Flora and Fauna Assessment

The Dog on the Tuckerbox
37 Annie Pyers Drive, Gundagai

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East Coast Ecology

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37 Annie Pyers Drive Gundagai, NSW 2722

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GLOSSARY

Abbreviation	Definition
BAM	Biodiversity Assessment Method 2020
BC Act	*Biodiversity Conservation Act 2016* (NSW)
BDAR	Biodiversity Development Assessment Report
DBH	Diameter at Breast Height
DPE	Department of Planning and Environment (formerly DPIE)
DPI	Department of Primary Industries
DPIE	Department of Planning, Industry and Environment (now DPE)
ECE	East Coast Ecology
EP&A Act	*Environmental Planning & Assessment Act 1979* (NSW)
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
FFA	Flora and Fauna Assessment
ha	Hectares
km	Kilometres
LGA	Local Government Area
Locality	The same meaning when describing a local population of a species or local occurrence of an ecological community.
m	metres
mm	millimetres
NSW	New South Wales
PCT	Plant Community Type
SEPP	State Environmental Planning Policy
Subject Land	37 Annie Pyers Drive Gundagai, NSW 2722 (Lot 2/-/DP160191, Lot 529B/-/DP203601)
TEC	Threatened Ecological Community

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1. INTRODUCTION

1.1 Project Overview

The proposed development includes the construction of a Bakery/ Café, General Store and Restaurant, Indigenous Cultural Centre, and Brew House/ Restaurant located at 37 Annie Pyers Drive, Gundagai NSW 2722 (Lot 2/-/DP160191, Lot 529B/-/DP203601).

1.2 Scope of Assessment

East Coast Ecology (ECE) was engaged by The Price Group to prepare a Flora and Fauna Assessment (FFA), including 5-Part Test and Assessment of Significance, for the proposed development.

The proposed development is assessable under Part 4 of the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act) and is subject to the local planning provisions of Cootamundra-Gundagai Regional Council. The overarching objective of this report was to evaluate the ecological values that occur within the site and identify how the proposed activity satisfies the relevant planning framework. This report discerns the likelihood of occurrence of any threatened entities (i.e. ecological communities and species) listed under the *Biodiversity Conservation Act 2016* (NSW) (BC Act) and the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act). The full scope of the assessment included:

- Background research to determine the likelihood for NSW and/ or Commonwealth threatened biota to occur within the Subject Land during any point of their lifecycles
- Identifying and mapping the distribution of vegetation communities within the Subject Land
- Recording presence and the extent of any known or potential fauna habitat features such as nests, dreys, caves, crevices, culverts, pools, soaks, flowering trees, fruiting trees or hollow-bearing trees and provide recommendations for on-going management of these habitat features and any fauna present
- Establishing the likelihood of occurrence and assess any potential impacts to species and/or communities listed under the BC Act, FM Act and EPBC Act
- Recording presence and the extent of any priority weed infestations that require management by law
- Determining potential ecological impacts or risks that may result due to the proposed works, and
- Recommendation of any controls or additional actions to be taken to protect or improve environmental outcomes of the proposed works.

The areas within this FFA have been defined in consultation with the Architectural Plans (SN Architects, 2023), the Bushfire Assessment Report (CAF, 2023) and the Tree Assessment Report (Mark McCrone, 2023).

1.3 The Subject Land

The property is located within the suburb of Gundagai, in the Cootamundra-Gundagai Local Government Area (LGA). It encompasses an area of approximately 1.31ha and is occupied by a small shop, parking areas and scattered trees on a lawn in the rear. The property is surrounded by low density commercial buildings and is situated within a peri-urban landscape. The area assessed as part of this FFA is hereafter referred to as the 'Subject Land'.

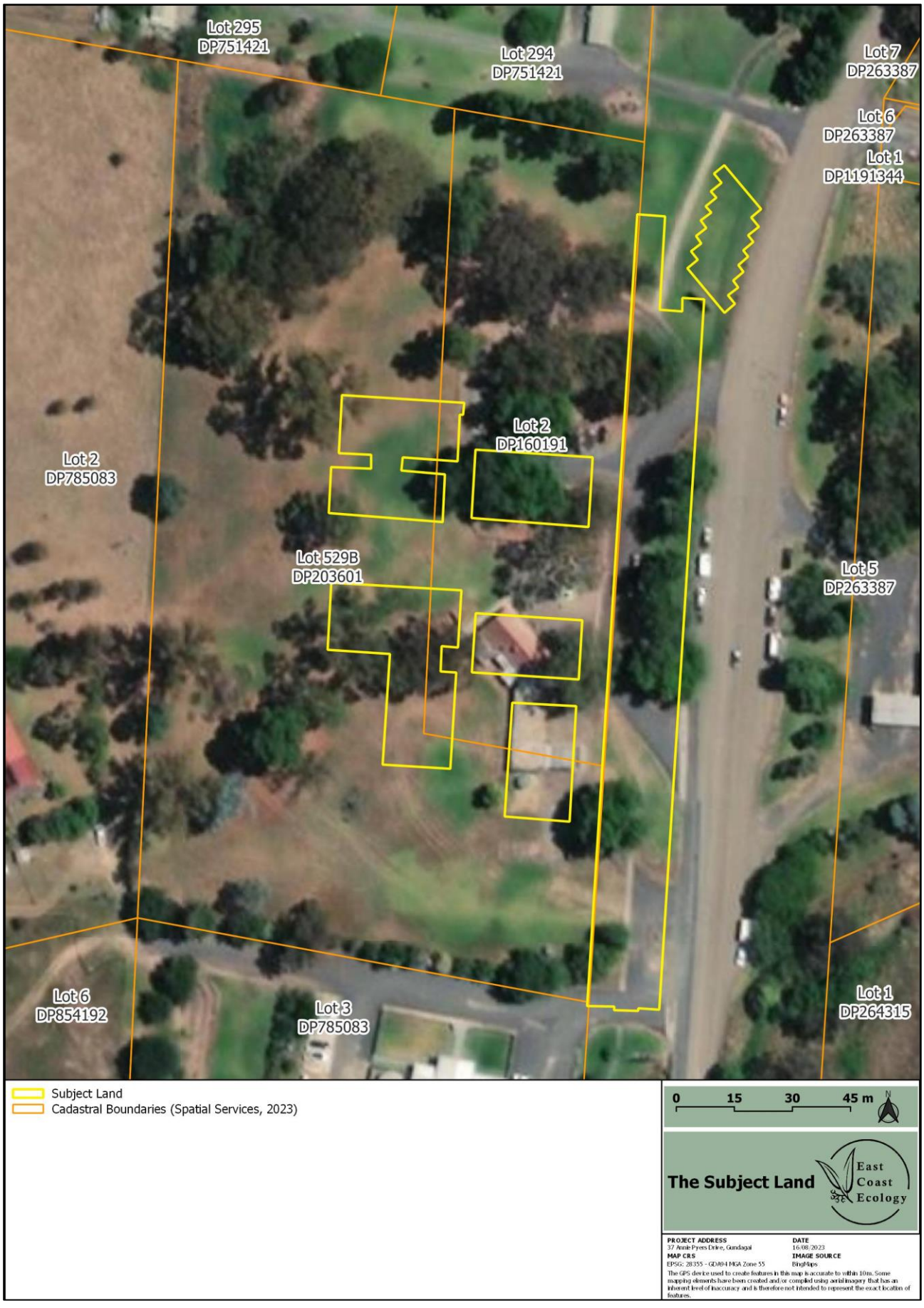

Figure 1. The location of the Subject Land.

1.4 Legislative Context

1.4.1 *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth)

The Commonwealth EPBC Act provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places which are considered Matters of National Environmental Significance (MNES). Under the EPBC Act, approval is required for actions that have, will have, or are likely to have a significant impact on MNES.

Several EPBC listed threatened species have potential to utilise the Subject Land. The proposed development will not result in a 'significant impact' on any MNES and a referral to the Australian Government Minister for the Environment is not required.

1.4.2 *Environmental Planning and Assessment Act 1979*

The *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act) establishes the system of environmental planning and assessment in NSW. The EP&A Act places a duty on the determining authority to adequately address a range of environmental matters including maintenance of biodiversity and the likely impact to threatened species, populations or ecological communities (under the BC Act).

This FFA forms part of the Development Application being prepared for the Dog of the Tuckerbox Redevelopment and assesses the biodiversity impacts of the proposed activity to meet the requirements of the EP&A Act.

1.4.3 *Biodiversity Conservation Act 2016*

The BC Act (NSW) seeks to conserve biological diversity and promote ecologically sustainable development, to prevent extinction and promote recovery of threatened species, populations and ecological communities and to protect areas of outstanding biodiversity value.

Several BC Act listed threatened species have the potential to occur within, or utilise, the Subject Land. The BC Act requires that the significance of the impact on threatened species, populations and threatened ecological communities is assessed using the test listed in Section 7.3 of the BC Act. Where a significant impact is likely to occur, a Species Impact Statement (SIS) must be prepared in accordance with the Environment Agency Head's requirements, or a Biodiversity Development Assessment Report (BDAR) must be prepared by an accredited assessor in accordance with the Biodiversity Assessment Method (BAM) (DPE, 2020a). The proposed activity will not result in a 'significant impact' on any threatened entities and therefore the Biodiversity Offset Scheme is not triggered. As such, an SIS or a BDAR is not required. The Subject Land is not located within any Areas of Outstanding Biodiversity Value.

1.4.3.1 Biodiversity Assessment Pathway

The requirements of the BC Act and *Biodiversity Conservation Regulation 2017* are mandatory for all Development Applications (DA) assessed pursuant to Part 4 of the EP&A Act submitted in the Cootamundra-Gundagai LGA. The BC Act and its regulations stipulate clearing 'area threshold' values (**Table 1**) that determine whether a development is required to be assessed in accordance with the Biodiversity Offset Scheme (BOS). Minimum entry thresholds for vegetation clearing depend on the

minimum lot size (i.e. 0.7ha in this case). Therefore, to avoid triggering the BOS, the proponent must avoid the clearing/ management of native vegetation in excess of 0.25ha.

Table 1. Entry thresholds for the Biodiversity Offset Scheme.

Minimum lot size associated with the property	Threshold for clearing
Less than 1ha	0.25ha or more
1ha to less than 40ha	0.5ha or more
40ha to less than 1000ha	1ha or more
1000ha or more	2ha or more

Dark border indicates relevant threshold.

In addition to the clearing area threshold, the Biodiversity Values (BV) Map (DPE, 2023d) identifies land with high biodiversity values that are particularly sensitive to impacts from development and clearing. The Subject Land has not been mapped as containing 'Biodiversity Values' on the BV Map at the time of writing this report. Developments that cause a significant impact to a threatened species or ecological community will trigger the BOS. It was determined that the proposed development will not significantly impact on any threatened species or ecological communities, therefore the BOS is not triggered.

1.4.4 Biosecurity Act 2015

The *Biosecurity Act 2015* (NSW) provides a framework for the prevention, elimination and minimisation of biosecurity risks posed by an activity as a matter of biosecurity. As defined in Part 3, section 23 of this Act, any non-conformance by an individual is defined as guilty of an offence.

No priority weeds for the Riverina (DPI, 2023) were identified within the Subject Land. Suitable mitigation measures (**Section 7.1**) have been provided to appropriately manage weeds within the impact areas in accordance with the *Biosecurity Act 2015*.

1.4.5 State Environmental Planning Policy (Resilience and Hazards) 2021

The State Environmental Planning Policy (Resilience and Hazards) 2021 (Resilience and Hazards SEPP) commenced on the 1st of March 2022 and replaces the following former SEPPs:

- State Environmental Planning Policy (Coastal Management) 2018
- State Environmental Planning Policy 33 – Hazardous and Offensive Development, and
- State Environmental Planning Policy 55 – Remediation of Land.

The Subject Land is not situated within the 'Coastal Zone' therefore is not subject to the listed controls.

1.4.6 State Environmental Planning Policy (Biodiversity and Conservation) 2021

1.4.6.1 Chapter 2 Vegetation in Non-rural Areas

The Subject Land occurs within the Cootamundra-Gundagai LGA, therefore the SEPP does not apply.

1.4.6.2 Chapter 3 Koala Habitat Protection 2020

The Subject Land does not occur within land zoned as RU1, RU2 or RU3, therefore this chapter does not apply.

1.4.6.3 Chapter 4 Koala Habitat Protection 2021

The Subject Land is situated within an LGA that is not specified in Schedule 2 of the SEPP, therefore this SEPP does not apply.

1.5 Gundagai Local Environmental Plan 2011

1.5.1 Zoning

The Subject Land is zoned 'SP3 - Tourist. The objectives of this zone are:

- To provide for a variety of tourist-oriented development and related uses.
- To recognise and promote the cultural significance of the "Dog on the Tuckerbox" installation at the Five Mile.

The proposed development seeks to enhance the site, particularly tourist amenities, in a manner that is consistent with the constraints and opportunities of the land. The proposed development satisfies the zone's objectives.

1.5.2 Clause 6.1 – Biodiversity Protection

The north of the Subject Land is not zoned 'Biodiversity Protection', therefore the controls under this clause apply to the proposed development.

(1) The objective of this clause is to maintain terrestrial and aquatic biodiversity, including the following—

- (a) protecting native fauna and flora,
- (b) protecting the ecological processes necessary for their continued existence,
- (c) encouraging the recovery of native fauna and flora and their habitats.

(3) Before determining a development application for development on land to which this clause applies, the consent authority must consider any adverse impact of the proposed development on the following—

- (a) native ecological communities,
- (b) the habitat of any threatened species, populations or ecological community,
- (c) regionally significant species of fauna and flora or habitat,
- (d) habitat elements providing connectivity.

(4) Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that—

- (a) the development is designed, sited and will be managed to avoid any adverse environmental impact, or
- (b) if that impact cannot be avoided—the development is designed, sited and will be managed to minimise that impact, or

- (c) if that impact cannot be minimised—the development will be managed to mitigate that impact.

The proposed development will include measures to protect and enhance the natural environment for protection purposes through environmentally sensitive design. The proposed development has been designed in a manner that is consistent with the constraints and opportunities of the land. The proposed development satisfies the zone's objectives.

1.6 Gundagai Development Control Plan 2007 – Five Mile Precinct

1.6.1 Clause 7(vi) – Flora, Fauna and Noxious Weeds

Intending developers must consider the likely impact of their project on existing flora and fauna on the site and in the general area. Compliance with the *Threatened Species Conservation Act 1995* (now *Biodiversity Conservation Act 2016*) is a requirement. Depending on the site characteristics and the nature of the proposal, Council may require a preliminary flora and fauna assessment by a suitably qualified expert to determine the likely impact of the development. Council must be consulted prior to the commencement of any works to ensure that adequate measures are in place to control noxious weeds (now priority weeds).

This report has been prepared to address the requirements of this clause and demonstrates how the proposed development complies with all biodiversity guidelines and legislation.

2. METHODOLOGY

2.1 Background Research

A thorough literature review of local information relevant to the Subject Land was undertaken. Searches using NSW Wildlife Atlas (BioNet) (DPE, 2023a) and the Commonwealth Protected Matters Search Tool (PMST) (DCCEEW, 2023) were conducted to identify all current threatened flora and fauna, as well as migratory fauna records, within a 5km radius of the Subject Land. These data were used to assist in establishing the presence or likelihood of any ecological values as occurring on or adjacent to the Subject Land and helped inform our ecologists on what to look for during the site assessment.

Soil landscape and geological mapping, as well as existing vegetation mapping, were examined to assist in determining whether any threatened flora or ecological communities could be present. The following technical resources were comprised in the preparation of this report:

- State and Commonwealth datasets:
    - EPBC Protected Matters Search Tool (DCCEEW, 2023)
    - NSW BioNet. The website of the Atlas of NSW Wildlife (DPE, 2023a)
    - NSW BioNet. Threatened Biodiversity Data Collection (DPE, 2023b)
    - NSW BioNet. Vegetation Classification System (DPE, 2023c)
    - NSW Government Spatial Services: Search and Discovery - Historical, Aerial and Satellite Imagery (Spatial Services, 2023a)
    - NSW Government Spatial Services: Six Maps Clip & Ship (Spatial Services, 2023b)
    - BAM Important Habitat Maps
- Vegetation and soil mapping:
    - The NSW State Vegetation Type Map (DPE, 2023d)
    - eSPADE v2.2.0 (DPIE, 2023)
- NSW State guidelines:
    - Surveying threatened plants and their habitats - NSW survey guide for the Biodiversity Assessment Method (DPE, 2020b)
    - Threatened Species Survey and Assessment: Guidelines for developments and activities. Working Draft (DEC, 2004b)

Species from both the BioNet and PMST online searches were combined to produce a list of threatened species, populations and communities that are likely occur within the Subject Land.

2.2 Permits and Licences

The biodiversity assessment was conducted under the terms of ECE's Scientific Licence issued by the NSW Department of Planning and Environment (SL102667). Fauna survey was conducted under approval RVF22/2367 from the NSW Animal Care and Ethics Committee.

2.3 Native Vegetation, Threatened Ecological Communities and Vegetation Integrity Methods

2.3.1 Existing Information

A review of the State Vegetation Type Map (DPE, 2023d) was used to assist in the identification of Plant Community Types (PCTs) within and surrounding the Subject Land. The PCT of 'best-fit' was determined based on the floristic descriptions within the Vegetation Classification System database (DPE, 2023c).

2.3.2 Mapping Native Vegetation Extent

The extent of native vegetation within the Subject Land was determined through a field assessment with the aid of a GPS-enabled tablet.

2.4 Threatened Flora Survey Methods

2.4.1 Review of Existing Information

Threatened flora with potential to occur within the Subject Land and immediate surrounds were identified following review of BioNet and the PMST. Soil mapping (DPIE, 2023) and topography (Google Earth) were also used to provide further context on habitat constraints for threatened flora.

2.4.2 Field Surveys

To determine whether any threatened flora or their habitats were present, a survey was undertaken using parallel field traverses in accordance with the 'Surveying threatened plants and their habitats - NSW survey guide for the Biodiversity Assessment Method' (DPE, 2020b).

2.5 Threatened Fauna Survey Methods

2.5.1 Review of Existing Information

Threatened fauna with potential to occur within the Subject Land and immediate surrounds were identified following review of BioNet and the PMST. Soil mapping (DPIE, 2023) and topography (Google Earth) were also used to provide further context on habitat constraints for threatened fauna.

2.5.2 Habitat Constraints

A field survey was undertaken to identify any habitat constraints (e.g. waterbodies, rocky areas, tree hollows), including microhabitat, present within the Subject Land and immediate surrounds. Potential habitat constraints within the broader area were assessed using Google Earth, historical aerial imagery (Spatial Services, 2023a), soil landscape mapping (DPIE, 2023) and recent vegetation mapping (DPE, 2023d)

2.5.3 Field Surveys

No targeted surveys for fauna were undertaken. To determine whether any threatened fauna species were present, targeted habitat surveys were undertaken from Settlers Road using binoculars.

2.6 Weather Conditions

Weather conditions recorded at the nearest weather station (Cootamundra Airport) prior to and during the general flora and fauna survey period are provided in **Table 2** (BOM, 2023). The data reveal cool temperatures and minor amounts of rainfall leading up to the survey.

Table 2. Weather observations recorded from Cootamundra Airport (station 073142).

Date	Day	Min. temp. (°C)	Max. Temp (°C)	Rainfall (mm)
15/11/2023	Tuesday	0.2	17.7	0
16/11/2023	Wednesday	2.2	-	0
17/11/2023	Thursday	-	13.7	0
18/11/2023	Friday	-3.1	13.1	0
19/11/2023	Saturday	-1.0	13.9	0
20/11/2023	Sunday	6.5	14.0	1.2
21/11/2023	Monday	-1.7	14.4	0

Dark border indicates date of survey.

2.7 Limitations

Not all flora and fauna species could be directly surveyed for during the site assessment. These species include nocturnal fauna and cryptic flora with flowering times outside of the survey period. The presence of nocturnal and cryptic species was assessed based on habitat constraints and historical records.

3. SITE CONTEXT

3.1 Landscape Features

3.1.1 Rivers, streams, estuaries and wetlands

The Subject Land does not contain any mapped watercourses or intersect with any riparian buffers. Five Mile Creek, a fourth order watercourse, occurs approximately 80m north of the Subject Land, and a minor tributary (first order watercourse) occurs 30m south of the Subject Land.

3.1.2 Topography, Geology and Soils

The Subject Land is situated on a gentle east-facing slope, rising from 257m in the east to 262m in the west. The Subject Land is situated on the Wandeen soil landscape (DPE, 2023). The Wandeen soil landscape is characterised by gentle to undulating rises, footslopes and plains formed on Quaternary alluvium and colluvium underlain by Silurian sedimentary, metamorphic and minor igneous rocks.

3.1.3 Karst, Caves, Crevices, Cliffs, Rocks or Other of Geological Features of Significance

The Subject Land did not contain areas of geological significance (karsts, caves, cliffs and crevices). The Subject Land, or surrounding area, was not mapped as occurring on acid sulfate soils nor mapped as having risk/ probability of exhibiting occurrence of acid sulfate soils.

3.1.4 Areas of Outstanding Biodiversity Value

No Areas of Outstanding Biodiversity Value occur on the Subject Land or surrounding area.

3.1.5 NSW (Mitchell) Landscapes

Mitchell Landscapes (Mitchell, 2002) groups ecosystems into meso-ecosystems representing larger natural entities based on topography and geology. The naming of ecosystems and meso-ecosystems was standardised so that each name provided location information and a meaningful descriptive landscape term. The Subject Land occurs within the 'Springdale Hills' Mitchell Landscape Ecosystem.

3.1.5.1 Springdale Hills

Rounded ridges and a few peaks on Silurian sandstone, shale and acid volcanics, general elevation 300 to 530m, local relief 150m. Gravelly uniform clay loams and red-brown texture-contrast soils. Grey box (*Eucalyptus microcarpa*), red ironbark (*Eucalyptus sideroxylon*), white cypress pine (*Callitris glaucophylla*) and patches of mallee. Bimble box (*Eucalyptus populnea*) along creek lines.

4. RESULTS: NATIVE VEGETATION

4.1 Historically Mapped Vegetation Communities

One Plant Community Type (PCT) has been mapped as occurring within the Subject Land:

- PCT 277: Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

This PCT is associated with the BC Act and EPBC listed communities:

- BC Act: 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 – Critically Endangered Ecological Community
- EPBC Act: White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland – Critically Endangered Ecological Community

4.2 Field-validated Vegetation Communities

The site assessment identified the presence of two vegetation types within the Subject Land that could not be assigned to a PCT:

- Urban Exotic/ Native, and
- Exotic Dominated Grassland.

The vegetation within the Subject Land is detailed in **Table 4** and **Table 5** and displayed in **Figure 2**.

4.2.1 Justification for Vegetation Community Selection

Plant Community Type (PCT) selection for native vegetation was undertaken using information and databases provided in the BioNet Vegetation Classification System (DPE, 2023c). The following selection criteria were used in the PCT Filter Tool to develop a PCT shortlist:

- IBRA Bioregion: NSW South Western Slopes
- IBRA Subregion: Inland Slopes
- Formation: Grassy Woodlands
- Dominant Species: *Eucalyptus mannifera, Eucalyptus cinerea, Eucalyptus sideroxylon, Eucalyptus camaldulensis.*

This process delivered a selection of two candidate PCTs that occur within the Inland Slopes IBRA Subregion (and NSW South Western Slopes Bioregion) and that have all dominant species (**Table 3**). The steps taken to justify the presence/ absence of the candidate PCTs within the Subject Land are detailed in **Table 3**.

Table 3. Output from the PCT Filter Tool (DPE, 2023c) and subsequent shortlisting of candidate PCTs.

Plant Community Type (PCT)	Subject Land within suitable geology, landscape position and vegetation formation.
PCT3372: Dalton Hills Grassy Stringybark Forest	No. This PCT is "distributed from Gundaroo and Murrumbateman north to Murringo, Wyangala Dam and east to Tuena, at elevations of 450-800 metres asl". The Subject Land occurs outside the known distribution at an elevation of 260m.
PCT3376: Southern Tableland Grassy Box Woodland	No. This PCT "primarily occurs in the Bredbo, Canberra, Goulburn and Boorowa areas, with more scattered occurrences extending north to Bathurst, Orange and Rylstone. It occurs on granite, volcanic and sedimentary substrates in cold, dry environments." The Subject Land occurs outside the known distribution on the incorrect soil landscape.

Of the shortlisted PCTs, none occurred within the correct distribution, landscape position and geologies as well as exhibiting the dominant canopy species found within the Subject Land. It is highly likely that all vegetation has been planted within the Subject Land. None of the tree species conform to the PCT mapped within the State Vegetation Type Map (PCT 277) and the species present are dominated by non-locally native species that naturally occur east of the Great Dividing Range (e.g. *Corymbia maculata, Corymbia citriodora, Grevillea robusta*). On this basis, the vegetation could not be assigned to a locally-occurring PCT, and is instead referred to as 'Urban Exotic/ Native'. A detailed description of the vegetation community is provided in the following subsections and is depicted in **Table 4** and **Table 5**.

Table 4. Description of Urban Exotic/ Native within the Subject Land.

Urban Exotic/ Native	
	
Description of the planted native and exotic dominated vegetation within the Subject Land	
This vegetation type within the Subject Land was heavily modified from its original state to the point that it is not recognisable as a locally-occurring PCT. This vegetation type was dominated by non-locally occurring, planted native species, such as *Corymbia maculata, Corymbia citriodora, Melia azedarach, Grevillea robusta, Eucalyptus bicostata.* Native species to the Inland Slopes subregion, but not necessarily the landscape in which the Subject Land occurs included *Eucalyptus mannifera*, *Eucalyptus cinerea*, *Eucalyptus sideroxylon* and *Eucalyptus camaldulensis.* Not only is evidence of planting supported by historical imagery and location (planted in rows), but also by the comparable size of non-locally native trees such as *Eucalyptus globulus subsp. bicostata* (Tasmanian Blue Gum), an introduced species, which comprised the largest tree (150cm DBH) within the Subject Land. Planted exotic species included *Liquidambar styraciflua*, *Fraxinus spp*. and *Platanus X hispanica.* All vegetation occurred either on hardstand (carparks and pedestrian paths) or exotic grassland.	
Extent to be impacted (approximate)	0.23ha
BC Act 2016 Status	Not listed
EPBC Act 1999 Status	Not listed

Table 5. Description of Exotic Dominated Grassland within the Subject Land.

Exotic Dominated Grassland	
	
Description of the planted native and exotic dominated vegetation within the Subject Land	
This vegetation type within the Subject Land was heavily modified from its original state to the point that it is not recognisable as a native vegetation community. This vegetation type was dominated by exotic grasses such as *Cenchrus clandestinus.*	
Extent to be impacted (approximate)	0.27ha
BC Act 2016 Status	Not listed
EPBC Act 1999 Status	Not listed

4.3 Threatened Ecological Communities

No threatened ecological communities were identified within the Subject Land.

4.4 Groundwater Dependent Ecosystems (GDE)

Assessment of the potential for the Subject Land to support groundwater dependent ecosystems was carried out using the Commonwealth's Bureau of Meteorology Groundwater Dependent Ecosystems Atlas (BOM, 2023a). No vegetation within or directly adjoining the Subject Land has been mapped as a Groundwater Dependent Ecosystem.

Figure 2. Field-validated vegetation communities.

5. RESULTS: THREATENED SPECIES

5.1 Threatened Flora

Database searches revealed four threatened flora have potential to occur within a ~5km radius of the Subject Land.

Table 6. Threatened flora with potential to occur within the Subject Land.

Scientific Name	Common Name	BC Act	EPBC Act	Records within 5km
Caladenia arenaria	Sand-hill Spider-orchid	E	E	0*
Lepidium aschersonii	Spiny Peppercress	V	V	0*
Prasophyllum petilum	Tarengo Leek Orchid	E	E	0*
Senecio macrocarpus	Large-fruit Fireweed	-	V	0*

V – Vulnerable; E – Endangered; EP – Endangered Population; CE – Critically Endangered
** Predicted by Protected Matters Search Tool (PMST) only.*

Species were assessed for their potential to occur within the Subject Land (**Appendix A**). Based on habitat constraints, no threatened flora species were considered likely to occur within the Subject Land, particularly given the existing disturbed state.

5.2 Threatened Fauna

Database searches revealed 15 threatened fauna occur, or have potential to occur, within a ~5km radius of the Subject Land (**Table 7**).

Table 7. Threatened fauna with potential to occur within the Subject Land.

Scientific Name	Common Name	BC Act	EPBC Act	Records within 5km
Artamus cyanopterus cyanopterus	Dusky Woodswallow	V	-	2
Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	V	-	1
Falco subniger	Black Falcon	V	-	1
Falsistrellus tasmaniensis	Eastern False Pipistrelle	V	-	1
Glossopsitta pusilla	Little Lorikeet	V	-	1
Haliaeetus leucogaster	White-bellied Sea-Eagle	V	-	2
Hieraaetus morphnoides	Little Eagle	V	-	1
Keyacris scurra	Key's Matchstick Grasshopper	E	-	1

Scientific Name	Common Name	BC Act	EPBC Act	Records within 5km
Lathamus discolor	Swift Parrot	E	CE	1
Miniopterus orianae oceanensis	Large Bent-winged Bat	V	-	2
Myotis macropus	Southern Myotis	V	-	2
Phascolarctos cinereus	Koala	E	E	1
Pteropus poliocephalus	Grey-headed Flying-fox	V	V	1
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	V	-	1
Stagonopleura guttata	Diamond Firetail	V	-	1

V – Vulnerable; E – Endangered; EP – Endangered Population; CE – Critically Endangered

No threatened fauna species were identified within the Subject Land however, this does not rule out the potential for threatened species to still exist within the Subject Land, particularly given no targeted surveys were undertaken. Given the targeted nature of the proposed development (i.e. select tree removal) and large areas of potential habitat connected to the Subject Land, it was determined that the proposed development is not likely to significantly impact upon any threatened fauna. Further assessment is provided in **Appendix A** and **Appendix B** of this report. Details of the threatened fauna habitat recorded within the Subject Land are included in **Table 8**.

Table 8. Fauna habitat values identified within the Subject Land.

Habitat component	Subject Land
Coarse woody debris	Absent.
Rock outcrops and bush rock	Absent.
Caves, crevices and overhangs	Absent.
Culverts, bridges, mine shafts, or abandoned structures	Absent.
Nectar/lerp-bearing Trees	Present. *Eucalyptus* spp. were recorded within the Subject Land.
Nectar-bearing shrubs	Absent.
Koala Use Trees	Present. Numerous Koala use trees (eucalypts) were present throughout the Subject Land, however Koalas are unlikely to access the trees within the Subject Land given the proximity to existing development and the level of fragmentation throughout the surrounding landscape..
Large stick nests	Absent.
Sap and gum sources	Present. *Eucalyptus spp.* were recorded within the Subject Land.
She-oak fruit	Absent.

Habitat component	Subject Land
Seed-bearing trees and shrubs	Absent.
Soft-fruit-bearing trees/shrubs	Absent.
Dense shrubbery and leaf litter	Absent.
Tree hollows	Present. Small hollows were present within Eucalyptus spp. were recorded adjoining the Subject Land.
Decorticating bark	Absent.
Wetlands, soaks, and streams	Absent.
Open water bodies	Absent.
Estuarine, beach, mudflats, and rocky foreshores	Absent.

5.3 Migratory Species

Database searches revealed seven migratory terrestrial species, or their habitat, is known to occur within the Subject Land (**Table 9**). These species do not breed in Australia.

Table 9. Migratory terrestrial species with potential to occur in the Subject Land.

Species	EPBC Act Status
Cuculus optatus (Oriental Cuckoo)	Migratory, CAMBA, JAMBA, ROKAMBA
Hirundapus caudacutus (White-throated Needletail)	Vulnerable, Migratory, CAMBA, JAMBA, ROKAMBA
Monarcha melanopsis (Black-faced Monarch)	Migratory, Bonn
Monarcha trivirgatus (Spectacled Monarch)	Migratory, Bonn
Motacilla flava (Yellow Wagtail)	Migratory, CAMBA, JAMBA, ROKAMBA
Myiagra cyanoleuca (Satin Flycatcher)	Migratory, Bonn
Rhipidura rufifrons (Rufous Fantail)	Migratory, Bonn

CAMBA = China-Australia Migratory Bird Agreement, JAMBA = Japan-Australia Migratory Bird Agreement, ROKAMBA = Republic of Korea-Australia Migratory Bird Agreement and Bonn = Convention on the Conservation of Migratory Species of Wild Animals.

6. MPACT SUMMARY

6.1 Impacts to Vegetation Communities and Flora

The proposed development will require the removal of the following planted trees (Mark McCrone, 2023):

- 2 x *Corymbia maculata* (Tree 2, 3)
- 2 x *Platanus X hispanica* (Tree 5, 12)
- 1 x *Eucalyptus cinerea* (Tree 6)
- 1 x *Melia azedarach* (Tree 9)
- 1 x *Eucalyptus sideroxylon* (Tree 10)
- 2 x *Fraxinus Raywood* (Tree 13, 14)
- 2 x *Corymbia citriodora* (Tree 15, 19)
- 1 x *Eucalyptus bicostata* (Tree 17)
- 1 x *Eucalyptus camaldulensis* (Tree 18)
- 2 x *Liquidambar styraciflua* (Tree 20, 25)
- 1 x *Melaleuca bracteata* (Tree 21)
- 1 x *Quercus palustris* (Tree 22)
- 5 x *Grevillea robusta* (Tree 23, 24, 26, 27, 28)

Of these, only Tree 6, 10 and 18 are native to the region.

6.1.1 Calculating the Area of Native Vegetation Clearing

The following ruleset is applied to the calculation of the area clearing threshold for partially exotic groundcover in heavily disturbed landscapes (DPE, 2023):

- Where there is greater than 75% native vegetation in the ground cover then treat the vegetation as 100% native and assess the area to be cleared accordingly
- Where the proportion of exotic to native vegetation in the ground cover is between 15-75% - the calculation of native vegetation extent is adjusted by multiplying the proportion (%) of native cover by the total area to be cleared, and
- Where there is less than 15% native ground cover all vegetation can be considered exotic and the area clearing threshold will not be exceeded.

This advice does not apply in the following circumstances:

- The primary community type is naturally a grassland plant community
- the vegetation meets the definition of a threatened ecological community (TEC) according to the scientific description in the final determination published by the Threatened Species Scientific Committee
- The vegetation meets the definition of a threatened ecological community or habitat for a species listed under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act), and

- The assessment of Category 1-exempt land or land categories under the Local Land Services Act 2013.

Vegetation within 'Exotic Dominated Grassland' was dominated by non-native species (<10% native based on a 20x20m plot), therefore the BOS is not triggered per **Table 10**.

Table 10. Impacts to Native Vegetation.

Vegetation Type	Impacts to Vegetation (ha)
Urban Exotic/ Native	0.23
Exotic Dominated Grassland	0.27 (does not meet condition threshold for native vegetation classification)
Total	**0.23**

6.2 Impacts to Protected Fauna

All vegetation proposed for removal provides minor foraging habitat for a suite of protected fauna species. Sensitive and/ or specialist fauna habitats that may be directly impacted by the development include:

- Approximately 15 native trees that provide potential foraging habitat for mobile species , and
- Leaf litter and woody debris.

Within the context of the surrounding landscape, these habitat types are unlikely to offer suitable habitat for threatened fauna owing to the proximity of the ongoing operational impacts created by the existing Dog on the Tuckerbox tourist attraction. Furthermore, the superior habitat offered within the surrounding landscape means that threatened fauna are unlikely to occupy the Subject Land in preference of surrounding habitats. Recommendations to minimise any potential impacts to fauna and their habitats are detailed in **section 7**.

6.3 Impacts to Threatened Species and Communities

No threatened ecological communities were identified within the Subject Land, nor will any nearby be impacted by the proposed activity. A likelihood of occurrence table for threatened flora and fauna species within the Subject Land is presented in **Appendix A** and **Appendix B.** No threatened flora or fauna species will be significantly impacted by the proposed development, therefore the Biodiversity Offset Scheme is not triggered. As such, an SIS or a BDAR is not required, not is a referral to the Australian Government Minister for the Environment required.

Figure 3. Proposed impacts to vegetation communities and fauna habitats within the Subject Land.

7. RECOMMENDATIONS

7.1 Impact Mitigation and Minimisation Recommendations

This section of the report details recommended efforts to avoid and minimise impacts on biodiversity values associated with the proposed development. Measures to be implemented before, during, and post construction are detailed in **Table 11**.

Table 11. Measures to be implemented before, during, and after construction to avoid and minimise the impacts of the proposed development.

Action	Outcome	Timing	Responsibility
Tree Protections	Australian Standard 4970 (2009) Protection of Trees on Development Sites (AS 4970:2009) outlines that a Tree Protection Zone (TPZ) is the principal means of protecting trees on construction sites. It is an area isolated from construction disturbance so that the tree remains viable. Ideally, works should be avoided within the TPZ. A Minor Encroachment is less than 10% of the TPZ and is outside the structural root zone (SRZ). A Minor Encroachment is considered acceptable by AS 4970:2009 when it is compensated for elsewhere and contiguous within the TPZ. A Major Encroachment is greater than 10% of the TPZ or inside the SRZ. Major Encroachments generally require root investigations undertaken by non-destructive methods or the use of tree sensitive construction methods. Temporary tree protection fencing and trunk protection should be installed prior to the commencement of works.	Prior to Construction	Proponent Arborist
Assigning a Project Ecologist for Vegetation Clearing	Prior to works, the applicant should commission the services of a qualified and experienced Ecological Consultant (minimum 3 years' experience) with a minimum tertiary degree in Science, Conservation, Biology, Ecology, Natural Resource Management, Environmental Science or Environmental Management. The Ecologist must be licensed with a current Department of Primary Industries Animal Research Authority permit and New South Wales Scientific License issued under the BC Act. The Ecologist will be commissioned to:	Prior to Construction	Proponent Ecologist

Action	Outcome	Timing	Responsibility
	▪ Undertake targeted searches for threatened flora prior to vegetation clearing, where possible ▪ The unexpected species find procedure is to be followed under Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011) if threatened ecological communities, not assessed in the biodiversity assessment, are identified in the Subject Land ▪ Pre-clearing surveys will be undertaken in accordance with Guide 1: Pre-clearing process of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011) ▪ Vegetation removal will be undertaken in accordance with Guide 4: Clearing of vegetation and removal of bushrock of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011) ▪ Fauna will be managed in accordance with Guide 9: Fauna handling of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011) ▪ Habitat removal will be undertaken in accordance with Guide 4: Clearing of vegetation and removal of bushrock of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011) ▪ Habitat will be replaced or re-instated in accordance with Guide 5: Re-use of woody debris and bushrock and Guide 8: Nest boxes of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011) The unexpected species find procedure is to be followed under Guide 1: Pre-clearing process of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011) if threatened flora and fauna, not assessed in the biodiversity assessment, are identified in the Subject Land.		
Edge Effects on Adjacent Native	Exclusion zones will be set up at the limit of clearing in accordance with Guide 2: Exclusion zones of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011).	During Construction	Proponent Construction Contractor

Action	Outcome	Timing	Responsibility
Vegetation and Habitat			
Erosion and Sedimentation	Appropriate erosion and sediment control should be erected and maintained at all times during construction in order to avoid the potential of incurring indirect impacts on biodiversity values: ▪ Erosion and sediment controls would be established in accordance with an erosion and sedimentation plan to be produced for the proposed works. As a minimum, such measures should comply with the relevant industry guidelines such as 'the Blue Book' (Landcom, 2004).	During Construction	Proponent Construction Contractors
Clearing of Vegetation	All habitat trees should be felled using a 'slow drop' technique. This involves knocking the trees to encourage any in situ fauna to vacate (e.g. using an excavator bucket) before slowly pushing the trees to the ground. Logs and log piles should be relocated outside of impact areas to minimise any loss of habitat.	During Construction	Proponent Clearing Contractors
Storage and Stockpiling (Soil and Materials)	Allocate all storage, stockpile, and laydown sites away from any vegetation that is planned to be retained. Avoid importing any soil from outside the site in order to avoid the potential of incurring indirect impacts on biodiversity values as this can introduce weeds and pathogens to the site. If materials are required to be imported for landscaping works, they are to be sterilised according to industry standards prior to importation to site.	During Construction	Construction Contractors
No Weeds imported on to the Subject Land	No priority or environmental weeds are to be imported on to the site prior to or during construction works.	During Construction	Proponent Construction Contractors

8. CONCLUSION

This assessment demonstrates that the relevant provisions of the *Environmental Planning and Assessment Act 1979, Biodiversity Conservation Act 2016, Biodiversity Conservation Regulation 2017,* the *Environment Protection and Biodiversity Act 1999* and the Cootamundra-Gundagai Council environmental planning instruments have been satisfied. If the appropriate recommendations in this report are followed, the proposed activity will not have a significant impact to any threatened ecological community or species.

9. REFERENCES

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10. APPENDICES

Appendix A. Assessment of likely occurrence of threatened flora species within the Subject Land. Survey conducted in November 2022.

Appendix B. Threatened fauna recorded within 5km of the Subject Land.

Appendix A. Assessment of likely occurrence of threatened flora species within the Subject Land. Survey conducted in November 2022.

Scientific Name (Common Name)	BC Act	EPBC Act	Habitat Requirements	Suitable Habitat Present (✓/-)	Recorded On Site (✓/-)	Records within 5km	Potential Impact	Further Assessment Required (✓/-)
Caladenia arenaria (Sand-hill Spider-orchid)	E	E	Occurs in woodland with sandy soil, especially that dominated by White Cypress Pine (*Callitris glaucophylla*)	-	-	Predicted	No suitable habitat within Subject Land. No further assessment is required.	-
Lepidium aschersonii (Spiny Peppercress)	V	V	Found on ridges of gilgai clays dominated by Brigalow (*Acacia harpophylla),* Belah (*Casuarina cristata*), Buloke (*Allocasuarina luehmanii*) and Grey Box (*Eucalyptus microcarpa*). In the south has been recorded growing in Bull Mallee (*Eucalyptus behriana*). Often the understorey is dominated by introduced plants	-	-	Predicted	No suitable habitat within Subject Land. No further assessment is required.	-
Prasophyllum petilum (Tarengo Leek Orchid)	E	E	Grows in open sites within Natural Temperate Grassland at the Boorowa and Delegate sites. Also grows in grassy woodland in association with River Tussock *Poa labillardieri*, Black Gum *Eucalyptus aggregata* and tea-trees *Leptospermum spp*. near Queanbeyan and within the grassy groundlayer dominated by Kanagroo Grass under Box-Gum Woodland at Ilford.	-	-	Predicted	No suitable habitat within Subject Land. No further assessment is required.	-

Scientific Name (Common Name)	BC Act	EPBC Act	Habitat Requirements	Suitable Habitat Present (✓/-)	Recorded On Site (✓/-)	Records within 5km	Potential Impact	Further Assessment Required (✓/-)
Senecio macrocarpus (Large-fruit Fireweed)	-	V	The Large-fruit Groundsel occurs in a variety of habitats, including grasslands, sedgelands, shrublands and woodlands, generally on sparsely vegetated sites on sandy loam to heavy clay soils, often in depressions that are waterlogged in winter.	-	-	Predicted	No suitable habitat within Subject Land. No further assessment is required.	-

Appendix B. Threatened fauna recorded within 5km of the Subject Land.

Scientific Name (Common Name)	BC Act	EPBC Act	Preferred Habitat	Recorded On Site (✓/-)	Foraging Habitat Present (✓/-)	Breeding Habitat Present (✓/-)	Potential Impact	Further Assessment Required (✓/-)
Polytelis swainsonii (Superb Parrot)	V	V	Inhabit Box-Gum, Box-Cypress-pine and Boree woodlands and River Red Gum forest. In the Riverina superb parrots 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 and Southern Tablelands nest trees can be in open Box-Gum woodland or isolated living or dead paddock trees. Species known to be used are Blakely's Red Gum, Yellow Box, Apple Box and Red Box. Superb Parrots nest in tree hollows with an entrance diameter of 6 cm or wider, and that are at least 3.5 m above the ground.	-	✓	-	Negligible. Removal of planted trees from a disturbed landscape.	-
Stagonopleura guttata (Diamond Firetail)	V	-	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. Often found in riparian areas (rivers and creeks), and sometimes in lightly wooded farmland.	-	✓	-	Negligible. Removal of planted trees from a disturbed landscape.	-
Aprasia parapulchella (Pink-tailed Worm-lizard)	V	V	Inhabits sloping, open woodland areas with predominantly native grassy groundlayers, particularly those dominated by Kangaroo Grass (*Themeda australis*). Sites are typically well-drained, with rocky outcrops or scattered, partially-buried rocks.	-	-	-	None. Habitat constraints absent.	-

Scientific Name (Common Name)	BC Act	EPBC Act	Preferred Habitat	Recorded On Site (✓/-)	Foraging Habitat Present (✓/-)	Breeding Habitat Present (✓/-)	Potential Impact	Further Assessment Required (✓/-)
Delma impar (Striped Legless Lizard)	V	V	Found mainly in Natural Temperate Grassland but has also been captured in grasslands that have a high exotic component. Also found in secondary grassland near Natural Temperate Grassland and occasionally in open Box-Gum Woodland. Habitat is where grassland is dominated by perennial, tussock-forming grasses such as Kangaroo Grass *Themeda australis*, spear-grasses *Austrostipa spp*. and poa tussocks *Poa spp*., and occasionally wallaby grasses *Austrodanthonia spp*.	-	-	-	None. Habitat constraints absent.	-
Nyctophilus corbeni (Corben's Long-eared Bat)	V	V	Inhabits a variety of vegetation types, including mallee, bulloke *Allocasuarina leuhmanni* and box eucalypt dominated communities, but it is distinctly more common in box/ironbark/cypress-pine vegetation that occurs in a north-south belt along the western slopes and plains of NSW and southern Queensland.	-	-	-	None. Habitat constraints absent.	-
Keyacris scurra (Key's Matchstick Grasshopper)	E	E	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 *Themeda triandra*) and known food plants (particularly Asteraceae). Opportunistic sightings (as opposed to records from systematic surveys) have been reported in a wide range of vegetation types in south-east NSW, including wet sclerophyll forest, montane low forest, dry woodlands, heathland, and montane grasslands	-	-	-	None. Habitat constraints absent.	-
Synemon plana (Golden Sun Moth)	V	V	Occurs in Natural Temperate Grasslands and grassy Box-Gum Woodlands in which groundlayer is dominated by wallaby grasses *Austrodanthonia spp*.	-	-	-	None. Habitat	-

Scientific Name (Common Name)	BC Act	EPBC Act	Preferred Habitat	Recorded On Site (✓/-)	Foraging Habitat Present (✓/-)	Breeding Habitat Present (✓/-)	Potential Impact	Further Assessment Required (✓/-)
			Grasslands dominated by wallaby grasses are typically low and open - the bare ground between the tussocks is thought to be an important microhabitat feature for the Golden Sun Moth, as it is typically these areas on which the females are observed displaying to attract males.				constraints absent.	
Crinia sloanei (Sloane's Froglet)	V	E	It is typically associated with periodically inundated areas in grassland, woodland and disturbed habitats.	-	-	-	None. Habitat constraints absent.	-
Litoria raniformis (Growling Grass Frog)	E	V	Usually found in or around permanent or ephemeral Black Box/Lignum/Nitre Goosefoot swamps, Lignum/Typha swamps and River Red Gum swamps or billabongs along floodplains and river valleys. They are also found in irrigated rice crops, particularly where there is no available natural habitat.	-	-	-	None. Habitat constraints absent.	-
Leipoa ocellata (Malleefowl)	E	V	Predominantly inhabit mallee communities, preferring the tall, dense and floristically-rich mallee found in higher rainfall (300 - 450 mm mean annual rainfall) areas. Utilises mallee with a spinifex understorey, but usually at lower densities than in areas with a shrub understorey. Less frequently found in other eucalypt woodlands, such as Inland Grey Box, Ironbark or Bimble Box Woodlands with thick understorey, or in other woodlands such dominated by Mulga or native Cypress Pine species.	-	-	-	None. Habitat constraints absent.	-

Scientific Name (Common Name)	BC Act	EPBC Act	Preferred Habitat	Recorded On Site (✓/-)	Foraging Habitat Present (✓/-)	Breeding Habitat Present (✓/-)	Potential Impact	Further Assessment Required (✓/-)
Anthochaera phrygia (Regent Honeyeater)	E	CE	The Regent Honeyeater is a generalist forager, although it feeds mainly on the nectar from a relatively small number of eucalypts that produce high volumes of nectar. Key eucalypt species include Mugga Ironbark, Yellow Box, White Box and Swamp Mahogany. Other tree species may be regionally important. For example the Lower Hunter Spotted Gum forests have recently been demonstrated to support regular breeding events. Flowering of associated species such as Thin-leaved Stringybark *Eucalyptus eugenioides* and other Stringybark species, and Broad-leaved Ironbark *E. fibrosa* can also contribute important nectar flows at times. Nectar and fruit from the *mistletoes Amyema miquelii, A. pendula* and *A. cambagei* are also utilised. There are three known key breeding areas, two of them in NSW - Capertee Valley and Bundarra-Barraba regions.	-	✓	-	Negligible. Removal of planted trees from a disturbed landscape. Subject Land is not included on the Important Habitat Map.	-
Callocephalon fimbriatum (Gang-gang Cockatoo)	V	E	In spring and summer, generally found in tall mountain forests and woodlands, particularly in heavily timbered and mature wet sclerophyll forests. In autumn and winter, the species often moves to lower altitudes in drier more open eucalypt forests and woodlands, particularly box-gum and box-ironbark assemblages, or in dry forest in coastal areas and often found in urban areas.	-	✓	-	Negligible. Removal of planted trees from a disturbed landscape.	-
Calidris ferruginea (Curlew Sandpiper)	E	CE	It generally occupies littoral and estuarine habitats, and in New South Wales is mainly found in intertidal mudflats of sheltered coasts.	-	-	-	None. Habitat	-

Scientific Name (Common Name)	BC Act	EPBC Act	Preferred Habitat	Recorded On Site (✓/-)	Foraging Habitat Present (✓/-)	Breeding Habitat Present (✓/-)	Potential Impact	Further Assessment Required (✓/-)
							constraints absent.	
Falco hypoleucos (Grey Falcon)	E	V	Usually restricted to shrubland, grassland and wooded watercourses of arid and semi-arid regions, although it is occasionally found in open woodlands near the coast.	-	-	-	None. Habitat constraints absent.	-
Grantiella picta (Painted Honeyeater)	P	V	Inhabits Boree/ Weeping Myall (*Acacia pendula*), Brigalow (*A. harpophylla*) and Box-Gum Woodlands and Box-Ironbark Forests.	-	-	-	None. Habitat constraints absent.	-
Hieraaetus morphnoides (Little Eagle)	V	-	Occupies open eucalypt forest, woodland or open woodland. Sheoak or Acacia woodlands and riparian woodlands of interior NSW are also used. Nests in tall living trees within a remnant patch, where pairs build a large stick nest in winter.	-	✓	-	Negligible. Removal of planted trees from a disturbed landscape	-
Hirundapus caudacutus (White-throated Needletail)	P	V	This species has been recorded eating a wide variety of insects, including beetles, cicadas, flying ants, bees, wasps, flies, termites, moths, locusts and grasshoppers. This species does not breed in Australia.	-	-	-	None. Habitat constraints will not be impacted.	-
Botaurus poiciloptilus (Australasian Bittern)	V	E	Inhabits both terrestrial and estuarine wetlands, generally in areas of permanent water and dense vegetation. Where permanent water is present, the species may occur in flooded grassland, forest, woodland, rainforest and mangroves. Feeds on frogs, reptiles, fish and invertebrates, including snails,	-	-	-	None. Habitat constraints absent.	-

Scientific Name (Common Name)	BC Act	EPBC Act	Preferred Habitat	Recorded On Site (✓/-)	Foraging Habitat Present (✓/-)	Breeding Habitat Present (✓/-)	Potential Impact	Further Assessment Required (✓/-)
			dragonflies, shrimps and crayfish, with most feeding done at dusk and at night. During the day, roosts in trees or on the ground amongst dense reeds. When disturbed, freezes in a characteristic bittern posture (stretched tall, bill pointing up, so that shape and streaked pattern blend with upright stems of reeds), or will fly up to a branch or flush for cover where it will freeze again.					
Lathamus discolor (Swift Parrot)	E	CE	Migrates to the Australian south-east mainland between February and October. On the mainland they occur in areas where eucalypts are flowering profusely or where there are abundant lerp (from sap-sucking bugs) infestations. Favoured feed trees include winter flowering species such as Swamp Mahogany *Eucalyptus robusta*, Spotted Gum *Corymbia maculata*, Red Bloodwood *C. gummifera*, Forest Red Gum *E. tereticornis*, Mugga Ironbark *E. sideroxylon*, and White Box *E. albens*.	-	✓	-	Negligible. Removal of planted trees from a disturbed landscape. Subject Land is not included on the Important Habitat Map.	-
Neophema pulchella (Turquoise Parrot)	V	-	Prefers to feed in the shade of a tree and spends most of the day on the ground searching for the seeds or grasses and herbaceous plants, or browsing on vegetable matter. Nests in tree hollows, logs or posts.	-	✓	-	Negligible. Removal of planted trees from a disturbed landscape	-

Scientific Name (Common Name)	BC Act	EPBC Act	Preferred Habitat	Recorded On Site (✓/-)	Foraging Habitat Present (✓/-)	Breeding Habitat Present (✓/-)	Potential Impact	Further Assessment Required (✓/-)
Ninox connivens (Barking Owl)	V	-	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 found on these fertile riparian soils. Roost in shaded portions of tree canopies, including tall midstorey trees with dense foliage such as Acacia and Casuarina species. Two or three eggs are laid in hollows of large, old trees. Living eucalypts are preferred though dead trees are also used.	-	✓	-	Negligible. Removal of planted trees from a disturbed landscape	-
Numenius madagascariensis (Eastern Curlew)	P	CE	This species generally occupies coastal lakes, inlets, bays and estuarine habitats, and in New South Wales is mainly found in intertidal mudflats and sometimes saltmarsh of sheltered coasts.	-	-	-	None. Habitat constraints absent.	-
Dasyurus maculatus (Spotted-tailed Quoll)	V	E	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. Quolls use hollow-bearing trees, fallen logs, other animal burrows, small caves and rock outcrops as den sites.	-	-	-	None. Habitat constraints absent.	-
Phascolarctos cinereus (Koala)	V	V	Inhabit eucalypt woodlands and forests. Feed on the foliage of more than 70 eucalypt species and 30 non-eucalypt species, but in any one area will select preferred browse species.	-	✓	-	Negligible. Removal of planted trees from	-

Scientific Name (Common Name)	BC Act	EPBC Act	Preferred Habitat	Recorded On Site (✓/-)	Foraging Habitat Present (✓/-)	Breeding Habitat Present (✓/-)	Potential Impact	Further Assessment Required (✓/-)
							a disturbed landscape	
Pteropus poliocephalus (Grey-headed Flying-fox)	V	V	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.	-	✓	-	Negligible. Removal of planted trees from a disturbed landscape	-

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