| 20 - 29                                      | -                     | Presence of <5cm stems records regeneration             |
| 10 - 19                                      | -                     | Record # trees with hollows, not number of hollows      |
| 5 - 9                                        | -                     | Count as one stem where tree is multistemmed            |
| < 5                                          | -                     | Hollow bearing stem may be a dead stem (incl. stag)     |
| <b># Trees with hollows</b>                  |                       | <b>Total #</b>                                          |
| <20cm                                        |                       |                                                         |
| >20cm**                                      |                       | 0                                                       |
| <b>Length of logs</b>                        |                       | <b>Total (m)</b>                                        |
|                                              |                       | 0                                                       |

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

\*\*Hollows of &gt;20cm are recorded for habitat for some threatened species

| <b>BAM Litter/ Groundcover (1 x 1 m plots)</b>                                                    |                    |    |    |    |    |    |                |
|---------------------------------------------------------------------------------------------------|--------------------|----|----|----|----|----|----------------|
| Litter cover is used for BAM, other attributes are useful for recording site condition in general |                    |    |    |    |    |    |                |
| <b>Sub-plot score</b><br>(% cover)                                                                |                    | 1  | 2  | 3  | 4  | 5  | <b>Average</b> |
|                                                                                                   | <b>Litter</b>      | 30 | 20 | 20 | 40 | 10 | 24             |
|                                                                                                   | <b>Bare ground</b> |    |    |    |    |    |                |
|                                                                                                   | <b>Cryptogam</b>   |    |    |    |    |    |                |
|                                                                                                   | <b>Rock</b>        |    |    |    |    |    |                |

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

**Other plot information (not essential for BAM)**

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

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

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

**Notes**



[illegible]

**BAM Plot - Field Survey Sheet**

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|           |               |                                                      |                       |
|-----------|---------------|------------------------------------------------------|-----------------------|
| Date      | 12/02/2025    | Survey Name                                          | Redmond Place, Orange |
| Recorders | David Orchard | Plot ID #                                            | RP10                  |
| Photo #   |               | Zone ID                                              | 3387_Der.             |
| Datum     | GDA2020       | Plot dimensions                                      | 20 x 50               |
| Easting   | 697896        | Plot bearing along midline                           | 321                   |
| Northing  | 6312631       | Record magnetic bearing along midline from 0 m point |                       |

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

|                         |                                 |
|-------------------------|---------------------------------|
| IBRA region             | South Eastern Highlands         |
| Subregion               | Orange                          |
| Likely Vegetation Class | Western Slopes Grassy Woodlands |
| Plant Community Type    | 3387                            |
| Condition state         | Derived                         |

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

| BAM Composition / Structure plot (400m <sup>2</sup> ) |                      |             |
|-------------------------------------------------------|----------------------|-------------|
| Dimensions (circle applicable size)                   |                      |             |
| 20 x 20 m                                             | <del>10 x 40 m</del> | Sum values* |
| Native Richness<br>(count of native species)          | Trees                | 0           |
|                                                       | Shrubs               | 0           |
|                                                       | Grasses etc          | 6           |
|                                                       | Forbs                | 2           |
|                                                       | Ferns                | 0           |
| Cover<br>(sum of cover of natives species)            | Other                | 0           |
|                                                       | Trees                | 0           |
|                                                       | Shrubs               | 0           |
|                                                       | Grasses etc          | 55.2        |
|                                                       | Forbs                | 0.2         |
|                                                       | Ferns                | 0           |
|                                                       | Other                | 0           |
| High threat weed cover                                |                      | 15          |

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

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

| BAM Function plot (1000m <sup>2</sup> ) |                       |                                                         |
|-----------------------------------------|-----------------------|---------------------------------------------------------|
| Dimensions (circle applicable size)     |                       |                                                         |
| 20 x 50 m                               | <del>10 x 100 m</del> |                                                         |
| Tree stem DBH (cm)                      |                       | Notes on function attributes:                           |
| >80                                     | 0                     | Stem size class records # large trees (cf. benchmark)   |
| 50 - 79                                 | 0                     | Record stems for living trees only, and for all species |
| 30 - 49                                 | -                     | For multistemmed trees, record only the largest stem    |
| 20 - 29                                 | -                     | Presence of <5cm stems records regeneration             |
| 10 - 19                                 | -                     | Record # trees with hollows, not number of hollows      |
| 5 - 9                                   | -                     | Count as one stem where tree is multistemmed            |
| < 5                                     | -                     | Hollow bearing stem may be a dead stem (incl. stag)     |
| # Trees with hollows                    | <20cm                 | Total #                                                 |
|                                         | >20cm**               | 0                                                       |
| Length of logs                          |                       | Total (m)                                               |
|                                         |                       | 0                                                       |

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

\*\*Hollows of &gt;20cm are recorded for habitat for some threatened species

| BAM Litter/ Groundcover (1 x 1 m plots) |             |   | Litter cover is used for BAM, other attributes are useful for recording site condition in general |   |   |   |         |
|-----------------------------------------|-------------|---|---------------------------------------------------------------------------------------------------|---|---|---|---------|
| Sub-plot score<br>(% cover)             | Litter      | 1 | 2                                                                                                 | 3 | 4 | 5 | Average |
|                                         | Bare ground | 5 | 2                                                                                                 | 2 | 5 | 1 | 3       |
|                                         | Cryptogam   |   |                                                                                                   |   |   |   |         |
|                                         | Rock        |   |                                                                                                   |   |   |   |         |

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

## Other plot information (not essential for BAM)

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

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

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

## Notes

[illegible]

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## **APPENDIX C – BC AND EPBC ACT HABITAT ASSESSMENT FOR THREATENED AND MIGRATORY SPECIES, POPULATIONS AND COMMUNITIES PREDICTED TO OCCUR**

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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. List generated by conducting a vegetation association within the relevant IBRA subregions. To determine whether any threatened species were known to occur near the subject site, BioNet Atlas records of threatened species 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 within the impact areas, but the species has not been observed or previously recorded within the search area. Or, the species has been observed or previously recorded within the search area, but no associated PCTs occur within the subject site.
- ‘Low’ – a very low likelihood that the species occurs within the site, based on the species distribution, lack of records within the search area, and/or lack of the preferred habitat type.
- ‘Absent’ – habitat on-site and in the vicinity is unsuitable for the species.

## Likelihood of occurrence table for BC, FM and EPBC Act listed threatened and migratory species and populations.

| Scientific Name                     | Common Name     | NSW Status <sup>+</sup> | Comm. Status <sup>+</sup> | Records within 10 km | Likelihood of Occurrence                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Test of Significance Required (Yes / No) |
|-------------------------------------|-----------------|-------------------------|---------------------------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| <i>Maccullochella macquariensis</i> | Trout Cod       | E1,P                    |                           | 0                    | <p>Trout Cod tend to occupy areas which have lots of large in-stream woody debris or 'snags', which provide complex habitats for each stage of the species' life cycle. They form pairs and spawn during spring and early summer when the water temperature is around 15°C. Females produce 1,200 – 11,000 adhesive eggs (2.5 – 3.6 mm in diameter) that attach to hard substrates and are guarded by the male.</p> <p><b>Absent – No suitable habitat.</b></p>                                                                                                                                                                                                                                                                                                                                                                                   | No                                       |
| <i>Maccullochella peelii</i>        | Murray Cod      | P                       | V                         | 0                    | <p>The Murray Cod is a moderately elongate, deep-bodied fish. It has a concave snout profile, a large mouth and small eyes. This species is olive to cream or yellowish with a reticulated pattern of green markings on the back and sides. It is white to cream below. The median fins are dusky with white margins. The pelvic fins are white. This fish is endemic to Australia, occurring in freshwaters of the Murray-Darling River drainage in Queensland, New South Wales, Victoria and South Australia. There are also erroneous reports from the Dawson-Fitzroy drainage. It preys on fishes, molluscs, turtles and some small terrestrial animals such as birds, mammals and snakes.</p> <p><b>Absent – No suitable habitat.</b></p>                                                                                                    | No                                       |
| <i>Macquaria australasica</i>       | Macquarie Perch | E1,P                    |                           | 0                    | <p>Macquarie Perch are found in the Murray-Darling Basin (particularly upstream reaches) of the Lachlan, Murrumbidgee and Murray rivers, and parts of south-eastern coastal NSW, including the Hawkesbury/Nepean and Shoalhaven catchments. The conservation status of the different populations is not well known, but there have been long-term declines in their abundance. Macquarie Perch numbers have declined in Victoria, and the species is now restricted to a small number of fragmented populations mostly in cool, rocky, fast flowing streams in relatively undisturbed upland catchments, such as King Parrot Creek in the in the Goulburn Broken Catchment in northern Victoria. A self-sustaining population also exists in the Yarra River from fish translocated in the 1920s.</p> <p><b>Absent – No suitable habitat.</b></p> | No                                       |



|                                |                            |         |    |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |     |
|--------------------------------|----------------------------|---------|----|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| <i>Litoria aurea</i>           | Green and Golden Bell Frog | E1,P    | V  | 0 | <p>Formerly distributed from the NSW north coast near Brunswick Heads, southwards along the NSW coast to Victoria where it extends into east Gippsland. Records from west to Bathurst, Tumut and the ACT region. Since 1990 there have been approximately 50 recorded locations in NSW, most of which are small, coastal, or near coastal populations. These locations occur over the species' former range, however they are widely separated and isolated. Large populations in NSW are located around the metropolitan areas of Sydney, Shoalhaven and mid north coast (one an island population). There is only one known population on the NSW Southern Tablelands. Inhabits marshes, dams and stream-sides, particularly those containing bullrushes (<i>Typha</i> spp.) or spikerushes (<i>Eleocharis</i> spp.). Optimum habitat includes water-bodies that are unshaded, free of predatory fish such as Plague Minnow (<i>Gambusia holbrooki</i>), have a grassy area nearby and diurnal sheltering sites available.</p> <p><b>Absent – Surveyed.</b></p> | No  |
| <i>Litoria booroolongensis</i> | Booroolong Frog            | E1,P    | E  | 0 | <p>The Booroolong Frog is restricted to NSW and north-eastern Victoria, predominantly along the western-flowing streams of the Great Dividing Range. It has disappeared from much of the Northern Tablelands, however several populations have recently been recorded in the Namoi catchment. The species is rare throughout most of the remainder of its range. Live along permanent streams with some fringing vegetation cover such as ferns, sedges or grasses.</p> <p><b>Absent – Surveyed.</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | No  |
| <i>Litoria castanea</i>        | Yellow-spotted Tree Frog   | E4A,P   | CE | 0 | <p>Historically, this species occurred in two separate highland ranges: on the New England Tableland, and on the southern and central tablelands from Bathurst to Bombala. Following the chytrid virus pandemic in the 1970s, this species went unrecorded for 30 years and was believed to be extinct, until it was rediscovered in 2009 on the Southern Tablelands. This population - near Yass - remains the only known extant site of the species. Require large permanent ponds or slow flowing 'chain-of-ponds' streams with abundant emergent vegetation such as bulrushes and aquatic vegetation.</p> <p><b>Absent – Surveyed.</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                    | No  |
| <i>Anthochaera phrygia</i>     | Regent Honeyeater          | E4A,P,2 | CE | 0 | <p>The Regent Honeyeater mainly inhabits temperate woodlands and open forests of the inland slopes of south-east Australia. Birds are also found in drier coastal woodlands and forests in some years. Once recorded between</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Yes |

|                                        |                    |     |       |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |     |
|----------------------------------------|--------------------|-----|-------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
|                                        |                    |     |       |     | <p>Adelaide and the central coast of Queensland, its range has contracted dramatically in the last 30 years to between north-eastern Victoria and south-eastern Queensland. There are only three known key breeding regions remaining: north-east Victoria (Chiltern-Albury), and in NSW at Capertee Valley and the Bundarra-Barraba region. In NSW the distribution is very patchy and mainly confined to the two main breeding areas and surrounding fragmented woodlands. In some years flocks converge on flowering coastal woodlands and forests. The Regent Honeyeater is a flagship threatened woodland bird whose conservation will benefit a large suite of other threatened and declining woodland fauna. The species inhabits dry open forest and woodland, particularly Box-Ironbark woodland, and riparian forests of River Sheoak. Regent Honeyeaters inhabit woodlands that support a significantly high abundance and species richness of bird species. These woodlands have significantly large numbers of mature trees, high canopy cover and abundance of mistletoes.</p> <p><b>Moderate – Subject site within predicted species distribution, associated PCT (3387) present, and no records within 10km.</b></p> |     |
| <i>Aphelocephala leucopsis</i>         | Southern Whiteface | V,P | V     | 1   | <p>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</p> <p><b>High – Subject site within predicted species distribution, no associated PCT present, and a record within 10km.</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Yes |
| <i>Apus pacificus</i>                  | Fork-tailed Swift  | P   | C,J,K | 2   | <p>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.</p> <p><b>Moderate – Subject site within predicted species distribution, associated PCT (3387) present, and no records within 10km.</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Yes |
| <i>Artamus cyanopterus cyanopterus</i> | Dusky Woodswallow  | V,P |       | 136 | <p>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</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Yes |

|                               |                        |      |       |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |     |
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|                               |                        |      |       |   | <p>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.</p> <p><b>High – Subject site within predicted species distribution, associated PCT (3387) present, and records within 10km.</b></p>                                                                                                                                                                                                                                                                                                                                              |     |
| <i>Botaurus poiciloptilus</i> | Australasian Bittern   | E1,P | E     | 0 | <p>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</i> spp.) and spikerushes (<i>Eleocharis</i> spp.). Hides during the day amongst dense reeds or rushes and feed mainly at night on frogs, fish, yabbies, spiders, insects and snails. Feeding platforms may be constructed over deeper water from reeds trampled by the bird; platforms are often littered with prey remains. Breeding occurs in summer from October to January; nests are built in secluded places in densely-vegetated wetlands on a platform of reeds; there are usually six olive-brown eggs to a clutch.</p> <p><b>Low – Subject site within species distribution, no associated PCTs present, and no records within 10km.</b></p> | No  |
| <i>Burhinus grallarius</i>    | Bush Stone-curlew      | E1,P |       | 0 | <p>The Bush Stone-curlew is found throughout Australia except for the central southern coast and inland, the far south-east corner, and Tasmania. Only in northern Australia is it still common however and in the south-east it is either rare or extinct throughout its former range. Inhabits open forests and woodlands with a sparse grassy ground layer and fallen timber. Largely nocturnal, being especially active on moonlit nights. Feed on insects and small vertebrates, such as frogs, lizards and snakes. Nest on the ground in a scrape or small bare patch. Two eggs are laid in spring and early summer.</p> <p><b>Absent – Surveyed.</b></p>                                                                                                                                                                                                                                                                | No  |
| <i>Calidris acuminata</i>     | Sharp-tailed Sandpiper | P    | C,J,K | 4 | <p>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</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Yes |

|                                        |                                     |       |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |
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|                                        |                                     |       |   |   | <p>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.</p> <p><b>Moderate – Subject site within species distribution, no associated PCTs present, and records within 10km.</b></p> |    |
| <i>Callocephalon fimbriatum</i>        | Gang-gang Cockatoo                  | V,P,3 | E | 0 | <p>The Gang-gang Cockatoo is distributed from southern Victoria through south and central-eastern New South Wales. In New South Wales, the Gang-gang Cockatoo is distributed from the south-east coast to the Hunter region, and inland to the Central Tablelands and south-west slopes. It occurs regularly in the Australian Capital Territory. It is rare at the extremities of its range, with isolated records known from as far north as Coffs Harbour and as far west as Mudgee. In spring and summer, generally found in tall mountain forests and woodlands, particularly in heavily timbered and mature wet sclerophyll forests.</p> <p><b>Absent – Surveyed.</b></p>                                                                                                                                                                                                                                                                                                                | No |
| <i>Calyptorhynchus lathami lathami</i> | South-eastern Glossy Black-Cockatoo | V,P   | V | 0 | <p>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.</p> <p><b>Absent – Surveyed.</b></p>                                                                                                                                                                                                                                                                                                                                                                              | No |
| <i>Certhionyx variegatus</i>           | Pied Honeyeater                     | V,P   |   | 2 | <p>Pied Honeyeater is widespread throughout acacia, mallee and spinifex scrubs of arid and semi-arid Australia. Occasionally occurs further east, on</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | No |

|                                       |                                        |     |   |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |     |
|---------------------------------------|----------------------------------------|-----|---|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
|                                       |                                        |     |   |    | <p>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</i> spp.); also from mistletoes and various other shrubs (e.g. <i>Grevillea</i> spp.); also eats saltbush fruit, berries, seed, flowers and insects. Highly nomadic, following the erratic flowering of shrubs; can be locally common at times.</p> <p><b>Low – Subject site within species distribution, no associated PCTs present, and two records within 10km, both from 2002. However subject site lacks required habitat features, including any stick nests and native shrubs</b></p>                                                                                                                                                                                                                                                  |     |
| <i>Circus assimilis</i>               | Spotted Harrier                        | V,P |   | 0  | <p>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.</p> <p><b>Low – Although the subject site is within the species distribution and an associated PCT (3387) is present, no records occur within the 10 km search area and there are no suitable nesting trees.</b></p>                                                                                                                                                                                                                                                                                                         | No  |
| <i>Climacteris picumnus victoriae</i> | Brown Treecreeper (eastern subspecies) | V,P | V | 17 | <p>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</p> | Yes |



|                                  |                    |     |  |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |     |
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|                                  |                    |     |  |   | <p>vegetation fragments smaller than 300 hectares, that have been isolated or fragmented for more than 50 years.</p> <p><b>High – Subject site within species distribution, associated PCTs present (3387), and records within 10km.</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |     |
| <i>Daphoenositta chrysoptera</i> | Varied Sittella    | V,P |  | 7 | <p>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.</p> <p><b>High – Subject site within species distribution, associated PCTs present (3387), and records within 10km.</b></p>                                                                                                                         | Yes |
| <i>Epthianura albifrons</i>      | White-fronted Chat | V,P |  | 0 | <p>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.</p> <p><b>Low – Subject site within species distribution, no associated PCTs present, and no records within 10km.</b></p> | No  |
| <i>Falco subniger</i>            | Black Falcon       | V,P |  | 0 | <p>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.</p>                                                                                                                                                                                                            | No  |

|                               |                         |     |     |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |     |
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|                               |                         |     |     |   | <b>Low – Although the subject site is within the species distribution and an associated PCT (3387) is present, no records occur within the 10 km search area and there are no suitable nesting trees.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |     |
| <i>Gallinago hardwickii</i>   | Latham's Snipe          | P   | J,K | 7 | <p>Latham's Snipe is a non-breeding visitor to south-eastern Australia and is a passage migrant through northern Australia (i.e. it travels through northern Australia to reach non-breeding areas located further south). The species has been recorded along the east coast of Australia from Cape York Peninsula through to south-eastern South Australia (including the Adelaide plains and Mount Lofty Ranges, and the Eyre Peninsula). The range extends inland over the eastern tablelands in south-eastern Queensland (and occasionally from Rockhampton in the north), and to west of the Great Dividing Range in New South. The species is widespread in Tasmania and is found in all regions of Victoria except for the north-west. Most birds spend the non-breeding period at sites located south of the Richmond River in New South Wales. In Australia, Latham's Snipe occurs in permanent and ephemeral wetlands up to 2000 m above sea-level. They usually inhabit open, freshwater wetlands with low, dense vegetation (e.g. swamps, flooded grasslands or heathlands, around bogs and other water bodies. However, they can also occur in habitats with saline or brackish water, in modified or artificial habitats, and in habitats located close to humans or human activity.</p> <p><b>Moderate – Subject site within predicted species distribution, no associated PCT present, and records within 10km.</b></p> | Yes |
| <i>Grantiella picta</i>       | Painted Honeyeater      | V,P | V   | 0 | <p>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.</p> <p><b>Low – Subject site within species distribution, no associated PCTs present, and no records within 10km.</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | No  |
| <i>Haliaeetus leucogaster</i> | White-bellied Sea-Eagle | V,P |     | 5 | <p>The White-bellied Sea-eagle is distributed around the Australian coastline, including Tasmania, and well inland along rivers and wetlands of the Murray Darling Basin. In New South Wales it is widespread along the east coast, and along all major inland rivers and waterways. Habitats are characterised by the presence of large areas of open water including larger rivers, swamps,</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | No  |

|                               |                           |     |         |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |     |
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|                               |                           |     |         |    | <p>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.</p> <p><b>Absent – Surveyed.</b></p> |     |
| <i>Hieraaetus morphnoides</i> | Little Eagle              | V,P |         | 27 | <p>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.</p> <p><b>Absent – Surveyed.</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | No  |
| <i>Hirundapus caudacutus</i>  | White-throated Needletail | V,P | V,C,J,K | 0  | <p>The White-throated Needletail is widespread in eastern and south-eastern. In eastern Australia, it is recorded in all coastal regions of Queensland and NSW, extending inland to the western slopes of the Great Divide and occasionally onto the adjacent inland plains. In Australia, the White-throated Needletail is almost exclusively aerial, from heights of less than 1 m up to more than 1000 m above the ground. Because they are aerial, it has been stated that conventional habitat descriptions are inapplicable, but there are, nevertheless, certain preferences exhibited by the species. Although they occur over most types of habitat, they are probably recorded most often above wooded areas, including open forest and rainforest, and may also fly between trees or in clearings, below the canopy, but they are less commonly recorded flying above woodland.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Yes |

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|                           |                     |       |         |   | <b>Moderate – Subject site within predicted species distribution, associated PCT (3387) present, and no records within 10km.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |    |
| <i>Lathamus discolor</i>  | Swift Parrot        | E1,P  | CE      | 1 | <p>Breeds in Tasmania during spring and summer, migrating in the autumn and winter months to south-eastern Australia from Victoria and the eastern parts of South Australia to south-east Queensland. In NSW mostly occurs on the coast and south west slopes. On the mainland they occur in areas where eucalypts are flowering profusely or where there are abundant lerp (from sap-sucking bugs) infestations. Favoured feed trees include winter flowering species such as Swamp Mahogany <i>Eucalyptus robusta</i>, Spotted Gum <i>Corymbia maculata</i>, Red Bloodwood <i>C. gummifera</i>, Forest Red Gum <i>E. tereticornis</i>, Mugga Ironbark <i>E. sideroxylon</i>, and White Box <i>E. albens</i>.</p> <p><b>Low – Although a record of this species occurs within the 10 km search area, no suitable feed tree species are present.</b></p>                         | No |
| <i>Limosa limosa</i>      | Black-tailed Godwit | V,P   | E,C,J,K | 0 | <p>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.</p> <p><b>Low – Subject site within species distribution, no associated PCTs present, and no records within 10km.</b></p> | No |
| <i>Lophoictinia isura</i> | Square-tailed Kite  | V,P,3 |         | 0 | <p>The Square-tailed Kite ranges along coastal and subcoastal areas from south-western to northern Australia, Queensland, NSW and Victoria. In NSW, scattered records of the species throughout the state indicate that the species is a regular resident in the north, north-east and along the major west-flowing river systems. It is a summer breeding migrant to the south-east, including the NSW south coast, arriving in September and leaving by March. Found in a variety of timbered habitats including dry woodlands and open forests. Shows a particular preference for timbered watercourses.</p> <p><b>Absent – Surveyed.</b></p>                                                                                                                                                                                                                                 | No |

|                              |                                               |      |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |     |
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| <i>Melanodryas cucullata</i> | South-eastern Hooded Robin                    | E1,P | E | 2 | <p>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.</p> <p><b>Moderate – Subject site within predicted species distribution, no associated PCT present, and records within 10km.</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Yes |
| <i>Melithreptus gularis</i>  | Black-chinned Honeyeater (eastern subspecies) | V,P  |   | 1 | <p>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.</p> | No  |



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|                           |                  |       |  |   | <b>Low – Subject site within species distribution, no associated PCTs present, and only one records within 10km. Subject site lacks ideal tree species and is not connected to a large woodland patch.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |     |
| <i>Neophema pulchella</i> | Turquoise Parrot | V,P,3 |  | 2 | <p>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.</p> <p><b>Moderate – Subject site within predicted species distribution, no associated PCT present, and records within 10km.</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Yes |
| <i>Ninox connivens</i>    | Barking Owl      | V,P,3 |  | 2 | <p>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.</p> <p><b>High – Subject site within species distribution, associated PCTs present (3387), and records within 10km.</b></p> | Yes |
| <i>Ninox strenua</i>      | Powerful Owl     | V,P,3 |  | 1 | <p>The Powerful Owl is endemic to eastern and south-eastern Australia, mainly on the coastal side of the Great Dividing Range from Mackay to south-western Victoria. In NSW, it is widely distributed throughout the eastern forests from the coast inland to tablelands, with scattered records on the western slopes and plains suggesting occupancy prior to land clearing. Now at low densities throughout most of its eastern range, rare along the Murray River and former inland populations may never recover. The Powerful Owl inhabits a range of vegetation types, from woodland and open sclerophyll forest to tall open wet forest and rainforest. The Powerful Owl requires large</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Yes |

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|                            |                  |     |  |    | <p>tracts of forest or woodland habitat but can occur in fragmented landscapes as well. The species breeds and hunts in open or closed sclerophyll forest or woodlands and occasionally hunts in open habitats. It roosts by day in dense vegetation comprising species such as Turpentine <i>Syncarpia glomulifera</i>, Black She-oak <i>Allocasuarina littoralis</i>, Blackwood <i>Acacia melanoxylon</i>, Rough-barked Apple <i>Angophora floribunda</i>, Cherry Ballart <i>Exocarpus cupressiformis</i> and a number of eucalypt species. Powerful Owls nest in large tree hollows (at least 0.5 m deep), in large eucalypts (diameter at breast height of 80-240 cm) that are at least 150 years old. While the female and young are in the nest hollow the male Powerful Owl roosts nearby (10-200 m) guarding them, often choosing a dense "grove" of trees that provide concealment from other birds that harass him.</p> <p><b>High – Subject site within species distribution, associated PCTs present (3387), and a record within 10km.</b></p> |    |
| <i>Oxyura australis</i>    | Blue-billed Duck | V,P |  | 86 | <p>The Blue-billed Duck is endemic to south-eastern and south-western Australia. It is widespread in NSW, but most common in the southern Murray-Darling Basin area. Birds disperse during the breeding season to deep swamps up to 300 km away. It is generally only during summer or in drier years that they are seen in coastal areas. The Blue-billed Duck prefers deep water in large permanent wetlands and swamps with dense aquatic vegetation. The species is completely aquatic, swimming low in the water along the edge of dense cover.</p> <p><b>Low – Although 86 records of this species occur within the 10 km search area, the subject site does not contain the preferred habitat of this species (deep water in large permanent wetlands and swamps). The 86 records within the 10 km search area are associated with the Spring Creek Reservoir, Lake Canobolas, and a large unnamed dam.</b></p>                                                                                                                                     | No |
| <i>Parvipsitta pusilla</i> | Little Lorikeet  | V,P |  | 2  | <p>The Little Lorikeet is distributed widely across the coastal and Great Divide regions of eastern Australia from Cape York to South Australia. NSW provides a large portion of the species' core habitat, with lorikeets found westward as far as Dubbo and Albury. Nomadic movements are common, influenced by season and food availability, although some areas retain residents for much of the year and 'locally nomadic' movements are suspected of breeding pairs. Forages primarily in the canopy of open <i>Eucalyptus</i> forest and woodland, yet also finds food in <i>Angophora</i>, <i>Melaleuca</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                    | No |

|                           |               |     |  |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |     |
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|                           |               |     |  |    | and other tree species. Riparian habitats are particularly used, due to higher soil fertility and hence greater productivity.<br><br><b>Low – Although two records of this species occur within the 10 km search area, required breeding habitat (small hollows present in the limbs and trunks of large smooth-barked eucalypts) and foraging tree species do not occur within the subject site.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |     |
| <i>Petroica boodang</i>   | Scarlet Robin | V,P |  | 10 | <p>The Scarlet Robin is found from south east Queensland to south east South Australia and also in Tasmania and south west Western Australia. In NSW, it occurs from the coast to the inland slopes. After breeding, some Scarlet Robins disperse to the lower valleys and plains of the tablelands and slopes. Some birds may appear as far west as the eastern edges of the inland plains in autumn and winter. The Scarlet Robin lives in dry eucalypt forests and woodlands. The understorey is usually open and grassy with few scattered shrubs. This species lives in both mature and regrowth vegetation. It occasionally occurs in mallee or wet forest communities, or in wetlands and tea-tree swamps. Scarlet Robin habitat usually contains abundant logs and fallen timber: these are important components of its habitat. Scarlet Robin habitat usually contains abundant logs and fallen timber: these are important components of its habitat. The Scarlet Robin breeds on ridges, hills and foothills of the western slopes, the Great Dividing Range and eastern coastal regions; this species is occasionally found up to 1000 metres in altitude. The Scarlet Robin is primarily a resident in forests and woodlands, but some adults and young birds disperse to more open habitats after breeding. In autumn and winter many Scarlet Robins live in open grassy woodlands, and grasslands or grazed paddocks with scattered trees. The Scarlet Robin is a quiet and unobtrusive species which is often quite tame and easily approached. Birds forage from low perches, fenceposts or on the ground, from where they pounce on small insects and other invertebrates which are taken from the ground, or off tree trunks and logs; they sometimes forage in the shrub or canopy layer.</p> <p><b>High – Subject site within species distribution, associated PCTs present (3387), and records within 10km.</b></p> | Yes |
| <i>Petroica phoenicea</i> | Flame Robin   | V,P |  | 8  | <p>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</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Yes |

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|                                           |                                           |       |   |     | <p>to Southern Tablelands. Breeds in upland tall moist eucalypt forests and woodlands, often on ridges and slopes. Prefers clearings or areas with open understoreys. Prefers clearings or areas with open understoreys. In winter, birds migrate to drier more open habitats in the lowlands (i.e. valleys below the ranges, and to the western slopes and plains), in dry forests, open woodlands and in pastures and native grasslands, with or without scattered trees.</p> <p><b>High – Subject site within species distribution, associated PCTs present (3387), and records within 10km.</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |    |
| <i>Polytelis swainsonii</i>               | Superb Parrot                             | V,P,3 | V | 359 | <p>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.</p> <p><b>Absent – Surveyed.</b></p> | No |
| <i>Pomatostomus temporalis temporalis</i> | Grey-crowned Babbler (eastern subspecies) | V,P   |   | 0   | <p>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. 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</p>                                                                                                                                                                                                                                | No |

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|                                |                          |      |   |    | <p>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.</p> <p><b>Absent – Surveyed.</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     |
| <i>Pyrrholaemus sagittatus</i> | Speckled Warbler         | V,P  |   | 10 | <p>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.</p> <p><b>High – Subject site within species distribution, associated PCTs present (3387), and records within 10km.</b></p> | Yes |
| <i>Rostratula australis</i>    | Australian Painted Snipe | E1,P | E | 1  | <p>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</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Yes |



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|                              |                  |     |   |    | <p>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.</p> <p><b>Moderate – Subject site within predicted species distribution, no associated PCT present, and a record within 10km.</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                     |     |
| <i>Stagonopleura guttata</i> | Diamond Firetail | V,P | V | 12 | <p>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.</p> <p><b>High – Subject site within species distribution, associated PCTs present (3387), and records within 10km</b></p>                                                                                                    | Yes |
| <i>Stictonetta naevosa</i>   | Freckled Duck    | V,P |   | 39 | <p>The Freckled Duck is found primarily in south-eastern and south-western Australia, occurring as a vagrant elsewhere. It breeds in large temporary swamps created by floods in the Bulloo and Lake Eyre basins and the Murray-Darling system, particularly along the Paroo and Lachlan Rivers, and other rivers within the Riverina. The duck is forced to disperse during extensive inland droughts when wetlands in the Murray River basin provide important habitat. The species may also occur as far as coastal NSW and Victoria during such times. Prefer permanent freshwater swamps and creeks with heavy growth of Cumbungi, Lignum or Tea-tree. During drier times they move from ephemeral breeding swamps to more permanent waters such as lakes, reservoirs, farm dams and sewage ponds. Generally, rest in dense cover during the day, usually in deep water. Feed at dawn and dusk and at night on algae, seeds and vegetative parts of aquatic grasses and sedges and small invertebrates. Nesting usually occurs between October and December but</p> | No  |

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|                            |                              |     |   |   | <p>can take place at other times when conditions are favourable. Nests are usually located in dense vegetation at or near water level.</p> <p><b>Low – Although 39 records of this species occur within the 10 km search area, all are associated with dams or water reservoirs &gt; 100 m wide. The relatively small dam and drainage line within the subject site is unlikely to contain suitable habitat for this species.</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                             |     |
| <i>Keyacris scurra</i>     | Key's Matchstick Grasshopper | E1  | E | 0 | <p>Key's Matchstick grasshopper was originally distributed from Victoria to Orange (NSW) across the wheat/sheep belt, typically recorded in native grasslands and grassy woodland. Typically found in native grasslands and grassy woodlands but it has also been recorded in other vegetation associations usually containing a native grass understory (especially kangaroo grass <i>Themeda triandra</i>) and known food plants (particularly Asteraceae).</p> <p><b>Low – Subject site within species distribution, no associated PCTs present, and no records within 10km.</b></p>                                                                                                                                                                                                                                                                                                           | No  |
| <i>Cercartetus nanus</i>   | Eastern Pygmy-possum         | V,P |   | 0 | <p>The Eastern Pygmy-possum is found in south-eastern Australia, from southern Queensland to eastern South Australia and in Tasmania. In NSW it extends from the coast inland as far as the Pilliga, Dubbo, Parkes and Wagga Wagga on the western slopes. Found in a broad range of habitats from rainforest through sclerophyll (including Box-Ironbark) forest and woodland to heath, but in most areas woodlands and heath appear to be preferred, except in north-eastern NSW where they are most frequently encountered in rainforest.</p> <p><b>Moderate – Subject site within species distribution, associated PCTs present (3387), and no records within 10km. Although this species was surveyed for, together with Squirrel Gliders and Koalas, it is noted to be very difficult to detect via spotlighting. As such, a test of significance has been included as a precaution.</b></p> | Yes |
| <i>Chalinolobus dwyeri</i> | Large-eared Pied Bat         | V,P | E | 1 | <p>Found mainly in areas with extensive cliffs and caves, from Rockhampton in Queensland south to Bungonia in the NSW Southern Highlands. It is generally rare with a very patchy distribution in NSW. There are scattered records from the New England Tablelands and North West Slopes. Roosts in caves (near their entrances), crevices in cliffs, old mine workings and in the disused, bottle-shaped mud nests of the Fairy Martin (<i>Petrochelidon ariel</i>), frequenting low to mid-elevation dry open forest and woodland close to these</p>                                                                                                                                                                                                                                                                                                                                            | Yes |

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|                                       |                         |      |   |   | <p>features. Females have been recorded raising young in maternity roosts (c. 20-40 females) from November through to January in roof domes in sandstone caves and overhangs. They remain loyal to the same cave over many years. Found in well-timbered areas containing gullies.</p> <p><b>High – Subject site within species distribution, associated PCTs present (3387), and a record occurs within 10km.</b></p>                                                                                                                                                                                                                                                                               |     |
| <i>Dasyurus maculatus</i>             | Spotted-tailed Quoll    | V,P  | E | 2 | <p>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.</p> <p><b>High – Subject site within species distribution, associated PCTs present (3387), and records within 10km.</b></p> | Yes |
| <i>Miniopterus orianae oceanensis</i> | Large Bent-winged Bat   | V,P  |   | 5 | <p>Eastern Bentwing-bats occur along the east and north-west coasts of Australia. Caves are the primary roosting habitat, but also use derelict mines, storm-water tunnels, buildings and other man-made structures.</p> <p><b>Moderate – Subject site within species distribution, no associated PCTs present, and records within 10km.</b></p>                                                                                                                                                                                                                                                                                                                                                     | Yes |
| <i>Myotis macropus</i>                | Southern Myotis         | V,P  |   | 0 | <p>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.</p> <p><b>Low – Subject site within species distribution, no associated PCTs present, and no records within 10km.</b></p>                                                                          | No  |
| <i>Petauroides volans</i>             | Southern Greater Glider | E1,P | E | 4 | <p>The Southern Greater Glider occurs in eastern Australia, in eucalypt forests and woodlands, where it has a broad distribution from around Proserpine in Queensland, south through NSW and the Australian Capital Territory into Victoria.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                     | No  |

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|                               |                         |      |   |    | <b>Absent – Surveyed.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |     |
| <i>Petaurus australis</i>     | Yellow-bellied Glider   | V,P  | V | 0  | <p>The Yellow-bellied Glider is found along the eastern coast to the western slopes of the Great Dividing Range, from southern Queensland to Victoria. Occur in tall mature eucalypt forest generally in areas with high rainfall and nutrient rich soils.</p> <p><b>Low – Subject site within species distribution, no associated PCTs present, and no records within 10km.</b></p>                                                                                                                                                                                                                                                                                                         | No  |
| <i>Petaurus norfolcensis</i>  | Squirrel Glider         | V,P  |   | 3  | <p>Inhabits woodlands and dry sclerophyll forests, usually in diverse stands of shrubs and trees. Shelters and breeds in tree hollows, and is primarily an insectivorous animal but, has also been known to ingest plant exudates.</p> <p><b>Absent – Surveyed.</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                      | Yes |
| <i>Phascogale tapoatafa</i>   | Brush-tailed Phascogale | V,P  |   | 0  | <p>The Brush-tailed Phascogale has a patchy distribution around the coast of Australia. In NSW it is mainly found east of the Great Dividing Range although there are occasional records west of the divide. Prefer dry sclerophyll open forest with sparse groundcover of herbs, grasses, shrubs or leaf litter. Also inhabit heath, swamps, rainforest and wet sclerophyll forest.</p> <p><b>Low – Subject site within species distribution, no associated PCTs present, and no records within 10km.</b></p>                                                                                                                                                                               | No  |
| <i>Phascolarctos cinereus</i> | Koala                   | E1,P | E | 4  | <p>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.</p> <p><b>Absent – Surveyed.</b></p>                                                                                                                                                                                                     | Yes |
| <i>Pteropus poliocephalus</i> | Grey-headed Flying-fox  | V,P  | V | 55 | <p>Grey-headed Flying-foxes are generally found within 200 km of the eastern coast of Australia, from Rockhampton in Queensland to Adelaide in South Australia. In times of natural resource shortages, they may be found in unusual locations. Occur in subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops. Roosting camps are generally located within 20 km of a regular food source and are commonly found in gullies, close to water, in vegetation with a dense canopy. Individual camps may have tens of thousands of animals and are used for mating, and for giving birth and</p> | Yes |

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|                                 |                               |     |   |   | <p>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 &lt;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.</p> <p><b>Present – Subject site within species distribution, no associated PCTs present, and records within 10km. Two individuals of this species were detected on the edge of the subject site (roosting within planted Poplar trees located directly west of the intersection of Brabham Way and Mitchell Highway).</b></p>                                                                                                                                                                                                                                 |    |
| <i>Saccolaimus flaviventris</i> | Yellow-bellied Sheathtail-bat | V,P |   | 0 | <p>The Yellow-bellied Sheathtail-bat is a wide-ranging species found across northern and eastern Australia. In the most southerly part of its range - most of Victoria, south-western NSW and adjacent South Australia - it is a rare visitor in late summer and autumn. There are scattered records of this species across the New England Tablelands and North West Slopes. Roosts singly or in groups of up to six, in tree hollows and buildings; in treeless areas they are known to utilise mammal burrows. When foraging for insects, flies high and fast over the forest canopy, but lower in more open country. Forages in most habitats across its very wide range, with and without trees; appears to defend an aerial territory. Breeding has been recorded from December to mid-March, when a single young is born. Seasonal movements are unknown; there is speculation about a migration to southern Australia in late summer and autumn.</p> <p><b>Low – Subject site within species distribution, no associated PCTs present, and no records within 10km.</b></p> | No |
| <i>Aprasia parapulchella</i>    | Pink-tailed Legless Lizard    | V,P | V | 0 | <p>The Pink-tailed Legless Lizard is only known from the Central and Southern Tablelands, and the South Western Slopes. There is a concentration of populations in the Canberra/Queanbeyan Region. Other populations have been recorded near Cooma, Yass, Bathurst, Albury and West Wyalong. This species is also found in the Australian Capital Territory. Inhabits sloping, open woodland areas with predominantly native grassy groundlayers, particularly those dominated by Kangaroo Grass (<i>Themeda australis</i>).</p> <p><b>Low – Subject site within species distribution, no associated PCTs present, and no records within 10km.</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                             | No |



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| <i>Tympanocryptis mccartneyi</i> | Bathurst Grassland Earless Dragon | E4A,2 | CE | 0 | <p><i>Tympanocryptis mccartneyi</i> is endemic to New South Wales (NSW), Australia where it is restricted to the grasslands and open country on the alluvial plains around Bathurst in the Central Tablelands of NSW. The grasslands occur at altitudes up to approximately 1200 m and are naturally treeless or sparsely treed, with native tussock grasses being the dominant vegetation.</p> <p><b>Low – Subject site within species distribution, no associated PCTs present, and no records within 10km.</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | No  |
| <i>Varanus rosenbergi</i>        | Rosenberg's Goanna                | V,P   |    | 0 | <p>Rosenberg's Goanna occurs on the Sydney Sandstone in Wollemi National Park to the north-west of Sydney, in the Goulburn and ACT regions and near Cooma in the south. There are records from the South West Slopes near Khancoban and Tooma River. Also occurs in South Australia and Western Australia. Found in heath, open forest and woodland.</p> <p><b>Moderate – Subject site within species distribution, associated PCTs present (3387), and no records within 10km.</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Yes |
| <i>Acacia meiantha</i>           |                                   | E1    | E  | 0 | <p>The species is found in three disjunct populations, all within the Central Tablelands and within 100kms of each other. These populations include Clarence, which covers an area of approximately 1 hectare; Mullions Range, covering approximately 5 hectares; and Aarons Pass, which is confined to 2.5km of road easements.</p> <p><b>Low – Subject site within species distribution, no associated PCTs present, and no records within 10km</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | No  |
| <i>Eucalyptus aggregata</i>      | Black Gum                         | V     | V  | 4 | <p>Black Gum is found in the NSW Central and Southern Tablelands, with small isolated populations in Victoria and the ACT. In NSW it occurs in the South Eastern Highlands Bioregion and on the western fringe of the Sydney Basin Bioregion. Black Gum has a moderately narrow distribution, occurring mainly in the wetter, cooler and higher parts of the tablelands, for example in the Blayney, Crookwell, Goulburn, Braidwood and Bungendore districts. Grows on alluvial soils, on cold, poorly-drained flats and hollows adjacent to creeks and small rivers. Often grows with other cold-adapted eucalypts, such as Snow Gum or White Sallee (<i>Eucalyptus pauciflora</i>), Manna or Ribbon Gum (<i>E. viminalis</i>), Candlebark (<i>E. rubida</i>), Black Sallee (<i>E. stellulata</i>) and Swamp Gum (<i>E. ovata</i>). Black Gum usually occurs in an open woodland formation with a grassy groundlayer dominated either by River Tussock (<i>Poa labillardierei</i>) or Kangaroo Grass (<i>Themeda australis</i>), but with few shrubs.</p> | Yes |

|                                                           |                                |    |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |     |
|-----------------------------------------------------------|--------------------------------|----|---|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
|                                                           |                                |    |   |   | <b>Moderate – Subject site within species distribution, no associated PCTs present, and records within 10km.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |     |
| <i>Eucalyptus canobolensis</i>                            | Silver-Leaf Candlebark         | E1 | E | 4 | Known only from Mt Canobolas near Orange. Found chiefly between 1100-1300m, but can occur down to 1000m and above 1300m. The species predominantly occurs in the Mt Canobolas State Recreation Area.<br><br><b>Moderate – Subject site within species distribution, no associated PCTs present, and records within 10km.</b>                                                                                                                                                                                                                                                                                      | Yes |
| <i>Eucalyptus nicholii</i>                                | Narrow-leaved Black Peppermint | V  | V | 1 | This species is sparsely distributed but widespread on the New England Tablelands from Nundle to north of Tenterfield, being most common in central portions of its range. Found largely on private property and roadsides, and occasionally in conservation reserves. Planted as urban trees, windbreaks and corridors. Typically grows in dry grassy woodland, on shallow soils of slopes and ridges. Found primarily on infertile soils derived from granite or metasedimentary rock.<br><br><b>Moderate – Subject site within species distribution, no associated PCTs present, and a record within 10km.</b> | Yes |
| <i>Eucalyptus robertsonii</i> subsp. <i>hemisphaerica</i> | Robertson's Peppermint         | V  | V | 0 | Known only from the central tablelands of NSW, at small disjunct localities from north of Orange to Burruga. Locally frequent in grassy or dry sclerophyll woodland or forest, on lighter soils and often on granite. Usually found in closed grassy woodlands in locally sheltered sites. Habitats include quartzite ridges, upper slopes and a slight rise of shallow clay over volcanics.<br><br><b>Low – Subject site within species distribution, no associated PCTs present, and no records within 10km</b>                                                                                                 | No  |
| <i>Isotoma fluviatilis</i> subsp. <i>fluviatilis</i>      |                                | 3  | X | 0 | Currently known from only two adjacent sites on a single private property at Erskine Park in the Penrith LGA. Previous sightings are all from western Sydney, at Homebush and at Agnes Banks. Known to grow in damp places, on the Cumberland Plain, including freshwater wetland, grassland/alluvial woodland and an alluvial woodland/shale plains woodland (Cumberland Plain Woodland) ecotone. May be an early successional species that benefits from some disturbance.<br><br><b>Low – Subject site within species distribution, no associated PCTs present, and no records within 10km</b>                 | No  |

|                                                        |                  |       |    |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |    |
|--------------------------------------------------------|------------------|-------|----|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| <i>Leucochrysum albicans</i><br><i>subsp. tricolor</i> | Hoary Sunray     | E1    | E  | 0 | <p>Endemic to south-eastern Australia, where it is currently known from three geographically separate areas in Tasmania, Victoria and south-eastern NSW and ACT. In NSW it currently occurs on the Southern Tablelands adjacent areas in an area roughly bounded by Albury, Bega and Goulburn, with a few scattered localities known from beyond this region. Occurs in a wide variety of grassland, woodland and forest habitats, generally on relatively heavy soils.</p> <p><b>Low – Subject site within species distribution, no associated PCTs present, and no records within 10km</b></p>                                                                                    | No |
| <i>Prostanthera gilesii</i>                            |                  | E4A,2 | CE | 0 | <p>Known only from Mount Canobolas State Conservation Area, south-west of Orange in central western NSW. There are two known populations within the Mount Canobolas State Conservation Area. The largest population occurs on a protected slope above a creek in shrubby open forest dominated by tall <i>Eucalyptus dalrympleana</i> subsp. <i>dalrympleana</i>, with scattered <i>E. canobolensis</i> and <i>E. dives</i>. The soil is a deep basaltic clay-loam with alluvial deposits on the lower slopes.</p> <p><b>Low – Subject site within species distribution, no associated PCTs present, and no records within 10km</b></p>                                             | No |
| <i>Swainsona recta</i>                                 | Small Purple-pea | E1    | E  | 0 | <p>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 australis</i>, poa tussocks <i>Poa</i> spp. and spear-grasses <i>Austrostipa</i> spp.</p> <p><b>Low – Subject site within species distribution, no associated PCTs present, and no records within 10km</b></p> | No |

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

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

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

| Community Name                                                                           | NSW Status | Likelihood of Occurrence                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 5-part test required (Yes / No) |
|------------------------------------------------------------------------------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| Monaro Tableland Cool Temperate Grassy Woodland in the South Eastern Highlands Bioregion | E4B        | <p>Monaro Tablelands Cool Temperate Grassy Woodland is a woodland to low open woodland community. It is characterised by a sparse to very sparse tree (woodland to open woodland) layer dominated by <i>Eucalyptus pauciflora</i> (snow gum) either as a single species or with any of <i>Acacia melanoxylon</i> (blackwood), <i>E. rubida</i> (candlebark), <i>E. stellulata</i> (black sallee) and/or <i>E. viminalis</i> (ribbon gum) as co-dominants. Other tree species may occur within the community, although very infrequently and always as canopy sub-dominants.</p> <p><b>Absent – Community did not occur within the subject site</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | No                              |
| Mt Canobolas <i>Xanthoparmelia</i> Lichen Community                                      | E3         | <p>The community occurs at Mt Canobolas in central-western New South Wales, on rock faces and soils of the Mt Canobolas Tertiary volcanic complex. <i>Xanthoparmelia canobolasensis</i> and <i>X. metastrigosa</i> are known only from Mt Canobolas, and <i>X. sulcifera</i> and <i>C. fuliginosa</i> are each known from only one other locality in New South Wales. Part of the Community occurs within the Mt Canobolas State Conservation Area.</p> <p><b>Absent – Community did not occur within the subject site</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | No                              |
| Tableland Basalt Forest in the Sydney Basin and South Eastern Highlands Bioregions       | E3         | <p>Tableland Basalt Forest is dominated by an open eucalypt canopy of variable composition. <i>Eucalyptus viminalis</i>, <i>E. radiata</i>, <i>E. dalrympleana</i> subsp. <i>dalrympleana</i> and <i>E. pauciflora</i> may occur in the community in pure stands or in varying combinations. The community typically has an open canopy of eucalypts with sparse mid-story shrubs (e.g. <i>Acacia melanoxylon</i> and <i>A. dealbata</i>) and understory shrubs (e.g. <i>Rubus parvifolius</i>) and a dense groundcover of herbs and grasses, although disturbed stands may lack either or both of the woody strata. The structure of the community varies depending on past and current disturbances, particularly fire history, clearing and grazing. Contemporary tree-dominated stands of the community are largely relics or regrowth of originally taller forests and woodlands, which are likely to have had scattered shrubs and a largely continuous grassy groundcover. At some sites, mature trees may exceed 30 m tall, although regrowth stands may be shorter than 10 m tall.</p> <p><b>Absent – Community did not occur within the subject site</b></p> | No                              |

| Community Name                                                                                                                                                                                                                                                                   | NSW Status | Likelihood of Occurrence                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 5-part test required (Yes / No) |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| Werriwa Tablelands Cool Temperate Grassy Woodland in the South Eastern Highlands and South East Corner Bioregions                                                                                                                                                                | E4B        | <p>Werriwa Grassy Woodlands (WGW) occur in the Southern Tablelands of NSW, occupying broad valley floors and gentle slopes and low rises of the moderately undulating Southern Tablelands of NSW. It has been commonly recorded on a wide variety of substrates including basalt, fine-grained sedimentary rocks, granite, acid volcanics and alluvium but rarely on steep ridge lines on the tablelands. Geographically, it occurs on the eastern fall of the Great Dividing Range between Golspie in the north and Majors Creek in the south. The community has been recorded as far to the east as Marulan and as far west as Carwoola.</p> <p><b>Absent – Community did not occur within the subject site</b></p> | No                              |
| White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions | E4B        | <p>Box-Gum Woodland is found from the Queensland border in the north, to the Victorian border in the south. It occurs in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions. Characterised by the presence or prior occurrence of White Box, Yellow Box and/or Blakely's Red Gum and a generally grassy understorey.</p> <p><b>Absent – Community did not occur within the subject site</b></p>                                                                                                                                                                                    | No                              |

NSW Status: E4B = Critically Endangered, E3 = Endangered



## APPENDIX D – BC ACT 5-PART 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:

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

- a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,
- b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:
  - i. is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or
  - ii. is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,
- c) in relation to the habitat of a threatened species or ecological community:
  - i. the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and
  - ii. whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and
  - iii. the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,
- d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly),
- e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.

Species life cycle information in section a) below is sourced from <https://www.environment.nsw.gov.au/threatenedSpeciesApp>

## BC Act Tests of Significance

| Scientific Name                | Common Name        | a.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | b.  | c.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | d.                                                        | e.                         | Impact Significance                                                                                                            |
|--------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| <i>Anthochaera phrygia</i>     | Regent Honeyeater  | This charismatic species is highly nomadic, with tracked individuals demonstrating large-scale movements in the order of hundreds of kilometres between breeding and foraging areas. As the subject site is not in proximity to the Capertee Valley, Lower Hunter Valley, Mudgee/Wollar and Bundarra-Barraba regions – the four known key breeding areas within NSW – it is highly unlikely that the subject site represents critical habitat that supports such migration patterns. Furthermore, the species was not detected during the field survey and no records of this species occur within the 10 km search area. As such, the proposal is unlikely to place a local population at risk of extinction | N/A | <p>i. This species is associated with PCT 3387 within the subject site. Consequently, up to 0.18 ha of potential habitat would be removed or modified by this proposal.</p> <p>ii. Considering the subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches, no significant additional fragmentation or isolation is expected to result from the proposal.</p> <p>iii. Considering the distance from known breeding areas, the inability to detect the species during the field survey, and the absence of records within the 10 km search area, the subject site is unlikely to be of importance to the long-term survival of this species.</p> | No, AOBV not present within or close to the subject site. | Yes. See <b>Appendix F</b> | No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal. |
| <i>Aphelocephala leucopsis</i> | Southern Whiteface | Southern whitefaces live in a wide range of open woodlands and shrublands where there is an understorey of grasses or shrubs, or both. Birds build large bulky domed nest of grass, bark and roots, usually in a hollow or crevice, although sometimes in low bushes. The subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches. Furthermore, this species was not detected during the field survey and only one record (from 2011)                                                                                                                                                                        | N/A | <p>i. This species is associated with PCT 3387 within the subject site. Consequently, up to 0.18 ha of potential habitat would be removed or modified by this proposal.</p> <p>ii. Considering the subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches, no significant additional fragmentation or isolation is expected to result from the proposal.</p>                                                                                                                                                                                                                                                                                   | No, AOBV not present within or close to the subject site. | Yes. See <b>Appendix F</b> | No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal. |

|                                        |                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                           |                            |                                                                                                                                |
|----------------------------------------|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------|
|                                        |                                        | occurs within the 10 km search area. As such, the proposal is unlikely to place a local population at risk of extinction.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |     | iii. Considering the degraded habitat within the subject site, the inability to detect the species during the field survey, and the low number of records within the 10 km search area, the subject site is unlikely to be of importance to the long-term survival of this species.                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                           |                            |                                                                                                                                |
| <i>Artamus cyanopterus cyanopterus</i> | Dusky Woodswallow                      | The Dusky Woodswallow inhabits dry, open eucalypt forests and woodlands. Nests are cup-shaped and constructed in the dense foliage of eucalypts. The subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches. Furthermore, the species was not detected during the field survey. Of the 136 records within the 10 km search area, only five are located within the 1.5 km study area. The species exhibits large-scale movements and broad habitat tolerances and is unlikely to dependent on particularly sites for its survival. Given this, and that suitable vegetation will continue to exist in the search area (e.g., Canobolas State Forest), the proposal is unlikely to place a local population at risk of extinction. | N/A | <p>i. This species is associated with PCT 3387 within the subject site. Consequently, up to 0.18 ha of potential habitat would be removed or modified by this proposal.</p> <p>ii. Considering the subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches, no significant additional fragmentation or isolation is expected to result from the proposal.</p> <p>iii. Given the relatively small impact area in comparison to the large-scale movements and broad habitat tolerances of this species, the subject site is unlikely to be of importance to the long-term survival of this species.</p> | No, AOBV not present within or close to the subject site. | Yes. See <b>Appendix F</b> | No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal. |
| <i>Climacteris picumnus victoriae</i>  | Brown Treecreeper (eastern subspecies) | The Brown Treecreeper is found in eucalypt woodlands (including Box-Gum Woodlands) and dry open forests, typically preferring those that are dominated by stringybarks and other rough-barked eucalypts. The subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | N/A | <p>i. This species is associated with PCT 3387 within the subject site. Consequently, up to 0.18 ha of potential habitat would be removed or modified by this proposal.</p> <p>ii. Considering the subject site occurs on degraded land which has been heavily cleared for grazing to the extent where</p>                                                                                                                                                                                                                                                                                                                                                                                             | No, AOBV not present within or close to the subject site. | Yes. See <b>Appendix F</b> | No significant impact will arise to the local viability of this species or its habitat due to the                              |

|                                  |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                           |                            |                                                                                                                                |
|----------------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------|
|                                  |                           | within the patches. Furthermore, the species was not detected during the field survey. Of the 17 records within the 10 km search area, all are located > 9.5 km from the subject site. As such, the proposal is unlikely to place a local population at risk of extinction.                                                                                                                                                                                                                                                                                                                                            |     | no remnant trees or shrubs remain within the patches, no significant additional fragmentation or isolation is expected to result from the proposal.<br><br>iii. Considering the degraded habitat within the subject site, the inability to detect the species during the field survey and the large distance to known records within the 10 km search area, the subject site is unlikely to be of importance to the long-term survival of this species.                                                                                                                                                                                                                                                                                                     |                                                           |                            | undertaking of the proposal.                                                                                                   |
| <i>Daphoenositta chrysoptera</i> | Varied Sittella           | The Varied Sittella inhabits eucalypt forests and woodlands and construct a cup-shaped nest in an upright tree fork high in the living canopy, often reusing the same nest over successive years. The subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches. Furthermore, the species was not detected during the field survey. Of the 7 records within the 10 km search area, all are located > 5.9 km from the subject site. As such, the proposal is unlikely to place a local population at risk of extinction. | N/A | i. This species is associated with PCT 3387 within the subject site. Consequently, up to 0.18 ha of potential habitat would be removed or modified by this proposal.<br><br>ii. Considering the subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches, no significant additional fragmentation or isolation is expected to result from the proposal.<br><br>iii. Considering the degraded habitat within the subject site, the inability to detect the species during the field survey and the large distance to known records within the 10 km search area, the subject site is unlikely to be of importance to the long-term survival of this species. | No, AOBV not present within or close to the subject site. | Yes. See <b>Appendix F</b> | No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal. |
| <i>Hirundapus caudacutus</i>     | White-throated Needletail | This is a migratory species which is usually seen in eastern Australia from October to April. It breeds in forests in south-eastern Siberia, Mongolia, the Korean Peninsula and northern Japan                                                                                                                                                                                                                                                                                                                                                                                                                         | N/A | i. This species is associated with PCT 3387 within the subject site. Consequently, up to 0.18 ha of potential                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | No, AOBV not present within or close to the               | Yes. See <b>Appendix F</b> | No significant impact will arise to the local viability of this species                                                        |

|                                        |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                           |                            |                                                                                                                                |
|----------------------------------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------|
|                                        |                            | June-August. The species is more common in coastal areas, less so inland. As this species breeds exclusively outside of Australia, they prefer coastal ecosystems, and no records occur within the 10 km search area, the proposal is unlikely to place a local population at risk of extinction                                                                                                                                                                                                                                       |     | <p>habitat would be removed or modified by this proposal.</p> <p>ii. Considering the subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches, no significant additional fragmentation or isolation is expected to result from the proposal.</p> <p>iii. Considering the species' preference for coastal ecosystems and the absence of breeding habitat within Australia, the subject site is unlikely to be of importance to the long-term survival of this species.</p>                                                                                     | subject site.                                             |                            | or its habitat due to the undertaking of the proposal.                                                                         |
| <i>Melanodryas cucullata cucullata</i> | South-eastern Hooded Robin | The Hooded Robin requires a structurally diverse habitat, featuring mature eucalypts, saplings, some small shrubs, and a ground layer of moderately tall native grasses. The subject site occurs on degraded land which lacks the structural diversity required by this species. Furthermore, the species was not detected during the field survey and only two records occur within the 10 km search area (both > 8.3 km from the subject site). As such, the proposal is unlikely to place a local population at risk of extinction. | N/A | <p>i. This species is not associated with any PCTs within the subject site.</p> <p>ii. Considering the subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches, no significant additional fragmentation or isolation is expected to result from the proposal.</p> <p>iii. Considering the degraded habitat within the subject site, the inability to detect the species during the field survey, and the low number of records within the 10 km search area, the subject site is unlikely to be of importance to the long-term survival of this species.</p> | No, AOBV not present within or close to the subject site. | Yes. See <b>Appendix F</b> | No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal. |
| <i>Neophema pulchella</i>              | Turquoise Parrot           | This species inhabits the edges of eucalypt woodlands, adjoining clearings, timbered ridges, and waterways. Nesting occurs within small hollows, at least 6cm                                                                                                                                                                                                                                                                                                                                                                          | N/A | <p>i. This species is not associated with any PCTs within the subject site.</p> <p>ii. Considering the subject site occurs on degraded land which has been heavily</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | No, AOBV not present within or close to the               | Yes. See <b>Appendix F</b> | No significant impact will arise to the local viability                                                                        |



|                        |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                           |                            |                                                                                                                                |
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|                        |              | in diameter, relatively close to the ground (1-2 m). A single stag containing five small hollows occurs within the subject site; though, the distances of the hollows from the ground was not recorded. The species was not detected during the field survey. Furthermore, given that both records within the 10 km search area are restricted to areas containing remnant vegetation, the highly fragmented subject site is unlikely to support a population of this species. As such, the proposal is unlikely to place a local population at risk of extinction. |     | cleared for grazing to the extent where no remnant trees or shrubs remain within the patches, no significant additional fragmentation or isolation is expected to result from the proposal.<br><br>iii. Considering the degraded habitat within the subject site, the inability to detect the species during the field survey, and the low number of records within the 10 km search area, the subject site is unlikely to be of importance to the long-term survival of this species.                                                                                                                                                                                                                                               | subject site.                                             |                            | of this species or its habitat due to 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 were present within the subject site. There are two records within the 10 km search area, from 2018 and 2022. Some impacts to foraging habitat for this species may occur; however, considering the degraded nature of the site, and the absence of suitable nesting hollows for this species, the proposal is unlikely to place a local population at risk of extinction.           | N/A | i. This species is associated with PCT 3387 within the subject site. Consequently, up to 0.18 ha of potential habitat would be removed or modified by this proposal.<br><br>ii. Considering the subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches, no significant additional fragmentation or isolation is expected to result from the proposal.<br><br>iii. Considering the degraded habitat within the subject site which lacks suitable tree hollows for breeding, and the low number of records within the 10 km search area, the subject site is unlikely to be of importance to the long-term survival of this species. | No, AOBV not present within or close to the subject site. | Yes. See <b>Appendix F</b> | No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal. |
| <i>Ninox strenua</i>   | Powerful Owl | The Powerful Owl requires large tracts of forest and woodland habitat for hunting and roosting purposes. They nest within large tree hollows (at least 0.5 m deep) in                                                                                                                                                                                                                                                                                                                                                                                               | N/A | i. This species is associated with PCT 3387 within the subject site. Consequently, up to 0.18 ha of potential                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | No, AOBV not present within or close to the               | Yes. See <b>Appendix F</b> | No significant impact will arise to the local viability                                                                        |

|                         |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                           |                            |                                                                                                                                |
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|                         |               | large eucalypts. The subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches. No large hollows occur within the subject site. Furthermore, only one record (from 2020) occurs within the 10 km search area. Considering the above, the proposal is unlikely to place a local population at risk of extinction.                                                                                                                                                                                                                                                                                                  |     | <p>habitat would be removed or modified by this proposal.</p> <p>ii. Considering the subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches, no significant additional fragmentation or isolation is expected to result from the proposal.</p> <p>iii. Considering the degraded habitat within the subject site which lacks suitable tree hollows for breeding, and the low number of records within the 10 km search area, the subject site is unlikely to be of importance to the long-term survival of this species.</p>                                                                                                                                  | subject site.                                             |                            | of this species or its habitat due to the undertaking of the proposal.                                                         |
| <i>Petroica boodang</i> | Scarlet Robin | The Scarlet Robin inhabits dry eucalypt forests and woodlands, typically with an understory that is open and grassy. Its cup-shaped nest is constructed in the crevices and forks of eucalypts. The subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches. Furthermore, the species was not detected during the field survey. Of the 10 records within the 10 km search area, all are located outside of the study area. Additionally, the species has not been recorded within the search area in the past eight years. As such, the proposal is unlikely to place a local population at risk of extinction. | N/A | <p>i. This species is associated with PCT 3387 within the subject site. Consequently, up to 0.18 ha of potential habitat would be removed or modified by this proposal.</p> <p>ii. Considering the subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches, no significant additional fragmentation or isolation is expected to result from the proposal.</p> <p>iii. Considering the degraded habitat within the subject site, the inability to detect the species during the field survey and the distance from known records within the 10 km search area, the subject site is unlikely to be of importance to the long-term survival of this species.</p> | No, AOBV not present within or close to the subject site. | Yes. See <b>Appendix F</b> | No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal. |

|                                |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                           |                            |                                                                                                                                |
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| <i>Petroica phoenicea</i>      | Flame Robin      | The Flame Robin constructs an open cup-shaped nest, made up of plant materials and spiderwebs. Breeding habitat requires a native grass understorey. The subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches. Furthermore, the species was not detected during the field survey. Of the eight records within the 10 km search area, all are located outside of the 1.5 km study area. Additionally, only one individual of this species has been recorded within the search area in the past 11 years. As such, the proposal is unlikely to place a local population at risk of extinction. | N/A | <p>i. This species is associated with PCT 3387 within the subject site. Consequently, up to 0.18 ha of potential habitat would be removed or modified by this proposal.</p> <p>ii. Considering the subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches, no significant additional fragmentation or isolation is expected to result from the proposal.</p> <p>iii. Considering the degraded habitat within the subject site, the inability to detect the species during the field survey and the distance and age of known records within the 10 km search area, the subject site is unlikely to be of importance to the long-term survival of this species.</p> | No, AOBV not present within or close to the subject site. | Yes. See <b>Appendix F</b> | No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal. |
| <i>Pyrrholaemus sagittatus</i> | Speckled Warbler | The Speckled Warbler is dependent on large, relatively undisturbed areas of eucalypt-dominated communities, with a thick grassy understory for breeding. The subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches. Furthermore, the species was not detected during the field survey. Of the 10 records within the 10 km search area, all are located > 5.9 km from the subject site. As such, the proposal is unlikely to place a local population at risk of extinction.                                                                                                                   | N/A | <p>i. This species is associated with PCT 3387 within the subject site. Consequently, up to 0.18 ha of potential habitat would be removed or modified by this proposal.</p> <p>ii. Considering the subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches, no significant additional fragmentation or isolation is expected to result from the proposal.</p> <p>iii. Considering the degraded habitat within the subject site, the inability to detect the species during the field survey and the distance from known records within the 10 km search area,</p>                                                                                                   | No, AOBV not present within or close to the subject site. | Yes. See <b>Appendix F</b> | No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal. |

|                              |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                           |                            |                                                                                                                                |
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|                              |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |     | the subject site is unlikely to be of importance to the long-term survival of this species.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                           |                            |                                                                                                                                |
| <i>Rostratula australis</i>  | Australian Painted Snipe | This species prefers fringes of swamps, dams and nearby marshy areas where there is a cover of grasses, lignum, low scrub or open timber. It builds nests on the ground amongst tall vegetation, such as grasses, tussocks or reeds. The subject site contains a small dam and a drainage line; however, these are likely to be too small to support a population of this species. Furthermore, the species was not detected during the field survey and only one record (from 2012) occurs within the 10 km search area. As such, the proposal is unlikely to place a local population at risk of extinction. | N/A | <p>i. This species is not associated with any PCTs within the subject site.</p> <p>ii. Considering a small dam and a drainage line occur within the subject site, the proposal would further exacerbate fragmentation within the landscape. However, no areas of habitat would become isolated.</p> <p>iii. Considering the inability to detect the species during the field survey, the small area of potential habitat for the species, and the low number of records within the 10 km search area, the subject site is unlikely to be of importance to the long-term survival of this species.</p>                                                                                                    | No, AOBV not present within or close to the subject site. | Yes. See <b>Appendix F</b> | No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal. |
| <i>Stagonopleura guttata</i> | Diamond Firetail         | The Diamond Firetail can be found in eucalypt woodlands with a native grass understorey. Its nests are built either in the shrubby understorey or under raptor and ravens' nests. The subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches. Furthermore, the species was not detected during the field survey. Of the 12 records within the 10 km search area, all are located > 5.9 km from the subject site. As such, the proposal is unlikely to place a local population at risk of extinction.        | N/A | <p>i. This species is associated with PCT 3387 within the subject site. Consequently, up to 0.18 ha of potential habitat would be removed or modified by this proposal.</p> <p>ii. Considering the subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches, no significant additional fragmentation or isolation is expected to result from the proposal.</p> <p>iii. Considering the degraded habitat within the subject site, the inability to detect the species during the field survey and the distance from known records within the 10 km search area, the subject site is unlikely to be of</p> | No, AOBV not present within or close to the subject site. | Yes. See <b>Appendix F</b> | No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal. |

|                            |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |     | importance to the long-term survival of this species.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                           |                            |                                                                                                                                |
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| <i>Cercartetus nanus</i>   | Eastern Pygmy-possum | The Eastern Pygmy Possum shelters and nests within tree hollows, fallen timber, rotten stumps, and abandoned birds' nests. The subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches. Furthermore, no records of this species occur within the 10 km search area and it was not detected during spotlighting surveys. As such, the proposal is unlikely to place a local population at risk of extinction. | N/A | <p>i. This species is associated with PCT 3387 within the subject site. Consequently, up to 0.18 ha of potential habitat would be removed or modified by this proposal.</p> <p>ii. Considering the subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches, no significant additional fragmentation or isolation is expected to result from the proposal.</p> <p>iii. Considering the degraded habitat within the subject site and the absence of records within the 10 km search area, the subject site is unlikely to be of importance to the long-term survival of this species.</p> | No, AOBV not present within or close to the subject site. | Yes. See <b>Appendix F</b> | No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal. |
| <i>Chalinolobus dwyeri</i> | Large-eared Pied Bat | The Large-eared Pied Bat roosts in caves, crevices in cliffs, old mine workings and in disused Fairy Martin nests. Given the absence of these habitat features within the subject site, and the low number of records within the 10 km search area (n=1), the proposal is unlikely to place a local population at risk of extinction.                                                                                                                                                                         | N/A | <p>i. This species is not associated with any PCTs within the subject site.</p> <p>ii. Considering the subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches, no significant additional fragmentation or isolation is expected to result from the proposal.</p> <p>iii. Considering the absence of roosting features within the subject site and the low number of Large-eared Pied Bat records within the 10 km search area, the subject site is unlikely to be of importance to the long-term survival of this species.</p>                                                         | No, AOBV not present within or close to the subject site. | Yes. See <b>Appendix F</b> | No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal. |



|                                       |                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                           |                            |                                                                                                                                |
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| <i>Dasyurus maculatus</i>             | Spotted-tailed Quoll  | The Spotted-tailed Quoll is the largest marsupial carnivore found on the Australian mainland. Quolls utilise hollow-bearing trees, fallen logs and rocky outcrops as den sites. The subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches. Furthermore, very few habitat features remain within the subject site. One stag (standing dead tree) with no hollows and one stag containing five small hollows are likely to be impacted by the proposal. These hollows are likely too small for this species. Additionally, of the two records within the 10 km search area, both are located > 6.8 km from the subject site. As such, the proposal is unlikely to place a local population at risk of extinction. | N/A | <p>i. This species is associated with PCT 3387 within the subject site. Consequently, up to 0.18 ha of potential habitat would be removed or modified by this proposal.</p> <p>ii. Considering the subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches, no significant additional fragmentation or isolation is expected to result from the proposal.</p> <p>iii. Considering the degraded habitat within the subject site which lacks potential den sites, and the distance from known records within the 10 km search area, the subject site is unlikely to be of importance to the long-term survival of this species.</p> | No, AOBV not present within or close to the subject site. | Yes. See <b>Appendix F</b> | No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal. |
| <i>Miniopterus orianae oceanensis</i> | Large Bent-winged Bat | The Large Bent-winged Bat roosts primarily in caves and anthropogenic structures, such as derelict mines and storm-water tunnels. Given the absence of suitable habitat features, and the low number of records ( $n=5$ ) from within the 10 km search area, the proposal is unlikely to place a local population at risk of extinction.                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | N/A | <p>i. This species is associated with PCT 3387 within the subject site. Consequently, up to 0.18 ha of potential habitat would be removed or modified by this proposal.</p> <p>ii. Considering the subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches, no significant additional fragmentation or isolation is expected to result from the proposal.</p> <p>iii. Considering the lack of roosting sites within the subject site and the low number of records within the 10 km search area, the subject site is unlikely</p>                                                                                                 | No, AOBV not present within or close to the subject site. | Yes. See <b>Appendix F</b> | No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal. |

|                               |                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                           |                            |                                                                                                                                |
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|                               |                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     | to be of importance to the long-term survival of this species.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                           |                            |                                                                                                                                |
| <i>Pteropus poliocephalus</i> | Grey-headed Flying-fox | <p>The Grey-headed Flying-fox resides within large roosting camps, generally located within 20 km of a regular food source. The most recently active roost camp is approximately 4.9 km to the west of the subject site, at the Orange golf course. As of 2020, this camp consisted of 500-2499 individuals (as per the National Flying-fox Monitor). A closer roost camp is also mapped approximately 570 m east of the subject site; however, this location was searched, and no Flying-foxes were found.</p> <p>Considering the distance to the known roosting camp, the entire search area is likely to be utilised by this species for foraging purposes. However, considering the subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches, the subject site is unlikely to be utilised for foraging by this species.</p> <p>Two individuals were observed roosting within the planted Poplar trees located directly west of the intersection of Brabham Way and Mitchell Highway. These Poplar trees will not be impacted by the proposal.</p> <p>Considering the above, the proposal is unlikely to place a local population at risk of extinction.</p> | N/A | <p>i. This species is not associated with any PCTs within the subject site.</p> <p>ii. Considering the subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches, no significant additional fragmentation or isolation is expected to result from the proposal.</p> <p>iii. Considering the degraded habitat within the subject site which lacks feeding opportunities for this species, the subject site is unlikely to be of importance to the long-term survival of this species.</p> | No, AOBV not present within or close to the subject site. | Yes. See <b>Appendix F</b> | No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal. |
| <i>Varanus rosenbergi</i>     | Rosenberg's Goanna     | This species is found in heath, open forest and woodland. It is associated with                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | N/A | i. This species is associated with PCT 3387 within the subject site.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | No, AOBV not present                                      | Yes. See <b>Appendix F</b> | No significant impact will                                                                                                     |

|                                |                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                           |                            |                                                                                                                                |
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|                                |                        | termites, the mounds of which this species nests in; termite mounds are a critical habitat component. No termite mounds occur within the subject site. Furthermore, the species was not detected during the field survey and no records occur within the 10 km search area. As such, the proposal is unlikely to place a local population at risk of extinction.                                                                                                                                                                                                                                                                                                                                                                                               |     | Consequently, up to 0.18 ha of potential habitat would be removed or modified by this proposal.<br><br>ii. Considering the subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches, no significant additional fragmentation or isolation is expected to result from the proposal.<br><br>iii. Considering the degraded habitat within the subject site which lacks termite mounds, the inability to detect the species during the field survey, and the low number of records within the 10 km search area, the subject site is unlikely to be of importance to the long-term survival of this species. | within or close to the subject site.                      |                            | arise to the local viability of this species or its habitat due to the undertaking of the proposal.                            |
| <i>Eucalyptus aggregata</i>    | Black Gum              | Grows in the lowest parts of the landscape, on alluvial soils, on cold, poorly-drained flats and hollows adjacent to creeks and small rivers. Often grows with other cold-adapted eucalypts, such as Snow Gum or White Sallee ( <i>Eucalyptus pauciflora</i> ), Manna or Ribbon Gum ( <i>E. viminalis</i> ), Candlebark ( <i>E. rubida</i> ), Black Sallee ( <i>E. stellulata</i> ) and Swamp Gum ( <i>E. ovata</i> ). Creeks, small rivers, and associated species are all absent from the subject site. Furthermore, the species was not detected during the field survey and all four records within the 10 km search area are located > 2.4 km from the subject site. As such, the proposal is unlikely to place a local population at risk of extinction. | N/A | i. This species is not associated with any PCTs within the subject site.<br><br>ii. Considering the subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches, no significant additional fragmentation or isolation is expected to result from the proposal.<br><br>iii. Considering the inability to detect the species during the field survey and the distance to known records within the 10 km search area, the subject site is unlikely to be of importance to the long-term survival of this species.                                                                                              | No, AOBV not present within or close to the subject site. | Yes. See <b>Appendix F</b> | No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal. |
| <i>Eucalyptus canobolensis</i> | Silver-Leaf Candlebark | This species occurs within landforms consisting of undulating low to steep hills.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | N/A | i. This species is not associated with any PCTs within the subject site.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | No, AOBV not present                                      | Yes. See <b>Appendix F</b> | No significant impact will                                                                                                     |

|                            |                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                           |                            |                                                                                                                                |
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|                            |                                | Soils are shallow skeletal sands and loams on steep slopes. Vegetation is a sub-alpine woodland. Other trees co-occurring with <i>Eucalyptus canobolensis</i> include <i>Eucalyptus pauciflora</i> , <i>Eucalyptus dalrympleana</i> , <i>Eucalyptus viminalis</i> , <i>Eucalyptus dives</i> and <i>Eucalyptus saxicola</i> . The species is common in all parts of Mt Canobolas State Recreation Area, with mixed aged stands comprising seedlings, juveniles and adults. Undulating low to steep hills and associated species are all absent from the subject site. Furthermore, the species was not detected during the field survey and all four records within the 10 km search area are located > 2.7 km from the subject site. As such, the proposal is unlikely to place a local population at risk of extinction. |     | <p>ii. Considering the subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches, no significant additional fragmentation or isolation is expected to result from the proposal.</p> <p>iii. Considering the inability to detect the species during the field survey and the distance to known records within the 10 km search area, the subject site is unlikely to be of importance to the long-term survival of this species.</p>                                                                                 | within or close to the subject site.                      |                            | arise to the local viability of this species or its habitat due to the undertaking of the proposal.                            |
| <i>Eucalyptus nicholii</i> | Narrow-leaved Black Peppermint | This species typically grows in dry grassy woodland, on shallow soils of slopes and ridges. Found primarily on infertile soils derived from granite or metasedimentary rock. Tends to grow on lower slopes in the landscape. This species was not detected during the field survey and the single record within the 10 km search area is located 6 km from the subject site. As such, the proposal is unlikely to place a local population at risk of extinction.                                                                                                                                                                                                                                                                                                                                                         | N/A | <p>i. This species is not associated with any PCTs within the subject site.</p> <p>ii. Considering the subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches, no significant additional fragmentation or isolation is expected to result from the proposal.</p> <p>iii. Considering the inability to detect the species during the field survey and the distance to known records within the 10 km search area, the subject site is unlikely to be of importance to the long-term survival of this species.</p> | No, AOBV not present within or close to the subject site. | Yes. See <b>Appendix F</b> | 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 four wetlands of international importance, two TECs, 41 threatened species, eight migratory species and 17 marine species that could possibly occur in the study area. Assessment of the subject site determined that no EPBC Act-listed TECs occur within the impact footprint. When habitat limitations are considered, 18 EPBC Act-listed threatened species, including four migratory species, were considered to have a moderate-to-high likelihood of occurring within the subject site (**Appendix C**).

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:** An Important Population, as defined in the EPBC Act, 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                       | 800 - 900 km upstream  | No, the proposal does not occur close to the wetland. |
| Riverland                                             | 700 – 800 km upstream  | No, the proposal does not occur close to the wetland. |
| The Coorong, and Lakes Alexandrina and Albert Wetland | 900 – 1000 km upstream | No, the proposal does not occur close to the wetland. |
| The Macquarie Marshes                                 | 200 – 300 km upstream  | No, the proposal does not occur close to the wetland. |

### Likelihood of occurrence table for EPBC Act-listed Threatened Ecological Communities

| Name                                                                                    | Status                | Assessment of significance required (Yes / No)            |
|-----------------------------------------------------------------------------------------|-----------------------|-----------------------------------------------------------|
| Natural Temperate Grasslands of the South Eastern Highlands                             | Critically Endangered | No, the community does not occur within the subject site. |
| White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland | Critically Endangered | No, the community does not occur within the subject site. |

## EPBC ACT TESTS OF SIGNIFICANCE

### EPBC Act-listed Critically Endangered and Endangered Species

| <i>Anthochaera phrygia</i> – Regent Honeyeater                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Significant Impact Guideline                                                                                                                                                  | Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Lead to a long-term decrease in the size of a population                                                                                                                      | <p>The proposal will impact up to 0.18 ha of potential habitat for this species. The subject site is not within a priority management area for the species.</p> <p>This charismatic species is highly nomadic, with tracked individuals demonstrating large-scale movements in the order of hundreds of kilometres between breeding and foraging areas. As the subject site is not in proximity to the Capertee Valley, Lower Hunter Valley, Mudgee/Wollar and Bundarra-Barraba regions – the four known key breeding areas within NSW – it is highly unlikely that the subject site represents critical habitat that supports such migration patterns. Furthermore, the species was not detected during the field survey and no records of this species occur within the 10 km search area. Given the above, and the small area of potential habitat, this proposal is unlikely to lead to the long-term decrease of any population of this species.</p> |
| 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                                                                                                                | Any breeding or foraging habitat in areas where the species is likely to occur must be considered habitat critical to the survival of this species. Within NSW, key areas include the Bundarra-Barraba region, Pilliga Woodlands, Mudgee-Wollar region, Capertee Valley and Hunter Valley. The subject site is not within any of the above regions and is not within a priority management area for the species. Considering the above, and the absence of records within 10 km, it is unlikely that the subject site contains habitat critical to the survival of the species.                                                                                                                                                                                                                                                                                                                                                                           |
| Disrupt the breeding cycle of a population                                                                                                                                    | Within NSW, key areas include the Bundarra-Barraba region, Pilliga Woodlands, Mudgee-Wollar region, Capertee Valley and Hunter Valley. The subject site does not fall within these regions. As such, this proposal will not disrupt the breeding cycle for any 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 remove/modify up to 0.18 ha of associated PCT for the species. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat | There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see <b>Section 7</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 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 <b>Section 7</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Interfere with the recovery of the species.                                                                                                                                   | Historical loss, fragmentation and degradation of habitat from clearing for agricultural and residential development, particularly fertile Yellow Box-White Box-Blakely's Red Gum Woodland, is a major threat to this species. Although this proposal will exacerbate the impacts of habitat clearing, due to the clearing/modifying of up to 0.18 ha of associated PCT, this small scale clearing should not significantly interfere with the recovery of the species within the region.                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Conclusion</b>                                                                                                                                                             | <b>Non-significant impact</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

***Melanodryas cucullata cucullata* - South-eastern Hooded Robin**

| <b>Significant Impact Guideline</b>                                                                                                                                           | <b>Assessment</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lead to a long-term decrease in the size of a population                                                                                                                      | <p>The proposal would not impact any PCTs associated with this species. The subject site is not within a priority management area for the species.</p> <p>The subject site occurs on degraded land which lacks the structural diversity required by this species. Furthermore, the species was not detected during the field survey and only two records occur within the 10 km search area (both &gt; 8.3 km from the subject site). As such, this proposal is unlikely to lead to the long-term decrease of any population of this species.</p>                                                                                                                                                                                                                                                                                                                                             |
| 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                                                                                                                | <p>Habitat critical to the survival of the South-eastern Hooded Robin include areas of dry eucalypt and acacia woodlands and shrublands remnants with an open understorey, some grassy areas and a complex ground layer, often in or near clearings or open areas; structurally diverse habitats featuring: mature eucalypts, saplings, some small shrubs and a ground layer of moderately tall native grasses; standing dead or live trees and tree stumps are also essential for nesting, roosting and foraging; and moderately deep to deep soils, rocks and fallen timber which provides essential foraging habitat.</p> <p>The subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches. As such, it does not fit the definition of habitat critical to the survival of the species.</p> |
| 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 for any 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 would not remove/modify any area of PCTs associated with this species.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat | There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see <b>Section 7</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 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 <b>Section 7</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Interfere with the recovery of the species.                                                                                                                                   | Clearing of woodlands, loss and fragmentation of habitat, modification/destruction of ground habitat from stock, removal of fallen timber, introduction of exotic pasture grasses and habitat loss and degradation are the main threats to the species. The proposal alone is unlikely to significantly interfere with the recovery of the species within the region.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Conclusion</b>                                                                                                                                                             | <b>Non-significant impact</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

***Rostratula australis* - Australian Painted Snipe**

| <b>Significant Impact Guideline</b>                                                                                                                                           | <b>Assessment</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lead to a long-term decrease in the size of a population                                                                                                                      | <p>The proposal would not impact any PCTs associated with this species. The subject site is not within a priority management area for the species.</p> <p>The subject site contains a small dam and a drainage line; however, these are likely to be too small to support a population of this species. Furthermore, the species was not detected during the field survey and only one record (from 2012) occurs within the 10 km search area. As such, this proposal is unlikely to lead to the long-term decrease of any population of this species.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 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                                                                                                                | <p>Due to relatively scarce records and unpredictable movements, very little is known about the specific habitat requirements of the Australian Painted Snipe. The habitat, or biophysical environment, of the Australian Painted Snipe varies across its range, so it is not possible to generate one detailed description or definition of habitat critical to survival.</p> <p>As a guide, habitat critical to the survival of the Australian Painted Snipe can be considered to include:</p> <ul style="list-style-type: none"> <li>Any natural wetland habitat where the species is known or likely to occur (especially with suitable breeding habitat).</li> <li>Any location outside the above area that may be periodically occupied by Australian Painted Snipe when wetland conditions are favourable.</li> </ul> <p>Considering the small size of the dam and a drainage line within the subject site, and the presence of only one record (from 2012) within the 10 km search area, the subject site is unlikely to contain habitat critical to the survival of the species.</p> |
| 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 for any 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 would not remove/modify any area of PCTs associated with this species.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat | There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see <b>Section 7</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 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 <b>Section 7</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Interfere with the recovery of the species.                                                                                                                                   | Drainage of wetlands; reduction in water quality; predation by introduced species; inappropriate fire and grazing regimes; and exotic weeds are the main threats to this species. The proposal alone is unlikely to significantly interfere with the recovery of the species within the region.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Conclusion</b>                                                                                                                                                             | <b>Non-significant impact</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

***Chalinolobus dwyeri* - Large-eared Pied Bat**

| <b>Significant Impact Guideline</b>                                                                                                                                           | <b>Assessment</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lead to a long-term decrease in the size of a population                                                                                                                      | <p>The proposal would impact up to 0.18 ha of potential habitat for this species. The subject site is not within a priority management area for the species.</p> <p>This species roosts in caves, crevices in cliffs, old mine workings, and disused Fairy Martin nests. The required habitat features for roosting are absent from the subject site. Furthermore, only one record of the species occurs within the 10 km search area. As such, this proposal is unlikely to lead to the long-term decrease of any population of this species.</p> |
| 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                                                                                                                | Habitat critical to the survival of the Large-eared Pied Bat include any maternity roosts, and sandstone cliffs and fertile wooded valley habitat within close proximity of each other. The subject site does not contain either of these habitats and is not within a priority management area for the species. Considering the above, and the low number of records within 10 km, it is unlikely that the subject site contains habitat critical to the survival of the species.                                                                 |
| Disrupt the breeding cycle of a population                                                                                                                                    | As indicated above it is unlikely that an established population exists at the site. Furthermore, the required habitat features for roosting are absent. Therefore, the proposal would not disrupt the breeding cycle of a population.                                                                                                                                                                                                                                                                                                             |
| Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline                                       | The proposal would remove/modify up to 0.18 ha of associated PCT for the species. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.                                                                                                                                                                                                                                                                                      |
| Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat | There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see <b>Section 7</b> ).                                                                                                                                                                                                                                                                              |
| 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 <b>Section 7</b> ).                                                                                                                                                                                                                                                                                                                                                     |
| Interfere with the recovery of the species.                                                                                                                                   | Clearing of roosting and foraging habitat close to cliffs, caves and old mine workings are the main threats to the species. The proposal is not near cliffs, caves, or old mine workings, and therefore is unlikely to directly interfere with the recovery of the species within the region.                                                                                                                                                                                                                                                      |
| <b>Conclusion</b>                                                                                                                                                             | <b>Non-significant impact</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |



***Dasyurus maculatus* - Spotted-tailed Quoll**

| <b>Significant Impact Guideline</b>                                                                                                                                           | <b>Assessment</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lead to a long-term decrease in the size of a population                                                                                                                      | <p>The proposal would impact up to 0.18 ha of potential habitat for this species. The subject site is not within a priority management area for the species.</p> <p>This species is solitary, and individuals come together only briefly to breed. Young are carried in the mother's pouch at first, then later left in a den. Quolls utilise hollow-bearing trees, fallen logs and rocky outcrops as den sites. The subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches. Furthermore, very few habitat features remain within the subject site. One stag (standing dead tree) with no hollows and one stag containing five small hollows are likely to be impacted by the proposal. These hollows are likely too small for this species. Additionally, of the two records within the 10 km search area, both are located &gt; 6.8 km from the subject site. Considering the above, this proposal is unlikely to lead to the long-term decrease of any population of this species.</p> |
| 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                                                                                                                | Habitat that is critical to the survival of the Spotted-tailed Quoll includes large patches of forest with adequate denning resources and relatively high densities of medium-sized mammalian prey. The subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches. Furthermore, very few habitat features remain within the subject site. As such, the subject site is unlikely to contain habitat critical to the survival of the species.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Disrupt the breeding cycle of a population                                                                                                                                    | As indicated above it is unlikely that an established population exists at the site. Therefore, the proposal would not disrupt the breeding cycle of a population.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline                                       | The proposal would remove/modify up to 0.18 ha of associated PCT for the species. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat | There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see <b>Section 7</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 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 <b>Section 7</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Interfere with the recovery of the species.                                                                                                                                   | Loss, fragmentation and degradation of habitat; competition with introduced predators such as cats and foxes; deliberate poisoning, shooting and trapping, primarily in response to chicken predation; roadkill; and poisoning from eating cane toads are the main threats for this species. Although this proposal would exacerbate the loss of habitat, due to the clearing/modifying of up to 0.18 ha of associated PCT, it should not significantly interfere with the recovery of the species within the region.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Conclusion</b>                                                                                                                                                             | <b>Non-significant impact</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

***Eucalyptus canobolensis* - Silver-Leaf Candlebark**

| Significant Impact Guideline                                                                                                                                                  | Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lead to a long-term decrease in the size of a population                                                                                                                      | <p>The proposal would not impact any PCTs associated with this species. The subject site is not within a priority management area for the species.</p> <p>This species occurs within landforms consisting of undulating low to steep hills. Soils are shallow skeletal sands and loams on steep slopes. Vegetation is a sub-alpine woodland. Other trees co-occurring with <i>Eucalyptus canobolensis</i> include <i>Eucalyptus pauciflora</i>, <i>Eucalyptus dalrympleana</i>, <i>Eucalyptus viminalis</i>, <i>Eucalyptus dives</i> and <i>Eucalyptus saxicola</i>. The species is common in all parts of Mt Canobolas State Recreation Area, with mixed aged stands comprising seedlings, juveniles and adults. Undulating low to steep hills and associated species are all absent from the subject site. Furthermore, the species was not detected during the field survey and all four records within the 10 km search area are located &gt; 2.7 km from the subject site. As such, this proposal is unlikely to lead to the long-term decrease of any population of this species.</p> |
| 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                                                                                                                | Critical habitat for this species has not been formally identified. However, considering the inability to detect the species during the field survey, the degraded state of the subject site, and the lack of records within 2.7 km, the subject site is unlikely to contain habitat critical to the survival of the species.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Disrupt the breeding cycle of a population                                                                                                                                    | As indicated above it is unlikely that an established population exists at the site. Therefore, the proposal would not disrupt the breeding cycle of a population.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline                                       | The proposal would not remove/modify any area of PCTs associated with this species.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat | There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see <b>Section 7</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 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 <b>Section 7</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Interfere with the recovery of the species.                                                                                                                                   | Blackberry infestations, invasion of <i>Pinus radiata</i> seedlings from adjacent State Forests, forestry operations (impinging on populations in Glenwood and Canobolas State Forests), fire management (may be a threat in some circumstances; repeated fires may limit recruitment and cause mortality), and global warming and associated climate change are the key threats to this species. The proposal alone is unlikely to significantly interfere with the recovery of the species within the region.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Conclusion</b>                                                                                                                                                             | <b>Non-significant impact</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

## EPBC Act-listed Vulnerable Species

| <i>Aphelocephala leucopsis</i> - Southern Whiteface                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Significant Impact Guideline                                                                                                            | Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Lead to a long-term decrease in the size of an important population of a species                                                        | <p>The proposal would impact up to 0.18 ha of potential habitat for this species. The subject site is not within a priority management area for the species, nor is it at the edge of the species' distribution.</p> <p>Southern whitefaces live in a wide range of open woodlands and shrublands where there is an understorey of grasses and/or shrubs. The subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches. Furthermore, this species was not detected during the field survey and only one record (from 2011) occurs within the 10 km search area. As such, it is unlikely a population of this species occurs within the subject site.</p> <p>Furthermore, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.</p> |
| Reduce the area of occupancy of an important population                                                                                 | As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Fragment an existing important population into two or more populations                                                                  | As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Adversely affect habitat critical to the survival of a species                                                                          | <p>Habitat critical to the survival of the Southern Whiteface includes areas of:</p> <ul style="list-style-type: none"> <li>relatively undisturbed open woodlands and shrublands with an understorey of grasses or shrubs, or both;</li> <li>habitat with low tree densities and an herbaceous understorey litter cover which provides essential foraging habitat;</li> <li>living and dead trees with hollows and crevices which are essential for roosting and nesting.</li> </ul> <p>Considering the degraded state of the subject site, the inability to detect the species during the field survey, and the low number of records within the 10 km search area, the subject site is unlikely to contain habitat critical to the survival of this species.</p>                                                                                                                                                 |
| Disrupt the breeding cycle of an important population                                                                                   | As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline | The proposal would remove/modify up to 0.18 ha of associated PCT for the species. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat             | There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see <b>Section 7</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 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 <b>Section 7</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 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 melanocephala</i> ) are the main threats for this species. Although this proposal would exacerbate the loss of habitat, due to the clearing/modifying of up to 0.18 ha of associated PCT, this should not significantly interfere with the recovery of the species within the region.                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Conclusion</b>                                                                                                                       | <b>Non-significant impact</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

***Climacteris picumnus victoriae* - Brown Treecreeper (eastern subspecies)**

| <b>Significant Impact Guideline</b>                                                                                                     | <b>Assessment</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lead to a long-term decrease in the size of an important population of a species                                                        | <p>The proposal would impact up to 0.18 ha of potential habitat for this species. The subject site is not within a priority management area for the species, nor is it at the edge of the species' distribution.</p> <p>The Brown Treecreeper is found in eucalypt woodlands (including Box-Gum Woodlands) and dry open forests, typically preferring those that are dominated by stringybarks and other rough-barked eucalypts. The subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches. Furthermore, the species was not detected during the field survey. Of the 17 records within the 10 km search area, all are located &gt; 9.5 km from the subject site. As such, the proposal is unlikely to lead to a long-term decrease in the size of a population of this species.</p> <p>Furthermore, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.</p> |
| Reduce the area of occupancy of an important population                                                                                 | As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Fragment an existing important population into two or more populations                                                                  | As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Adversely affect habitat critical to the survival of a species                                                                          | Habitat critical to the survival of the Brown Treecreeper (eastern subspecies) includes areas that have a relatively undisturbed grassy woodland with native understorey; large living or dead trees and stumps with hollows which are essential for roosting and nesting sites; and fallen timber which provides essential foraging habitat. Considering the prior disturbance to the site, the inability to detect the species during the field survey, and the lack of records within 9.5 km, the subject site is unlikely to contain habitat critical to the survival of the species.                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Disrupt the breeding cycle of an important population                                                                                   | As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline | The proposal would remove/modify up to 0.18 ha of associated PCT for the species. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat             | There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see <b>Section 7</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 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 <b>Section 7</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Interfere with the recovery of the species.                                                                                             | Historical loss of woodland, forest and mallee habitats as a result of agriculture, forestry, mining and residential development; fragmentation of woodland and forest remnants which isolates populations and causes local extinctions; ongoing degradation of habitat, particularly the loss of tree hollows and fallen timber from firewood collection; and the lack of regeneration of eucalypt overstorey in woodland due to overgrazing and too-frequent fires are the main threats facing this species. Although this proposal would exacerbate the loss of habitat, due to the clearing/modifying of up to 0.18 ha of associated PCT, this should not significantly interfere with the recovery of the species within the region.                                                                                                                                                                                                                                                                                                         |
| <b>Conclusion</b>                                                                                                                       | <b>Non-significant impact</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

***Hirundapus caudacutus* - White-throated Needletail**

| <b>Significant Impact Guideline</b>                                                                                                     | <b>Assessment</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
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| Lead to a long-term decrease in the size of an important population of a species                                                        | <p>The proposal would impact up to 0.18 ha of potential habitat for this species. The subject site is not within a priority management area for the species, nor is it at the edge of the species' distribution.</p> <p>The White-throated Needletail is a migratory species seen along eastern Australia, commonly in coastal areas and less often inland. As this species breeds exclusively outside of Australia, and it prefers coastal ecosystems, the proposal is unlikely to lead to a long-term decrease in the size of a population of this species.</p> <p>Furthermore, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.</p> |
| Reduce the area of occupancy of an important population                                                                                 | As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Fragment an existing important population into two or more populations                                                                  | As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Adversely affect habitat critical to the survival of a species                                                                          | Critical habitat for this species has not been formally identified. However, considering the lack of records within the 10 km search area, the subject site is unlikely to contain habitat critical to the survival of the species.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Disrupt the breeding cycle of an important population                                                                                   | No, this species breeds in forests in south-eastern Siberia, Mongolia, the Korean Peninsula and northern Japan from June-August.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline | With this species being almost exclusively aerial, it is unlikely that the proposal will modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat             | There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see <b>Section 7</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 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 <b>Section 7</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Interfere with the recovery of the species.                                                                                             | Aerial collision with wind turbines, wires, windows and lighthouses are the biggest threats for this species while it resides in Australia. Though the reduction in invertebrate prey due to the loss of woodland habitat is also a threat. It is unlikely that the proposal would interfere with the recovery of this species.                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Conclusion</b>                                                                                                                       | <b>Non-significant impact</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |



***Stagonopleura guttata* – Diamond Firetail**

| <b>Significant Impact Guideline</b>                                                                                                     | <b>Assessment</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lead to a long-term decrease in the size of an important population of a species                                                        | <p>The proposal would impact up to 0.18 ha of potential habitat for this species. The subject site is not within a priority management area for the species, nor is it at the edge of the species' distribution.</p> <p>The Diamond Firetail can be found in eucalypt woodlands with a native grass understorey. The subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches. Furthermore, the species was not detected during the field survey. Of the 12 records within the 10 km search area, all are located &gt; 5.9 km from the subject site.</p> <p>Furthermore, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.</p> |
| Reduce the area of occupancy of an important population                                                                                 | As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Fragment an existing important population into two or more populations                                                                  | As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Adversely affect habitat critical to the survival of a species                                                                          | <p>Habitat critical to the survival of the diamond firetail includes areas of eucalypt, acacia or casuarina woodlands, open forests and other lightly timbered habitats; low tree density, few large logs, and little litter cover but high grass cover for foraging, roosting and breeding; and Drooping She-oak (<i>Allocasuarina verticillata</i>) within the Mt Lofty Ranges.</p> <p>Considering the prior disturbance to the subject site, it does not fit the above definition of habitat critical to the survival of the species.</p>                                                                                                                                                                                                                                                                       |
| Disrupt the breeding cycle of an important population                                                                                   | As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline | The proposal would remove/modify up to 0.18 ha of associated PCT for the species. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat             | There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see <b>Section 7</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 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 <b>Section 7</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Interfere with the recovery of the species.                                                                                             | Clearing and fragmentation of woodland, open forest, grassland and mallee habitat for agriculture and residential development, and firewood collection; poor regeneration of open forest and woodland habitats; and the invasion of weeds, resulting in the loss of important food plants are the main threats facing this species. Although this proposal would exacerbate the loss of habitat, due to the clearing/modifying of up to 0.18 ha of associated PCT, this should not significantly interfere with the recovery of the species within the region.                                                                                                                                                                                                                                                     |
| <b>Conclusion</b>                                                                                                                       | <b>Non-significant impact</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

***Pteropus poliocephalus* - Grey-headed Flying-fox**

| Significant Impact Guideline                                                                                                            | Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
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| Lead to a long-term decrease in the size of an important population of a species                                                        | <p>The proposal would not impact any PCTs associated with this species. The subject site is not within a priority management area for the species, nor is it at the edge of the species' distribution.</p> <p>The Grey-headed Flying-fox resides within large roosting camps, generally located within 20 km of a regular food source. The nearest, and most recent, known roost camp is approximately 4.9 km to the west of the subject site, at the Orange golf course. As of 2020, this camp consisted of 500-2499 individuals (as per the National Flying-fox Monitor). A closer roost camp is also mapped approximately 570 m east of the subject site; however, this location was searched, and no Flying-foxes were found.</p> <p>Considering the distance to the known roosting camp, the entire search area is likely to be utilised by this species for foraging purposes. However, considering the subject site occurs on degraded land which has been heavily cleared for grazing to the extent where no remnant trees or shrubs remain within the patches, the subject site is unlikely to be utilised for foraging by this species.</p> <p>Two individuals were observed roosting within the planted Poplar trees located directly west of the intersection of Brabham Way and Mitchell Highway. These Poplar trees will not be impacted by the proposal.</p> <p>Considering the above, the proposal is unlikely to place the local population at risk of extinction. Furthermore, the local population does not fit the definition of an important population under the EPBC Act.</p> |
| Reduce the area of occupancy of an important population                                                                                 | As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Fragment an existing important population into two or more populations                                                                  | As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Adversely affect habitat critical to the survival of a species                                                                          | <p>Important winter and spring vegetation communities are those that contain <i>Eucalyptus tereticornis</i>, <i>E. albens</i>, <i>E. crebra</i>, <i>E. fibrosa</i>, <i>E. melliodora</i>, <i>E. paniculata</i>, <i>E. pilularis</i>, <i>E. robusta</i>, <i>E. seeana</i>, <i>E. sideroxylon</i>, <i>E. siderophloia</i>, <i>Banksia integrifolia</i>, <i>Castanospermum australe</i>, <i>Corymbia citriodora citriodora</i>, <i>C. eximia</i>, <i>C. maculata</i>, <i>Grevillea robusta</i>, <i>Melaleuca quinquenervia</i> or <i>Syncarpia glomulifera</i>.</p> <p>Habitat critical to the survival of the Grey-headed Flying-fox may also be vegetation communities not containing the above tree species but which:</p> <ul style="list-style-type: none"> <li>• contain native species that are known to be productive as foraging habitat during the final weeks of gestation, and during the weeks of birth, lactation and conception (August to May)</li> <li>• contain native species used for foraging and occur within 20 km of a nationally important camp as identified on the Department's interactive flying-fox web viewer, or</li> <li>• contain native and or exotic species used for roosting at the site of a nationally important Grey-Headed Flying-Fox camp as identified on the Department's interactive flying-fox web viewer.</li> </ul> <p>Considering the prior disturbance to the subject site, all habitat within the subject site fails to meet any of the abovementioned criteria for habitat critical to the survival of the species.</p>                            |
| Disrupt the breeding cycle of an important population                                                                                   | As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline | The proposal would not remove/modify any area of PCTs associated with this species.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

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|-----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat | There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see <b>Section 7</b> ). |
| 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 <b>Section 7</b> ).                                                                        |
| Interfere with the recovery of the species.                                                                                 | Loss of roosts and foraging sites, electrocution on powerlines, illegal shooting, conflict with humans and heat stress are the key threats to this species. The proposal is unlikely to directly interfere with the recovery of the species.                          |
| <b>Conclusion</b>                                                                                                           | <b>Non-significant impact</b>                                                                                                                                                                                                                                         |

***Eucalyptus aggregate* – Black Gum**

| Significant Impact Guideline                                                                                                            | Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lead to a long-term decrease in the size of an important population of a species                                                        | <p>The proposal would not impact any PCTs associated with this species. The subject site is not within a priority management area for the species, nor is it at the edge of the species' distribution</p> <p>This species grows in the lowest parts of the landscape, on alluvial soils, on cold, poorly-drained flats and hollows adjacent to creeks and small rivers. Often grows with other cold-adapted eucalypts, such as Snow Gum or White Sallee (<i>Eucalyptus pauciflora</i>), Manna or Ribbon Gum (<i>E. viminalis</i>), Candlebark (<i>E. rubida</i>), Black Sallee (<i>E. stellulata</i>) and Swamp Gum (<i>E. ovata</i>). Creeks, small rivers, and associated species are all absent from the subject site. Furthermore, the species was not detected during the field survey and all four records within the 10 km search area are located &gt; 2.4 km from the subject site. As such, the proposal is unlikely to lead to a long-term decrease in the size of a population of this species.</p> <p>Furthermore, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.</p> |
| Reduce the area of occupancy of an important population                                                                                 | As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Fragment an existing important population into two or more populations                                                                  | As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Adversely affect habitat critical to the survival of a species                                                                          | Critical habitat for this species has not been formally identified. However, considering the prior disturbance to the subject site and the inability to detect the species during the field survey, the subject site is unlikely to contain habitat critical to the survival of the species.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Disrupt the breeding cycle of an important population                                                                                   | As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline | The proposal would not remove/modify any area of PCTs associated with this species.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat             | There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see <b>Section 7</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 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 <b>Section 7</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Interfere with the recovery of the species.                                                                                             | Clearing for cropping and grazing, small-scale clearing as farming properties are subdivided for rural-residential use, and lack of recruitment under current grazing and because of competition by weeds are the main threats to the species. The proposal is unlikely to directly interfere with the recovery of the species.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Conclusion</b>                                                                                                                       | <b>Non-significant impact</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

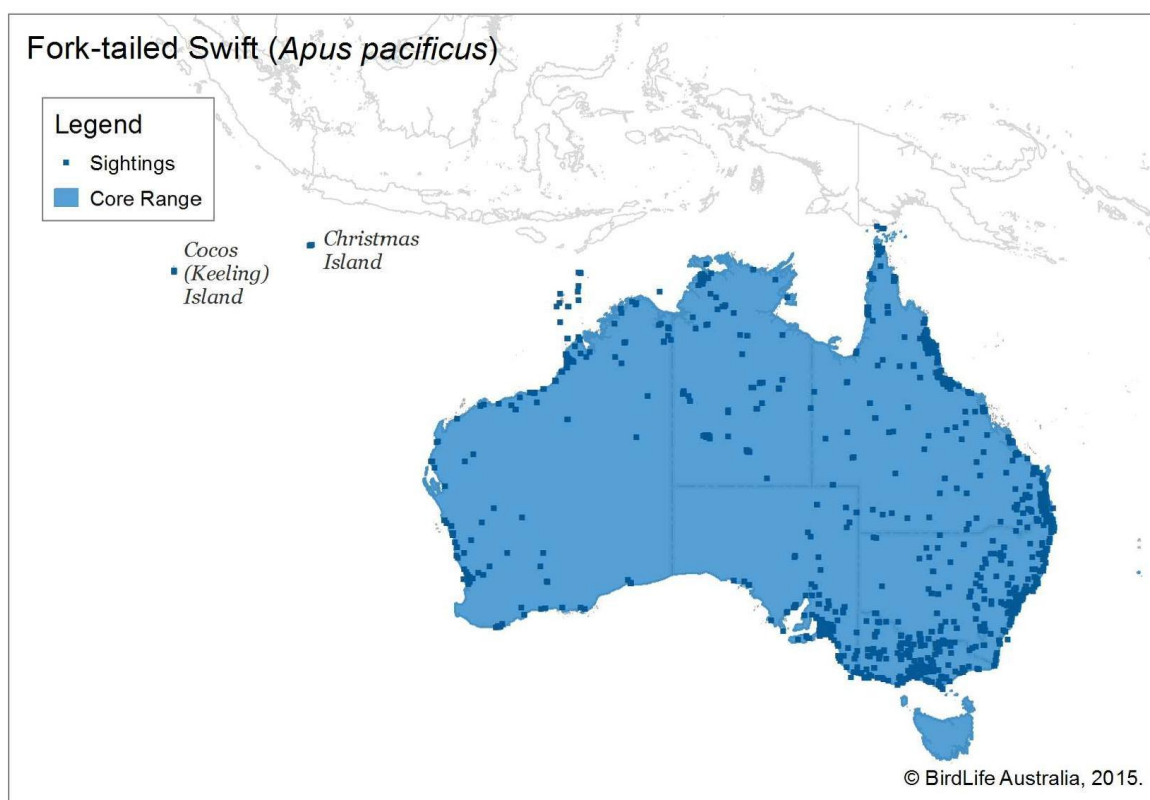
***Eucalyptus nicholii* – Narrow-leaved Black Peppermint**

| <b>Significant Impact Guideline</b>                                                                                                     | <b>Assessment</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lead to a long-term decrease in the size of an important population of a species                                                        | <p>The proposal would not impact any PCTs associated with this species. The subject site is not within a priority management area for the species; however, it does occur at the edge of the species distribution. Therefore, if a population were to occur within the subject site, it would fit the definition of an important population under the EPBC Act.</p> <p>This species typically grows in dry grassy woodland, on shallow soils of slopes and ridges. Found primarily on infertile soils derived from granite or metasedimentary rock. Tends to grow on lower slopes in the landscape. This species was not detected during the field survey and the single record within the 10 km search area is located 6 km from the subject site. As such, the subject site is unlikely to contain an important population of this species.</p> |
| 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                                                                          | Critical habitat for this species has not been formally identified. However, considering the prior disturbance to the subject site, the inability to detect the species during the field survey, and the lack of records within 6 km of the subject site, the subject site is unlikely to contain 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 would not remove/modify any area of PCTs associated with this species.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat             | There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see <b>Section 7</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 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 <b>Section 7</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Interfere with the recovery of the species.                                                                                             | Clearing and fragmentation of habitat for agriculture and grazing, inappropriate fire regimes, roadside management, grazing by domestic stock and introduced species, collection of firewood, collection of seed for horticulture, invasion and spread of exotic grasses, and spraying chemicals (e.g. fertiliser/pesticides) on pastures on private land are the main threats facing this species. The proposal is unlikely to directly interfere with the recovery of the species.                                                                                                                                                                                                                                                                                                                                                              |
| <b>Conclusion</b>                                                                                                                       | <b>Non-significant impact</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |



## EPBC Act-Listed Migratory Species

| Fork-tailed Swift – <i>Apus pacificus</i>                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Significant Impact Guideline                                                                                                                                                                               | Assessment                                                                                                                                                                                                                                                                                                                                                            |
| Substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles, or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species | The subject site occurs within the core non-breeding range of the Fork-tailed Swift (see figure below). As the species is very widely distributed, and as the subject site contains only a small area of potential foraging habitat, it is unlikely to constitute important habitat for this species.                                                                 |
| Result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species                                                      | It is highly unlikely that the proposal site constitutes important habitat for this species. While there is 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 <b>Section 7</b> ). |
| Seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.                                    | It is highly unlikely that an ecologically significant proportion of the population occurs within or is dependent on the proposal site. Furthermore, this species breeds in Siberia and other East Asian countries from April – July. As such, the proposal is unlikely to seriously disrupt the lifecycle for this species.                                          |
| <b>Conclusion</b>                                                                                                                                                                                          | <b>Non-significant impact</b>                                                                                                                                                                                                                                                                                                                                         |



Fork-tailed Swift Core Non-breeding Range (DP 2015).

**Sharp-tailed Sandpiper – *Calidris acuminata***

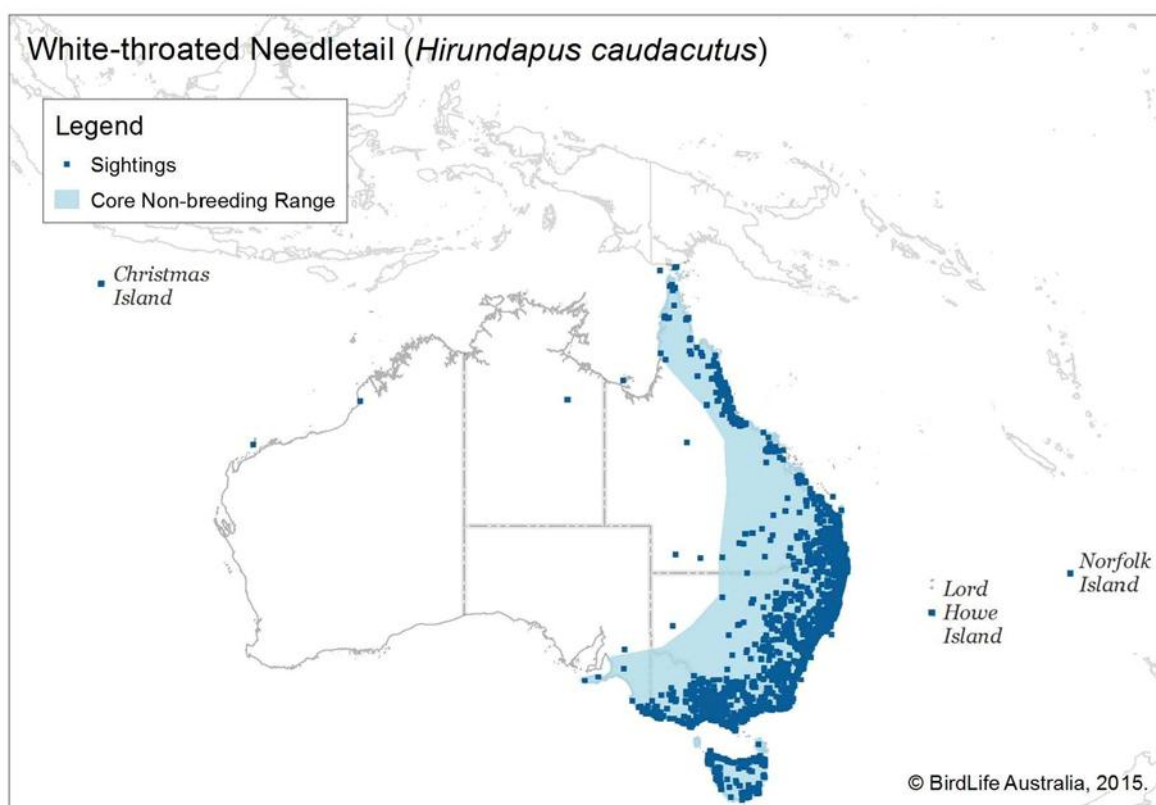
| Significant Impact Guideline                                                                                                                                                                               | Assessment                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles, or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species | The subject site occurs within the non-breeding range of the Sharp-tailed Sandpiper. As the species is very widely distributed, and as the subject site contains only a small area of potential foraging habitat, it is unlikely to constitute important habitat for this species.                                                                                    |
| Result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species                                                      | It is highly unlikely that the proposal site constitutes important habitat for this species. While there is 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 <b>Section 7</b> ). |
| Seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.                                    | It is highly unlikely that an ecologically significant proportion of the population occurs within or is dependent on the proposal site. Furthermore, this species breeds in northern Siberia from July – August. As such, the proposal is unlikely to seriously disrupt the lifecycle for this species.                                                               |
| <b>Conclusion</b>                                                                                                                                                                                          | <b>Non-significant impact</b>                                                                                                                                                                                                                                                                                                                                         |

**Latham's Snipe – *Gallinago hardwickii***

| Significant Impact Guideline                                                                                                                                                                               | Assessment                                                                                                                                                                                                                                                                                                                                                                                             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles, or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species | The subject site occurs within the non-breeding range of the Latham's Snipe. As the species is very widely distributed, and as the subject site contains only a small area of potential foraging habitat, it is unlikely to constitute important habitat for this species.                                                                                                                             |
| Result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species                                                      | It is highly unlikely that the proposal site constitutes important habitat for this species. While there is 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 <b>Section 7</b> ).                                  |
| Seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.                                    | It is highly unlikely that an ecologically significant proportion of the population occurs within or is dependent on the proposal site. Furthermore, this species breeds in Hokkaido and highland areas of Honshu in Japan, and in Sakhalin and the nearby Kuril Islands of far eastern Russia from May – July. As such, the proposal is unlikely to seriously disrupt the lifecycle for this species. |
| <b>Conclusion</b>                                                                                                                                                                                          | <b>Non-significant impact</b>                                                                                                                                                                                                                                                                                                                                                                          |

### White-throated Needletail – *Hirundapus caudacutus*

| Significant Impact Guideline                                                                                                                                                                               | Assessment                                                                                                                                                                                                                                                                                                                                                               |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles, or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species | The subject site occurs within the core non-breeding range of the White-throated Needletail (see figure below). As the species is very widely distributed, and as the subject site contains only a small area of potential foraging habitat, it is unlikely to constitute important habitat for this species.                                                            |
| Result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species                                                      | It is highly unlikely that the proposal site constitutes important habitat for this species. While there is 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 <b>Section 7</b> ).    |
| Seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.                                    | It is highly unlikely that an ecologically significant proportion of the population occurs within or is dependent on the proposal site. Furthermore, this species breeds in forests in south-eastern Siberia, Mongolia, the Korean Peninsula and northern Japan from June-August. As such, the proposal is unlikely to seriously disrupt the lifecycle for this species. |
| <b>Conclusion</b>                                                                                                                                                                                          | <b>Non-significant impact</b>                                                                                                                                                                                                                                                                                                                                            |



White-throated Needletail Core Non-breeding Range (DP 2015).

## APPENDIX F – KEY THREATENING PROCESSES

BC and EPBC Act-listed KTPs predicted as acting on the study area that may be exacerbated by the proposal.

| Name                                                                                                                                  | NSW Status | Comm. Status | Likelihood of Occurrence | Exacerbated by Proposal                                                                                                                                                             |
|---------------------------------------------------------------------------------------------------------------------------------------|------------|--------------|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Aggressive exclusion of birds from woodland and forest habitat by abundant Noisy Miners, <i>Manorina melanocephala</i> (Latham, 1802) | KTP        | KTP          | <b>Unlikely</b>          | <b>No</b><br>The proposal does not include any activities that would exacerbate this threat.                                                                                        |
| Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands                                       | KTP        |              | <b>Likely</b>            | <b>Potentially</b><br>Changes to the land use and hydrology of the subject site may exacerbate this for streams.                                                                    |
| Anthropogenic Climate Change                                                                                                          | KTP        | KTP          | <b>Very Likely</b>       | <b>Yes</b><br>Some unavoidable emissions will occur from construction and operation and removal of native vegetation will diminish the carbon storing capacity of the subject site. |
| Bushrock removal                                                                                                                      | KTP        |              | <b>Very Likely</b>       | <b>Yes</b><br>Bushrock occurs within the assessment area. Any bushrock encountered on site should be left in situ (where possible) or relocated to a suitable place nearby.         |
| Clearing of native vegetation                                                                                                         | KTP        | KTP          | <b>Very Likely</b>       | <b>Yes</b><br>Up to 0.18 ha of native vegetation may be cleared by the current proposal.                                                                                            |
| Competition and grazing by the feral European Rabbit, <i>Oryctolagus cuniculus</i> (L.)                                               | KTP        | KTP          | <b>Unlikely</b>          | <b>No</b><br>The proposal does not include any activities that would exacerbate this threat.                                                                                        |
| Competition and habitat degradation by Feral Goats, <i>Capra hircus</i> Linnaeus 1758                                                 | KTP        | KTP          | <b>Unlikely</b>          | <b>No</b><br>The proposal does not include any activities that would exacerbate this threat.                                                                                        |
| Competition from feral honey bees, <i>Apis mellifera</i> L.                                                                           | KTP        |              | <b>Likely</b>            | <b>Potentially</b><br>The removal of tree hollows may exacerbate this threat.                                                                                                       |

|                                                                                                                                                |     |     |                 |                                                                                                                                                                                               |
|------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Forest eucalypt dieback associated with over-abundant psyllids and Bell Miners                                                                 | KTP |     | <b>Unlikely</b> | <b>No</b><br>The proposal does not include any activities that would exacerbate this threat.                                                                                                  |
| Habitat degradation and loss by Feral Horses (brumbies, wild horses), <i>Equus caballus</i> Linnaeus 1758                                      | KTP |     | <b>Unlikely</b> | <b>No</b><br>The proposal does not include any activities that would exacerbate this threat.                                                                                                  |
| Herbivory and environmental degradation caused by feral deer                                                                                   | KTP |     | <b>Unlikely</b> | <b>No</b><br>The proposal will not increase occupancy by this species.                                                                                                                        |
| High frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition | KTP |     | <b>Unlikely</b> | <b>No</b><br>Fire frequency will not increase due to activities undertaken as part of the proposal. Implementation of the mitigation measures in <b>Section 7</b> should reduce this risk.    |
| Importation of Red Imported Fire Ants <i>Solenopsis invicta</i> Buren 1972                                                                     | KTP | KTP | <b>Unlikely</b> | <b>Potentially</b><br>Machinery used on site can potentially act as a transport for biosecurity risks, however, this species is not known to occur nearby.                                    |
| Infection by Psittacine Circoviral (beak and feather) Disease affecting endangered psittacine species and populations                          | KTP | KTP | <b>Unlikely</b> | <b>Potentially</b><br>The removal of tree hollows may exacerbate this threat.                                                                                                                 |
| Infection of frogs by amphibian chytrid causing the disease chytridiomycosis                                                                   | KTP | KTP | <b>Unlikely</b> | <b>Potentially</b><br>Machinery used on site can potentially act as a transport for biosecurity risks. Implementation of the mitigation measures in <b>Section 7</b> should reduce this risk. |
| Infection of native plants by <i>Phytophthora cinnamomi</i>                                                                                    | KTP | KTP | <b>Likely</b>   | <b>Potentially</b><br>Machinery used on site can potentially act as a transport for biosecurity risks. Implementation of the mitigation measures in <b>Section 7</b> should reduce this risk. |
| Introduction of the Large Earth Bumblebee <i>Bombus terrestris</i> (L.)                                                                        | KTP |     | <b>Unlikely</b> | <b>No</b><br>This species only occurs in Tasmania. It is highly unlikely that the proposal will result in the importation of this species to the mainland.                                    |
| Invasion and establishment of exotic vines and scramblers                                                                                      | KTP |     | <b>Unlikely</b> | <b>Potentially</b>                                                                                                                                                                            |



|                                                                                                                           |     |     |                 |                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------------------------------------------------------------------------------------------------|-----|-----|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                           |     |     |                 | Exotic vine species are likely to occur in the wider landscape and machinery used on site can potentially act as a transport for biosecurity risks. Implementation of the mitigation measures in <b>Section 7</b> should reduce this risk.                                                                                                     |
| Invasion and establishment of Scotch Broom ( <i>Cytisus scoparius</i> )                                                   | KTP |     | <b>Unlikely</b> | <b>Potentially</b><br>Machinery used on site can potentially act as a transport for biosecurity risks. Implementation of the mitigation measures in <b>Section 7</b> should reduce this risk.                                                                                                                                                  |
| Invasion and establishment of the Cane Toad ( <i>Bufo marinus</i> )                                                       | KTP | KTP | <b>Unlikely</b> | <b>Potentially</b><br>This species is primarily confined to wetter subtropical and tropical sites; however, isolated populations can survive close to water elsewhere. Machinery used on site can potentially act as a transport for biosecurity risks. Implementation of the mitigation measures in <b>Section 7</b> should reduce this risk. |
| Invasion of native plant communities by African Olive <i>Olea europaea</i> subsp. <i>cuspidata</i> (Wall. ex G. Don) Cif. | KTP |     | <b>Unlikely</b> | <b>Potentially</b><br>Machinery used on site can potentially act as a transport for biosecurity risks. Implementation of the mitigation measures in <b>Section 7</b> should reduce this risk.                                                                                                                                                  |
| Invasion of native plant communities by <i>Chrysanthemoides monilifera</i>                                                | KTP |     | <b>Unlikely</b> | <b>No</b><br>This species is mainly confined to disturbed coastal sites.                                                                                                                                                                                                                                                                       |
| Invasion of native plant communities by exotic perennial grasses                                                          | KTP |     | <b>Likely</b>   | <b>Yes</b><br>Exotic perennial grasses already occur at the subject site and will likely spread further. Machinery used on site can potentially act as a transport for biosecurity risks. Implementation of the mitigation measures in <b>Section 7</b> should reduce this risk.                                                               |
| Invasion of the Yellow Crazy Ant, <i>Anoplolepis gracilipes</i> (Fr. Smith) into NSW                                      | KTP |     | <b>Unlikely</b> | <b>Potentially</b><br>This species is not known within the area, however machinery used on site can potentially act as a transport for biosecurity risks. Implementation of the mitigation measures in <b>Section 7</b> should reduce this risk.                                                                                               |
| Invasion, establishment and spread of Lantana ( <i>Lantana camara</i> L. sens. Lat)                                       | KTP |     | <b>Unlikely</b> | <b>Potentially</b>                                                                                                                                                                                                                                                                                                                             |

|                                                                                                                        |     |     |                    |                                                                                                                                                                                                                            |
|------------------------------------------------------------------------------------------------------------------------|-----|-----|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                        |     |     |                    | This species is not known within the area, however machinery used on site can potentially act as a transport for biosecurity risks. Implementation of the mitigation measures in <b>Section 7</b> should reduce this risk. |
| Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants | KTP | KTP | <b>Unlikely</b>    | <b>Potentially</b><br>Machinery used on site can potentially act as a transport for biosecurity risks. Implementation of the mitigation measures in <b>Section 7</b> should reduce this risk.                              |
| Loss of Hollow-bearing Trees                                                                                           | KTP |     | <b>Very Likely</b> | <b>Yes</b><br>One hollow-bearing stag, containing five hollows, occurs within the subject site.                                                                                                                            |
| Loss or degradation (or both) of sites used for hill-topping by butterflies                                            | KTP |     | <b>Unlikely</b>    | <b>No</b><br>No sites known or suspected to be present.                                                                                                                                                                    |
| Predation and hybridisation by Feral Dogs, <i>Canis lupus familiaris</i>                                               | KTP |     | <b>Unlikely</b>    | <b>No</b><br>The proposed works will not increase the likelihood of this threat.                                                                                                                                           |
| Predation by <i>Gambusia holbrooki</i> Girard, 1859 (Plague Minnow or Mosquito Fish)                                   | KTP |     | <b>Unlikely</b>    | <b>No</b><br>The proposed works will not increase the likelihood of this threat.                                                                                                                                           |
| Predation by the European Red Fox <i>Vulpes Vulpes</i> (Linnaeus, 1758)                                                | KTP | KTP | <b>Unlikely</b>    | <b>No</b><br>Ease of access for feral foxes will not be increased by the proposal                                                                                                                                          |
| Predation by the Feral Cat <i>Felis catus</i> (Linnaeus, 1758)                                                         | KTP | KTP | <b>Likely</b>      | <b>Yes</b><br>Residential subdivisions increase feral cat populations.                                                                                                                                                     |
| Predation, habitat degradation, competition and disease transmission by Feral Pigs, <i>Sus scrofa</i> Linnaeus 1758    | KTP | KTP | <b>Unlikely</b>    | <b>No</b><br>Ease of access for feral pigs will not be increased by the proposal                                                                                                                                           |
| Removal of dead wood and dead trees                                                                                    | KTP |     | <b>Likely</b>      | <b>Yes</b><br>Some dead wood is likely to be impacted. Any dead wood encountered on site should be left in situ (where possible) or relocated to a suitable place nearby.                                                  |