Preliminary Biodiversity Assessment

Jindera Rezoning

June 2022

Project Number: 21-782

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Acronyms and abbreviations

BC Act	*Biodiversity Conservation Act 2016* (NSW)
BCS	Biodiversity Conservation Science Directorate
BDAR	Biodiversity Development Assessment Report
BOS	Biodiversity Offset Scheme
BV	Biodiversity Value
CE	Critically Endangered – as defined under relevant law applying to the proposal
CEEC	Critically Endangered ecological community – as defined under relevant law applying to the proposal
Cwth	Commonwealth
DA	Development Application
DAWE	Department of Agriculture, Water and the Environment (Cwth)
DPE	Department of Planning and Environment (NSW) (formerly Department of Planning, Industry and Environment (DPIE))
E	Endangered – as defined under relevant law applying to the proposal
EEC	Endangered ecological community – as defined under relevant law applying to the proposal
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Cwth)
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW)
FM Act	*Fisheries Management Act 1994* (NSW)
GHSC	Greater Hume Shire Council
ha	hectares
HBT	Hollow-bearing Tree
KFH	Key Fish Habitat
km	kilometres
LEP	Local Environment Plan
LGA	Local Government Area
m	metres
NES	Matters of National Environmental Significance under the EPBC Act (*c.f.*)
PCT	Plant Community Type
SAII	Serious and Irreversible Impact
SAII Entity	Species or TEC at risk of a SAII
TEC	Threatened Ecological Community
V	Vulnerable – as defined under relevant law applying to the proposal

1. Introduction

1.1 Proposal Location

The proposed land for rezoning is located within the Greater Hume Local Government Area (LGA) and is managed under the Greater Hume Shire Council (GHSC) Local Environmental Plan 2012 (LEP).

The proposal area is comprised of:

- Lot 5 DP260275
- Lot 122 DP753345
- Lot 22 DP635058
- Lot 121 DP753345
- Lot 153 DP753345
- Lot 1 DP785168

The proposal area is currently zoned RU4 – Primary Production Small Lots. The proposal area is bounded by Molkentin Road, Rock Road, Red Hill Road and Funk Road around 1.8km from the township of Jindera, New South Wales (NSW).

1.2 Proposal Description

BioPlan on behalf of Hurst Earthmoving require a preliminary Biodiversity Assessment to support a Rezoning Application (RA) with Greater Hume Shire Council. The RA is phase one of a proposed subdivision of the proposal area.

The RA would involve amending the Greater Hume LEP 2012 to rezone the land to R5 – Large Lot Residential. An appropriate minimum lot size would be determined through the initial investigations and planning proposal.

If adopted, the proposed LEP amendment would facilitate phase two of the proposed subdivision of the proposal area. Subdivision of the land would be subject to Council approval under a future Development Application (DA) and would be subject to provisions under relevant legislation.

This preliminary Biodiversity Assessment has been prepared to consider:

- The relevant requirements of the *NSW Biodiversity Conservation Act 2016* (BC Act) and the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (*EPBC Act).
- The nature, extent and condition of the flora and fauna at the site
- The likelihood of any threatened species, communities and populations being present
- Any threatened biota to which a significant effect could occur
- The Biodiversity Offset Scheme (BOS) thresholds assessment
- Design or ongoing management measures that could mitigate impacts
- Serious and Irreversible Impact (SAII) entities

For the purpose of this assessment the following definitions are used:

Proposal area: All areas proposed for rezoning and associated adjacent roads as described in section 1.2.

Development footprint: all land directly impacted by the proposal.

Survey area: The proposal area

Locality: All area within a 10km radius of the proposal area.

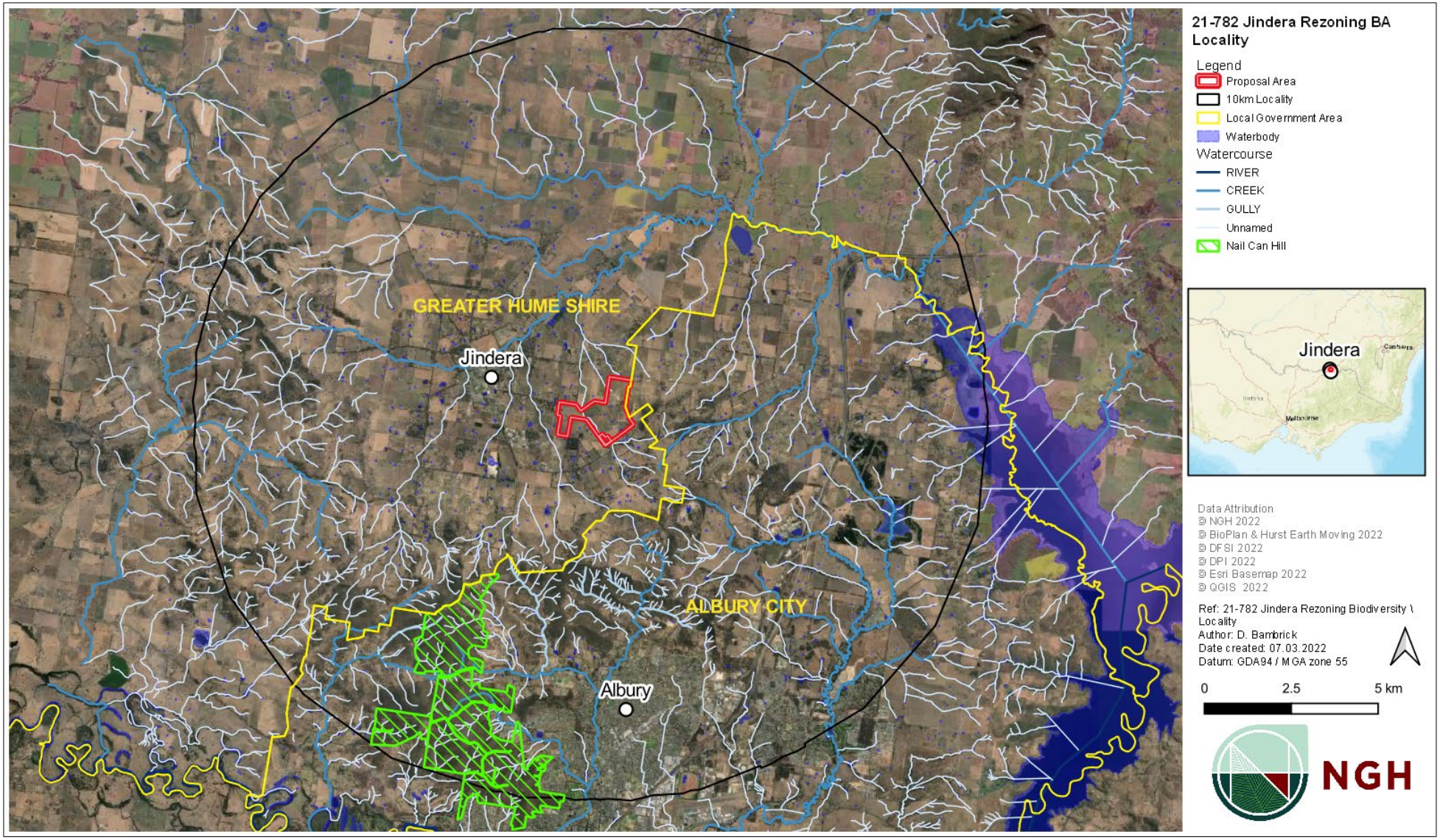

Figure 1-1 Proposal Locality

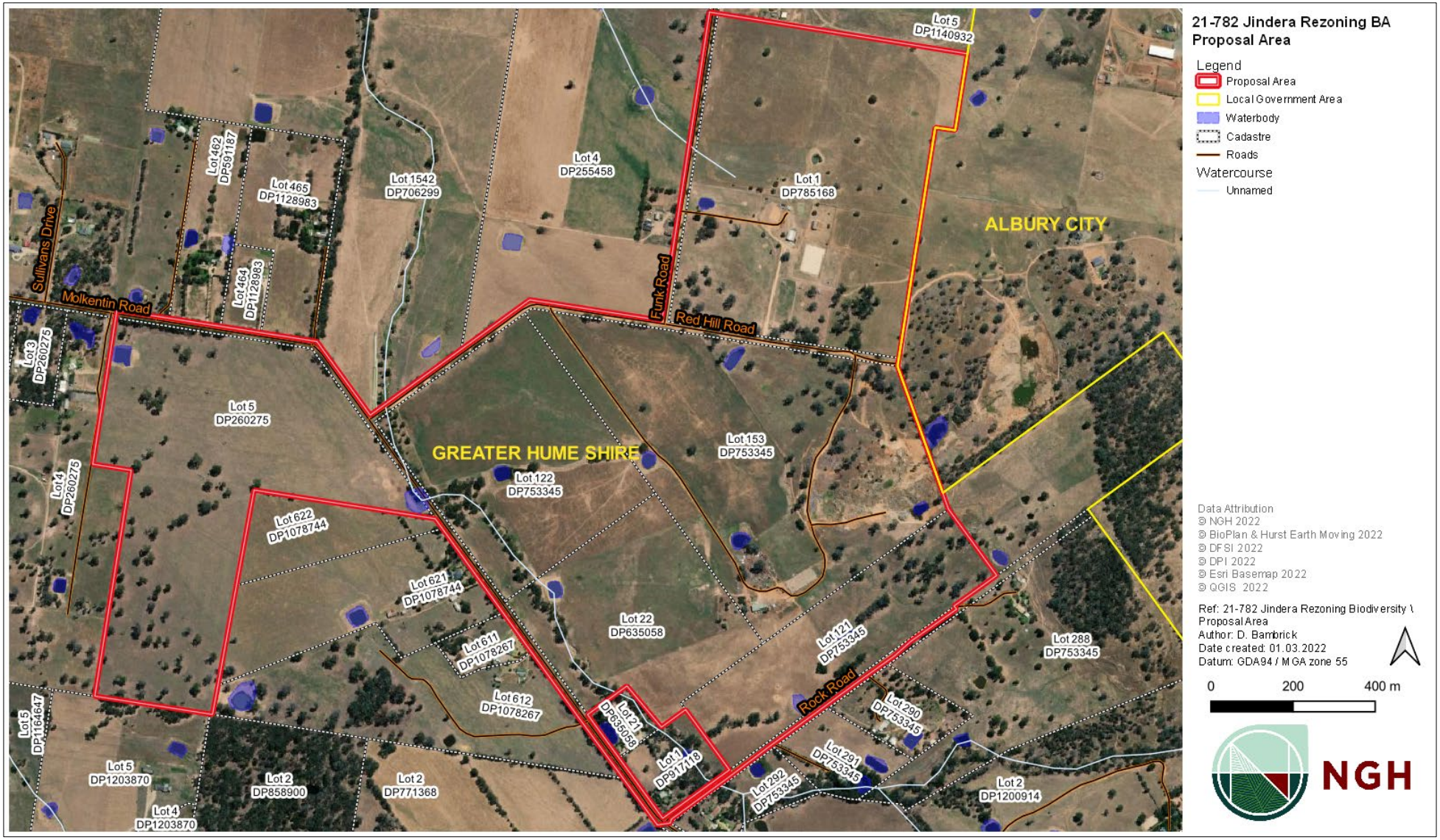

Figure 1-2 Proposal Area

2. Statutory Considerations

2.1 Biodiversity Conservation Act 2016

The BC Act aims to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development. The BC Act contains lists of critically endangered, endangered, and vulnerable species, populations and ecological communities, as well as a list of key threatening processes in NSW.

The primary requirement under the BC Act, is to determine whether a development is likely to significantly affect threatened species. According to clause 7.7(2) of the BC Act, if a proposed development is likely to significantly affect threatened species, the development application is to be accompanied by a biodiversity development assessment report (BDAR). According to this clause, development is considered likely to significantly affect threatened species if:

> (a) it is likely to significantly affect threatened species or ecological communities, or their habitats, according to the BC Act 5-part Test, or
>
> (b) the development exceeds the biodiversity offsets scheme threshold if the biodiversity offsets scheme applies to the impacts of the development on biodiversity values, or
>
> (c) it is carried out in a declared area of outstanding biodiversity value.

Residential subdivisions require assessment under Part 4 of the *Environment, Planning and Assessment Act 1979* (EP&A Act). An assessment against the Biodiversity Offset Scheme (BOS) thresholds would be required to determine the assessment pathway once a preliminary detailed design has been formulated.

This assessment considers the potential for the future rezoning and subdivision proposal to impact upon biodiversity.

2.2 State Environmental Planning Policy (Biodiversity and Conservation) 2021

The *State Environmental Planning Policy* (SEPP) *Biodiversity and Conservation 2021* (B&C SEPP) consolidated and repealed 11 SEPPs including the *Koala Habitat Protection 2020* and *Koala Habitat Protection 2021* SEPPs. Chapter 4 (Koala Habitat Protection 2021) of the B&C SEPP is applicable to this proposal.

Chapter 3 and Chapter 4 of the B&C SEPP encourages the conservation and management of natural vegetation that provides habitat for Koalas. Koalas are listed under the BC Act as an Endangered species. Chapter 3 (Koala Habitat Protection 2020) of the B&C SEPP applies to RU1, RU2 and RU3 zoned land in the local government area (LGA) listed in Schedule 2 of the SEPP. Greater Hume Shire is listed in Schedule 2 however the development site is zoned RU5, therefore, Chapter 3 of the B&C SEPP do not apply to the proposal area.

Chapter 4 (Koala Habitat Protection 2021) applies to land not zoned RU1, RU2 or RU3 in the LGAs listed in Schedule 2 and thus this chapter applies to the proposal. No Koala Plan of Management exists for the Greater Hume Shire and the development site has an area of greater than 1ha. Section 4.9 of the B&C SEPP applies and council must be satisfied that the development is likely

to have low or no impact on koalas or koala habitat to grant consent. Council may grant development consent if the applicant provides to the council evidence, prepared by a suitably qualified and experienced person, that the subject land:

- does not include any trees belonging to the koala use tree species listed in Schedule 3 for the relevant koala management area, or
- is not core koala habitat.

This Biodiversity Assessment has considered the presence of koala use tree species and core and potential Koala habitat on the subject land, refer to section 4.7.1.

2.3 Environment Protection and Biodiversity Conservation Act 1999

The Environment Protection and Biodiversity Conservation Act 1999 (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. Matters of national environmental significance relevant to biodiversity are:

1. Wetlands of international importance.
2. Nationally threatened species, populations and ecological communities.
3. Migratory species.
4. Commonwealth marine areas.

Significance of impacts is determined in accordance with the Significance impact guidelines 1.1 – matters of national environmental significance .

Where a proposal is likely to have a significant impact on a matter of national environmental significance, the proposal is referred to the Commonwealth Environment Minister via the Department of Agriculture, Water and the Environment (DAWE) (Depeartment of the Environment, 2013). The Minister then determines whether the proposal is a 'controlled action'. If a proposal is declared a controlled action, an assessment of the action is carried out and the Minister makes a decision to approve, approve with conditions, or not approve the proposed action.

This assessment considers the potential for the future rezoning and subdivision proposal to impact on matters of national environmental significance relevant to biodiversity.

3. Methodology

3.1 Desktop Assessment

Background searches were undertaken prior to the field assessment to determine potential occurrence of threatened entities within the proposal area. Background searches are detailed within Table 3-1.

Table 3-1 Background searches undertaken

Resource	Target	Search date NGH	Search area
NSW BioNet Atlas Threatened Species Database	Threatened flora and fauna, populations and endangered ecological communities	18/01/2022	10 km locality
EPBC Act Protected Matters Search Tool (PMST)	Threatened flora and fauna, endangered populations and ecological communities and migratory species	18/01/2022	10 km locality
OEH Vegetation Information System	Plant Community Type (PCT) Descriptions	18/01/2022	Proposal area
DPE State Vegetation Mapping	Mapped vegetation	18/01/2022	Proposal area
NSW Biodiversity Values Map and Threshold Tool	Biodiversity Value mapped land.	28/01/2022	10 km locality
Department of Primary Industries (DPI) Strahler Stream Order Watercourses.	Watercourses and Strahler Stream Order (SSO)	18/01/2022	10 km locality
Department of Primary Industries (DPI) Key Fish Habitat	Key Fish Habitat	28/01/2022	10 km locality
DPI Threatened Freshwater Species Indicative Distributions	Threatened Freshwater Species Indicative Distributions	28/01/2022	10 km locality

3.2 Site Assessment

A detailed site assessment was completed on the 2nd of February 2022 by two Ecologist's from NGH.

Flora surveys were undertaken to:

- Determine the vegetation communities present within the study area, their condition and extent
- Identify potential Threatened Ecological Communities (TECs) within the study area and determine their condition and extent

- Identify potential and map habitat for threatened flora species within the study area
- Map and identify scattered trees
- Identify any connectivity corridors or waterways

The random meander method (Cropper, 1993) was used to survey vegetation at the study area. These methods provide good coverage in terms of area and microhabitats and maximises opportunities for detecting rare or sparsely distributed species. Species were recorded progressively with abundance recorded within proposal area. Any priority weeds were recorded opportunistically.

Plant Community Types (PCTs) were identified according to the DPE BioNet Vegetation Classification (DPE, 2022). Where relevant TECs were confirmed based on the relevant 'Scientific Committee – final determinations' for each TEC. Botanical nomenclature follows (Harden, 1990-2002) and the PlantNet website (National Herbarium of NSW, Royal Botanic Gardens, 2022), updated with recent changes recognised in Angiosperm Phylogeny Group (The Angiosperm Phylogeny Group, 2016) and the Australian Plant Census (Council Heads of Australasia Herbaria, 2022).

Fauna and habitat features were recorded including:

- Hollows and fissures in standing trees and stags
- Fallen timber and litter
- Fauna signs such as nests, scratches, glider sap feed marks, scats and latrine sites
- Food tree species (for gliders, possums and koala etc)
- Microhabitats such as soaks, rock outcrops and dense understorey
- Habitat type (Woodland, grassland, aquatic etc) and quality
- Aquatic habitat

All trees were individually inspected for trunk or limb hollows and any signs of occupation or use. Any disturbances and active threats to fauna or habitats were also recorded during the survey.

4. Results

4.1 Existing Environment

The proposal area is located in a rural landscape and contained the following features relevant to biodiversity:

- Remnant native vegetation
- Scattered native trees
- Planted native trees
- Planted exotic trees
- Hollow-bearing Trees (HBTs)
- A threatened vegetation community
- Threatened species habitat
- Aquatic habitat including:
    - Dams
    - Watercourses and drainage lines
    - Depressions/fringing floodplain
- Rock outcrops and rocky habitat

Some areas of the proposal area contained infrastructure and residential dwellings. Several paddocks were utilised for cropping and grazing. Areas in use at the time of the site assessment for cropping were mapped as exotic vegetation.

Exotic dominated grassland was present where historic clearing of paddocks for cropping and grazing has occurred. Exotic dominated grassland areas were mapped where improved pasture was present and native grassland species were generally not observed in these areas. Pasture grasses observed were a mixture of perennial and annual exotic grasses including Kikuyu Grass (**Pennisetum sp.*), **Phalaris sp.*, Barley Grass (**Hordeum leporinum*), Witch Grass (**Panicum capillare*) and Ryegrass (**Lolium sp.*). Other exotic ground-stratum species were often present including Catsear (**Hypochaeris radicata*), Mallow (**malva sp.*) and Plantain (**Plantago lanceolata*).

Native vegetation communities occurred in the form of five Plant Community Types (PCTs):

- PCT 277 *Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion*:
    - Comprised of Remnant vegetation
- PCT 266 *White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion:*
    - Comprised of Remnant vegetation
- PCT 186 *Dwyer's Red Gum - Black Cypress Pine - Currawang shrubby low woodland on rocky hills mainly in the NSW South Western Slopes Bioregion:*
    - Comprised of Remnant vegetation
- PCT 74 *Yellow Box - River Red Gum tall grassy riverine woodland of NSW South Western Slopes Bioregion and Riverina Bioregion:*
    - Comprised of Planted River Red Gum and Yellow Box

- PCT 360 *Gilgai wetland mosaic in the southern NSW South Western Slopes Bioregion:*
    - Comprised of dam not subject to grazing with species regenerated from cleared landscape limited to aquatic species.

PCTs are described in full within section 4.2 below.

PCT 277 and 266 formed part of a Threatened Ecological Community (TEC). TEC presence is described in detail within section 4.3.

Planted native trees occurred within the proposal area. A number of these trees were species native to Australia but not indigenous to NSW. These trees hold biodiversity value for native species, however, under the relevant legislative requirements of a Part 4 Assessment are not recognised as 'native' trees to NSW. Some planted native Honeymyrtle (*Melaleuca sp.*) were also present. Planted native tree species included:

- Indigenous to NSW:
    - River Red Gum (*Eucalyptus camaldulensis*)
    - Red Box (*Eucalyptus polyanthemos*)
    - Kurrajong (*Brachychiton populneus*)
    - Yellow Box (*Eucalyptus melliodora*)
- Non-Indigenous to NSW:
    - Sugar Gum (*Eucalyptus cladocalyx*)
    - Yellow Gum (*Eucalyptus leucoxylon* subsp. *leucoxylon*)

Only one subspecies of Yellow Gum, occurs in NSW, that is *Eucalyptus leucoxylon subsp. pruinosa* (Listed as Vulnerable under the BC Act), the subspecies planted within the proposal were identified as *Eucalyptus leucoxylon subsp. leucoxylon* and are therefore non-indigenous to NSW.

Exotic trees were planted within the proposal area, these trees hold a very low biodiversity value. Planted exotic species include Tree Lucerne (**Chamaecytisus palmensis*), Tree of Heaven (**Ailanthus altissima*), Poplar (**Populus alba*), Ornamental Plum (**Prunus sp.*), Willow (**Salix sp.*), Almond (**Prunus amygdalus*), Oleander (**Nerium oleander*), Desert Ash (**Fraxinus sp.*), Oak (*Quercus) and Fir Tree (**Abies sp.*).

A large number of HBTs were identified within PCT 277 and PCT 266. HBTs are described in detail within section 4.4.

Aquatic habitat was identified in the form of a defined watercourse, drainage lines, natural soaks, low-lying wet areas and farm dams. Aquatic habitat is described in detail within section 4.6.

4.2 Plant Community Type's

Five PCTs were identified during the site assessment. Each PCT is described below within Table 4-1.

Table 4-1 Plant Community Types identified within the proposal area

PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion.	
Vegetation Formation	Grassy woodlands
Vegetation Class	Floodplain Transition Woodlands

Description	Tall woodland to about 20 m high dominated by Blakely's Red Gum (*Eucalyptus blakelyi*) and Yellow Box (*Eucalyptus melliodora*). Blakely's Red Gum was generally dominant with lower density of Yellow Box. Shrubs were sparse and generally absent in non-modified areas of this PCT. Where this PCT occurred around residential dwellings, planted native and exotic shrub species were present. The ground cover at the time of the site assessment was high in coverage due to the higher-than average rainfall received from 2020 – present. Ground cover throughout this PCT was dominated by exotic species including Kikuyu Grass (**Cenchrus clandestinus*), **Phalaris sp.*, Barley Grass (**Hordeum leporinum*), Witch Grass (**Panicum capillare*) and Ryegrass (**Lolium sp.*). Other exotic ground-stratum species were common including Catsear (**Hypochaeris radicata*), Mallow (**Malva sp.*) and Plantain (**Plantago lanceolata*). Native ground-stratum species occurred in lower densities or small isolated patches including Wallaby Grass (*Rytidosperma sp.*), Red Grass (*Bothriochloa macra*) and Rough Spear grass (*Austrostipa scabra*). In depressions and aquatic areas, native species identified included Native Rush (*Juncus usitatus*), Tall Sedge (*Carex appressa*) and Loosestrife (*Lythrum hyssopifolia*). Occurred on fertile deep, loam or clay soils derived from a range of substrates including fine-grained sedimentary and metamorphic rocks but also volcanics and fine-grained granite. Occurred on flats, foot slopes and hillslopes and alluvial flats. Mainly cleared and subjected to nutrification from fertilizers and associated weed invasion.
Approximate extent within study area	Around 28.98 ha of this PCT occurred within the proposal area.
Condition	Moderate condition. Mature canopy. Cleared and grazed understory in agricultural land, with very low level of canopy regeneration. Exotic dominated ground-stratum with low diversity of native species.
Conservation Status	This PCT is associated with the state (BC Act) listed *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 (CEEC) (BC Act Box-Gum Woodland) and federal (EPBC Act) listed *White Box – Yellow Box – Blakley's Red Gum grassy woodlands and derived native grasslands* – CEEC (EPBC Act Box-Gum Woodland). This PCT only met the condition thresholds for listing of Box-Gum Woodland under the BC Act. Refer to 4.3.

Image	
PCT 266 *White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion*	
Vegetation Formation	Grassy Woodlands
Vegetation Class	Western Slopes Grassy Woodlands
Description	Tall woodland with trees to 25 m high dominated by White Box (*Eucalyptus albens*) often as the only tree species. Kurrajong (*Brachychiton populneus subsp. populneus*) was often present, particularly on rocky ground. Shrub layer was absent. Ground cover varied based on condition. The majority of the ground stratum of this PCT occurrence was dominated by exotic species. In sites exposed to continuous grazing, soil disturbance and fertilizer application, exotic species included Kikuyu Grass (**Cenchrus clandestinus*), **Phalaris sp.*, *Paspalum dilatatum*, Barley Grass (**Hordeum leporinum*), Witch Grass (**Panicum capillare*) and Ryegrass (**Lolium sp.*). Other exotic ground-stratum species were often present including Catsear (**Hypochaeris radicata*), Mallow (**Malva sp.*), Plantain (**Plantago lanceolata*), Patterson's Curse (**Echium plantagineum*) and Spear Thistle (**Crisium vulgare*) One area of this PCT was high condition and was dominated by native grasses and forbs incldluing Wallaby Grass (*Rytidosperma sp.*), Red Grass (*Bothriochloa macra*) and Rough Spear grass (*Austrostipa scabra*), Curly Windmill Grass (*Enteropogon ramosus*), Bunch Wire Grass (*Aristida behriana*), *Lomandra sp.*, Common Couch (*Cynodon dactylon*), Hairy Panic (*Panicum effusum*) and Windmill Grass (*Chloris truncata*). Other native forb species were present including Pigweed (*Portulaca oleracea*), Corrugated Sida (*Sida corrugata*), Swamp Dock (*Rumex brownii*), Bluebells (*Wahlenbergia sp.*), Fuzzweed (*Vittadinia cuneata*), Sorrel (*Oxalis perennans*) and Tarvine (*Boerhavia dominii*). The soils are derived from a variety of lithologies including shale, limestone, fine grained metamorphic rocks, granite and basalt. Mainly occurred on hillslopes in low hill or hill landform patterns within the proposal area. A highly threatened plant community due to ground cover change and clearing.

Approximate extent within study area	Around 6.73 ha of this PCT occurred within the proposal area.
Condition	This PCT occurred in two conditions, moderate and high. Moderate condition contained a mature canopy with grazed or cropped ground layer dominated by exotic species. High condition contained mature canopy with a native dominated ground layer.
Conservation Status	This PCT is associated with the state listed BC Act -Box-Gum Woodland and federal listed EPBC Act Box-Gum Woodland. Moderate condition occurrence of this PCT only met the condition thresholds for listing of BC Act Box-Gum Woodland High condition occurrence of this PCT met the condition thresholds for listing of both BC Act and EPBC Act Box-Gum Woodland. Refer to section 4.3.
Image	
PCT 186 *Dwyer's Red Gum - Black Cypress Pine - Currawang shrubby low woodland on rocky hills mainly in the NSW South Western Slopes Bioregion*	
Vegetation Formation	Semi-arid Woodlands (Shrubby sub-formation)
Vegetation Class	Inland Rocky Hill Woodlands
Description	Woodland community extending east up-slope comprised of a small patch adjacent to PCT 266. Within the proposal area this PCT contained Red Stringybark (*Eucalyptus macrorhyncha*). Directly east of the proposal area within the same woodland patch Dwyer's Red Gum (*Eucalyptus dwyeri*) was observed as being dominant. No shrub layer was present due to grazing from livestock and rabbits. Rabbit droppings and burrowing was present where this PCT occurred. This PCT occurred on a rocky outcrop with large boulders and contained mostly bare ground from use as shelter by livestock. Occurred on skeletal or shallow lithosol soil derived from granites. Generally

	present on steep upper slopes, ridgelines or steep gullies on rocky hills.
Approximate extent within study area	A small area of around 0.12 ha of this PCT occurred within the proposal area.
Condition	Moderate condition_ Mature canopy connected to a larger more diverse patch adjacent to the proposal area.
Conservation Status	This PCT is associated with the state BC Act listed CEEC *Mallee and Mallee-Broombush dominated woodland and shrubland, lacking Triodia, in the NSW South Western Slopes Bioregion*. This TEC was not present within the proposal area. Refer to 4.3.
Image	
PCT 74 Yellow Box - River Red Gum tall grassy riverine woodland of NSW South Western Slopes Bioregion and Riverina Bioregion	
Vegetation Formation	Grassy Woodlands
Vegetation Class	Floodplain Transition Woodlands
Description	Tall woodland usually about 20 m high. Generally occurred as planted River Red Gum (*Eucalyptus camaldulensis*). A small isolated roadside occurrence appeared to be remnant with both River Red Gum (*E. camaldulensis*) and Yellow Box (*Eucalyptus melliodora*). Where planted, this PCT contained no shrub species. Roadside occurrence of this PCT contained a moderate shrub layer of Silver Wattle (*Acacia dealbata*). Low density of *Poa labillardierei* occurred on Funk Road at the existing bridge where River Red Gum is present from planted individuals upstream of the proposal area. Planted River Red Gum trees predominantly occurred in wet areas of paddocks within the proposal area. Ground cover was dominated by *Paspalum dilatatum*, Witch Grass (**Panicum capillare*) and Ryegrass (**Lolium sp.*). Other exotic ground-stratum species were often present including Catsear (**Hypochaeris radicata*) and Plantain (**Plantago lanceolata*). Some areas of planted roadside occurrence of this PCT along Funk Road contained a disturbed ground layer subject to slashing. Within the Riverina region this PCT naturally occurs on sandy-loam rises on terrace flats on the edge of floodplains of major river systems.
Approximate extent within study area	Around 0.32 ha of this PCT occurred within the proposal area.
Condition	Moderate condition. Mature canopy present, some shrub and regeneration occurring in roadside occurrence of this PCT. Generally occurred as planted scattered trees within the proposal area.
Conservation Status	This PCT is associated with the state listed BC Act -Box-Gum Woodland and federal listed EPBC Act Box-Gum Woodland. Due to the dominance of this PCT by River Red Gum it was determined not to meet the condition thresholds for listing of BC Act or EPBC Act Box-Gum Woodland. Refer to section 4.3.

Image	
PCT 360 Gilgai wetland mosaic in the southern NSW South Western Slopes Bioregion	
Vegetation Formation	Freshwater Wetlands
Vegetation Class	Inland Floodplain Swamps
Description	Naturally occurs as small freshwater wetlands occurring in gilgai depressions. This PCT was assigned as it was determined to be the best fit given the occurrence of permanent but shallow water and dominance of native aquatic species replicating a wetland like landform. Varying dominance of aquatic native species occurred including Swamp Wallaby Grass (*Amphibromus nervosus*), Spike Rush (*Eleocharis acuta*), Common Rush (*Juncus flavidus*), Swamp Stonecrop (*Crassulula helmsii*), Duckweed (*Landoltia punctata*), Tall Sedge (*Carex appressa*) and Mud Grass (*Pseudoraphis spinescens*). Some exotic Umbrella Sedge (**Cyperus eragrostis*) was also present Occurs on light grey, heavy clay gilgaied soil on alluvial terraces or floodplains. The floristic composition varies greatly with levels and length of time of inundation. During dry periods, wetland species are replaced by grasses and dryland forbs while the wetland plants survive as rootstock, bulbs or seed. Distributed around Holbrook, Albury and Jindera in the southern-most part of the NSW.
Approximate extent within study area	A very small area covered one un-grazed dam and surrounding aquatic vegetation, around 0.05 ha.
Condition	Moderate condition due to the moderate diversity of wetland species present, however all species present are common and capable of surviving disturbance.
Conservation Status	This PCT is associated with the EPBC Act listed *Seasonal herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains*. Due to the dominance of Spike

	Rush and Common Rush within this PCT it does not meet the condition thresholds for listing of this TEC. Refer to section 4.3.
Image	

4.3 Threatened Ecological Community

PCT 186 is associated with the CEEC *Mallee and Mallee-Broombush dominated woodland and shrubland, lacking Triodia, in the NSW South Western Slopes Bioregion* listed under the NSW BC Act. No characteristic species of this TEC were present with in the proposal area, this TEC was determined not to occur.

PCT 74, 277 and 266 are associated with Box-Gum Woodland under the BC Act and EPBC Act.

PCT 74 was dominated by River Red Gum *E. camaldulensis*. Within the proposal area this PCT often occurred solely as *E. camaldulensis*. Therefore, this PCT did not meet condition thresholds for listing of Box-Gum Woodland under the BC Act (DPIE, 2020) or EPBC Act (Department of the Environment and Heritage, 2006).

PCT 277 met the condition thresholds for listing of Box-Gum Woodland under the BC Act due to the presence and dominance in the canopy of Blakey's Red Gum *E. blakleyi* and Yellow Box *E. melliodora* (DPIE, 2020). Due to the exotic dominated ground-stratum, where less than 50% of the perennial vegetation cover in the ground layer was made up of native perennial species this PCT did not meet condition thresholds for listing under the EPBC Act (Department of the Environment and Heritage, 2006) (NWPS, 2002). Alongside this, due to the presence of cattle grazing regeneration of canopy species was not observed. .

PCT 266 met the condition thresholds for listing of Box-Gum Woodland under the BC Act due to the presence and dominance of White Box *E. albens*, often as the only canopy species (DPIE, 2020). The majority of this PCT did not meet the condition thresholds for listing under the EPBC Act due to the exotic dominated ground-stratum, where less than 50% of the perennial vegetation cover in the ground layer was made up of native perennial species . However, one area of this PCT was dominated native ground stratum species (Department of the Environment and Heritage, 2006). This patch was dominated by native grass species; however seven native understory species were identified. The patch size was greater than 0.1 ha. Seven native understory species were identified within a 50x50m assessment. Although 12 understory species were not identified within this patch, due to the timing of the survey not all annual understory species are likely to have been visible. Alongside this, the patch size of Box-Gum Woodland connected to this area of PCT 266 is greater than 2 ha with an average of 20 or more mature trees per ha of the dominant

overstory eucalyptus. Therefore, this area of PCT 266 meets the requirements of listing under the EPBC Act (Department of the Environment and Heritage, 2006).

PCT 360 is associated with the EPBC Act listed *Seasonal herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains*. This PCT has formed following landscape modification to create a wetland (vegetated shallow dam) like area. Seasonal Herbaceous Wetlands ecological community is not present if the site is dominated by taller native graminoids including tall Spike-Sedges (*Eleocharis sp.*) (Department of Sustainability, Environment, Water, Population and Communities, 2012).Greater than 25% of the mapped area was dominated by taller *Juncus sp*. and Tall Spike-Rush (*Eleocharis acuta*) and is therefore not likely to meet the requirements of this TEC. The area of mapped wetland (PCT 360) was around 0.05ha in size and therefore under Part C of the Seasonal herbaceous Wetland identification guide does not qualify as this TEC (Bayes, Cook, Rakali Ecological Consulting, Wilson, & Duncan, 2017).

Table 4-2 Summary of TECs within the proposal area

TEC Name	Listing	PCT	Area within proposal area (ha)
Box-Gum Woodland	Critically Endangered (NSW BC Act)	277, 266	35.71
Box-Gum Woodland	Critically Endangered (Cwth EPBC Act)	266	2.05

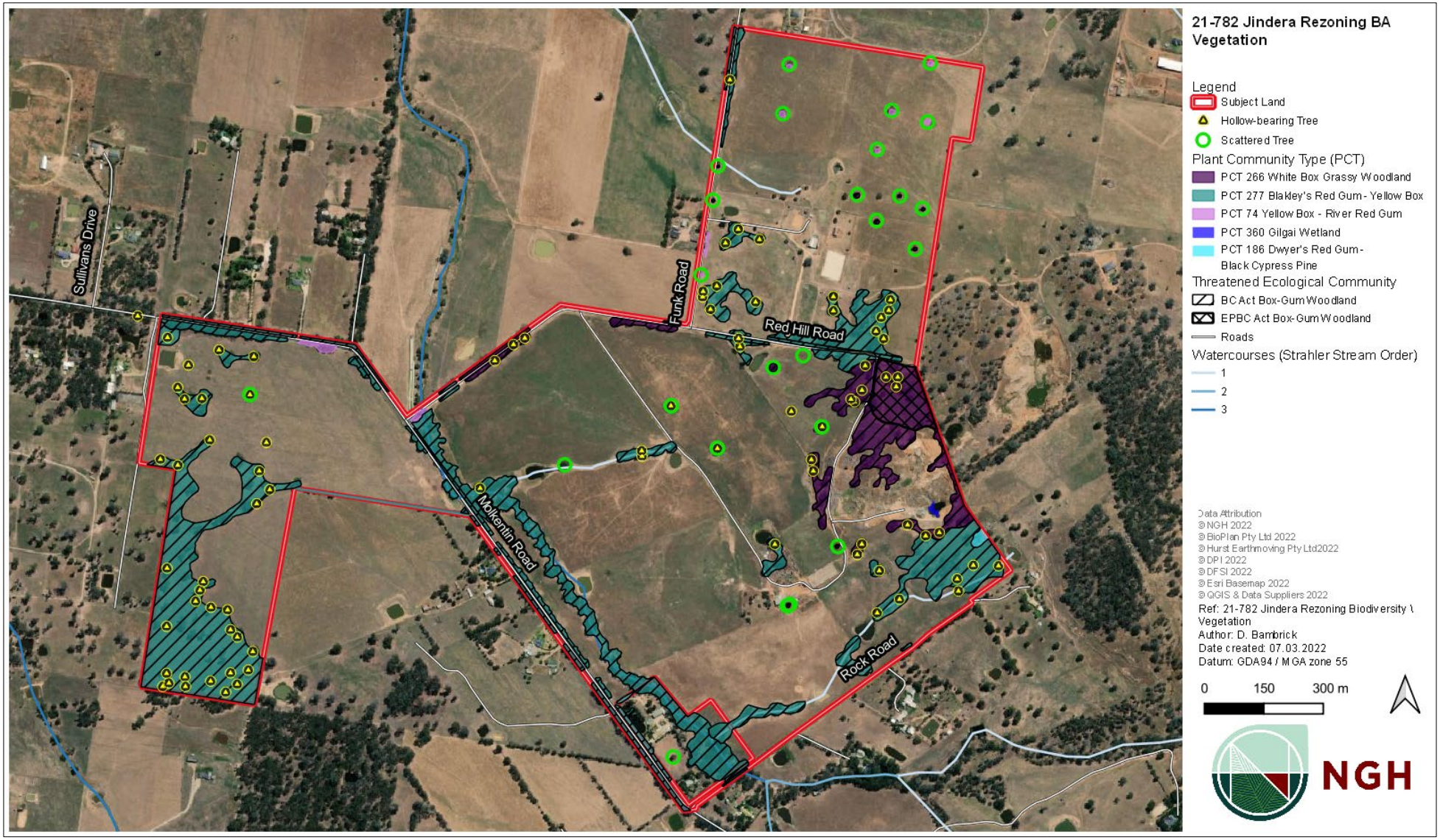

Figure 4-1 Vegetation within the proposal area

4.4 Serious and Irreversible Impact Entities

Serious and Irreversible Impact's (SAII) are a central component of the NSW Biodiversity Offset Scheme (BOS). The BC Act and *Local Land Services Act 2013* (LLS Act) imposes various obligations on decision makers in relation to SAII (DPIE, 2019). SAII entities are only relevant when the NSW BOS scheme has been exceeded and a Biodiversity Development Assessment Report (BDAR) is required.

SAII entities are entities that are most at risk of a SAII. These entities have been determined through quantifiable measurements including:

- Rapid rate of decline
- Very small population size
- Are severely degraded or disrupted
- Have a very limited geographic distribution
- Are unlikely to respond to measures to improve habitat

It is important to note that the presence of a listed SAII entity does not mean a SAII will occur from the proposed development. However, any impact to a SAII entity could be serious and irreversible. Therefore, if a SAII entity is present within the proposed development site the proponent must detail measures taken to – Step 1) Avoid, Step 2) Minimise and Step 3 Mitigate impacts to the SAII entity present (DPIE, 2019). It is up to the consent authority to determine if a SAII occurs. The consent authority cannot grant approval if they determine the proposal is likely to have a SAII.

Box-Gum Woodland is listed as a SAII entity (DPIE, 2021). This TEC is present within the proposal area in the form of PCT 277 and PCT 266. Around 35.71 ha of Box-Gum Woodland is present within the proposal area (Figure 4-2)_.

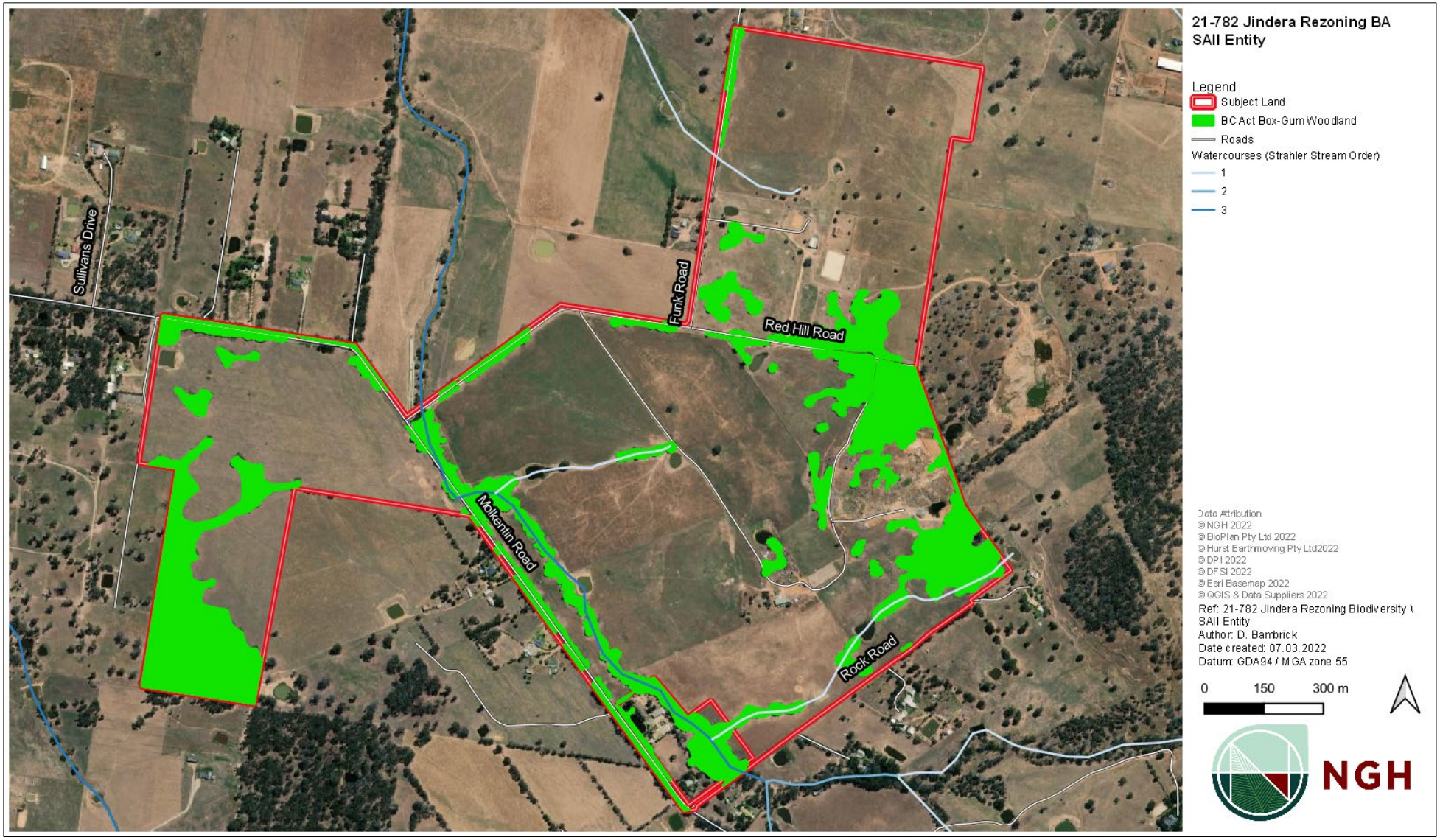

Figure 4-2 SAII Entity

4.5 Terrestrial Habitat

Terrestrial habitat for fauna and flora species occurs within the proposal area. Terrestrial habitat identified is detailed below in Table 4-3.

Table 4-3 Terrestrial habitat identified within the proposal area

Habitat feature	Description	Image
Box-Gum Woodland.	Remnant woodland within the proposal area provides valuable foraging and breeding habitat for native species. PCT 277 was dominated by Blakley's Red Gum and PCT 266 was dominated by White Box. These woodland areas form part of woodland connectivity within the Jindera and Albury LGA's. Both remnant 200+cm DBH and regenerated 20-50+ cm DBH trees were present. Box-Gum Woodland is known habitat for a large number of threatened and non-threatened native species.	
Native Grassland	Native grasses occurred in low to moderate densities throughout most of the proposal area, however one area of PCT 277 was dominated by at least 90% native ground cover species including native grasses. Native grasses provide foraging resources for native species, especially birds. Threatened species, including legless lizards and moths are known to utilise native grassland.	
Fallen timber and dense leaf litter.	Fallen timber has collected in a few locations throughout the proposal area. These areas generally occurred in road reserves. Fallen timber and dense leaf litter provides shelter and foraging resources for several native fauna species including small reptiles and ground-foraging birds.	

Habitat feature	Description	Image
Hollow-bearing trees	HBTs occurred within the proposal area. HBTs are an increasingly rare resource for fauna. HBTs take up to 100 years to start forming, many fauna species are dependent on hollow-bearing trees for breeding, nesting and roosting including a number of threatened species. HBTs provide a high-level of biodiversity value. Many HBTs identified within the proposal area showed signs of active use in the form of chew marks around hollow entrances. Hollow sizes ranged from small 3-5cm to large 20cm+ and would support a diversity of hollow-dependent species.	
Rocky habitat/Rock outcrops	Rock outcrops and rocky habitat, including exposed rocks, partially buried rocks, surface rocks and rocky soil areas occurred within the proposal area. This habitat is known to support smaller fauna species such as reptiles, including threatened legless lizards.	

4.6 Aquatic Habitat

Aquatic habitat was identified within the proposal area.

Four watercourses are mapped within the proposal area. Three of these watercourses are 1st order streams feeding into a larger 3rd order watercourse. The three first order streams were generally modified from cropping and grazing reducing the definition of bed and banks. Despite modification these areas were still visible in the landscape and often connected to farm dams. The aquatic environment of these three watercourses were similar including:

- Bed and banks less than 1m deep, grey silty clays and red clays
- Dominated by exotic vegetation and generally cleared or grazed of any native riparian vegetation. Some riparian woodland present where drainage lines run through woodland PCTs.
- No flowing water but damp/wet ground from recent rains

- Pooled water in dams built within watercourses
- Water dependent on seasonal rainfall.

The larger 3rd order watercourse was very well defined. The aquatic environment of this watercourse at the time of the site assessment included:

- Defined bed and banks up to 4m wide and 3m deep in some areas.
- Strong erosion present.
- Minimal in-stream snags or watercourse roughness.
- Some native aquatic vegetation present in waterway.
- Ground cover on bank terraces dominated by grazed exotic species.
- Native woodland PCTs present in the form of Eucalyptus.
- Some pooled water however no flow present, evidence of high seasonal flow based on height and width of banks.
- Mixture of grey silty clays and sandy gravels <3cm in diameter.

All three 1st order watercourses feed into the 3rd order watercourse. The 3rd order watercourse feeds into Bowna Creek around 3.5 km north of the proposal area.

Aquatic habitat identified within the proposal area is described below in Table 4-4.

Table 4-4 Aquatic habitat identified within the proposal area

Habitat feature	Detail	Image
1st order watercourses	These watercourses provide wet and damp environments for fauna species including amphibians. When holding low levels of water these areas provide 'marshy' habitat for fauna and flora species.	

Habitat feature	Detail	Image
3rd watercourse	This watercourse is seasonal and showed signs of holding higher volumes of water. Wooded watercourses form strong connectivity features in the landscape for fauna species. Larger watercourses have the potential to seasonally host freshwater species such as fish.	
Dams	Farms dams are present within the proposal area. Farm dams provide (generally) year round access to water. Farm dams aid in the ability of fauna species to remain in woodland areas through periods of low rainfall. Vegetated farm dams provide breeding habitat for fauna species such as birds and frogs. Many of the farm dams within the proposal area were grazed with minimal native aquatic species present. These areas are still utilised for foraging by fauna species such as ducks. Freshwater species, including crayfish also use farm dams. Migratory species or wetland species that move throughout the landscape often utilise farm dams as 'stop over' locations in the landscape.	

Habitat feature	Detail	Image
Depressions/Fringing Floodplain	The south-western area of Lot 5 DP 260275 within the proposal area was low-lying. This depression may have one formed part of a larger floodplain area where the watercourse around 200m west of this lot is mapped as flood prone land. Lot 5 contain a high occurrence of aquatic vegetation including native rushes. Small depressions occurred thought this area with numerous pools of water present. Although grazed and subject to plugging from hard hoofed livestock this area still holds aquatic habitat.	

4.7 Threatened Fauna

One threatened flora species was identified during the site survey, this was the Brown Treecreeper (*Climacteris picumnus victoriae*), listed as vulnerable under the BC Act. This species was observed foraging within PCT 277. Due to the timing of the site survey not all fauna species that may occur within the proposal area would have been identified. Alongside this, targeted surveys were not conducted. Many fauna species are highly mobile throughout daylight hours, migrate locally depending on food availability and seasonality and/or are active nocturnally (at night).

No targeted fauna surveys were conducted. Fauna species were recorded when identified opportunistically during the site assessment. Fauna identified during the site assessment are detailed within Appendix B.

Horizontal chew marks were observed on a number of eucalyptus trees, especially hollow-bearing trees. Sap forms part of the diet of glider species, these species are known to chew tree trunks and branches to draw out sap while forging. The threatened species, Squirrel Glider *Petaurus norfolcensis*, is known to occur within the locality and has been recorded within 900m of the proposal area in connected woodland. It is considered likely this species occurs within the proposal area, refer to Appendix C.

A search of the NSW BioNet Atlas and EPBC Protected Matters Search Tool identified the following threatened entities - 43 birds (including 12 migratory birds), five mammals, two reptiles, two amphibians, five fish and one invertebrate with the potential to occur within the proposal area.

An assessment of habitat suitability, species records and occurrence (refer to Appendix C) found the following fauna species have the potential to occur within the proposal area:

- Woodland Birds
    - Regent Honeyeater *Anthochaera phrygia* BC – CE; EPBC - CE
    - Dusky Woodswallow *Artamus cyanopterus cyanopterus* BC - V
    - Bush-stone Curlew *Burhinus grallarius* BC - E
    - Speckled Warbler *Chthonicola sagittate* BC - V
    - Brown treecreeper *Climacteris picumnus victoriae* BC - V
    - Varied Sittella *Daphoenositta chrysoptera* BC - V
    - Painted Honeyeater *Grantiella picta* BC - V
    - Grey-crowned Babbler *Pomatostomus temporalis temporalis* BC - V
    - Swift Parrot (foraging only) *Lathamus discolor* BC – CE; EPBC - CE
    - Hooded Robin *Melanodryas cucullata cucullate* BC - V
    - Black-chinned Honeyeater *Melithreptus gularis gularis* BC - V
    - Scarlet Robin *Petroica boodang* BC - V
    - Flame Robin *Petroica phoenicea* BC - V
    - Diamond Firetail *Stagonopleura guttata* BC - V
- Raptors
    - Grey Falcon *Falco hypoleucos* - BC - E
    - Little Eagle *Hieraaetus morphnoides* BC - V
    - Black Falcon *Falco subniger* BC - V
    - Spotted Harrier *Circus assimilis* BC - V
- Hollow-dependent Birds
    - Gang-gang Cockatoo *Callocephalon fimbriatum* BC - V
    - Purple-crowned Lorikeet *Glossopsitta porphyrocephala* - V
    - Little Lorikeet *Glossopsitta pusilla* BC - V
    - Turquoise Parrot *Neophema pulchella* BC - V
    - Barking Owl *Ninox connivens* BC - V
    - Superb Parrot *Polytelis swainsonii* BC – V; EPBC - V
- Hollow-dependent Mammals
    - Corben's Long-eared Bat *Nyctophilus corbeni* BC – V; EPBC - V
    - Squirrel Glider *Petaurus norfolcensis* BC - V
- Non-hollow-dependent Mammals
    - Koala *Phascolarctos cinereus* BC – V; EPBC - V
    - Grey-headed Flying Fox *Pteropus poliocephalus* BC – V; EPBC - V
- Reptiles
    - Pink-tailed Worm-lizard *Aprasia parapulchella* BC – V; EPBC - V
    - Striped Legless Lizard *Delma impar* BV – V; EPBC - V
- Amphibians
    - Southern Bell Frog *Litoria raniformis* BC – E; EPBC - V
- Fish
    - Flathead Minow *Galaxias rostratus* FM – CE; EPBC - CE
    - Southern Pygmy Perch (Murray-Darling Basin Lineage) *Nannoperca australis* FM – E; EPBC – V

4.7.1 Koala

EPBC Act Koala Habitat Impact Assessment

The Koala Habitat Assessment Tool from the Commonwealth EPBC Act Referral Guidelines for the Endangered Koala were repealed following update to the threatened species listing to Endangered. A test of significant impact under the EPBC Act is required for decision making for referral requirement. No Habitat suitable to support this species would be impacted by the proposed rezoning. Impacts to woodland areas from subdivision may occur, subject to project design. Assessments/tests of significant impact under the BC Act and EPBC Act would be required following proposal of subdivision works where clearing of suitable habitat for this species is proposed.

State Environmental Planning Policy (Biodiversity and Conservation) 2020

Chapter 4 of the B&C SEPP applies to the proposal, as the subject land occurs on RU5 Land in the Greater Hume shire LGA. No Koala Plan of Management applies to the land thus an assessment of the presence of core koala habitat has been undertaken.

Under Part 4.1, Section 4 .2 'Definitions', core koala habitat means:

- an area of land which has been assessed by a suitably qualified and experienced person as being highly suitable koala habitat and where koalas are recorded as being present at the time of assessment, or
- an area of land which has been assessed by a suitably qualified and experienced person as being highly suitable koala habitat and where koalas have been recorded as being present in the previous 18 years.

The site does contain feed trees (Blakely's Red Gum, Yellow Box, River Red Gum, Red Box, White box and Red Stringy Bark) , which are listed on Schedule 3 of the SEPP.

There is one current record (2004) of a Koala sighting around 1.5km from the site and one historic record (1980) around 8km from the site. No Koala climbing signs (deep scratches on tree trunks) were observed during the survey. Suitable food trees are present, however the structure of the potential habitat is low-moderate suitability with some isolated paddock tree's alongside connected woodland areas and creek lines.

On the basis of low-moderate habitat structure, no detectable signs during the field survey and only one record from 18 years ago around 1.5km from the site, it is considered unlikely that the study area supports a resident Koala population, and the site is not considered Core Koala Habitat.

4.8 Threatened Flora and TECs

No threatened flora species were identified during the site survey. However, due to the timing of the site survey not all flora species present within the study area may have been visible. Flora identified during the site assessment are detailed within Appendix B.

A search of the NSW BioNet Atlas and EPBC Protected Matters Search Tool identified 12 threatened flora species and four TECs with the potential to occur within the proposal area.

An assessment of habitat suitability, species records and occurrence (refer to Appendix C) found the following flora species have the potential to occur by the proposal area:

- Aquatic flora
    - Floating Swam Wallaby Grass *Amphibromus fluitans* BC – V; EPBC - V
- Woodland Flora
    - Small Scurf-pea *Cullen parvum* BC - E
    - Hoary Sunray *Leucochrysum albicans var. tricolor* EPBC – E
    - Sturdy Leek Orchid *Prasophyllum validum* EPBC - V
    - Small Purple-pea *Swainsona recta* BC – E; EPBC - E
    - Yass Daisy *Ammobium craspedioides* BC – V; EPBC - V
    - Large-fruit Fireweed *Senecio macrocarpas* EPBC - V
    - Silky Swainson-pea *Swainsona sericea* BC – V

Box-Gum Woodland was identified within the proposal area, refer to section 4.3.

- TECs
    - Box-Gum Woodland BC – CEEC; EPBC - CEEC

4.9 Biodiversity Values Map

Biodiversity Values (BV) mapped by the Department of Planning and Environment (DPE), indicates land that is identified as containing high biodiversity value. Areas of high biodiversity value are particularly sensitive to clearing and development. BV mapped land forms one of the triggers under the BOS (DPIE, 2022).

No areas of BV mapped land are present within or directly adjacent to the proposal area at the time of this assessment. The closest mapped BV land at the time of this assessment is located around 13 km south-east of the proposal area in Sandy Creek (DPIE, 2022).

5. Predicted Impacts

No impacts are proposed or expected to occur from the rezoning of the proposal area. Predicted impacts below are relevant to phase two 'subdivision' as discussed within section 1.2.

A quantifiable measurement, i.e. area and habitat features, to be impacted, by a proposed subdivision would be calculated for the phase two following drafting of detailed subdivision design.

5.1 Vegetation Loss

The potential future subdivision is likely to have direct impacts to native vegetation. Short-term direct impacts in the form of vegetation clearing are likely to occur from:

- Road upgrades
- Road construction
- Storm water
- Temporary disturbance to ground cover from the movement of plant equipment and machinery
- Fragmentation and isolation of woodland habitat

Long-term direct impacts are likely to occur following:

- Building of residential dwellings
- Utility connection
- Fence lines
- Introduction of weeds and garden escapes
- Modification and disturbance of retained woodland within residential parcels

A biodiversity assessment as part of phase two subdivision must include all future impacts expected from the change in Landuse resulting from the subdivision.

5.2 Threatened Ecological Communities

Critically Endangered Box-Gum Woodland occurs within the proposal area. This woodland is a listed SAII entity.

Direct impacts to this TEC would occur through clearing associated with the proposed subdivision. Lack of avoidance and minimisation in clearing of this TEC may trigger a SAII.

Impacts to this TEC from the proposed subdivision have the potential to include:

- Reduction in the extent of the ecological community
- Fragment or increase fragmentation of the ecological community
- Modify abiotic factors such as water, nutrients or soil necessary for the survival of the ecological community, including reduction of ground water or modification to surface water drainage
- Substantial change in the species composition within the extent of the ecological community

- Substantial reduction in the quality and integrity of the ecological community including but not limited to:
    - Introduction of invasive species to become established
    - Regular mobilisation of fertilisers, herbicides or other chemicals or pollutants into the ecological community which kill or inhibit the growth of the ecological community
    - Interfere with the recovery of the ecological community

Detailed design for the subdivision may include building envelopes to aid in reduction of assumed clearing for the proposed subdivision, however it is important to note that long-term impacts to Box-Gum Woodland from residential use may occur, for example:

- Mowing/slashing
- Establishment of plants:
    - Gardens and garden escapees
    - Any shrub or tree species not associated with Box-Gum Woodland
    - Weed species
- Herbicide use
- Fertiliser application

These impacts have the potential to lead to a long-term reduction and/or modification to this ecological community and therefore, may require assessment as an impact to this TEC under the relevant assessment pathways.

5.3 Threatened Species

Threatened species have the potential to occur within the proposal area. Any removal or disturbance to terrestrial and aquatic habitat identified within the proposal area has the potential to incur an impact to threatened species. Impacts to threated species that may occur as a result of a proposed subdivision include:

- Fragmentation and isolation of habitat and connectivity
- Removal and disturbance to foraging, breeding and roosting habitat
- Reduction in resource available and therefore an increase in competition for resources
- Modification to existing habitat with the potential to lead to reduction of suitability for existing species
- Light and noise pollution

It is important to note, a known population of Squirrel Glider occurs across the Jindera and Albury area. Given the extent and number of HBTs and woodland identified within the proposal area it is considered likely this species would occur.

6. Recommendations and Conclusions

This preliminary assessment has identified constraints related to biodiversity to be considered following amendment of the LEP for the rezoning of the proposal area. The following key constraints were identified:

- Native vegetation:
  - Five Plant community types
  - Scattered trees
- Threatened Ecological Communities:
  - BC Act listed Box-Gum Woodland
  - EPBC Act listed Box-Gum Woodland
- Serious and Irreversible Impact (SAII) entities:
  - Box-Gum Woodland
- Threatened species habitat:
  - Box-Gum Woodland
  - Hollow-bearing trees
  - Timbered watercourses
  - Rock outcrops and rocky habitat
  - Native grassland
  - Aquatic habitat

Phase two of the proposed subdivision has a high potential of triggering the BOS thresholds (clearing and impacts to threatened species) and therefore require a BDAR under the BAM 2020

It is recommended that the following areas are excluded from the subdivision design to avoid and minimise impacts to threatened entities:

- Hollow-bearing trees
- Box-Gum Woodland/SAII entity

Box-gum woodland community is present on site and is a serious and irreversible impact (SAII) entity. If the area of this community (which includes single paddock trees) to be cleared triggers the threshold a Biodiversity Development Assessment Report (BDAR) would be required which includes a SAII assessment. It is up to the consent authority's discretion to determine if a SAII would occur, and they may refuse to grant development consent. Early discussion with council is recommended.

Possible foraging signs of the Squirrel Glider *Petaurus norfolcensis,* were observed during the site assessment. A known population of this species occurs within the Jindera and Albury Area. HBTs are a critical component to the long-term survival of this species.

Brown Treecreeper (*Climacteris picumnus victoriae*), a threatened species under the BC Act was identified during the site assessment.

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Appendix A Background Searches

A.1 EPBC PMST

Australian Government
Department of Agriculture, Water and the Environment

EPBC Act Protected Matters Report

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

Report created: 24-Jan-2022

Summary

Matters of National Environment Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	7
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	4
Listed Threatened Species:	34
Listed Migratory Species:	12

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Lands:	44
Commonwealth Heritage Places:	1
Listed Marine Species:	19
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

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

State and Territory Reserves:	2
Regional Forest Agreements:	2
Nationally Important Wetlands:	2
EPBC Act Referrals:	26
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands)		[Resource Information]
Ramsar Site Name	Proximity	Buffer Status
Banrock station wetland complex	600 - 700km upstream from Ramsar site	In feature area
Barmah forest	100 - 150km upstream from Ramsar site	In feature area
Gunbower forest	200 - 300km upstream from Ramsar site	In feature area
Hattah-kulkyne lakes	400 - 500km upstream from Ramsar site	In feature area
Nsw central murray state forests	100 - 150km upstream from Ramsar site	In feature area
Riverland	500 - 600km upstream from Ramsar site	In feature area
The coorong, and lakes alexandrina and albert wetland	600 - 700km upstream from Ramsar site	In feature area

Listed Threatened Ecological Communities			[Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	Endangered	Community likely to occur within area	In feature area
Natural Grasslands of the Murray Valley Plains	Critically Endangered	Community may occur within area	In buffer area only
Weeping Myall Woodlands	Endangered	Community may occur within area	In feature area

Community Name	Threatened Category	Presence Text	Buffer Status
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to occur within area	In feature area

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Breeding known to occur within area	In feature area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat known to occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat known to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Pedionomus torquatus Plains-wanderer [906]	Critically Endangered	Species or species habitat likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Polytelis swainsonii Superb Parrot [738]	Vulnerable	Species or species habitat known to occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area	In feature area
FISH			
Galaxias rostratus Flathead Galaxias, Beaked Minnow, Flat-headed Galaxias, Flat-headed Jollytail, Flat-headed Minnow [84745]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Maccullochella macquariensis Trout Cod [26171]	Endangered	Species or species habitat known to occur within area	In buffer area only
Maccullochella peelii Murray Cod [66633]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Macquaria australasica Macquarie Perch [66632]	Endangered	Species or species habitat may occur within area	In feature area
Nannoperca australis Murray-Darling Basin lineage Southern Pygmy Perch (Murray-Darling Basin lineage) [91711]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
FROG			
Crinia sloanei Sloane's Froglet [59151]	Endangered	Species or species habitat known to occur within area	In feature area
Litoria raniformis Growling Grass Frog, Southern Bell Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog [1828]	Vulnerable	Species or species habitat known to occur within area	In feature area
INSECT			
Synemon plana Golden Sun Moth [25234]	Vulnerable	Species or species habitat may occur within area	In feature area
MAMMAL			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Dasyurus maculatus maculatus (SE mainland population)			
Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat known to occur within area	In feature area
Nyctophilus corbeni			
Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat may occur within area	In feature area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)			
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat known to occur within area	In feature area
Pteropus poliocephalus			
Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area	In feature area
PLANT			
Ammobium craspedioides			
Yass Daisy [20758]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Amphibromus fluitans			
River Swamp Wallaby-grass, Floating Swamp Wallaby-grass [19215]	Vulnerable	Species or species habitat known to occur within area	In feature area
Caladenia concolor			
Crimson Spider-orchid, Maroon Spider-orchid [5505]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Lepidium monoplocoides			
Winged Pepper-cress [9190]	Endangered	Species or species habitat may occur within area	In buffer area only
Leucochrysum albicans subsp. tricolor			
Hoary Sunray, Grassland Paper-daisy [89104]	Endangered	Species or species habitat known to occur within area	In buffer area only
Prasophyllum petilum			
Tarengo Leek Orchid [55144]	Endangered	Species or species habitat may occur within area	In feature area
Prasophyllum validum			
Sturdy Leek-orchid, Mount Remarkable Leek-orchid [10268]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Senecio macrocarpus](#)			
Large-fruit Fireweed, Large-fruit Groundsel [16333]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Swainsona recta](#)			
Small Purple-pea, Mountain Swainson-pea, Small Purple Pea [7580]	Endangered	Species or species habitat known to occur within area	In feature area
REPTILE			
[Aprasia parapulchella](#)			
Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Delma impar](#)			
Striped Legless Lizard, Striped Snake-lizard [1649]	Vulnerable	Species or species habitat may occur within area	In feature area

Listed Migratory Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
[Apus pacificus](#)			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
[Hirundapus caudacutus](#)			
White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Motacilla flava](#)			
Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
[Myiagra cyanoleuca](#)			
Satin Flycatcher [612]		Species or species habitat likely to occur within area	In feature area
[Rhipidura rufifrons](#)			
Rufous Fantail [592]		Species or species habitat known to occur within area	In feature area
Migratory Wetlands Species			
[Actitis hypoleucos](#)			
Common Sandpiper [59309]		Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat may occur within area	In buffer area only

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

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

Commonwealth Land Name	State	Buffer Status
Commonwealth Trading Bank of Australia		
Commonwealth Land - Commonwealth Trading Bank of Australia [15029]	NSW	In buffer area only
Commonwealth Land - Commonwealth Trading Bank of Australia [15030]	NSW	In buffer area only
Commonwealth Land - Commonwealth Trading Bank of Australia [15033]	NSW	In buffer area only
Communications, Information Technology and the Arts - Australian Postal Corporation		
Commonwealth Land - Australian Postal Commission [15036]	NSW	In buffer area only
Commonwealth Land - Australian Postal Corporation [15010]	NSW	In buffer area only
Communications, Information Technology and the Arts - Telstra Corporation Limited		

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Australian Telecommunications Commission [15020]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [15287]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [15288]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [15037]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [15613]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [15482]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [15017]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [15016]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [16446]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [15019]	NSW	In buffer area only
Defence		
Commonwealth Land - Defence Service Homes Corporation [15028]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [15023]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [15027]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [15026]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [15025]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [15005]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [15008]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [15007]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [15004]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [15006]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [15011]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [15035]	NSW	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Defence Service Homes Corporation [15034]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [15032]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [15031]	NSW	In buffer area only
Defence - ARMY RECRUITING OFFICE - ALBURY [10089]	NSW	In buffer area only
Defence - ARMY RECRUITING OFFICE - ALBURY [10090]	NSW	In buffer area only
Defence - ARMY RECRUITING OFFICE - ALBURY [10092]	NSW	In buffer area only
Defence - ARMY RECRUITING OFFICE - ALBURY [10091]	NSW	In buffer area only
Defence - WIRLINGA ORDNANCE DEPOT [11210]	NSW	In buffer area only
Defence - Defence Housing Authority		
Commonwealth Land - Defence Housing Authority [15012]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [15013]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [15015]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [15014]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [15022]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [15024]	NSW	In buffer area only
Transport and Regional Services - Airservices Australia		
Commonwealth Land - Airservices Australia [15915]	NSW	In buffer area only
Unknown		
Commonwealth Land - [15021]	NSW	In buffer area only
Commonwealth Land - [15009]	NSW	In buffer area only

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

Listed Marine Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos			
Common Sandpiper [59309]		Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Apus pacificus](#) Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
[Bubulcus ibis as Ardea ibis](#) Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area	In feature area
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
[Chalcites osculans as Chrysococcyx osculans](#) Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area	In feature area
[Gallinago hardwickii](#) Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area overfly marine area	In feature area
[Haliaeetus leucogaster](#) White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
[Hirundapus caudacutus](#) White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
[Lathamus discolor](#) Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area overfly marine area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]		Species or species habitat known to occur within area overfly marine area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat may occur within area overfly marine area	In buffer area only

Extra Information

State and Territory Reserves			[Resource Information]
Protected Area Name	Reserve Type	State	Buffer Status
River Murray Reserve (non-PV)	Natural Features Reserve	VIC	In buffer area only
Ryans Lagoon N.C.R.	Natural Features Reserve	VIC	In buffer area only

Protected Area Name	Reserve Type	State	Buffer Status

Regional Forest Agreements [Resource Information]

Note that all areas with completed RFAs have been included.

RFA Name	State	Buffer Status
North East Victoria RFA	Victoria	In buffer area only
Southern RFA	New South Wales	In buffer area only

Nationally Important Wetlands [Resource Information]

Wetland Name	State	Buffer Status
Lake Hume	VIC	In buffer area only
Ryan's Lagoon	VIC	In buffer area only

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
The Modified Operation of the Goulburn Murray Irrigation District	2009/5123	Controlled Action	Post-Approval	In buffer area only
Thurgoona Link Road	2020/8804	Controlled Action	Further Information Request	In buffer area only
Trinity Anglican College, Thurgoona Junior School Expansion, NSW	2021/8921	Controlled Action	Assessment Approach	In buffer area only
Not controlled action				
Albury to Illabo Section of Inland Rail	2020/8670	Not Controlled Action	Completed	In buffer area only
Biodiversity Impacts Audit	2011/6191	Not Controlled Action	Completed	In buffer area only
Construction of a Rail Bypass and Associated Infrastructure	2001/372	Not Controlled Action	Completed	In buffer area only
Construction of Fire Trails and Vehicle Access to Centaur Rd/Urana Rd Residential Subdivision	2003/1086	Not Controlled Action	Completed	In buffer area only
Corrys Wood Estate - stage 8	2003/1309	Not Controlled Action	Completed	In buffer area only
Corrys Wood Residential Estate	2000/96	Not Controlled Action	Completed	In buffer area only
Dalbirra Residential Estate	2003/1032	Not Controlled Action	Completed	In buffer area only
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed	In feature area
Jindera Solar Farm, NSW	2021/8901	Not Controlled Action	Completed	In buffer area only
Kerrs Road Woolshed Creek Crossing	2001/255	Not Controlled Action	Completed	In feature area
Land sub-division and road construction	2004/1332	Not Controlled Action	Completed	In buffer area only
Mitchell Park Residential Estate Stage 1	2003/1215	Not Controlled Action	Completed	In feature area
Norris Park Estate Residential Subdivision	2003/918	Not Controlled Action	Completed	In buffer area only
Proposed Upgrade of the Bethanga Bridge over Lake Hume	2003/1089	Not Controlled Action	Completed	In buffer area only
Rockwood Quarry Project, Table Top, NSW	2019/8391	Not Controlled Action	Completed	In buffer area only
Sale and remediation of former munitions depot on Central Reserve Road	2004/1737	Not Controlled Action	Completed	In buffer area only
Thurgoona Park Industrial Estate Stage 2	2003/982	Not Controlled Action	Completed	In buffer area only
Tree Clearing for Relocation of 132kV Electricity Line, Thurgoona	2002/635	Not Controlled Action	Completed	In buffer area only
Wodonga Golf Club Residential Development: Stages 6.9, 7.1 and 7.2	2001/328	Not Controlled Action	Completed	In buffer area only
Not controlled action (particular manner)				
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Kensington Gardens	2021/8984	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Residential subdivision St Johns Close	2003/1080	Not Controlled Action (Particular Manner)	Post-Approval	In feature area

Caveat

1 PURPOSE

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

The report contains the mapped locations of:

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

2 DISCLAIMER

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

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

3 DATA SOURCES

Threatened ecological communities

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

Threatened, migratory and marine species

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

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

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

4 LIMITATIONS

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

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

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

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

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

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

Acknowledgements

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

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

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

Please feel free to provide feedback via the Contact Us page.

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A.2 NSW BioNet Atlas

NSW BioNet Atlas – threatened species recorded within 10km of the proposal area
Barking Owl *Ninox connivens*
Black Falcon *Falco subniger*
Black-chinned Honeyeater (eastern subspecies) *Melithreptus gularis gularis*
Blue-billed Duck *Oxyura australis*
Brown Treecreeper (eastern subspecies) *Climacteris picumnus victoriae*
Bush Stone-curlew *Burhinus grallarius*
Crimson Spider Orchid *Caladenia concolor*
Diamond Firetail *Stagonopleura guttata*
Dusky Woodswallow *Artamus cyanopterus cyanopterus*
Flame Robin *Petroica phoenicea*
Floating Swamp Wallaby-grass *Amphibromus fluitans*
Freckled Duck *Stictonetta naevosa*
Gang-gang Cockatoo *Callocephalon fimbriatum*
Grey Falcon *Falco hypoleucos*
Grey-crowned Babbler (eastern subspecies) *Pomatostomus temporalis temporalis*
Grey-headed Flying-fox *Pteropus poliocephalus*
Hoary Sunray *Leucochrysum albicans var. tricolor*
Hooded Robin (south-eastern form) *Melanodryas cucullata cucullata*
Koala *Phascolarctos cinereus*
Little Eagle *Hieraaetus morphnoides*
Little Lorikeet *Glossopsitta pusilla*
Magpie Goose *Anseranas semipalmata*
Painted Honeyeater *Grantiella picta*
Pink-tailed Legless Lizard *Aprasia parapulchella*
Purple-crowned Lorikeet *Glossopsitta porphyrocephala*
Regent Honeyeater *Anthochaera phrygia*
Scarlet Robin *Petroica boodang*
Silky Swainson-pea *Swainsona sericea*
Sloane's Froglet *Crinia sloanei*
Small Scurf-pea *Cullen parvum*
Southern Bell Frog *Litoria raniformis*
Speckled Warbler *Chthonicola sagittata*

NSW BioNet Atlas – threatened species recorded within 10km of the proposal area
Spotted Harrier *Circus assimilis*
Spotted-tailed Quoll *Dasyurus maculatus*
Squirrel Glider *Petaurus norfolcensis*
Superb Parrot *Polytelis swainsonii*
Swift Parrot *Lathamus discolor*
Turquoise Parrot *Neophema pulchella*
Varied Sittella *Daphoenositta chrysoptera*
White-bellied Sea-Eagle *Haliaeetus leucogaster*
White-throated Needletail *Hirundapus caudacutus*
Woolly Ragwort *Senecio garlandii*

Appendix B Flora and Fauna Observed

B.1.1 Fauna

Possible foraging signs of the Squirrel Glider *Petaurus norfolcensis* were identified during the site assessment.

Common Name	Latin Name	Threatened Entity?	
		BC Act	EPBC Act
Avian			
Australian Magpie	*Gymnorhina tibicen*		
Australian Raven	*Corvus coronoides*		
Australian Wood Duck	*Chenonetta jubata*		
Australasian Pipit	*Anthus novaeseelandiae*		
Australian Grebe	*Tachybaptus novaehollandiae*		
Blue-faced Honeyeater	*Entomyzon cyanotis*		
Brown Treecreeper	*Climacteris picumnus*	Vulnerable	
Crested Pidgeon	*Ocyphaps lophotes*		
Eastern Rosella	*Platycercus eximius*		
European Starling	*Sturnus vulgaris*		
Galah	*Eolophus roseicapilla*		
House Sparrow	*Passer domesticus*		
Indian Myna	*Acridotheres tristis*		
Laughing Kookaburra	*Dacelo novaeguineae*		
Magpie-Lark	*Grallina cyanoleuca*		
Masked Lapwing	*Vanellus miles*		

Common Name	Latin Name	Threatened Entity?	
		BC Act	EPBC Act
Nankeen Kestrel	*Falco cenchroides*		
Noisy Miner	*Manorina melanocephala*		
Noisy Friarbird	*Philemon corniculatus*		
Pacific Black Duck	*Anas superciliosa*		
Red-rumped Parrot	*Psephotus haematonotus*		
Red Wattlebird	*Anthochaera carunculata*		
Striated Pardalote	*Pardalotus striatus*		
Welcome Swallow	*Hirundo neoxena*		
Weebill	*Smicrornis brevirostris*		
Willy Wagtail	*Rhipidura leucophrys*		
White-breasted Woodswallow	*Artamus leucorynchus*		
Mammals			
Red Fox	*Vulpes vulpes*		
European Rabbit	*Oryctolagus cuniculus*		
Amphibian			
Beeping Froglet	*Crinia parinsignifera*		
Reptile			
Skink	*Ctenotus sp.*		

B.1.2 Flora

Score	Description
0.1	Not many, 1-10 individuals
0.5	Sparsely or very sparsely present; cover very small (less than 5%)
1	Plentiful but of small cover (less than 5%)
2	Any number of individuals covering 5-25% of the area
3	Any number of individuals covering 25-50% of the area
4	Any number of individuals covering 50-75% of the area
5	Covering more than 75% of the area

Exotic	Scientific Name	Common Name	PCT 277	PCT 266	PCT 74	PCT 186	PCT 360
Upper stratum							
*	*Abies sp.*	Fir Tree	0	0	0	0	0
*	*Ailanthus altissima*	Tree of Heaven	0	0	0	0	0
	Brachychiton populneus	Kurrajong	0.1	0.1	0	0	0
*	*Chamaecytisus palmensis*	Tree Lucerne	0	0	0	0	0
	Eucalyptus albens	White Box	0	5	0	0	0
	Eucalyptus blakelyi	Blakely's Red Gum	5	0	0	0	0
	Eucalyptus camaldulensis	River Red Gum	0.5	0	3	0	0
*	*Eucalyptus cladocalyx*	Sugar Gum	0	0	0	0	0
*	*Eucalyptus leucoxylon subsp. leucoxylon*	Yellow Gum	0	0	0	0	0
	Eucalyptus macrorhyncha	Red Stringybark	0	0	0	5	0
	Eucalyptus melliodora	Yellow Box	3	0	1	0	0
	Eucalyptus polyanthemos	Red Box	0	0	0	0	0
*	*Fraxinus spp.*	Desert Ash	0	0	0	0	0
*	*Nerium oleander*	Oleander	0	0	0	0	0
*	*Populus alba*	White Poplar	0	0	0	0	0
*	*Prunus spp.*	Plum	0	0	0	0	0
*	*Prunus spp.*	Almond	0	0	0	0	0
*	*Quercus spp.*	Oak	0	0	0	0	0
*	*Salix spp.*	Willow	0	0	0	0	0
Ground-stratum							
	Amphibromus nervosus	Swamp Wallaby Grass	0	0	0	0	0.5

Exotic	Scientific Name	Common Name	PCT 277	PCT 266	PCT 74	PCT 186	PCT 360
	Aristida behriana	Bunch Wiregrass	0	0.1	0	0	0
	Austrostipa scabra	Speargrass	0	0.5	0	0	0
	Boerhavia dominii	Tarvine	0	0.1	0	0	0
	Bothriochloa macra	Red Grass	0	0.5	0	0	0
	Carex appressa	Tall Sedge	0	0	0	0	0.1
	Chloris truncata	Windmill Grass	0.1	0.1	0.1	0	0
*	*Cirsium vulgare*	Spear Thistle	0.1	0	0	0	0
*	*Conyza bonariensis*	Flaxleaf Fleabane	0.1	0	0.1	0	0
	Crassula helmsii	Swamp Stonecrop	0	0	0	0	0.5
	Cynodon dactylon	Common Couch	0	0.1	0.1	0	0.1
*	*Cyperus eragrostis*	Umbrella Sedge	0.1	0	0	0	0.1
*	*Echium plantagineum*	Patterson's Curse	0	0.5	0.1	0	0
	Eleocharis acuta	Spike Rush	0	0	0	0	2
	Enteropogon ramosus	Curly Windmill Grass	0.1	0.1	0	0	0
	Helichrysum luteoalbum	Jersey Cudweed	0	0.1	0	0	0
*	*Hordeum spp.*	A Barley Grass	0	0	0	0	0
*	*Hypochaeris radicata*	Catsear	0.1	0.1	1	0.1	0
	Juncus usitatus	Common Rush	0.1	0	0	0	2
	Landoltia punctata	Duckweed	0	0	0	0	0.5
*	*Lolium spp.*	A Ryegrass	0.1	0.1	0.1	0	0
	Lomandra spp.	Mat-rush	0	0.1	0	0	0
	Lythrum hyssopifolia	Hyssop Loosestrife	0.1	0	0.1	0	1
*	*Malva spp.*	Mallow	0.1	0.1	1	0	0
	Oxalis perennans	Wood Sorrel	0.1	0.1	0	0	0
*	*Panicum capillare*	Witchgrass	0.5	0.5	0.5	0	0
	Panicum effusum	Hairy Panic	0	0.5	0	0	0
*	*Paspalum dilatatum*	Paspalum	0.1	0.5	0.5	0	0
*	*Pennisetum spp.*	Kikuyu Grass	0.5	0.5	0	0	0
*	*Phalaris spp.*		0.1	0.5	1	0	0
*	*Plantago lanceolata*	Lamb's Tongues	0.1	0.1	0.5	0	0
	Poa labillardierei var. labillardierei	Tussock Grass	0	0	.1	0	0
	Portulaca spp.	Pigweed	0.1	0.1	0	0	0

Exotic	Scientific Name	Common Name	PCT 277	PCT 266	PCT 74	PCT 186	PCT 360
	Pseudoraphis spinescens	Spiny Mudgrass	0	0	0	0	0.5
	Rumex brownii	Swamp Dock	0	0.1	0	0	0.1
	Rytidosperma setaceum	Small-flowered Wallaby-grass	0.5	0.5	0	0	0
	Sida corrugata	Corrugated Sida	0	0.1	0	0	0
	Vittadinia cuneata	A Fuzzweed	0	0.1	0	0	0
	Wahlenbergia spp.	Bluebell	0	0.1	0	0	0
Additional species							
	Amyema miquelii	Box Mistletoe	0.1	0.1	0.1	0	0

Appendix C Habitat Evaluation

The habitat evaluation for threatened species, ecological communities and endangered populations listed within 10km of the proposal area under the *NSW BioNet* [1] and those identified as potentially occurring in the area according to the Commonwealth EPBC *Protected Matters Search Tool*[2].

The likelihood of occurrence is based on presence of habitat, proximity of nearest records and mobility of the species (where relevant). The assessment of potential impact is based on the nature of the proposal, the ecology of the species and its likelihood of occurrence. The following classifications are used:

Presence of habitat:

Present: Potential or known habitat is present within the study area

Marginal: Habitat onsite meets basic habitat description, without microhabitat needs being met

Absent: No potential or known habitat is present within the study area

Likelihood of occurrence

Unlikely: Species known or predicted within the locality but unlikely to occur in the study area

Possible: Species could occur in the study area

Present: Species was recorded during the field investigations

[1] The *NSW BioNet* is administered by the NSW Office of Environment and Heritage (DPE (formerly DPIE)) and is an online database of fauna and flora records that contains over four million recorded sightings.
[2] This online tool is designed for the public to search for matters protected under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). It is managed by the DAWE.

Scientific Name	Common Name	Threatened Listing			Habitat	No of Records	Presence of habitat	Likelihood of Occurrence
		FM Act	BC Act	EPBC Act				
Migratory								
Actitis hypoleucos	Common Sandpiper			M	Found along all coastlines of Australia and many areas inland. The population that migrates to Australia breeds in the Russian far east. Roost sites are typically on rocks or in roots or branches of vegetation, especially mangroves. The species utilises a wide range of coastal wetlands and inland wetlands, with varying levels of salinity, and is mostly found around muddy margins or rocky shores and rarely on mudflats. The Common Sandpiper has been recorded in estuaries and deltas of streams, as well as on banks farther upstream; around lakes, pools, billabongs, reservoirs, dams and claypans, and occasionally piers and jetties. The muddy margins utilised by the species are often narrow and may be steep. The species is often associated with mangroves, and sometimes found in areas of mud littered with rocks or snags. The species is known to perch on posts, jetties, moored boats, and other artificial structures, and to sometimes rest on mud or 'loaf' on rocks.		**Marginal** Farm dams and some wet areas present. Mostly grazed.	**Unlikely** Marginal habitat present, not recorded in the locality. Habitat present would not support prolonged foraging of this species.
Apus pacificus	Fork-tailed Swift			M	The Fork-tailed Swift is exclusively aerial, flying from less than 1 m to at least 300 m above ground and probably higher. In Australia, they mostly occur over inland plains but sometimes above foothills or in coastal areas. They often occur over cliffs and beaches and also over islands and sometimes well out to sea. They also occur over settled areas, including towns, urban areas, and cities. They mostly occur over dry or open habitats, including riparian woodland and tea-tree swamps, low scrub, heathland, or saltmarsh. They are also found at treeless grassland and sandplains covered with spinifex, open farmland, and inland and coastal sand-dunes. The sometimes occur above rainforests, wet sclerophyll forest or open forest or plantations of pines (Higgins 1999). They forage aerially, up to hundreds of metres above ground, but also less than 1 m above open areas or over water. They often occur in areas of updraughts, especially around cliffs. They are said to search along edges of low-pressure systems, which assist flight. Low-flying Swifts are said to be precursors of unsettled weather, possibly because insect prey fly at a lower altitude when the air is humid and when the air density is low (Cameron 1952). They sometimes feed aerially among tree-tops in open forest (Higgins 1999). They probably roost aerially but are occasionally observed to land (Higgins 1999). They were once recorded roosting in trees, using a bare exposed branch emergent above the foliage (Newell 1930). Sometimes they loaf in the air, by allowing strong winds to support them (Boehm 1939). There have been rare records of loafing elsewhere including Swifts briefly resting on ground (Campbell 1900) and alighting on wire netting of a tennis court (Wheeler 1959). Once, one was seen attempting to land on the wall of a lighthouse (Scarff 1990).		**Marginal** Woodland present, however, although woodland to the east increases in elevation proposal site is still relatively low in elevation and is unlikely to be utilised by this species.	**Unlikely** Species is aerial and prefers use of woodland on ridgelines. Species is not considered likely to occur.
Calidris acuminata	Sharp-tailed Sandpiper			M	The Sharp-tailed Sandpiper spends the non-breeding season in Australia. 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.		**Marginal** Farm dams and some wet areas present. Mostly grazed.	**Unlikely** Marginal habitat present, not recorded in the locality. Habitat present would not support prolonged foraging of this species.
Calidris ferruginea	Curlew Sandpiper		CE	CE	Generally, occupies littoral and estuarine habitats, and in NSW is mainly found in intertidal mudflats of sheltered coasts. It also occurs in non-tidal swamps, lakes, and lagoons on the coast and sometimes inland. It forages in or at the edge of shallow water, occasionally on exposed algal mats or waterweed, or on banks of beach-cast seagrass or seaweed. Roosts on shingle, shell, or sand beaches; spits or islets on the coast or in wetlands; or sometimes in salt marsh, among beach-cast seaweed, or on rocky shores. Feeds on worms, molluscs, crustaceans, insects, and some seeds. Distributed around most of the Australian coastline (including Tasmania). It occurs along the entire coast of NSW, particularly in the Hunter Estuary, and sometimes in freshwater wetlands in the Murray-Darling Basin. Inland records are mainly of birds pausing for a few days during migration.		**Marginal** Farm dams and some wet areas present. Mostly grazed.	**Unlikely** Marginal habitat present, not recorded in the locality. Habitat present would not support prolonged foraging of this species.
Calidris melanotos	Pectoral Sandpiper			M	In NSW, it is widespread, but scattered. Records exist east of the Great Divide, from Casino and Ballina, south to Ulladulla. West of the Great Divide, the species is widespread in the Riverina and Lower Western regions. The species is found at coastal lagoons, estuaries, bays, swamps, lakes, inundated grasslands, saltmarshes, river pools, creeks, floodplains, and artificial wetlands. The species is usually found in coastal or near coastal habitat but occasionally found further inland. It prefers wetlands that have open fringing mudflats and low, emergent, or fringing vegetation, such as grass or samphire. The species has also been recorded in swamp overgrown with lignum.		**Marginal** Farm dams and some wet areas present. Mostly grazed.	**Unlikely** Marginal habitat present, not recorded in the locality. Habitat present would not support prolonged foraging of this species.
Haliaeetus leucogaster	White-bellied Sea Eagle		V	M	Distributed around the Australian coastline, including Tasmania, and well inland along rivers and wetlands of the Murray Darling Basin. Habitats are characterised by the presence of large areas of open water including larger rivers, swamps, lakes, and the sea. Also occurs at sites near the sea or seashore, 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’	4	**Marginal** Farm dams and some wet areas present. Mostly grazed not likely to be large enough to support this species.	**Unlikely** Marginal habitat present, not recorded in the locality. Habitat present is not considered likely to support this species.
Gallinago hardwickii	Latham's Snipe			M	Usually inhabit open, freshwater wetlands with low, dense vegetation (e.g., swamps, flooded grasslands or heathlands, around bogs and other water bodies). Known to occur in the upland wetlands of the New England Tablelands and Monaro Plateau.		**Marginal** Farm dams and some wet areas present. Mostly grazed.	**Unlikely** Marginal habitat present, not recorded in the locality. Habitat present would not support prolonged foraging of this species.
Hirundapus caudacutus	White-throated Needletail			M	Arrive in Australia from their breeding grounds in the northern hemisphere in about October each year and leave somewhere between May and August. Are non-breeding migrants in Australia. Breeding takes place in northern Asia.	1	**Marginal** Woodland present, however, although woodland to the east	**Unlikely** Species is aerial and prefers use of woodland on ridgelines. Species is

Scientific Name	Common Name	Threatened Listing			Habitat	No of Records	Presence of habitat	Likelihood of Occurrence
		FM Act	BC Act	EPBC Act				
							increases in elevation proposal site is still relatively low in elevation and is unlikely to be utilised by this species.	not considered likely to occur.
Motacilla flava	Yellow Wagtail			M	Occupies a range of damp or wet habitats with low vegetation, from damp meadows, marshes, waterside pastures, sewage farms and bogs to damp steppe and grassy tundra. In the north of its range, it is also found in large forest clearings. Breeds from April to August, although this varies with latitude.		**Marginal** Farm dams and some wet areas present. Mostly grazed.	**Unlikely** Marginal habitat present, not recorded in the locality. Habitat present would not support prolonged foraging of this species.
Myiagra cyanoleuca	Satin Flycatcher			M	Found along the east coast of Australia in tall forests, preferring wetter habitats such as heavily forested gullies, but not rainforests. Nests in loose colonies of two to five pairs nesting at intervals of about 20-50 m apart. It builds a broad-based, cup-shaped nest of shredded bark and grass, coated with spider webs, and decorated with lichen. The nest is placed on a bare, horizontal branch, with overhanging foliage, about 3-25 m above the ground. In NSW, they are widespread on and east of the Great Divide and sparsely scattered on the western slopes, with very occasional records on the western plains		**Marginal** Woodland present is unlikely to be preferred by this species. Species prefers woodland and wetter habitat east of the Great Divide.	**Unlikely** Dry grassy woodland present within proposal area unlikely to be utilised by this species during migration.
Numenius madagascariensis	Eastern Curlew		CE	CE, M	In NSW, occurs across the entire coast but is found in estuaries such as the Hunter River, Port Stephens, Clarence River, Richmond River and ICOLLs of the south coast. Generally, occupies coastal lakes, inlets, bays and estuarine habitats, and in NSW is mainly found in intertidal mudflats and sometimes saltmarsh of sheltered coasts. Occasionally, the species occurs on ocean beaches (often near estuaries), and coral reefs, rock platforms, or rocky islets. Forages in or at the edge of shallow water, occasionally on exposed algal mats or waterweed, or on banks of beach-cast seagrass or seaweed. Roosts on sandy spits and islets, especially on dry beach sand near the high-water mark, and among coastal vegetation including low saltmarsh or mangroves. May also roost on wooden oyster leases or other similar structures. Is carnivorous, eating crustaceans.		**Marginal** Farm dams and some wet areas present. Mostly grazed.	**Unlikely** Marginal habitat present, not recorded in the locality. Habitat present would not support prolonged foraging of this species.
Rhipidura rufifrons	Rufous Fantail			M	Found in rainforest, dense wet forests, swamp woodlands and mangroves, preferring deep shade, and is often seen close to the ground. During migration, it may be found in more open habitats or urban areas. Builds a small compact cup nest, of fine grasses bound with spider webs, which is suspended from a tree fork about 5 m from the ground. The bottom of the nest is drawn out into a long stem. When on passage, they are sometimes recorded in drier sclerophyll forests and woodlands, including Spotted Gum (*Eucalyptus maculata*), Yellow Box (*E. melliodora*), ironbarks or stringybarks, often with a shrubby or heath understorey. They are also recorded from parks and gardens when on passage.		**Marginal** Elevation too low for breeding of this species. Some woodland present however, woodland is grazed and open grassy with no shrubby or heathy understory.	**Unlikely** Dry grassy woodland present within proposal area unlikely to be utilised by this species during migration.
Tringa nebularia	Common Greenshank			M	Does not breed in Australia, however, the species occurs in all types of wetlands and has the widest distribution of any shorebird in Australia. In NSW, the species has been recorded in most coastal regions. It is widespread west of the Great Dividing Range, especially between the Lachlan and Murray Rivers and the Darling River drainage basin, including the Macquarie Marshes, and north-west regions.		**Marginal** Farm dams and some wet areas present. Mostly grazed.	**Unlikely** Marginal habitat present, not recorded in the locality. Habitat present would not support prolonged foraging of this species.
Aves								
Anthochaera phrygia	Regent Honeyeater		CE	CE	Inhabits dry open forest and woodland, particularly Box-Ironbark woodland, and riparian forests of River Sheoak, that inhabit woodlands that support a significantly high abundance and species richness of bird species, and have large numbers of mature trees, high canopy cover and abundance of mistletoes. Every few years non-breeding flocks are seen foraging in flowering coastal Swamp Mahogany and Spotted Gum forests, particularly on the central coast and occasionally on the upper north coast. Recently recorded in urban areas around Albury where woodlands tree species such as Mugga Ironbark and Yellow Box were planted 20 years ago. A generalist forager, although feeds on the nectar from a relatively small number of eucalypts that produce high volumes of nectar e.g. Mugga Ironbark, Yellow Box, White Box and Swamp Mahogany. Other tree species may be regionally important e.g. Lower Hunter Spotted Gum forests support regular breeding events. Flowering of associated species such as *Eucalyptus eugenioides* and other Stringybark species, and *E. fibrosa* can also contribute important nectar flows at times. Nectar and fruit from *Amyema miquelii, A. pendula* and *A. cambagei* are also utilised. When nectar is scarce, lerp and honeydew can comprise a substantial proportion of the diet. The species breeds between July and January in Box-Ironbark and other temperate woodlands and riparian gallery forest dominated by River Sheoak. Nests in horizontal branches or forks in tall mature eucalypts, mistletoes and Sheoaks. In NSW, the distribution is very patchy and mainly confined to the two main breeding areas and surrounding fragmented woodlands.	38	**Present** Eucalyptus woodland.	**Possible** Species known to frequent woodland in the Albury LGA, prefers Mugga Ironbark however known to use Box-Gum woodland as well.
Artamus cyanopterus cyanopterus	Dusky Woodswallow		V		Widespread in eastern, southern and southwestern Australia. Occurs throughout most of New South Wales, but sparsely scattered in, or absent from, much of the upper western region. Most breeding occurs on the western slopes of the Great Dividing Range. Primarily inhabit dry, open eucalypt forests and woodlands, including mallee associations, with an open or sparse understorey of eucalypt	36	**Present** Eucalyptus woodland.	**Possible** Suitable habitat present, recorded within locality.

Scientific Name	Common Name	Threatened Listing			Habitat	No of Records	Presence of habitat	Likelihood of Occurrence
		FM Act	BC Act	EPBC Act				
					saplings, acacias and other shrubs, and groundcover 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.			
Botaurus poiciloptilus	Australasian Bittern		E	E	Favours permanent freshwater wetlands with tall, dense vegetation, particularly *Typha* spp. and *Eleocharis.* Hides during the day amongst dense reeds or rushes and feed 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. Mainly found in shallow wetlands (less than 1 m deep) with dense growth of rushes or sedges.		**Marginal** Farm dams and some wet areas present. Mostly grazed.	**Unlikely** Marginal habitat present, not recorded in the locality. Habitat present would not support prolonged foraging of this species.
Burhinus grallarius	Bush Stone-curlew		E		Found throughout Australia except for the central southern coast and inland, the far south-east corner, and Tasmania. 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. The species is nocturnal, being especially active on moonlit nights.	6	**Present** Eucalyptus woodland with grassy understory, connected to larger woodland patches.	**Possible** Recorded within the locality, suitable habitat present.
Callocephalon fimbriatum	Gang-gang Cockatoo		V		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. May also occur in sub-alpine Snow Gum (*Eucalyptus pauciflora)* woodland and occasionally in temperate rainforests. In NSW, it is distributed from the south-east coast to the Hunter region, inland to the Central Tablelands and south-west slopes, and regularly in the ACT. 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.	5	**Present** HBTs and eucalyptus woodland.	**Possible** Recorded within the locality, suitable habitat present.
Chthonicola sagittata	Speckled Warbler		V		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. 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.	17	**Present** Eucalyptus woodland.	**Possible** Suitable habitat present, recorded within locality.
Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)		V		Found in eucalypt woodlands (including Box-Gum, stringybarks or other rough-barked eucalypts) and dry open forest of the inland slopes and plains inland of the Great Dividing Range; mainly inhabits woodlands dominated with an open grassy understorey, sometimes with one or more shrub species; also found in mallee and *Eucalyptus camaldulensis* Forest bordering wetlands with an open understorey of acacias, saltbush, lignum, cumbungi and grasses. Usually not found in woodlands with a dense shrub layer. Fallen timber is an important habitat component for foraging. Terrestrial and arboreal in about equal proportions; active, noisy and conspicuous while foraging on trunks and branches of trees and amongst fallen timber; spend much more time foraging on the ground and fallen logs than other treecreepers. Western boundary of the range of *Climacteris picumnus victoriae* runs approximately through Corowa, Wagga Wagga, Temora, Forbes, Dubbo and Inverell.	34	**Present** Eucalyptus woodland.	Present Observed during site surveys Suitable habitat present, recorded within locality.
Daphoenositta chrysoptera	Varied Sittella		V		Inhabits eucalypt forests and woodlands, especially those containing rough-barked species and mature smooth-barked gums with dead branches, mallee and Acacia woodland. Feeds on arthropods gleaned from crevices in rough or decorticating bark, dead branches, standing dead trees and small branches and twigs in the tree canopy. Builds a cup-shaped nest of plant fibres and cobwebs in an upright tree fork high in the living tree canopy, and often re-uses the same fork or tree in successive years. 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.	8	**Present** Eucalyptus woodland.	**Possible** Suitable habitat present, recorded within locality.
Falco hypoleucos	Grey Falcon		E		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, and near wetlands where surface water attracts prey. Preys primarily on birds, especially parrots and pigeons, using high-speed chases and stoops; reptiles and mammals are also taken. Utilises old nests of other birds of prey and ravens, usually high in a living eucalypt near water or a watercourse; peak laying season is in late winter and early spring. Sparsely distributed in NSW, chiefly throughout the Murray-Darling Basin, with the occasional vagrant east of the Great Dividing Range. Believed to be extinct in areas with more than 500mm rainfall in NSW.	2	**Present** Eucalyptus woodland and timbered watercourse.	**Possible** Suitable habitat present, recorded within locality.
Glossopsitta porphyrocephala	Purple-crowned Lorikeet		V		Found in open forests and woodlands, particularly where there are large flowering eucalypts. Also recorded from mallee habitats. Feeds primarily on nectar and pollen of flowering Eucalypts, including planted trees in urban areas. May rarely raid orchards to feed on ripe fruit. Breeds away from feeding areas, utilising hollow branches or holes in trees. Also roosts in dense vegetation up to several kilometres away from feeding areas.	2	**Present** HBTs and eucalyptus woodland and timbered watercourse.	**Possible** Recorded within the locality, suitable habitat present.
Glossopsitta pusilla	Little Lorikeet		V		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. Forages primarily in the canopy of open Eucalyptus forest and woodland, yet also finds food in Angophora, Melaleuca and other tree species. Riparian habitats are particularly used, due to higher soil fertility and hence greater productivity. Occupies isolated flowering trees in open country, e.g. paddocks, roadside remnants and urban trees also help sustain viable populations of the species. Nests in proximity to feeding areas if possible, most typically selecting hollows in the limb or trunk of smooth-barked Eucalypts	18	**Present** HBTs and eucalyptus woodland.	**Possible** Recorded within the locality, suitable habitat present.
Grantiella picta	Painted Honeyeater		V	V	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. Inhabits Boree/ Weeping Myall (*Acacia pendula*), Brigalow (*A. harpophylla*) and Box-Gum Woodlands and Box-Ironbark Forests. A specialist feeder on the fruits of mistletoes growing on	1	**Marginal** Eucalyptus woodland present however	**Possible** Some suitable habitat present, however

Scientific Name	Common Name	Threatened Listing			Habitat	No of Records	Presence of habitat	Likelihood of Occurrence
		FM Act	BC Act	EPBC Act				
					woodland eucalypts and acacias. Prefers mistletoes of the genus *Amyema*. Nest from spring to autumn in a small, delicate nest hanging within the outer canopy of drooping eucalypts, she-oak, paperbark or mistletoe branches.		preferred food source, mistletoe, was not present in abundance. However some mistle was present in low densities.	preferred foraging resources marginal. Small roadside woodland patch present unlikely to support this species.
Hieraaetus morphnoides	Little Eagle		V		The Little Eagle is found throughout the Australian mainland excepting the most densely forested parts of the Dividing Range escarpment. 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. Nests in tall living trees within a remnant patch, where pairs build a large stick nest in winter.	3	**Present** Eucalyptus woodland and timbered watercourse.	**Possible** Suitable habitat present, recorded within locality.
Falco subniger	Black Falcon		V		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 (Marchant & Higgins 1993). Occurs as solitary individuals, in pairs, or in family groups of parents and offspring. The Black Falcon is found along tree-lined watercourses and in isolated woodlands, mainly in arid and semi-arid areas. It roosts in trees at night and often on power poles by day.	1	**Present** Eucalyptus woodland and timbered watercourse.	**Possible** Suitable habitat present, recorded within locality.
Oxyura australis	Blue-billed Duck		V		Prefers deep water in large permanent wetlands and swamps with dense aquatic vegetation. Completely aquatic, swimming low in the water along the edge of dense cover. Feeds by day far from the shore, particularly if dense cover is available in the central parts of the wetland. They feed on the bottom of swamps eating seeds, buds, stems, leaves, fruit and small aquatic insects such as the larvae of midges, caddisflies and dragonflies. Partly migratory, with short-distance movements between breeding swamps and overwintering lakes with some long-distance dispersal to breed during spring and early summer. Nest solitarily in Cumbungi over deep water between September and February, and in trampled vegetation in Lignum, sedges or Spike-rushes, where a bowl-shaped nest is constructed. Young birds disperse in April-May from their breeding swamps in inland NSW to non-breeding areas on the Murray River system and coastal lakes. Endemic to south-eastern and south-western Australia. 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.	1	**Marginal** Farm dams and some wet areas present. Mostly grazed.	**Unlikely** Marginal habitat present, not recorded in the locality. Habitat present would not support prolonged foraging of this species.
Stictonetta naevosa	Freckled Duck		V		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 October-December, but can take place at other times when conditions are favourable. Nests are usually located in dense vegetation at or near water level. Found primarily in south-eastern and south-western Australia, occurring as a vagrant elsewhere.	1	**Marginal** Farm dams and some wet areas present. Mostly grazed.	**Unlikely** Marginal habitat present, not recorded in the locality. Habitat present would not support prolonged foraging of this species.
Pomatostomus temporalis temporalis	Grey-crowned Babbler (eastern subspecies)		V		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. Flight is laborious so birds prefer to hop to the top of a tree and glide down to the next one. Generally unable to cross large open areas. Live in family groups that consist of a breeding pair and young from previous breeding seasons. Feed on invertebrates, either by foraging on the trunks and branches of eucalypts and other woodland trees or on the ground, digging and probing amongst litter and tussock grasses. Build and maintain several conspicuous, dome-shaped stick nests about the size of a football. A nest is used as a dormitory for roosting each night. Nests usually located in shrubs or sapling eucalypts, although they may be built in the outermost leaves of low branches of large eucalypts. Nests are maintained year round, and old nests are often dismantled to build new ones. Breed July-February. Territories range from one to fifty hectares (usually around ten hectares) and are defended all year. The eastern subspecies (temporalis occurs from Cape York south through Queensland, NSW and Victoria and formerly to the south east of South Australia. This subspecies also occurs in the Trans-Fly Region in southern New Guinea. In NSW, the eastern sub-species occurs on the western slopes of the Great Dividing Range, and on the western plains reaching as far as Louth and Balranald. It also occurs in woodlands in the Hunter Valley and in several locations on the north coast of NSW. May be extinct in the southern, central and New England tablelands.	1	**Marginal** Eucalyptus woodland and roadside woodland present. No particularly dense but may support this species.	**Possible** Some potentially suitable habitat present, recorded within the locality.
Anseranas semipalmata	Magpie Goose		V		Mainly found in shallow wetlands (less than 1 m deep) with dense growth of rushes or sedges, aquatic or terrestrial habitats; and often seen walking and grazing on land; feeds on grasses, bulbs and rhizomes. Activities are centred on wetlands, mainly those on floodplains of rivers and large shallow wetlands formed by run-off; breeding can occur in both summer and winter dominated rainfall areas and is strongly influenced by water level; most breeding now occurs in monsoonal areas; nests are formed in trees over deep water; breeding is unlikely in south-eastern NSW. Often seen in trios or flocks on shallow wetlands, dry ephemeral swamps, wet grasslands and floodplains; roosts in tall vegetation. Relatively common in the Australian northern tropics, but had disappeared from south-east Australia by 1920 due to drainage and overgrazing of reed swamps used for breeding. Since the 1980s there have been increasing records in central and northern NSW. Vagrants can follow food sources to south-eastern NSW.	1	**Marginal** Farm dams and some wet areas present. Mostly grazed.	**Unlikely** Marginal habitat present, not recorded in the locality. Habitat present would not support prolonged foraging of this species.
Circus assimilis	Spotted Harrier		V		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. Builds a stick nest in a tree and lays eggs in spring (or sometimes autumn). Preys on terrestrial mammals (eg bandicoots, bettongs, and rodents), birds and reptile, occasionally insects and rarely carrion. Occurs throughout the Australian mainland, except in densely forested or wooded habitats of the coast, escarpment and ranges, and rarely in Tasmania.	1	**Present** Eucalyptus woodland, timbered watercourse, agricultural land.	**Possible** Some potentially suitable habitat present, recorded within the locality.
Lathamus discolor	Swift Parrot		CE	CE	Breeds in Tasmania during spring and summer, migrating in the autumn and winter months to south-eastern Australia from Victoria and	10	**Present**	**Possible**

Scientific Name	Common Name	Threatened Listing			Habitat	No of Records	Presence of habitat	Likelihood of Occurrence
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					the eastern parts of South Australia to south-east Queensland. In NSW mostly occurs on the coast and south west slopes. Migrates to the Australian south-east mainland between March and October. No breeding in NSW. Favoured feed trees include winter flowering species such as Swamp Mahogany *Eucalyptus robusta*, Spotted Gum *Corymbia maculata*, Red Bloodwood *C. gummifera*, Mugga Ironbark *E. sideroxylon*, and White Box *E. albens*.		Eucalyptus woodland.	Suitable habitat present, recorded within locality.
Melanodryas cucullata cucullata	Hooded Robin (south-eastern form)		V		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 morderately tall native grasses. Perches on low dead stumps and fallen timber or on low-hanging branches. Territories range from around 10 ha during the breeding season, to 30 ha in the non-breeding season. Nest is a small, neat cup of bark and grasses bound with webs, in a tree fork or crevice, from less than 1-5 m above the ground. Widespread across Australia, except for the driest deserts and the wetter coastal areas - northern and eastern coastal Queensland and Tasmania. Considered a sedentary species, but local seasonal movements are possible. The south-eastern form (subspecies *cucullata*) is found from Brisbane to Adelaide and throughout much of inland NSW, with the exception of the extreme north-west, where it is replaced by subspecies *picata*.	9	**Present** Eucalyptus woodland.	**Possible** Suitable habitat present, recorded within locality.
Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)		V		Occupies mostly upper levels of drier open forests or woodlands dominated by box and ironbark eucalypts, especially *Eucalyptus sideroxylon, E. albens,E. microcarpa, E. melliodora, E. blakelyi* and *E. tereticornis.* Inhabits open forests of smooth-barked gums, stringybarks, ironbarks, river sheoaks (nesting habitat) and tea-trees. Tends to occur in the largest woodland patches in the landscape as birds forage over large home ranges of at least 5 hectares. Forages rapidly along outer twigs, underside of branches and trunks, probing for insects, nectar, and honeydew. Breeds from June to December. Nest is placed high in the crown of a tree, in the uppermost lateral branches, hidden by foliage. Extends south from central Queensland, through NSW, Victoria into south-eastern South Australia. Widespread in NSW, with records from the tablelands and western slopes of the Great Dividing Range to the north-west and central-west plains and the Riverina. Rarely recorded east of the Great Dividing Range.	24	**Present** Eucalyptus woodland.	**Possible** Suitable habitat present, recorded within locality.
Neophema pulchella	Turquoise Parrot		V		Lives on the edges of eucalypt woodland adjoining clearings, timbered ridges and creeks in farmland. Usually seen in pairs or small, possibly family, groups and have also been reported in flocks of up to thirty individuals. 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. Forages quietly and may be quite tolerant of disturbance. Range extends from southern Queensland through to northern Victoria, from the coastal plains to the western slopes of the Great Dividing Range.	31	**Present** HBTs and eucalyptus woodland.	**Possible** Recorded within the locality, suitable habitat present.
Ninox connivens	Barking Owl		V		Inhabits woodland and open forest, including fragmented remnants and partly cleared farmland. Flexible in its habitat use, and hunting can extend in to closed forest and more open areas. Breeds along timbered watercourses in heavily cleared habitats (e.g. western NSW) due to the higher density of prey found on these fertile riparian soils. Roosts in shaded portions of tree canopies, including tall midstorey trees with dense foliage such as Acacia and Casuarina species. Hunts small arboreal mammals such as Squirrel Gliders and Common Ringtail Possums, but becomes more reliant on birds, invertebrates, bats and terrestrial mammals such as rodents and rabbits when key food is sparse. Requires very large permanent territories in most habitats due to sparse prey densities, over as much as 6000 hectares, with 2000 hectares being more typical in NSW habitats. 2-3 eggs are laid in hollows of large, old living or dead trees. Nest sites are used repeatedly over years by a pair, but may switch sites if disturbed by predators. Nesting occurs mid-winter and spring. Common in parts of northern Australia, but now sparse distribution in NSW. Core populations exist on the western slopes and plains and in some northeast coastal and escarpment forests.	6	**Present** HBTs and eucalyptus woodland.	**Possible** Recorded within the locality, suitable habitat present.
Pedionomus torquatus	Plains-wanderer		E	CE	Live in semi-arid, lowland native grasslands that typically occur on hard red-brown soils. These grasslands support a high diversity of plant species, including a number of state and nationally threatened species. Habitat structure appears to play a more important role than plant species composition. Preferred habitat typically comprises 50% bare ground, 10% fallen litter, and 40% herbs, forbs and grasses. Most grassland habitat is <5 cm high, but some vegetation up to a maximum of 30 cm is important for concealment, as long as grass tussocks are spaced 10-20 cm apart. During prolonged drought, the denudation of preferred habitats may force birds into marginal denser and taller grassland habitats that become temporarily suitable. Average home range of a single bird is about 12 ha. Breeding pairs have overlapping home ranges that total approximately 18 ha. Is a ground-dwelling grassland bird, which is cryptic and very difficult to observe during the day. Can only be properly surveyed at night using spotlighting techinques. 99% of records in NSW in the past 30 years come from an area of the western Riverina bounded by Hay and Narrandera on the Murrumbidgee River in the north, the Cobb Highway in the west, the Billabong Creek in the south, and Urana in the east. The amount of high quality habitat in the Riverina drops to 1-2% during very wet or dry years when grasslands become too dense or are grazed too bare.		**Absent** No suitable habitat present for this species. One small area of grassland present however small patch is not likely to support this species.	**Unlikely** No suitable habitat present.
Petroica boodang	Scarlet Robin		V		Lives in dry eucalypt forests and woodlands. The understorey is usually open and grassy with few scattered shrubs. Lives in both mature and regrowth vegetation. Occasionally occurs in mallee or wet forest communities, or in wetlands and tea-tree swamps. Habitat usually contains abundant logs and fallen timber, which are important components of its habitat. Breeds on ridges, hills and foothills of the western slopes, the Great Dividing Range and eastern coastal regions; and occasionally found up to 1000m in altitude. 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 live in open grassy woodlands, and grasslands or grazed paddocks with scattered trees. 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 they 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.	19	**Present** Eucalyptus woodland.	**Possible** Suitable habitat present, recorded within locality.
Petroica phoenicea	Flame Robin		V		Endemic to south eastern Australia, and ranges from near the Queensland border to south east South Australia and also in Tasmania. Breeds in upland tall moist eucalypt forests and woodlands, often on ridges and slopes. Prefers clearings or areas with open understoreys. Groundlayer of the breeding habitat is dominated by native grasses and the shrub layer may be either sparse or dense. Occasionally occurs in temperate rainforest, and also in herbfields, heathlands, shrublands and sedgelands at high altitudes. 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). Often	8	**Present** Eucalyptus woodland.	**Possible** Suitable habitat present, recorded within locality.

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					occurs in recently burnt areas; however, habitat becomes unsuitable as vegetation closes up following regeneration. In winter lives in dry forests, open woodlands, in pastures and native grasslands, with or without scattered trees; occasionally seen in heathland or other shrublands in coastal areas. Forages from low perches, from which they sally or pounce onto small invertebrates which they take from the ground or off tree trunks, logs and other coarse woody debris. Breeds in spring to late summer. Nests are often near the ground and are built in sheltered sites, such as shallow cavities in trees, stumps or banks.			
Polytelis swainsonii	Superb Parrot		V	V	Inhabit 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. Nest in small colonies, often with more than one nest in a single tree. Breed September-January. May forage up to 10 km from nesting sites, primarily in grassy box woodland. Feeds in trees and understorey shrubs and on the ground and their diet consists mainly of grass seeds, herbaceous plants, fruits, berries, nectar, buds, flowers, insects and grain. 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. It is estimated that there are less than 5000 breeding pairs left in the wild.	1	**Present** HBTs and eucalyptus woodland	**Possible** Not within an important breeding location, species prefers River Red Gum along larger creeks however recorded within the locality. Creek present. Has potential to occur.
Rostratula australis	Australian Painted Snipe		E	E	A small freshwater wader restricted to Australia. Most records are from the south east, particularly the Murray Darling Basin, with scattered records across northern Australia and historical records from around the Perth region in Western Australia. In NSW many records are from the Murray-Darling Basin including the Paroo wetlands, Lake Cowal, Macquarie Marshes, Fivebough Swamp and more recently, swamps near Balldale and Wanganella and 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. The nest consists of a scrape in the ground, lined with grasses and leaves.		**Marginal** Farm dams and some wet areas present. Mostly grazed.	**Unlikely** Marginal habitat present, not recorded in the locality. Habitat present would not support prolonged foraging of this species.
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. Feeds exclusively on the ground, on ripe and partly-ripe grass and herb seeds and green leaves, and on insects (especially in the breeding season). Usually encountered in flocks of between 5-40 birds, occasionally more. Groups separate into small colonies to breed, between August and January. Nests are globular structures built either in the shrubby understorey, or higher up, especially under hawk's or raven's nests. Appears to be sedentary, though some populations move locally, especially those in the south. Has been recorded in some towns and near farm houses. 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, Cental and South Western Slopes and the North West Plains and Riverina.	28	**Present** Eucalyptus woodland.	**Possible** Suitable habitat present, recorded within locality.
Mammals								
Dasyurus maculatus	Spot-tailed Quoll		E	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. Individual animals use hollow-bearing trees, fallen logs, small caves, rock outcrops and rocky-cliff faces as den sites. Use communal 'latrine sites', often on flat rocks among boulder fields, rocky cliff-faces or along rocky stream beds or banks. 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.	1	**Marginal** Woodland habitat present, basically no large fallen logs. Some rocky habitat. Very open woodland habitat unlikely to support this species.	**Unlikely** Habitat present unlikely to support this species.
Nyctophilus corbeni	Corben's Long-eared Bat		V	V	Overall, the distribution coincides approximately with the Murray Darling Basin with the Pilliga Scrub region being the distinct stronghold for this species. Inhabits a variety of vegetation types, including mallee, bulloke *Allocasuarina leuhmanni* and box eucalypt dominated communities, but it is distinctly more common in box/ironbark/cypress-pine vegetation that occurs in a north-south belt along the western slopes and plains of NSW and southern Queensland. Roosts in tree hollows, crevices, and under loose bark. Mating takes place in autumn with one or two young born in late spring to early summer.		**Present** HBTs and eucalyptus woodland.	**Possible** Not recorded within the locality, however species is small and non-conspicuous, suitable habitat present.
Petaurus norfolcensis	Squirrel Glider		V		Widely though sparsely distributed in eastern Australia, from northern Queensland to western Victoria. Inhabits mature or old growth Box, Box-Ironbark woodlands and River Red Gum forest west of the Great Dividing Range and Blackbutt-Bloodwood forest with heath understorey in coastal areas. Prefers mixed species stands with a shrub or Acacia midstorey. Require abundant tree hollows for refuge and nest sites. Diet varies seasonally and consists of Acacia gum, eucalypt sap, nectar, honeydew and manna, with invertebrates and pollen providing protein.	296	**Present** HBTs and eucalyptus woodland.	**Likely** Recorded within the locality, species known to occur within Jindera, suitable habitat present. Some possible signs of trunk chew marks for this species observed.
Phascolarctos cinereus	Koala		V	V	In NSW it mainly occurs on the central and north coasts with some populations in the west of the Great Dividing Range. 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. Inactive for most of the day, feeding and moving mostly at night. Spend most of their time in trees, but will descend and traverse open ground to move between trees. Home range size varies with quality of habitat, ranging from less than	2	**Present** Eucalyptus woodland.	**Possible** Species recorded twice within the locality, one record is 1.8km north (in

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					two ha to several hundred hectares in size. Generally solitary, but have complex social hierarchies based on a dominant male with a territory overlapping several females and sub-ordinate males on the periphery.			2006) of the proposal area in a woodland corridor connecting directly south to the proposal area.
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 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, giving birth and rearing young. Annual mating commences in January and 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 50km from the camp to forage; commuting distances are more often <20 km. Feed on the nectar and pollen of native trees, in particular *Eucalyptus, Melaleuca* and *Banksia,* and fruits of rainforest trees and vines. Also forage in cultivated gardens and fruit crops.	30	**Present** Eucalyptus woodland.	**Possible** Suitable habitat present, recorded within locality.
Reptiles								
Aprasia parapulchella	Pink-tailed Worm-lizard		V	V	Known from the Central and Southern Tablelands, and the South Western Slopes. A concentration of populations in the Canberra/Queanbeyan Region, Cooma, Yass, Bathurst, Albury and West Wyalong. Inhabits sloping, open woodland areas with predominantly native grassy groundlayers, particularly those dominated by Kangaroo Grass (*Themeda triandra*). Sites are typically well-drained, with rocky outcrops or scattered, partially-buried rocks. Commonly found beneath small, partially-embedded rocks and appear to spend considerable time in burrows below these rocks; the burrows have been constructed by and are often still inhabited by small black ants and termites. Feeds on the larvae and eggs of the ants with which it shares its burrows.	14	**Present** Partially buried rocks, rocky habitat and rocky outcrops with native grasses and sloping ground. .	**Possible** Known population within locality occurs on ranges including Nail Can Hill. Suitable habitat present in proposal area.
Delma impar	Striped Legless Lizard		V	V	Occurs in the Southern Tablelands, the South West Slopes, the Upper Hunter and possibly on the Riverina. Populations are known in the Goulburn, Yass, Queanbeyan, Cooma, Muswellbrook and Tumut areas. Also occurs in the ACT, Victoria and south-eastern South Australia. Found mainly in Natural Temperate Grassland but has also been captured in grasslands that have a high exotic component. Habitat is where grassland is dominated by perennial, tussock-forming grasses such as Kangaroo Grass *Themeda triandra*, spear-grasses *Austrostipa* spp., Poa tussocks *Poa* spp., and occasionally wallaby grasses *Austrodanthonia* spp. Sometimes present in modified grasslands with a significant content of exotic grasses. Sometimes found in grasslands with significant amounts of surface rocks, which are used for shelter. Sometimes utilises dried cowpats for shelter. Actively hunts for spiders, crickets, moth larvae and cockroaches.		**Present** Partially buried rocks, rocky habitat and rocky outcrops with native grasses and sloping ground. .	**Possible** Not recorded within locality however some suitable habitat present.
Amphibians								
Crinia sloanei	Sloane's Froglet		V		It is typically associated with periodically inundated areas in grassland, woodland and disturbed habitats. Recorded from widely scattered sites in the floodplains of the Murray-Darling Basin, with the majority of records in the Darling Riverine Plains, NSW South Western Slopes and Riverina bioregions in New South Wales. At a number of sites where records are verified by museum specimens, the species has not been subsequently detected during more recent frog surveys in the vicinity (e.g. Holbrook, Nyngan, Wagga Wagga and Tocumwal)..	73	**Marginal** some suitable habitat present in the form of PCT 360 however higher in elevation and not likely to support this low-elevation/floodplain species. Other low-elevation habitat is too shaded, contains no suitable vegetation, too deep, too fast flowing or does not contain water long enough for breeding.	**Unlikely** Although species is known to occur as an important population in Albury, habitat within the proposal area is not considered likely to support this species.
Litoria raniformis	Southern Bell 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. Breeding occurs during the warmer months and is triggered by flooding or a significant rise in water levels. Known to breed anytime from early spring through to late summer/early autumn (Sept to April) following a rise in water levels. During the breeding season animals are found floating amongst aquatic vegetation (especially cumbungi or Common Reeds) within or at the edge of slow-moving streams, marshes, lagoons, lakes, farm dams and rice crops. Tadpoles require standing water for at least 4 months for development and metamorphosis to occur but can take up to 12 months to develop. Outside the breeding season animals disperse away from the water and take shelter beneath ground debris such as fallen timber and bark, rocks, grass clumps and in deep soil cracks.	2	**Present** Farm dams may be considered suitable for this species.	**Possible** Two records within the locality, some potentially suitable habitat present.
Fish								
Galaxias rostratus	Flathead Minow	CE		CE	Flathead Galaxias is a freshwater fish. It is generally found mid-water in still and gently moving waters of small streams, lakes, lagoons, billabongs and backwaters. Its habitat consists of coarse sand or mud substrate and aquatic vegetation.	1	**Present** habitat suitable for this species in the watercourse.	**Possible** DPI mapping indicated this species occurs within the locality, mapped in Bowna Creek connected to the watercourse in the proposal area.

Scientific Name	Common Name	Threatened Listing			Habitat	No of Records	Presence of habitat	Likelihood of Occurrence
		FM Act	BC Act	EPBC Act				
Macquaria australasica	Macquarie Perch	E		E	The Macquarie Perch is a riverine, schooling species. It prefers clear water and deep, rocky holes with lots of cover. As well as aquatic vegetation, additional cover may comprise of large boulders, debris and overhanging banks (Cadwallader & Eden 1979). Spawning occurs just above riffles (shallow running water). Populations may survive in impoundments if able to access suitable spawning sites (Wager & Jackson 1993). Spawning sites used by the Macquarie Perch in the rivers flowing into Lake Eildon (between 1966–69) consisted of rubble substrate of small boulders, pebbles and gravel. Water depth was 0.2–0.9 m (usually 0.4–0.6 m) and water velocity was 0.3–0.6 m/s. There was also a pool (usually 15–30 m long and at least 1.5 m deep) immediately upstream, and fast-flowing broken water immediately downstream. Although this species can tolerate temperatures of < 9 °C (the temperature of the water at the bottom of Lake Eildon) they appear to require a temperature of at least 16.5 °C for spawning to occur. Newly hatched yolk sac larvae shelter amongst pebbles (Cadwallader & Rogan 1977). In Seven Creeks, this species occurred in deep pools and riffles above falls where the substrate was gravel and boulders (Brumley et al. 1987).		**Present** habitat suitable for this species in the watercourse.	**Unlikely** Species not known to occur within locality as indicated by DPI data.
Maccullochella macquariensis	Trout Cod	E		E	The Trout Cod is endemic to the southern Murray-Darling river system, including the Murrumbidgee and Murray Rivers, and the Macquarie River in central NSW. The species was once widespread and abundant in these areas but has undergone dramatic declines in its distribution and abundance over the past century. The last known reproducing population of Trout Cod is confined to the Murray River below Yarrawonga downstream to Tocumwal. Trout Cod are often found in faster flowing water with rocky and gravel bottoms, but can also be found in some slower flowing, lowland rivers. Large woody snags are very important for the species as they provide complex habitats for each stage of the species' life cycle.		**Absent** Watercourse present in proposal area is not considered likely to support this species.	**Unlikely** Species not known to occur within locality as indicated by DPI data. Watercourse is not permanent or connected to a known river where this species occurs.
Maccullochella peelii	Murray Cod			V	Widely distributed in waterways of the Murray-Darling Basin. There are approx. 13,245km of waterways in the Murray-Darling Basin that may be suitable habitat. An estimate of the extent of occurrence based on an average river width of 50m would be approximately 660km2. Murray Cod has specific habitat requirements. Sedentary and territorial rather than free ranging, and has a distinct preference for woody debris (snags), debris piles and bank side vegetation that provides shelter from high water velocities. The availability of these specific habitats has been reduced since European settlement due to desnagging, habitat degradation in the form of physical fragmentation, cold water discharges from dams and other forms of pollution		**Absent** Watercourse present in proposal area is not considered likely to support this species.	**Unlikely** Species not known to occur within locality as indicated by DPI data. Watercourse is not permanent or connected to a known river where this species occurs.
Nannoperca australis Murray-Darling Basin lineage	Southern Pygmy Perch	E		V	The natural distribution of Southern Pygmy Perch-MDB once extended across the southern Murray-Darling Basin, from the lowland to the upland zones (0–580 m a.s.l.) of New South Wales and Victorian catchments. In New South Wales the species was once found within the Lachlan, Murrumbidgee and Murray river catchments. In New South Wales, remnant populations remain in a tributary of the Lachlan River, and two tributaries of the Murray River. The Southern Pygmy Perch-MDB, has been observed to prefer habitats in low-gradient waterways and floodplains with slow-flowing or still water, and aquatic macrophyte cover or wood at shallow depths, with little or no flow in summer. The species has a limited tolerance of salinity and prefers waters with salinity less than 3.3 ppt, however it can tolerate a broad range of temperatures and extremely low dissolved oxygen levels	1	**Present** habitat suitable for this species in the watercourse.	**Possible** DPI mapping indicates this species may occur within the proposal, mapped in Bowna Creek connected to the watercourse in the proposal area.
Invertebrates								
Synemon plana	Golden Sun Moth		E	CE	NSW populations are found in the area between Queanbeyan, Gunning, Young and Tumut. Historical distribution extended from Bathurst (central NSW) through the NSW Southern Tablelands, through to central and western Victoria, to Bordertown in eastern South Australia. Occurs in Natural Temperate Grasslands and grassy Box-Gum Woodlands in which groundlayer is dominated by wallaby grasses *Austrodanthonia* spp. Grasslands dominated by wallaby grasses are typically low and open - the bare ground between the tussocks is thought to be an important microhabitat feature, as it is typically these areas on which the females are observed displaying to attract males. Habitat may contain several wallaby grass species, which are typically associated with other grasses particularly spear-grasses *Austrostipa* spp. or Kangaroo Grass *Themeda triandra*. Larvae feed on the roots of the wallaby grass plant.		**Marginal** One patch of EPBC Act quality Box-Gum Woodland with native grassland patch. Not dominated by wallaby grass, dominated by mixture of native garsses.	**Unlikely** Species not known to occur within the locality, small patch of marginal habitat for this species within the proposal area is not considered likely to support this species.
Flora								
Amphibromus fluitans	Floating Swamp Wallaby-grass		V	V	Grows mostly in permanent swamps. The species needs wetlands which are at least morderately fertile and which have some bare ground, conditions which are produced by seasonally-fluctuating water levels. Habitats in south-western NSW include swamp margins in mud, dam and tank beds in hard clay and in semi-dry mud of lagoons with *Potamogeton* and *Chamaeraphis* species. The species is virtually aquatic, often with only the flower heads above the water. It has been recorded recently in lagoons beside the Murray River near Cooks Lagoon (Shire of Greater Hume), Mungabarina Reserve, East Albury, at Ettamogah, Thurgoona (Charles Sturt University Campus), near Narranderra, and also further west along the Murray River (near Mathoura) and in Victoria. There is a recent record of this species near Laggan in Upper Lachlan Shire. It is also found in Victoria and in Tasmania.	24	**Marginal** Some suitable habitat may be present for this species in farm dams.	**Possible** Population known to occur in Albury LGA, species has been detected within farm dams within the locality.
Caladenia concolor	Crimson Spider Orchid		E	V	In the area where this species occurs, only the Rosella Spider Orchid *C. rosella* is similar, but it is musk-scented and has paler pink-streaked flower-parts. The current NSW Scientific Committee listing incorporates two populations which have each been described as separate species. Other occurrences of the Crimson Spider Orchid in NSW are from the Nail Can Hill Crown Reserve near Albury. The	17	**Absent** No suitable habitat present for this	**Unlikely** Population within locality occurs on ranges including

Scientific Name	Common Name	Threatened Listing			Habitat	No of Records	Presence of habitat	Likelihood of Occurrence
		FM Act	BC Act	EPBC Act				
					species also occurs at two localities in Victoria near Beechworth and Chiltern.		species. Some potentially marginal habitat is rocky area however very grazed and disturbed, not considered likely to support this species.	Nail Can Hill. Habitat within the proposal area is not considered likely to support this species.
Cullen parvum	Small Scurf-pea		E		In Victoria and NSW, plants are found in grassland, River Red Gum (*Eucalyptus camaldulensis*) Woodland or Box-Gum Woodland, sometimes on grazed land and usually on table drains or adjacent to drainage lines or watercourses, in areas with rainfall of between 450 and 700 mm. Plants tend to die back in dry seasons and resprout with rain in winter or spring; in dry years, plants apparently do not always produce shoots but survive below the ground.	1	**Present** River Red Gum and Box-Gum woodland, table drain.	**Possible** Recorded historically within Jindera. Suitable habitat present.
Lepidium monoplocoides	Winged Peppercress		E	E	Occurs on seasonally moist to waterlogged sites, on heavy fertile soils, with a mean annual rainfall of around 300-500 mm. Predominant vegetation is usually an open woodland dominated by *Allocasuarina luehmannii* (Bulloak) and/or eucalypts, particularly *Eucalyptus largiflorens* (Black Box) or *Eucalyptus populnea* (Poplar Box). The field layer of the surrounding woodland is dominated by tussock grasses. Recorded in a wetland-grassland community comprising *Eragrostis australasicus, Agrostis avenacea, Austrodanthonia duttoniana, Homopholis proluta, Myriophyllum crispatum, Utricularia dichotoma* and *Pycnosorus globosus,* on waterlogged grey-brown clay. Also recorded from a *Maireana pyramidata* shrubland. Widespread in the semi-arid western plains regions of NSW.		**Marginal** Farm dams and some seasonally waterlogged sites present, however associated species not present.	**Unlikely** Species not recorded within the locality, habitat within the proposal area is marginal for this species.
Leucochrysum albicans var. tricolor	Hoary Sunray		-	E	Occurs in a wide variety of grassland, woodland and forest habitats, generally on relatively heavy soils. Can occur in modified habitats such as semi-urban areas and roadsides. Highly dependent on the presence of bare ground for germination. Endemic to south-eastern Australia. 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 locatlities know from beyond this region.	1	**Present** Roadside woodland, bare ground.	**Possible** Recorded historically on Nail Can Hill in Albury. Suitable habitat present.
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 *Poa labillardieri, Eucalyptus aggregata* and *Leptospermum* spp. near Queanbeyan and within the grassy groundlayer dominated by *Themeda* under Box-Gum Woodland at Ilford (and Hall, ACT). Natural populations are known in NSW, near Boorowa, Queanbeyan area, at Hall in the ACT, Ilford, Delegate and a new population c.10 km west of Muswellbrook. This species has also been recorded at Bowning Cemetery where it was experimentally introduced, though it is not known whether this population has persisted.		**Marginal** Box-Gum Woodland present however associated grassland species absent.	**Unlikely** Species not recorded within the locality, habitat within the proposal area is not considered marginal for this species.
Prasophyllum validum	Sturdy leek orchid			V	The Sturdy Leek-orchid tends to grow in drier woodland habitats, generally with a low sparse understorey. In Victoria, it occurs in box and box-ironbark woodland with overstorey trees including Eucalyptus polyanthemos, Eucalyptus albens, Eucalyptus macrorhyncha, Eucalyptus viminalis and Callitris glaucophylla, and an open grassy to sparsely shrubby understorey including Themeda triandra, Joycea pallida, Arthropodium strictum, Acacia verniciflua, Bursaria spinosa, Grevillea alpina and Grevillea dryophylla. Soils vary from heavy clays to sandy loams. In South Australia, P. validum occurs in Eucalyptus cladocalyx woodland with porcupine grass Triodia species understorey, on loamy soils. Little is known of specific habitat requirements, and some sites have been disturbed by periodic fire, stock grazing and timber removal. A proposed action in this Recovery Plan is to more precisely determine habitat that is critical to survival of the Sturdy Leek-orchid.		**Present** Woodland with low/sparse understory. Box woodland inclduing white box.	**Possible** Species not recorded within the locality however potential for suitable habitat.
Senecio garlandii	Woolly Ragwort		V		Occurs on sheltered slopes of rocky outcrops.Found between Temora, Bethungra and Albury and possibly Burrinjuck near Yass. The largest populations are at The Rock and Mt Tabletop (and surrounds). There is a single population in Victoria at Chiltern.	4	**Absent** No suitable habitat present for this species. Rocky habitat present was not suitable for this species, not sheltered and grazed.	**Unlikely** Recorded within the locality on ranges including Nail Can Hill. No suitable habitat to support this species present within proposal area.
Swainsona recta	Small Purple-pea		E	E	Before European settlement it occurred in the grassy understorey of woodlands and open-forests dominated by *Eucalyptus blakelyi, E. melliodora, E. rubida* and *E. goniocalyx.* Grows in association with understorey dominants that include *Themeda triandra, Poa* spp. and *Austrostipa* spp. 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. Also known from the ACT and a single population of four plants near Chiltern in Victoria.		**Present** Box-Gum woodland.	**Possible** Species not recorded within the locality however potential for suitable habitat.
Ammobium craspedioides	Yass Daisy		V	V	Found in moist or dry forest communities, Box-Gum Woodland and secondary grassland derived from clearing of these communities. Grows in association with a large range of eucalypts (Eucalyptus blakelyi, E. bridgesiana, E. dives, E. goniocalyx, E. macrorhyncha, E. mannifera, E. melliodora, E. polyanthemos, E. rubida). Apparently unaffected by light grazing, as populations persist in some grazed sites. Found in a number of TSRs, Crown reserves, cemeteries and roadside reserves within the region. Eg. near Crookwell on the Southern Tablelands to near Wagga Wagga on the South Western Slopes. Most populations are in the Yass region.		**Present** Box-Gum woodland.	**Possible** Species not recorded within the locality however potential for suitable habitat.
Senecio macrocarpas	Large-fruit Fireweed			V	In NSW, Large-fruit Fireweed occurs in partly cleared dry forests and box-gum woodlands which transition to Brittle Gum Forest with a relatively undisturbed understorey of native grasses, forbs and subshrubs.		**Present** Box-Gum woodland.	**Possible** Species not recorded within the locality however potential for suitable

Scientific Name	Common Name	Threatened Listing			Habitat	No of Records	Presence of habitat	Likelihood of Occurrence
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								habitat.
Swainsona sericea	Silky Swainson pea		V		Found in Natural Temperate Grassland and Eucalyptus pauciflora Woodland on the Monaro. Found in Box-Gum Woodland in the Southern Tablelands and South West Slopes. Sometimes found in association with Callitris spp. Recorded from the Northern Tablelands to the Southern Tablelands and further inland on the slopes and plains. There is one isolated record from the far north-west of NSW. Its stronghold is on the Monaro. Also found in South Australia, Victoria and Queensland.	1	**Present** Box-Gum woodland	**Possible** Recorded historically within Jindera. Suitable habitat present.
TECs								
Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia			E		. This grassy woodland form has a tree canopy that is dominated or co-dominated by Grey Box (Eucalyptus microcarpa). This is the most common form of the ecological community that comprises a tree layer and a native understorey with a varying proportion of shrubs, grasses and herbs Derived native grassland can also occur. It mostly occurs from central NSW, through northern/central Victoria into eastern South Australi		**Absent** Characteristic species not present within proposal area, no associated PCTs present.	**Not Present** TEC not present.
Natural Grasslands of the Murray Valley Plains			CE		The Natural Grasslands of the Murray Valley Plains ecological community occurs on the plains of western and northern Victoria, extending into southern New South Wales. The grasslands are naturally treeless or almost so, with sparse tree cover. Grasses are characteristically represented by one or more of the following genera: Rytidosperma (wallaby-grasses), Austrostipa (spear-grasses), Chloris (windmill grasses) and Enteropogon (windmill grass, spider grass).		**Absent** Characteristic species not present within proposal area, no associated PCTs present.	**Not Present** TEC not present.
Weeping Myall Woodlands			E		Weeping Myall Woodlands occur in a range of forms from open woodlands to woodlands, in which weeping myall (Acacia pendula) trees are the sole or dominant overstorey species. Although weeping myall trees are often the only tree species in these woodlands, other trees can occur in the overstorey of the ecological community. The understorey of Weeping Myall Woodlands often includes an open layer of shrubs above an open ground layer of grasses and herbs, though the ecological community can exist naturally as either a shrubby, or grassy woodland.		**Absent** Characteristic species not present within proposal area, no associated PCTs present.	**Not Present** TEC not present.
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland .			CE		The ecological community can occur either as woodland or derived native grassland (i.e. grassy woodland where the tree overstorey has been removed). It is characterised by a species-rich understorey of native tussock grasses, herbs and scattered shrubs (where shrub cover comprises less than 30% cover), and a dominance or prior dominance of White Box (Eucalyptus albens) and/or Yellow Box (E. melliodora) and/or Blakely's Red Gum (E. blakelyi) trees.		**Present** Characteristic species present within proposal area, no associated PCTs present.	**Present** PCT 277, 266 met condition thresholds for listing of this TEC, refer to section 4.3. .
V = Vulnerable, E= Endangered, CE = Critically Endangered, M = Migratory								