Campbells Lane subdivision

Biodiversity Assessment Report

Brian Plemming

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→ The Power of Commitment

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1. Introduction

1.1 Proposal background

The Campbells Lane subdivision is the extension of an existing rural-residential subdivision on the north-eastern side of Coolamon, NSW. The subdivision would include the rezoning of one large lot currently zoned as RU1: Primary Production, to 24 lots zoned as RU4: Primary Production Small Lots, and the construction of roadways and services to the subdivided lots (the proposal). In order to progress the planning proposal, Coolamon Shire Council (Council) requires the provision of a Biodiversity Assessment Report (BAR) and an Aboriginal Due Diligence Assessment (ADDA), to assess the likelihood of impact on potential biodiversity and aboriginal heritage values respectively. The following BAR is required to satisfy the biodiversity requirements of the proposal.

1.1.1 The proposal

The proposal includes both the rezoning of existing farmland into small rural residential lots, and the associated construction of two access roads, and various services and amenities such as power and water to service the new subdivision (See Figure 1.1) Two access roads would be constructed off Davies Drive (located about 220 metres and 830 metres north of the intersection of Davies Drive and Campbells Lane respectively). The as yet unnamed roadways would extend approximately east through the entire length of the subdivision, facilitating road access to the future subdivided lots. In order to construct the northern-most access tree, one White Cypress Pine (*Callitris glaucophylla*) tree would require removal, which is discussed further in section 5.1.1. Services and amenities would be constructed within these road reserves.

The existing subdivision along Campbells Lane included the subdivision of 20 RU4 lots surrounding the proposal site. The proposal would complete the subdivision at Campbells Lane, Coolamon.

1.2 Purpose of this report

GHD has been engaged by the proponent to assess the potential biodiversity impacts of the proposal.

The primary objectives of the BAR is to:

- Identify potential biodiversity constraints and opportunities, including known or likely presence of species, populations and ecological communities and their habitats listed under the NSW *Fisheries Management Act 1994* (FM Act), NSW *Biodiversity Conservation Act 2016* (BC Act) and Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)
- Identify the potential occurrence of any matters of National Environmental Significance (MNES) listed under the EPBC Act
- Identify the potential impacts of the proposal on threatened biota and their habitats and advise on potential development design options
- Identify, describe and map biodiversity constraints, such as hollow-bearing trees, present within the proposal site and study area
- Assess the significance of impacts using the five part test (test of significance) on threatened biota and MNES and identify the likely requirement or otherwise for further approvals under the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) and/or EPBC Act
- Recommend safeguards and environmental management measures to avoid, minimise or offset potential impacts on threatened biota and biodiversity values.

1.3 Scope and limitations

This report: has been prepared by GHD for Brian Plemming and may only be used and relied on by Brian Plemming for the purpose agreed between GHD and Brian Plemming as set out in section 1.2 of this report.

GHD otherwise disclaims responsibility to any person other than Brian Plemming arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in section 1.4 of this report. GHD disclaims liability arising from any of the assumptions being incorrect.

1.4 Assumptions

The services undertaken by GHD in connection with preparing this BAR:

– Were limited to those detailed specifically in section 1.1.1 of this report
– Are based on the footprint presented in this report
– Will be assessed under Part 4 of the EP&A Act, and does not trigger the area thresholds for entry into the Biodiversity Offsets Scheme (BOS) for impacts to biodiversity and therefore a Biodiversity Development Assessment Report (BDAR) will not be required.

Paper Size ISO A4

0 0.15 0.3 0.45 0.6

Kilometers

Map Projection: Mercator Auxiliary Sphere
Horizontal Datum: WGS 1984
Grid: WGS 1984 Web Mercator Auxiliary Sphere

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GHD

Brian Plemming
Campbells Lane subdivison, Coolamon

Project No. 12579201
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Features of the proposal

Figure 1.1

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Data source: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
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2. Legislative requirements

2.1 Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

The EPBC Act provides a mechanism for assessing the environmental impact of activities and developments, where 'matters of national environmental significance' (MNES) may be affected by the proposed activities. If the proposal is likely to have a significant impact on a matter of MNES it must be referred to the Commonwealth Minister for the Environment. After the referral is completed and assessed, the Commonwealth Minister determines whether further assessment and approval under the EPBC Act is required.

MNES relevant to this BAR include:

– Threatened species and ecological communities
– Migratory species
– Ramsar wetlands of international importance.

Under the EPBC Act, a referral is required to the Australian Government for proposed actions that have the potential to significantly impact on a MNES or environment of Commonwealth land.

2.2 Biodiversity Conservation Act 2016

The BC Act lists a number of threatened species, populations and ecological communities to be considered when deciding whether there is likely to be a significant impact on threatened biota or their habitats. If a species of flora or fauna listed in the BC Act is identified, a review must be carried out of the factors set out to establish if there is likely to be a significant impact on that species, population, ecological community or their habitat. If any of these could be impacted by the proposal, an assessment of significance that addresses the requirements of section 1.7 of the EP&A Act must be completed to determine the significance of the impact.

If a significant impact on a threatened species, population or ecological community is likely, a Biodiversity Development Assessment Report (BDAR) or Species Impact Statement (SIS) must be completed and consultation with the NSW Department of Planning and Environment (PDE).

Given the low impacts of the proposal, a BDAR or SIS is not required.

2.2.1 Biodiversity Offsets Scheme Threshold

The Biodiversity Offsets Scheme Threshold is a test used to determine when it is necessary to apply the Biodiversity Assessment Method (BAM) to assess the impacts of a proposal.

The Biodiversity Conservation Regulation 2017 sets out threshold levels for when the Biodiversity Offsets Scheme (BOS) will be triggered. The threshold has two elements:

– Whether the amount of native vegetation being cleared exceeds a threshold area
– Whether the impacts occur on an area mapped on the Biodiversity Values map published by the Minister for the Environment.

For developments under Part 4, where clearing of native vegetation exceeds the minimum lot size clearing threshold, the preparation of a BDAR would be required.

A BOS threshold test was prepared for the proposal and the proposed vegetation removal will not require a BDAR as (DPE, 2022a):

– The minimum lot size is greater than 40 hectare and less than 1000 hectares. The clearing thresholds for this lot size is 1 hectare or more. The total clearing for this proposal involves the removal of only one White Cypress Pine tree, and is subsequently below the clearing threshold of 1 hectare.
– No native vegetation to be cleared is mapped on the Biodiversity Values Map (see Appendix D).

2.3 NSW Environment Planning and Assessment Act

The proposal can be assessed under Part 4 of the EP&A Act. Council is the determining authority.

Section 1.7 of the EP&A Act require that the significance of the impact on threatened species, populations and endangered ecological communities listed under the BC Act and/or FM Act is assessed using a five-part test (test of significance). Where a significant impact is likely to occur, a SIS must be prepared in accordance with the Secretary's Environmental Assessment Requirements, or a BDAR in accordance with the BOS and BAM.

2.4 Fisheries Management Act 1994

The FM Act aims to conserve, develop and share the fishery resources of the State for the benefit of present and future generations including conserving fish stocks and fish habitat and promoting ecologically sustainable development.

The FM Act requires an assessment of whether threatened species of fish and aquatic vegetation, populations or ecological communities are likely to be affected by the proposal. If a significant impact on a threatened species, population or ecological community is likely, a species impact statement must be completed and consultation with the NSW Department of Primary Industries (Fishing and Aquaculture) is required.

The FM Act lists key threatening processes under Schedule 6 that are likely to impact on watercourses and threatened biota, including degradation of native riparian vegetation along NSW watercourses, and installation and operation of in-stream structures and other mechanisms that alter natural flow regimes of rivers and streams.

No permanent waterways occur in the study area, and no watercourses occur within the proposal site or would be impacted by the proposal. Two farm dams are present within the proposal site; however, these do not represent Key Fish Habitat (KFH) and are not connected to any waterways.

2.5 Biosecurity Act 2015

The NSW *Biosecurity Act 2015* provides for modern, flexible tools and powers that allow effective, risk-based management of biosecurity in NSW. It provides a streamlined statutory framework to protect the NSW economy, environment and community from the negative impact of pests, diseases and weeds.

The primary object of the Act is to provide a framework for the prevention, elimination and minimisation of biosecurity risks posed by biosecurity matter, dealing with biosecurity matter, carriers and potential carriers, and other activities that involve biosecurity matter, carriers or potential carriers.

In NSW, all plants are regulated with a general biosecurity duty to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable.

One priority weed listed for the Riverina control region were identified during field surveys for the proposal (see section 4.2.1).

2.6 Coolamon Local Environmental Plan 2011

The *Coolamon Local Environmental Plan 2011* (Coolamon LEP) is the principal planning instrument for Coolamon Shire Council providing detailed controls on land use within the Shire. The study area is presently zoned as RU1: Primary Production, and would be rezoned to RU4: Primary Production Small Lots under the Coolamon LEP. The objectives of the new zoning is:

– To enable sustainable primary industry and other compatible land use
– To encourage and promote diversity and employment opportunities in relation to primary industry enterprises, particularly those that require smaller lots or that are more intensive in nature.
– To minimise conflict between land uses within this zone and land uses within adjoining zones.

3. Method

3.1 Personnel

Two people have been involved in the preparation of this report.

Table 3.1 Personnel and roles

Name	Title	Qualifications	Role
Andrew Smith	Senior Ecologist	BSc (EnvBio), PhD	Technical review
Brianna Turner	Ecologist	BSc (EnvSc)	Field assessment and report writing

3.1.1 Database review

A search of relevant databases was conducted to obtain records of threatened and migratory species, populations and ecological communities within the region. The search included all species, populations and ecological communities listed under the NSW BC Act and Commonwealth EPBC Act with the potential to occur in the locality. The assessment included a review of:

- BioNet Atlas – threatened species web application, species sightings. Search of all terrestrial threatened flora and fauna species (within a 20 kilometre radius of the proposal site) (searched April 2022) (DPE, 2022b)
- BioNet Atlas – threatened species web application, threatened biodiversity profiles (DPE, 2022c) NSW, online profiles
- BioNet Atlas – vegetation classification for plant community types in the study area (DPE, 2022d)
- EPBC Act Protected Matters Search Tool – for a 20 kilometre radius around the proposal site (searched April 2022) (DAWE, 2022a)
- Species profile and threats database, online profiles (DAWE, 2022b)
- NSW Department of Primary Industries (DPI) priority weed declarations – Riverina region (DPI, 2022) (searched April 2022)
- Any other relevant spatial data such as soils, geology and topography (DMR, 2002).

3.2 Field survey

Flora and fauna field surveys were conducted by an ecologist on 31 March 2022. Where appropriate, field surveys were conducted in accordance with the '*Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities Working Draft*' (DEC, 2004).

The primary objectives of the field surveys were to:

- Determine the presence and/or potential for threatened flora and fauna species, populations, ecological communities, listed under the NSW BC Act, NSW FM Act and Commonwealth EPBC Act, and their habitats to occur in the study area
- Determine the value of the habitat in the study area for flora and fauna species, particularly for threatened species and species of conservation significance, and describe potential impacts that would result from the proposal
- Describe the flora and fauna species, habitat, populations and ecological communities in the study area in relation to their occurrence and quality in the locality. This included ground truthing, reference to aerial photographs and vegetation mapping
- Determine the condition and extent of vegetation removal required for the proposal.

Biodiversity survey effort for this proposal is summarised in Table 3.2.

Table 3.2 Survey effort for biodiversity assessment

Survey method	Effort
Flora transects and incidental flora records	A flora survey transect along the proposal site. Due to the small size of the proposal site, flora transects were conducted across the entire site, and all incidental flora species were recorded.
Tree survey	GPS location and habitat attributes of all trees with the potential to be removed, or of habitat value for fauna in the proposal site
Fauna habitat assessment	Potential fauna habitat identified within areas of potential vegetation clearing and adjacent areas.
Opportunistic fauna observations	Opportunistic fauna observations for all fauna species encountered during flora surveys and habitat assessment.

3.2.1.1 Weather conditions

Weather conditions were mostly fine during times of surveying, with occasional cloud-cover overhead. Daytime maximum temperatures reached 27.1 degrees Celsius, and the overnight low was 11.0 degrees Celsius, as measured at the Kapooka (defence) weather station (ID 074272). Measured at 9 am, the wind speed was calm and no rain had occurred in the proceeding 48 hours.

3.2.2 Flora

Flora surveys were conducted in the proposal site using incidental flora recording and random transect surveys. The proposal site was traversed by vehicle, and specific sections of higher biodiversity value were traversed on foot. Some areas of the study area were observed over the fence of the proposal site, and details of biodiversity value were mapped and recorded. The following information was recorded:

– Description of vegetation
– Groundcover species and abundance
– Any signs of previous disturbance and grazing.

Flora survey transects were surveyed across the entire proposal site by vehicle, due to the large size of the site and previous modification and disturbance (cropping) resulting in a lack of biodiversity features across most of the site. Site observations included recording all incidentally observed flora species, and taking general site notes relating to the quality, cover and abundance of flora species recorded.

Tree assessments

Tree counts were conducted to record the species and size class of trees to be removed, and trees of high habitat value to fauna. Details recorded included:

– Tree species
– Diameter at breast height (DBH)
– Presence and size of hollows (if any).

The results of this assessment are provided in section 5.1.

Survey timing and potential limitations

Threatened flora searches were not undertaken as, given the highly modified and degraded condition of the groundcover at the site, it is unlikely that threatened flora would occur. Threatened flora species predicted to occur in the study area using background searches were assessed using the ‘likelihood of occurrence’ assessment (see Appendix B). This assessment method takes into account the suitability of the habitat on site and the likelihood that the landscape and surrounding area could support the threatened species. This is discussed in further detail below.

3.2.3 Vegetation mapping

Surveys of vegetation along the proposal site were undertaken to characterise vegetation formation, class, structure and condition. Plant community composition is especially important for those areas that have the potential to be a threatened ecological community.

Native vegetation in the study area was initially assigned a vegetation community name based on observed floristic and structural characteristics. Intact native vegetation communities were defined according to BioNet vegetation classification, Plant Community Types (PCT) (DPE, 2022d).

Introduced or highly modified native vegetation was defined based on structure and species composition.

All vegetation communities were mapped using aerial photographic interpretation guided by the field survey results.

For areas with the potential to classify as a threatened ecological community, an analysis was undertaken using the criteria for classification under the BC Act and EPBC Act.

3.2.4 Fauna

Due to the limited habitat availability within the proposal site, fauna surveys consisted of opportunistic observations and observations of fauna signs only, as discussed below.

Opportunistic observations

Any fauna species observed during flora and hollow-bearing tree surveys were recorded as opportunistic observations.

Habitat assessment

Fauna surveys comprised habitat assessment for all fauna groups and observations of fauna signs. Fauna habitat resources were assessed to identify areas of potential habitat within the study area. Specific resources such as shelter, basking, roosting, nesting and foraging sites for birds, bats, arboreal mammals, amphibians, ground-dwelling mammals and reptiles were noted. Habitat details recorded included presence or absence of:

- Hollow-bearing trees (arboreal mammals, hollow-nesting birds and microchiropteran bats)
- Feed trees (e.g. *Allocasuarina* species and mistletoe)
- Roost sites (hollow-bearing trees or for bats)
- Waterbodies (amphibians)
- Nests (birds)
- Rocky outcrops and ground debris (reptiles)
- Other features likely to provide potential habitat for threatened fauna.

Searches for potential mammal, amphibian, and reptile habitat were undertaken and recorded during flora and fauna surveys. Opportunistic sightings of all fauna species were also recorded.

3.3 Assessment of likelihood of occurrence and impact of the proposal on threatened biota

An assessment of the likelihood of occurrence and possibility of impact was completed for listed species, populations and ecological communities with the potential to occur in the study area.

In assessing which of these species, populations and ecological communities are ‘likely’ to occur within the study area (as described in ‘Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities Working Draft’) (DEC, 2004), the following factors were taken into consideration:

- The presence of potential habitat within the study area
- Condition and approximate extent of potential habitat within the study area

– Species occurrence within the locality and region (including results of current and previous surveys and results of database searches and literature review).

In addition, the possibility of impact by the proposal on threatened biota likely to occur, or present was assessed, and therefore whether a BC Act assessment of significance and/or EPBC Act significance assessment is required to assess the significance of the impact.

The likelihood of occurrence assessment (see Appendix B) determined that, although some species could occur within the proposal site on occasion, the proposal would not impact on any of these species to the limited direct impacts of the proposal. As the proposed lot layout and construction design has limited impacts to one isolated White Cypress Pine tree only, and the proposal site occurs in a highly modified and fragmented landscape unlikely to support the occurrence of threatened species on a regular basis, the proposal would not impact on threatened biota. Full justifications of minimal impacts to threatened species are provided in Appendix B.

Subsequently, no Assessment of Significance (five-part test) in accordance with section 7.3 of the NSW BC Act, or the EPBC Act Policy Statement ‘Matters of National Environmental Significance: Significant impact guidelines 1.1’ (DotE, 2013), are required.

4. Existing environment

4.1 General description

4.1.1 Bioregion

The study area occurs in the NSW South West Slopes Bioregion. This bioregion covers the lower inland slopes of the Great Dividing Range extending from north of Cowra through southern NSW into western Victoria.

4.1.2 Surrounding land-use and vegetation

The proposal occurs within agricultural land bounded by Rannock Road, Campbells Lane and Bartletts Lane, north-east of the township of Coolamon. The surrounding land-use is dominated by agricultural practices, including cropping and grazing and is highly cleared and modified.

Minimal connected vegetation occurs within the proposal site, as past clearing has resulted in only some isolated White Cypress Pine trees within the paddocks. A small patch of larger eucalypts and remnant trees occur in vicinity to the existing farm house on site. These trees, Yellow Box (*Eucalyptus melliodora*), Grey Box (*Eucalyptus microcarpa*), Blakely's Red Gum (*Eucalyptus blakelyi*), White Cypress Pine and Kurrajong (*Brachychiton populneus*), are located around a farm dam to the south of the proposal site. A patch of remnant White Cypress Pine and Grey Box trees occurs north-west of the farmhouse, and a variety of planted trees such as Sugar Gums (*Eucalyptus cladocalyx*), Radiata Pine (*Pinus radiata*) and Peppercorn Trees (*Schinus areira*) occurs along fence-lines and around shed structures on the property.

Larger tracts of remnant woodland comprised of Grey Box and White Cypress Pine occur along roads and lanes in the study area to the north (Bartletts Lane), west (Rannock Road) and south and east (Campbells Lane). In addition, a large remnant patch of native woodland occurs south of Campbells Lane within Kindra State Forest

4.1.3 Terrain, soils, geology and draining

Terrain within the project site and wider study area is typically flat to gently undulating. The study area occurs in the Ardlethan Hills Mitchell Landscape, which comprises rolling hills and rises on Ordovician quartzose sandstone, greywacke, chert, and phyllite. General elevation is 200–412 metres and local relief is 50–60 metres.

The Ardlethan Hills Mitchell Landscape contains stony red and brown texture-contrast soils merging to calcareous red earth on valley floors (Mitchell, 2002).

There are no named watercourses in the study area.

4.1.4 Climate

The area is classified as warm semi-arid with a mean annual rainfall of 324.4 millimetres, recorded from the Marrar weather station. Summers are generally warm to hot while winters are cold. The mean maximum annual temperature is 35.5 degrees celsius, recorded in January, while the mean minimum annual temperature is 1.3 degrees celsius recorded in July from the Kapooka weather station (BoM, 2022).

4.1.5 Groundwater dependent ecosystems

No groundwater dependent ecosystems exist within the proposal site.

4.2 Flora

4.2.1 Flora survey results

The survey of the proposal site identified 24 flora species, of which 12 are native and 12 are introduced (Appendix A).

Within the proposal site, the groundcover vegetation is very sparse, due to the previous and ongoing land-use of the area (cropping and grazing). At the time of the survey, the paddocks contained predominantly crop stubble, and exotic pasture species including Hairy Panic (*Panicum effusum*), Stink grass (*Eragrostis cilianensis*) and Barley Grass (*Hordeum leporinum*), and weeds such as Mallow Weed (*Malva parviflora*) and Patterson's Curse (*Echium plantagineum*). Some native groundcover species were recorded in the vicinity to the native trees surrounding the dam to the south of the proposal site, and along the northern boundary fence bordering Bartletts Lane, where areas of native woodland vegetation were present. These native species include native grasses such as Speargrass (*Austrostipa scabra*), Windmill Grass (*Chloris truncata*) and Wallaby Grass (*Rytidosperma* spp.), and native forbs including Ruby Saltbush (*Enchylaena tomentosa*) and Creeping Saltbush (*Atriplex semibaccata*). Trees within the proposal site consisted of a few scattered White Cypress Pine trees in the open paddocks, a small patch of remnant White Cypress Pine and Grey Box woodland occurs north of the existing farmhouse, and a patch of remnant woodland comprised of Yellow Box, Blakely's Red Gum and Grey Box surrounding the dam west of the farmhouse. This is discussed further below. A variety of exotic planted trees occur along fence lines and surrounding the shed structures and farmhouse to the south of the proposal site. These include Olive trees (*Olea europaea* subsp. *europaea*), Sugar Gums, Radiata Pine and Peppercorn trees.

Figure 4.1 The proposal site, demonstrating predominantly cropped paddocks

Woodland

Woodland is sparse within the proposal site, as the site has been historically cleared for agricultural purposes. Three small remnant patches occur within the proposal site, mostly within the vicinity of the existing farmhouse and dam to the south of the proposal site.

Remnant Grey Box and White Cypress Pine woodland most closely aligned with PCT 80 - *Western Grey Box - White Cypress Pine tall woodland on loam soil on alluvial plains of NSW South Western Slopes Bioregion and Riverina Bioregion* (Grey Box Woodland). This vegetation community is listed as an endangered ecological community in NSW, and can be listed federally if it conforms to the Commonwealth listing criteria (see below).

Two patches of Grey Box Woodland occur to the north and west of the farmhouse, respectively. The northern patch is comprised of predominantly White Cypress Pine, with some mature Grey Box trees scattered throughout. The western patch is comprised of large White Cypress Pine trees, and although does not contain Grey Box trees, is remnant of the same woodland vegetation community. Further to the west the final woodland patch surrounds the farm dam and is comprised of a mixture of Grey Box, Yellow Box, Blakely's Red Gum and White Cypress Pine.

Larger tracts of remnant Grey Box Woodland occur along roads and lanes in the study area to the north (Bartletts Lane), west (Rannock Road) and south and east (Campbells Lane), and within Kindra State Forest.

The listing status of Grey Box Woodland are as follows:

- NSW State listing - *Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions* – endangered ecological community
- Commonwealth listing - *Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-Eastern Australia* – endangered ecological community.

Two patches (the northern patch, and the patch surrounding the southern dam) would conform to the NSW BC Act listing for the endangered Grey Box Woodland community, due to the correct composition of canopy species. These patches would not conform to the EPBC Act listing for the community due the small size of the patches (patch is less than 0.5 ha), and the degraded condition (predominantly exotic species) of the groundcover stratum (non-grass weeds make up less than 30% of the plant cover in the ground layer) (SEWPaC, 2012).

Figure 4.2 Grey Box Woodland adjacent to the proposal site along Bartletts Lane

Priority weeds

One priority weed species, African Boxthorn (*Lycium ferocissimum*), listed for the Riverina control area was identified during surveys. This weed species is listed as a 'prohibition on dealings' and must not be imported into the State or sold.

African Boxthorn is also listed as Weeds of National Significance (WONS). These species are nationally prioritised weeds based on their invasiveness, potential for spread and environmental, social and economic impacts.

African Box Thorn was observed in the proposal site on the banks of the southern dam, and in the road reserve of Bartletts Lane in the study area to the north.

Figure 4.3 African Box Thorn in the proposal site

4.3 Fauna

Incidental observations during the survey period were all bird species. Twelve bird species were observed, all of which are native. More frequently observed species included the Galah (*Eolophus roseicapillus*) and Australian Magpie (*Cracticus tibicen*).

No threatened fauna species listed under either the BC Act or EPBC Act were recorded during surveys.

4.3.1 Fauna habitat

Woodland

Fauna habitat in the proposal site is limited due to lack of connected canopy vegetation within the proposal site. Habitat within the site is only likely to support highly mobile fauna species such as birds, due to large gaps in the canopy (over 200 metres in some areas) across open paddocks. Some areas of connected canopy occur around the dam and farmhouse to the south of the proposal site, where large eucalypt trees and remnant White Cypress Pine and planted exotic trees are present. Most incidental bird observations were made in this area, and the dam likely provides a water source for birds, concentrating them in this area. Canopy vegetation in this area provides minor movement, nesting and foraging habitat these bird species. Higher quality (more structurally diverse) and better connected woodland occurs in thin linear strips along Bartletts Lane, Rannock Road and Campbells Lane in the study area. A large, structurally diverse and highly connected remnant woodland patch (Kindra State Forest) occurs to the south of the proposal site, and is known to support a wide variety of flora and fauna species including the threatened Superb Parrot (*Polytelis swainsonii*) and Grey-crowned Babbler (*Pomatostomus temporalis temporalis*).

Large remnant eucalypts surrounding the farm dam in the proposal site contain hollows (see Figure 4.4). They are also likely to occur in habitat connected to the proposal site along the road reserves in the study area and in Kindra State Forest.

Native grasses within the proposal site could provide occasional foraging habitat for birds, reptile and mammal species. Introduced groundcover species would provide marginal foraging habitat for bird and mammal species.

Figure 4.4 Southern farm dam and large eucalypt trees within the proposal site

Aquatic habitat

Aquatic habitat within the proposal site is limited to two moderate sized farm dams located in the north and south of the proposal site respectively. The quality of these dams is low, as they are impacted heavily by grazing pressures. No aquatic fringing vegetation or sheltering habitat was recorded within the dams or along the banks.

This aquatic habitat could support commonly occurring amphibian species, such as the Eastern Sign-bearing Froglet (*Crinia parinsignifera*) and Spotted Marsh Frog (*Limnodynastes tasmaniensis*) and is likely to provide foraging and wading habitat for various waterbirds, such as the Australian Wood Duck (*Chenonetta jubata*) and White-faced Heron (*Egretta novaehollandiae*) which were observed foraging at the dams at the time of surveys. The farm dam is also likely to provide drinking water for various avian and terrestrial fauna that occupy the study area.

Figure 4.5 Northern farm dam

4.4 Threatened migratory biota

4.4.1 Summary of NSW listed species, communities and populations

The literature review, database search and field surveys identified the NSW BC Act threatened biota outlined in Appendix B as having the potential to occur in the study area.

One ecological community (Grey Box Woodland) listed under the BC Act was recorded in the study area during surveys. The proposal would not impact on this community.

While the Superb Parrot and Grey-crowned Babbler are known to occur occasionally in the study area, they are unlikely to occur reliably in the proposal site due to the highly fragmentated and modified condition of the site.

4.4.2 Summary of matters of national environmental significance (MNES)

Biota and migratory species

The literature review, database search and field surveys identified the EPBC Act threatened biota outlined in Appendix B as having the potential to occur in the study area. This includes migratory species, which are protected under the international agreements to which Australia is a signatory, including the Japan-Australia Migratory Bird Agreement (JAMBA), the China-Australia Migratory Bird Agreement (CAMBA), the Republic of Korea-Australia Migratory Bird Agreement (RoKAMBA) and the Bonn Convention on the Conservation of Migratory Species of Wild Animals.

No migratory bird species or biota listed under the EPBC Act and relevant to the proposal were recorded during the field surveys. Additionally, no biota are likely to be impacted by the proposal due to its very small size and limited impacts. Therefore, the 'EPBC Act Policy Statement Matters of National Environmental Significance: Significant impact guidelines 1.1' (DotE, 2013) were not applied to any biota. Individual justifications for biota are provided in Appendix B.

5. Impact assessment

5.1 Direct impacts

5.1.1 Removal of native vegetation

The proposal would remove only one White Cypress Pine tree, with a DBH of about 60–70 centimetres, to facilitate the construction of the roadway to access the northern section of the proposed subdivision. The White Cypress Pine tree to be removed is in poor health, and appears to be in the process of dying back (see Figure 5.1). No nests or fauna habitat was recorded in or surrounding the tree at the time of surveys. All other vegetation to be impacted by the proposal is limited to exotic groundcover vegetation within previously cropped paddocks in the proposal site.

Figure 5.1 White Cypress Pine to be removed

5.1.2 Hollow-bearing tree removal

Hollow-bearing trees are limited in the proposal site, and only occur around the southern dam. No hollow-bearing trees would be removed or impacted by the proposal.

5.1.3 Removal of fauna habitats and fragmentation

No rocky habitats, permanent or ephemeral wetlands will be directly or indirectly impacted by the proposal. The loss of one tree from an already highly fragmented landscape would not result in any further fragmentation or barrier to movement for local native species.

5.1.4 Injury and mortality

During construction, death or injury may occur to fauna present during clearing of trees and vegetation. If birds are present but not nesting during construction, they will generally move away from the proposal site to escape disturbance. Given the lack of habitat features (nests or hollows) in the tree to be removed, it is unlikely that any bird species would be present at the time of tree removal or would fail to leave the area during construction.

The proposal is unlikely to result in increased impacts to fauna movements during the construction periods, due to the lack of native species in the proposal site. The increase in traffic to the area during the construction period is unlikely to substantially increase the risk of fauna strikes, as the landscape is very open and highly fragmented, and fauna are unlikely to reliably occur or remain in open paddocks during daylight (construction) hours.

It is likely that a slight increase in the operational risk of fauna strike along Campbells Lane (adjacent to Kindra State Forest) would occur after the subdivision due to the increase in local traffic after new residential housing is built in the area. However, this impact is unlikely to be significant given that the low-quality habitat the proposal site represents is unlikely to result in many species traversing Campbells Lane to travel to the proposal site.

5.1.5 Disturbance of fauna

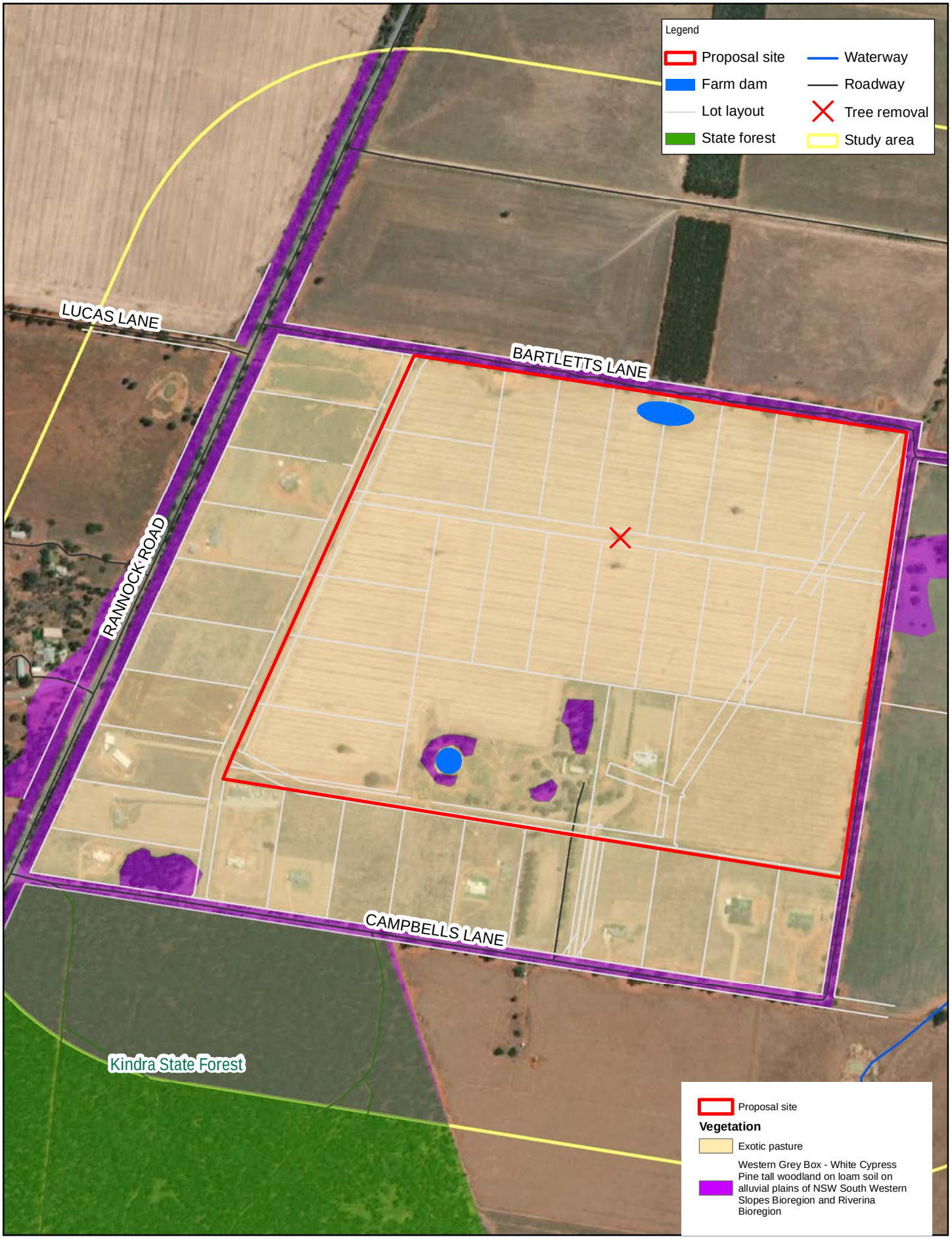
The proposal has the potential to temporarily affect the use of the study area by fauna as a result of increased disturbance during construction. The use of machinery may temporarily deter some fauna species from using potential habitat in the study area during construction.

Noise can cause change in behaviours such as foraging, requiring additional energy expenditure if fauna need to forage further afield. Impacts during construction would be short-term and temporary and would be unlikely to deter fauna from using the study area in the long term.

Given the current land use of the proposal site (agricultural) which is already subject to machinery noise, and the distance between areas in the proposal site requiring machinery work and habitat, it is unlikely that the proposal would deter species which already occur and utilise the area, from continuing to do so. In addition, with the implementation of safeguards (see section 6.2), the proposal would be unlikely to substantially affect fauna in the study area.

5.1.6 Changes in surface hydrology

Construction of the proposal may affect surface runoff characteristics near the proposal site. There is an increased risk of sediment entering the table drains during the construction period following clearing, while construction traffic is present in the area. The proposal is unlikely to cause any long-term changes in surface hydrology that would adversely impact biota in the study area. The additional surface area of the road is unlikely to have more than a minor impact.



Paper Size ISO A4

0 0.07 0.14 0.21 0.28

Kilometers

Map Projection: Mercator Auxiliary Sphere
Horizontal Datum: WGS 1984
Grid: WGS 1984 Web Mercator Auxiliary Sphere

N

GHD

Brian Plemming
Campbells Lane subdivison, Coolamon

Project No. 12579201
Revision No. -
Date 24/05/2022

Biodiversity features and impacts

Figure 5.2

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Data source: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community. Created by: bturner

5.2 Indirect impacts

5.2.1 Wildlife connectivity and habitat fragmentation

Habitat within the proposal site is highly fragmented by previous clearing and agricultural land use. The removal of one White Cypress Pine tree is unlikely to increase this fragmentation as fauna would remain able to traverse the study area and wider locality. It is unlikely that species limited in their dispersal abilities would be restrained by the proposed removal of vegetation. Treed vegetation patches in the study area and locality would remain connected. Roadside corridors in the study area connect to remnant native vegetation within roadside reserves and Kindra State Forest approximately 300 metres to the south.

The subdivision is likely to result in greater habitat connectivity in the proposal site, due to the likelihood that smaller rural/residential blocks would undergo tree line and garden plantings which would increase canopy and habitat connectivity throughout the study area over time. It was observed during site surveys that the previously re-zoned and sold lots surrounding the proposal site have undergone various tree line and plantings of a mixture of native and exotic trees, and many bird species (including the Double-barred Finch recorded) were observed in these tree plantings. The ceasing of intensive agricultural (cropping) is likely to have long term benefits to local fauna.

5.2.2 Invasion and spread of weeds

Groundcover vegetation in the study area is affected by some introduced species and escaped garden varieties. The proposal has the potential to further introduce and spread weeds in the study area by movement of machinery and light vehicle traffic during construction of the proposal.

One priority weed species was identified during field surveys, African Boxthorn (Appendix A; DPI, 2022).

The spread of weeds would be managed by implementing safeguards identified in section 6.2.

5.2.3 Contamination, erosion and sedimentation

The proposal has the potential to cause impacts to native flora and fauna through spills of fuels and chemicals. This may occur during refuelling operations or during preparation and use of chemicals for weed management. Spills could potentially have localised impacts on terrestrial fauna.

Additionally, the construction of the proposal has the potential to result in erosion of the area where soils are exposed. This could lead to sedimentation of drains, with the potential for sediment to be carried offsite during wet weather events into local drainage lines.

Contamination and sedimentation impacts have the potential to occur during construction. These impacts would be unlikely to be substantial due to the limited area of impact and the implementation of safeguards detailed in section 6.2

5.2.4 Invasion and spread of pathogens

The proposal has the potential to result in the spread of pathogens such as bacteria and fungi during construction. This could occur through the spread of soils on vehicle tyres and operatives' footwear. Impacts of pathogens include spread of known diseases that are detrimental to fauna such as the amphibian chytrid fungus. Given the minimal amount of native vegetation within the proposal site, and the low quality aquatic habitat (which would provide only marginal habitat for amphibians) present, this is unlikely to have a substantial impact.

The potential spread of pathogens would be minimised through the implementation of safeguards outlined in section 6.2.

5.2.5 Bushfire

The proposal site does not occur in an area mapped as 'Bushfire prone'. Subsequently, there is a low likelihood that the proposal could result in a bushfire or grassfire during construction, as there is very minimal connected canopy vegetation and a low cover of groundcover vegetation.

Impacts of bushfires may include death and injury to fauna, loss of woodland habitat including hollow bearing trees and loss of feed resources. In addition, bushfires may result in changes to structure and function of woodland communities including changes to groundcover composition. This would be unlikely provided the low likelihood of bushfire occurring in the proposal site.

5.3 Cumulative impacts

The proposal is unlikely to result in cumulative impacts given that impacts to native vegetation are restricted to only one White Cypress Pine tree.

5.4 Assessment of significance

The assessment of likelihood of occurrence found that the proposal is unlikely to impact on threatened biota due to the minor impacts of the proposal. As such, assessments of significance under section 1.7 of the EP&A Act and the 'EPBC Act Policy Statement Matters of National Environmental Significance: Significant impact guidelines 1.1' (DotE, 2013) were not applied to any biota. Individual justifications for the lack of impact to biota are provided in Appendix B. The preparation of a species impact statement is also not required.

6. Avoid, minimise, mitigate impacts

6.1 Avoidance

The proposal has been positioned to minimise the requirement for removal of native vegetation. In particular, the layout for lot 43 is larger than the majority of the lots to avoid the future need to remove native trees to construct a house or infrastructure on the property. The establishment of roadways and services for the proposal would only result in the removal of one White Cypress Pine tree, and very minor components of native vegetation (isolated remnant native trees) occur on a small percentage of the lots, and would not require removal to facilitate a building envelope.

6.2 Safeguards and management measures

The safeguards and management measures detailed in Table 6.1 would be implemented to minimise the impacts of the proposal on the biodiversity values in the study area. These safeguards and management measures would be implemented during construction.

Table 6.1 Safeguards and management measures

Impact	Safeguards and management measures	Timing
Removal of native vegetation	Construction boundaries are to be clearly marked prior to commencing construction. Plans showing the tree to be cleared should be clearly marked, and all other trees on site should be protected. No trees are to be removed beyond the widening footprint for either permanent or temporary construction impacts.	Pre-construction
Impacts to fauna	If required, fauna handling during vegetation removal will be undertaken by a licensed fauna ecologist or wildlife carer.	Construction
General	All construction vehicles will be parked in areas already cleared of native vegetation or within the dip zone of retained trees.	Construction
Sediment and erosion control	Temporary sediment and silt control fencing would be placed on the perimeter of works before commencement of earthworks. Weather forecasts will be checked before construction. If rainfall is predicted for the day of construction, construction will be delayed until no rainfall is predicted and access tracks are dry.	Pre-construction and construction
Water quality, chemical and fuel impacts on flora and fauna	All fuels, chemicals, fertilisers, and liquids will be stored at least 50 metres away from any waterway or drainage line and will be stored in an impervious bunded area within the compound site. Refuelling of plant and planned maintenance of machinery and plant will be carried out 50 metres away from waterways and drainage lines. Machinery will be checked prior to commencement of construction to ensure there is no oil, fuel or other liquids leaking from the machinery.	Pre-construction and construction
Spread of weeds	All soil excavated during construction will be stockpiled within existing cleared areas for immediate reuse after construction. Any surplus fill will be removed from site and disposed of at an appropriate facility.	Construction
Unexpected threatened species	If unexpected threatened biota are discovered, works will stop immediately in the vicinity of the find. The environment manager will be notified immediately and an assessment of the likely impacts of the proposal on the threatened species will be completed before work can recommence.	Construction

7. Conclusion

The proposal site occurs in a highly modified and fragmented landscape due to past and ongoing agricultural practices, and minimal areas of biodiversity value still occur within the site. The impacts of the proposal are highly limited, and would include the removal of only one White Cypress Pine tree from the centre of the proposal site to facilitate the construction of the new roadway. The loss of one low-quality tree would not impact species movement or foraging capability (where it currently exists) on site.

Woodland in the study area occurs along surrounding roadside reserves along Rannock Road, Bartletts Lane and Campbells Lane, which connects to Kindra State Forest to the south. Woodland in the road reserves and Kindra State Forrest (as observed from Campbells Lane) is dominated by White Cypress Pine and Grey Box, and would meet the criteria for the BC Act listing of the endangered ecological community Grey Box Woodland (as described in section 4.2. The proposal would not impact on any areas of this community mapped in the study area.

Impacts to threatened flora and fauna listed under the BC Act and EPBC Act are not expected (see Appendix B). Subsequently, assessments of significance with reference to section 1.7 of the EP&A Act and EPBC Act *'Significant Impact Guidelines 1.1 Matters of National Environmental Significance'* were not required to be completed. The proposal is also unlikely to have a significant impact on any biota listed under the EPBC Act and a referral to the Australian Government Minister for the Environment is not required.

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Appendices

Appendix A

Species lists

Table 8.1 Flora species recorded

Exotic	Scientific Name	Common Name	Bio Act	WoNS	BC Act	EPBC Act
-	*Atriplex semibaccata*	Creeping Saltbush	-	-	-	-
-	*Austrostipa scabra*	Speargrass	-	-	-	-
-	*Brachychiton populneus*	Kurrajong	-	-	-	-
-	*Callitris glaucophylla*	White Cypress Pine	-	-	-	-
-	*Chloris truncata*	Windmill Grass	-	-	-	-
Ex	*Conyza bonariensis*	Flaxleaf Fleabane	-	-	-	-
-	*Cynodon dactylon*	Common Couch	-	-	-	-
Ex	*Echium plantagineum*	Patterson's Curse	-	-	-	-
-	*Enchylaena tomentosa*	Ruby Saltbush	-	-	-	-
Ex	*Eragrostis cilianensis*	Stinkgrass	-	-	-	-
-	*Eucalyptus blakelyi*	Blakely's Red Gum	-	-	-	-
Ex	*Eucalyptus cladocalyx*	Sugar Gum	-	-	-	-
-	*Eucalyptus melliodora*	Yellow Box	-	-	-	-
-	*Eucalyptus microcarpa*	Western Grey Box	-	-	-	-
Ex	*Hordeum leporinum*	Barley Grass	-	-	-	-
Ex	*Lactuca serriola*	Prickly Lettuce	-	-	-	-
Ex	*Lycium ferocissimum*	African Boxthorn	Yes	Yes	-	-
Ex	*Malva parviflora*	Small-flowered Mallow	-	-	-	-
Ex	*Olea europaea* subsp. *europaea*	Olive	-	-	-	-
-	*Panicum effusum*	Hairy Panic	-	-	-	-
-	*Rytidosperma* spp.	-	-	-	-	-
Ex	*Schinus areira*	Pepper Tree	-	-	-	-
Ex	*Sonchus oleraceus*	Common Sowthistle	-	-	-	-
Ex	*Xanthium spinosum*	Bathurst Burr	-	-	-	-

Key: Ex = exotic species

Table 8.2 Fauna species recorded

Species name	Common name	BC Act	EPBC Act
Struthidea cinerea	Apostlebird	-	-
Cracticus tibicen	Australian Magpie	-	-
Corvus coronoides	Australian Raven	-	-
Chenonetta jubata	Australian Wood Duck	-	-
Taeniopygia bichenovii	Double-barred Finch	-	-
Platycercus eximius	Eastern Rosella	-	-
Psephotus haematonotus	Red-rumped Parrot	-	-
Cacatua galerita	Sulphur-crested Cockatoo	-	-
Egretta novaehollandiae	White-faced Heron	-	-
Corcorax melanorhamphos	White-winged Chough	-	-
Rhipidura leucophrys	Willie Wagtail	-	-
Acanthiza chrysorrhoa	Yellow-rumped Thornbill	-	-

Appendix B

Likelihood of occurrence and impact

Likelihoods of occurrence and impact

An evaluation of the likelihood and extent of impact to threatened and migratory fauna recorded from within the Coolamon Shire Council (DPE, 2022b) and within a 20-kilometre radius of the proposal site (EPBC Act threatened and migratory species). Records are from the EPBC Protected Matters Search Tool (PMST) available from the Department of Agriculture, Water, and the Environment (DAWE) website (DAWE, 2022a). Ecology information has been obtained from the Threatened Species Profiles on the NSW DPE website (DPE, 2022c) and from the Species Profiles and Threats Database on the Commonwealth DAWE website (DAWE, 2022b).

Status

- National - *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).
- NSW - *Biodiversity Conservation Act 2016*
- NSW – *Fisheries Management Act 1994*
- CE Critically Endangered
- E Endangered
- EP Endangered Population
- V Vulnerable
- Mi Migratory

Likelihood of occurrence in study area

Recorded – The species was observed in the study area during the current survey.

High – It is highly likely that a species inhabits the study area and is dependent on identified suitable habitat (i.e. for breeding or important life cycle periods such as winter flowering resources), has been recorded recently in the locality (within 20 kilometres) **and** is known or likely to maintain resident populations in the proposal site.

Moderate – Potential habitat is present in the study area. Species unlikely to maintain sedentary populations, however, may seasonally use resources within the study area opportunistically or during migration. The species is unlikely to be dependent (i.e. for breeding or important life cycle periods such as winter flowering resources) on habitat within the study area, or habitat is in a modified or degraded state. Includes cryptic flowering flora species that were not seasonally targeted by surveys and that have not been recorded.

Low – It is unlikely that the species inhabits the study area and has not been recorded recently in the locality (within 20 kilometres). It may be an occasional visitor, but habitat similar to the study area is widely distributed in the local area, meaning that the species is not dependent (i.e. for breeding or important life cycle periods such as winter flowering resources) on available habitat. Specific habitat is not present in the study area or the species are a non-cryptic perennial flora species that were specifically targeted by surveys and not recorded. Species with a low likelihood of occurrence are unlikely to be impacted by the proposal.

None – Suitable habitat is absent from the study area.

Likelihood of impact by the proposal

Unlikely impact - The project would have a low possibility of impact on this species/community or its habitats. No five-part test is required for this species/community.

Likely impact - The project could impact on this species/community and its habitat. A five-part test is required for this species/community.

Table 8.3 Likelihood of occurrence and impact assessment

Scientific name	Common name	BC Act / FM Act	EPBC Act	Source	Habitat requirements (DAWE, 2022b; DPE, 2022c)	Likelihood of occurrence and impact justification
Ecological communities						
-	White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	CE	CE	EPBC PMST	Characterised by the presence or prior occurrence of White Box, Yellow Box and/or Blakely's Red Gum. The trees may occur as pure stands, mixtures of the three species or in mixtures with other trees, including wattles. Commonly co-occurring eucalypts include *Eucalyptus bridgesiana*, *E. polyanthemos*, *E. rubida*, *E. pauciflora*, *E. cinerea*, *E. mannifera*, *E. macrorhyncha*, *E. microcarpa* and others.	**None:** This community was not recorded in the study area during site surveys, and is unlikely to be impacted
-	Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	E	E	EPBC PMST	Inland Grey Box Woodland includes those woodlands in which the most characteristic tree species, *Eucalyptus microcarpa* (Inland Grey Box), is often found in association with *E. populnea* subsp. *bimbil* (Bimble or Poplar Box), *Callitris glaucophylla* (White Cypress Pine), *Brachychiton populneus* (Kurrajong), *Allocasuarina luehmannii* (Buloke) or *E. melliodora* (Yellow Box), and sometimes with *E. albens* (White Box). Shrubs are typically sparse or absent although this component can be diverse and may be locally common, especially in drier western portions of the community. A variable ground layer of grass and herbaceous species is present at most sites. At severely disturbed sites the ground layer may be absent.	**Recorded:** Grey Box Woodland was recorded in the study area during surveys. The proposal would not impact on this community
-	Weeping Myall Woodlands	E	E	EPBC PMST	This ecological community generally occurs as part of a mosaic of sparse to open woodlands and treeless shrublands and grasslands. The ecological community can be dominated by Weeping Myall trees that are in a living, defoliated or dead state. 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 either as a shrubby or a grassy woodland (Beadle 1948; Keith 2004). In many areas, however, the shrub layer has disappeared through overgrazing and dieback events and the woodland now has a primarily grassy understorey (Beadle 1948).	**None:** This community was not recorded in the study area during site surveys, and is unlikely to be impacted
Birds						
Botaurus poiciloptilus	Australasian Bittern	E	E	EPBC PMST	Australasian Bitterns are widespread but uncommon over south-eastern Australia. In NSW they may be found over most of the state except for the far north-west. The species	**Low:** The species is unlikely to occur due to a lack of suitable aquatic habitat with wetland components the species

Scientific name	Common name	BC Act / FM Act	EPBC Act	Source	Habitat requirements (DAWE, 2022b; DPE, 2022c)	Likelihood of occurrence and impact justification
					favours permanent freshwater wetlands with tall, dense vegetation, particularly bullrushes (*Typha* spp.) and spikerushes (*Eleocharis* spp.), it hides during the day amongst dense reeds or rushes and feed mainly at night on frogs, fish, yabbies, spiders, insects and snails. The species may construct feeding platforms over deeper water from reeds trampled by the bird; platforms are often littered with prey remains.	requires. **Unlikely impact**
Rostratula australis	Australian Painted Snipe	E	E	EPBC PMST	In NSW, many records of the Australian Painted Snipe are from the Murray-Darling Basin including the Paroo wetlands, Lake Cowal, Macquarie Marshes, Fivebough Swamp and more recently, swamps near Balldale and Wanganella. Other important locations with recent records include wetlands on the Hawkesbury River and the Clarence and lower Hunter Valleys. The species prefers fringes of swamps, dams and nearby marshy areas where there is a cover of grasses, lignum, low scrub or open timber.	**Low:** The species is unlikely to occur due to a lack of suitable aquatic habitat with wetland components the species requires. **Unlikely impact**
Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	V	-	BioNet NSW (19 records)	Occurs in eucalypt forests and woodlands of inland plains and slopes of the Great Dividing Range. It is less commonly found on coastal plains and ranges. Mainly inhabits woodlands dominated by stringybarks or other rough-barked eucalypts, usually with an open grassy understorey, sometimes with one or more shrub species; also found in mallee and River Red Gum (*Eucalyptus camaldulensis*) Forest bordering wetlands with an open understorey of acacias, saltbush, lignum, cumbungi and grasses. Sedentary, considered to be resident in many locations throughout its range; present in all seasons or year-round at many sites; territorial year-round. Up to 80% of the diet is comprised of ants; other invertebrates (including spiders, insects, larvae, moths, beetles, flies, hemipteran bugs, cockroaches, termites and lacewings) make up the remaining percentage; nectar from Mugga Ironbark (*Eucalyptus sideroxylon*) and paperbarks, and sap from an unidentified eucalypt are also eaten. Hollows in standing dead or live trees and tree stumps are essential for nesting. Breeds in pairs or co-operatively in territories which range in size from 1.1 to 10.7 ha (mean = 4.4 ha).	**Low:** This species is unlikely to occur within the proposal site as the highly fragmented condition of remnant is not likely to support the species. **Unlikely impact**
Calidris ferruginea	Curlew Sandpiper	E	CE, M	EPBC PMST	The Curlew Sandpiper is 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-	**Low:** The species is unlikely to occur due to a lack of suitable aquatic habitat with wetland components the species

Scientific name	Common name	BC Act / FM Act	EPBC Act	Source	Habitat requirements (DAWE, 2022b; DPE, 2022c)	Likelihood of occurrence and impact justification
					Darling Basin. Inland records are probably mainly of birds pausing for a few days during migration. The Curlew Sandpiper breeds in Siberia and migrates to Australia (as well as Africa and Asia) for the non-breeding period, arriving in Australia between August and November, and departing between March and mid-April. It generally occupies littoral and estuarine habitats, and in New South Wales 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.	requires. **Unlikely impact**
Stagonopleura guttata	Diamond Firetail	V	-	BioNet NSW (2 records)	The Diamond Firetail is endemic to south-eastern Australia, extending from central Queensland to the Eyre Peninsula in South Australia. It is widely distributed in NSW, with a concentration of records from the Northern, Central and Southern Tablelands, the Northern, Central and South Western Slopes and the North West Plains and Riverina. Not commonly found in coastal districts, though there are records from near Sydney, the Hunter Valley and the Bega Valley. This species has a scattered distribution over the rest of NSW, though is very rare west of the Darling River. Found in grassy eucalypt woodlands, including Box-Gum Woodlands and Snow Gum Eucalyptus pauciflora Woodlands. Also occurs in open forest, mallee, Natural Temperate Grassland, and in secondary grassland derived from other communities. Often found in riparian areas (rivers and creeks), and sometimes in lightly wooded farmland.	**Low:** This species is unlikely to occur within the proposal site as the highly fragmented condition of remnant vegetation is not likely to support the species. **Unlikely impact**
Artamus cyanopterus cyanopterus	Dusky Woodswallow	V	-	BioNet NSW (10 records)	The Dusky Woodswallow is widespread from the coast to inland, including the western slopes of the Great Dividing Range and farther west. It is often recorded in woodlands and dry open sclerophyll forests, and has also been recorded in shrublands, heathlands regenerating forests and very occasionally in moist forests or rainforests. The understorey is typically open with sparse eucalypt saplings, acacias and other shrubs, often with coarse woody debris. It is also recorded in farmland, usually at the edges of forest or woodland or in roadside remnants or wind breaks with dead timber. The nest is an open shallow untidy cup frequently built in an open hollow, crevice or stump. Although Dusky Woodswallows have large home ranges, individuals may spend most of their time in about a 2 ha range and defend an area about 50 m around the nest. Dusky Woodswallows prefer larger remnants over smaller	**Moderate:** This mobile species may occur on occasion and forage at the edge of the proposal site. **Unlikely impact:** The removal of one White Cypress Pine tree would not impact the species given the higher availability of habitat in the study area.

Scientific name	Common name	BC Act / FM Act	EPBC Act	Source	Habitat requirements (DAWE, 2022b; DPE, 2022c)	Likelihood of occurrence and impact justification
					remnants. Competitive exclusion by Noisy Miners (*Manorina melanocephala*) is a significant threat to this species.	
Numenius madagascariensis	Eastern Curlew	-	CE, C,J,K	EPBC PMST	The Eastern Curlew is widespread in coastal regions in the north-east and south of Australia, including Tasmania, and scattered in other coastal areas. It is rarely seen inland. It breeds in Russia and north-eastern China. On passage, they are commonly seen in Japan, Korea and Borneo. Small numbers visit New Zealand. The Eastern Curlew is found on intertidal mudflats and sandflats, often with beds of seagrass, on sheltered coasts, especially estuaries, mangrove swamps, bays, harbours and lagoons.	**Low:** The species is unlikely to occur due to a lack of suitable aquatic habitat with wetland components the species requires. **Unlikely impact**
Petroica phoenicea	Flame Robin	V	-	BioNet NSW (2 records)	The Flame Robin is endemic to south eastern Australia, and ranges from near the Queensland border to south east South Australia and also in Tasmania. In NSW, it breeds in upland areas and in winter, many birds move to the inland slopes and plains. It is likely that there are two separate populations in NSW, one in the Northern Tablelands, and another ranging from the Central to Southern Tablelands. Breeds in upland tall moist eucalypt forests and woodlands, often on ridges and slopes. Prefers clearings or areas with open understoreys. The groundlayer of the breeding habitat is dominated by native grasses and the shrub layer may be either sparse or dense.	**Moderate:** This mobile species may occur on occasion and forage at the edge of the proposal site. It is known from Kindra State Forrest. **Unlikely impact:** The removal of one White Cypress Pine tree would not impact the species given the higher availability of habitat in the study area.
Apus pacificus	Fork-tailed Swift	-	Mi	EPBC PMST	Recorded in all regions of NSW. Non- breeding, and almost exclusively aerial while in Australia. Occurs over urban and rural areas as well as areas of native vegetation.	**Moderate:** The species may occur aerially over the study area on occasion. **Unlikely:** No habitat for the species would be impacted.
Pomatostomus temporalis temporalis	Grey-crowned Babbler (eastern subspecies)	V	-	BioNet NSW (15 records)	The eastern subspecies (temporalis occurs from Cape York south through Queensland, NSW and Victoria and formerly to the south east of South Australia. This subspecies also occurs in the Trans-Fly Region in southern New Guinea. In NSW, the eastern sub-species occurs on the western slopes of the Great Dividing Range, and on the western plains reaching as far as Louth and Balranald. It also occurs in woodlands in the Hunter Valley and in several locations on the north coast of NSW. It may be extinct in the southern, central and New England tablelands. Inhabits open Box-Gum Woodlands on the slopes, and Box-Cypress-pine and open Box Woodlands on alluvial plains. Woodlands on fertile soils in coastal regions.	**Moderate:** This mobile species may occur on occasion and forage at the edge of the proposal site, however would not occur in the proposal site as it requires connected vegetation to move through an area. It is known from Kindra State Forest and surrounding road reserves. **Unlikely impact:** The removal of one White Cypress Pine tree would not impact the species given the higher availability of habitat in the study area.

Scientific name	Common name	BC Act / FM Act	EPBC Act	Source	Habitat requirements (DAWE, 2022b; DPE, 2022c)	Likelihood of occurrence and impact justification
Falco hypoleucos	Grey Falcon	E	V	EPBC PMST	The Grey Falcon is sparsely distributed in NSW, chiefly throughout the Murray-Darling Basin, with the occasional vagrant east of the Great Dividing Range. The breeding range has contracted since the 1950s with most breeding now confined to arid parts of the range. There are possibly less than 5000 individuals left. Population trends are unclear, though it is believed to be extinct in areas with more than 500mm rainfall in NSW. Usually restricted to shrubland, grassland and wooded watercourses of arid and semi-arid regions, although it is occasionally found in open woodlands near the coast. Also occurs near wetlands where surface water attracts prey.	**Moderate:** This highly mobile species may occur and hunt over the site on occasion. **Unlikely impact:** No habitat of relevance to the species would be impacted by the proposal. The removal of one White Cypress Pine tree would not impact the species given the higher availability of habitat in the study area.
Hieraaetus morphnoides	Little Eagle	V	-	BioNet NSW (3 records)	The Little Eagle is found throughout the Australian mainland excepting the most densely forested parts of the Dividing Range escarpment. It occurs as a single population throughout NSW. Occupies open eucalypt forest, woodland or open woodland. Sheoak or Acacia woodlands and riparian woodlands of interior NSW are also used.	**Moderate:** This highly mobile species may occur and hunt over the site on occasion. **Unlikely impact:** No habitat of relevance to the species would be impacted by the proposal. The removal of one White Cypress Pine tree would not impact the species given the higher availability of habitat in the study area.
Melanodryas cucullata cucullata	Hooded Robin	V	-	BioNet NSW (2 records)	The Hooded Robin is widespread, found across Australia, except for the driest deserts and the wetter coastal areas - northern and eastern coastal Queensland and Tasmania. However, it is common in few places, and rarely found on the coast. It is considered a sedentary species, but local seasonal movements are possible. The south-eastern form (subspecies *cucullata*) is found from Brisbane to Adelaide and throughout much of inland NSW, with the exception of the extreme north-west, where it is replaced by subspecies *picata*. Two other subspecies occur outside NSW. Prefers lightly wooded country, usually open eucalypt woodland, acacia scrub and mallee, often in or near clearings or open areas. Requires structurally diverse habitats featuring mature eucalypts, saplings, some small shrubs and a ground layer of moderately tall native grasses.	**Moderate:** This mobile species may occur on occasion and forage at the edge of the proposal site. It is known from Kindra State Forrest. **Unlikely impact:** The removal of one White Cypress Pine tree would not impact the species given the higher availability of habitat in the study area.
Leipoa ocellata	Mallee Fowl	E	V	EPBC PMST	Occurs in semi-arid to arid mallee country in the south-west of NSW. Its NSW stronghold is centred on Mallee Cliffs NP, extending east to Balranald and with scattered records north to Mungo NP. There are also populations near Dubbo (Goonoo forest). Occasional records exist from the Pilliga,	**None:** No habitat (mallee) for the species occurs in the locality. The species known range is restricted to areas outside of the locality.

Scientific name	Common name	BC Act / FM Act	EPBC Act	Source	Habitat requirements (DAWE, 2022b; DPE, 2022c)	Likelihood of occurrence and impact justification
					around Cobar and Goulburn River NP. Predominantly inhabit mallee communities, preferring the tall, dense and floristically-rich mallee found in higher rainfall (300–450 mm mean annual rainfall) areas. Utilises mallee with a spinifex understorey, but usually at lower densities than in areas with a shrub understorey. Less frequently found in other eucalypt woodlands, such as Inland Grey Box, Ironbark or Bimble Box Woodlands with thick understorey, or in other woodlands such dominated by Mulga or native Cypress Pine species. Prefers areas of light sandy to sandy loam soils and habitats with a dense but discontinuous canopy and dense and diverse shrub and herb layers.	
Grantiella picta	Painted Honeyeater	V	V	EPBC PMST	Nomadic, occurring in low densities across most of NSW. Highest concentrations and almost all breeding occur on inland slopes of the Great Dividing Range. Inhabits Boree, Brigalow and Box Gum woodlands and Box-Ironbark forests. Specialist forager on the fruits of mistletoes, preferably of the *Amyema* genus. Nests in outer tree canopy. A specialist feeder on the fruits of mistletoes growing on woodland eucalypts and acacias. Prefers mistletoes of the genus *Amyema*.	**Moderate:** This mobile species may occur on occasion and forage at the edge of the proposal site on trees containing mistletoe. **Unlikely impact:** The removal of one White Cypress Pine tree would not impact the species given the higher availability of habitat in the study area.
Anthochaera phrygia	Regent Honeyeater	CE	CE	EPBC PMST	The Regent Honeyeater mainly inhabits temperate woodlands and open forests of the inland slopes of south-east Australia. Birds are also found in drier coastal woodlands and forests in some years. Once recorded between Adelaide and the central coast of Queensland, its range has contracted dramatically in the last 30 years to between north-eastern Victoria and south-eastern Queensland. There are only three known key breeding regions remaining: north-east Victoria (Chiltern-Albury), and in NSW at Capertee Valley and the Bundarra-Barraba region. In NSW the distribution is very patchy and mainly confined to the two main breeding areas and surrounding fragmented woodlands. In some years flocks converge on flowering coastal woodlands and forests.	**Low:** The species has not been recorded in the locality, and the proposal site does not contain suitable habitat likely to attract the species to the area. **Unlikely impact**
Petroica boodang	Scarlet Robin	V	-	BioNet NSW (1 record)	The Scarlet Robin is found from south east Queensland to south east South Australia and also in Tasmania and south west Western Australia. In NSW, it occurs from the coast to the inland slopes. After breeding, some Scarlet Robins disperse to the lower valleys and plains of the tablelands and slopes. Some birds may appear as far west as the eastern edges of the inland plains in autumn and winter.	**Moderate:** This mobile species may occur on occasion and forage at the edge of the proposal site. It is known from Kindra State Forrest. **Unlikely impact:** The removal of one White Cypress Pine tree would not

Scientific name	Common name	BC Act / FM Act	EPBC Act	Source	Habitat requirements (DAWE, 2022b; DPE, 2022c)	Likelihood of occurrence and impact justification
					The Scarlet Robin lives in dry eucalypt forests and woodlands. The understorey is usually open and grassy with few scattered shrubs. This species lives in both mature and regrowth vegetation. It occasionally occurs in mallee or wet forest communities, or in wetlands and tea-tree swamps.	impact the species given the higher availability of habitat in the study area.
Chthonicola sagittata	Speckled Warbler	V	-	BioNet NSW (3 records)	The Speckled Warbler has a patchy distribution throughout south-eastern Queensland, the eastern half of NSW and into Victoria, as far west as the Grampians. The species is most frequently reported from the hills and tablelands of the Great Dividing Range, and rarely from the coast. The Speckled Warbler lives in a wide range of Eucalyptus dominated communities that have a grassy understorey, often on rocky ridges or in gullies. Typical habitat would include scattered native tussock grasses, a sparse shrub layer, some eucalypt regrowth and an open canopy. Large, relatively undisturbed remnants are required for the species to persist in an area.	**Low:** This species requires very large remnant woodland patches to persist at a site. It is unlikely to occur in the proposal site due to the highly fragmented condition of the vegetation. **Unlikely impact**
Polytelis swainsonii	Superb Parrot	V	V	BioNet NSW (20 records) EPBC PMST	The Superb Parrot is found throughout eastern inland NSW. On the South-western Slopes their core breeding area is roughly bounded by Cowra and Yass in the east, and Grenfell, Cootamundra and Coolac in the west. Birds breeding in this region are mainly absent during winter, when they migrate north to the region of the upper Namoi and Gwydir Rivers. The other main breeding sites are in the Riverina along the corridors of the Murray, Edward and Murrumbidgee Rivers where birds are present all year round. In the Riverina the bird nests 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. Inhabit Box-Gum, Box-Cypress-pine and Boree Woodlands and River Red Gum Forest.	**Moderate:** This mobile species may occur on occasion and forage in the proposal site. It is known from road reserves and Kindra State Forest in the Coolamon area. **Unlikely impact:** The removal of one White Cypress Pine tree would not impact the species given the higher availability of habitat in the study area.
Lathamus discolor	Swift Parrot	E	CE	BioNet NSW (1 record) EPBC PMST	Breeds in Tasmania during spring and summer, migrating in the autumn and winter months to south-eastern Australia from Victoria and the eastern parts of South Australia to south-east Queensland. In NSW mostly occurs on the coast and south west slopes. On the mainland they occur in areas where eucalypts are flowering profusely or where there are abundant lerp (from	**Low:** The species has not been recorded in the locality, and the proposal site does not contain suitable habitat likely to attract the species to the area. **Unlikely impact**

Scientific name	Common name	BC Act / FM Act	EPBC Act	Source	Habitat requirements (DAWE, 2022b; DPE, 2022c)	Likelihood of occurrence and impact justification
					sap-sucking bugs) infestations. Favoured feed trees include winter flowering species such as Swamp Mahogany *Eucalyptus robusta*, Spotted Gum *Corymbia maculata*, Red Bloodwood *C. gummifera*, Mugga Ironbark *E. sideroxylon*, and White Box *E. albens*. Commonly used lerp infested trees include Inland Grey Box *E. microcarpa*, Grey Box *E. moluccana* and Blackbutt *E. pilularis*.	
Epthianura albifrons	White-fronted Chat	V	-	BioNet NSW (1 record)	The White-fronted Chat is found across the southern half of Australia, from southernmost Queensland to southern Tasmania, and across to Western Australia as far north as Carnarvon. Found mostly in temperate to arid climates and very rarely sub-tropical areas, it occupies foothills and lowlands up to 1000 m above sea level. In NSW, it occurs mostly in the southern half of the state, in damp open habitats along the coast, and near waterways in the western part of the state. Along the coastline, it is found predominantly in saltmarsh vegetation but also in open grasslands and sometimes in low shrubs bordering wetland areas. Gregarious species, usually found foraging on bare or grassy ground in wetland areas, singly or in pairs. They are insectivorous, feeding mainly on flies and beetles caught from or close to the ground.	**Low:** Suitable native grassland and shrubby habitat does not occur in the proposal site. No suitable habitat along waterways occurs for the species and it is unlikely to occur. **Unlikely impact**
Hirundapus caudacutus	White-throated Needletail	-	V, Mi	EPBC PMST	The White-throated Needletail is widespread in eastern and south-eastern Australia. In eastern Australia, it is recorded in all coastal regions of Queensland and NSW, extending inland to the western slopes of the Great Divide and occasionally onto the adjacent inland plains. A large proportion of the White-throated Needletails of the nominate subspecies would occur in Australia as non-breeding visitors. Most White-throated Needletails spend the non-breeding season in Australasia, mainly in Australia, and occasionally in New Guinea and New Zealand, though it has been suggested that some may overwinter in parts of South-East Asia. As the Needletails that occur in Australia migrate from breeding areas in the Northern Hemisphere, they would be affected by global threats.	**Moderate:** The species may occur aerially over the study area on occasion. **Unlikely**: No habitat for the species would be impacted.
Fish and amphibians						
Galaxias rostratus	Flathead Galaxias	CE	CE	EPBC PMST	The species 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.	**None:** No freshwater habitat within the study area to support the species.

Scientific name	Common name	BC Act / FM Act	EPBC Act	Source	Habitat requirements (DAWE, 2022b; DPE, 2022c)	Likelihood of occurrence and impact justification
					It is thought that the species may be locally extinct from the lower Murray, Murrumbidgee, Macquarie and Lachlan Rivers.	
Macquaria australasica	Macquarie Perch	E	E	EPBC PMST	Occurs in the upper reaches of the Lachlan, Murrumbidgee and Murray Rivers, and in parts of the Hawkesbury and Shoalhaven catchment areas. Inhabits river and lake habitats, especially the upper reaches of rivers and their tributaries. Requires clear water with deep, rocky holes and abundant cover (including aquatic vegetation, woody debris, large boulders and overhanging banks). Spawning occurs in spring and summer in shallow upland streams or flowing sections of river systems.	**None:** No freshwater habitat within the study area to support the species.
Maccullochella peelii	Murray Cod	-	V	EPBC PMST	Occurs throughout the Murray-Darling Basin. Can live in a wide range of habitats, from clear, rocky streams in the upper western slopes regions of New South Wales to the slow flowing, turbid rivers and billabongs of the western plains. Generally, they are found in waters up to 5m deep and in sheltered areas with cover from rocks, timber or overhanging banks. The presence of wood debris has been shown to be the primary factor determining Murray cod presence.	**None:** No freshwater habitat within the study area to support the species.
Nannoperca australis	Southern Pygmy Perch	E	-	EPBC PMST	The Southern Pygmy Perch was once widely distributed throughout the Murrumbidgee and Murray River systems, as well as coastal streams in South Australia and Victoria, north-eastern Tasmania and King and Flinders Islands in Bass Strait. There have been large-scale reductions in their range since European settlement, particularly in inland regions. They have recently been discovered in the upper Lachlan catchment and upper Murray River catchments. The Lachlan population appears to be restricted to one small area in the Lachlan, and several small creeks and billabongs near Albury and Holbrook. Prefers slow flowing or still waters, usually with dense aquatic vegetation and plenty of cover. Has been recorded from small streams, well-vegetated lakes (or wetlands within), billabongs and irrigation channels.	**None:** No freshwater habitat within the study area to support the species.
Maccullochella macquariensis	Trout Cod	E	-	EPBC PMST	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	**None:** No freshwater habitat within the study area to support the species.

Scientific name	Common name	BC Act / FM Act	EPBC Act	Source	Habitat requirements (DAWE, 2022b; DPE, 2022c)	Likelihood of occurrence and impact justification
					reproducing population of Trout Cod is confined to the Murray River below Yarrawonga downstream to Tocumwal.	
Litoria raniformis	Southern Bell Frog	E	V	EPBC PMST	In NSW the species was once distributed along the Murray and Murrumbidgee Rivers and their tributaries, the southern slopes of the Monaro district and the central southern tablelands as far north as Tarana, near Bathurst. Currently, the species is known to exist only in isolated populations in the Coleambally Irrigation Area, the Lowbidgee floodplain and around Lake Victoria. A few yet unconfirmed records have also been made in the Murray Irrigation Area in recent years. The species is also found in Victoria, Tasmania and South Australia, where it has also become endangered. 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.	**Low:** Aquatic habitat (dam) in the proposal site is isolated and of low quality. It is unlikely to support this species. **Unlikely impact**
Mammals						
Nyctophilus corbeni	Corben's Long-eared Bat	V	V	EPBC PMST	Overall, the distribution of the south eastern form coincides approximately with the Murray Darling Basin with the Pilliga Scrub region being the distinct stronghold for this species. Inhabits a variety of vegetation types, including Mallee, Bulloke *Allocasuarina leuhmanni* and Box Eucalypt dominated communities, but it is distinctly more common in box/ironbark/cypress-pine vegetation that occurs in a north-south belt along the western slopes and plains of NSW and southern Queensland.	**Moderate:** The species may forage in the study area on occasion. **Unlikely impact:** No habitat likely to support the species would be impacted by the proposal.
Pteropus poliocephalus	Grey-headed Flying-fox	V	V	EPBC PMST	Grey-headed Flying-foxes are generally found within 200 km of the eastern coast of Australia, from Rockhampton in Queensland to Adelaide in South Australia. In times of natural resource shortages, they may be found in unusual locations. The species occur in subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops. Roosting camps are generally located within 20 km of a regular food source and are commonly found in gullies, close to water, in vegetation with a dense canopy.	**Moderate:** The species may forage in the study area during migrations from the coast for food **Unlikely impact:** No habitat likely to support the species would removed, as the loss of one White Cypress Pine tree would not impact the species.

Scientific name	Common name	BC Act / FM Act	EPBC Act	Source	Habitat requirements (DAWE, 2022b; DPE, 2022c)	Likelihood of occurrence and impact justification
Phascolarctos cinereus	Koala	V	V	EPBC PMST	The Koala has a fragmented distribution throughout eastern Australia from north-east Queensland to the Eyre Peninsula in South Australia. In New South Wales, koala populations are found on the central and north coasts, southern highlands, southern and northern tablelands, Blue Mountains, southern coastal forests, with some smaller populations on the plains west of the Great Dividing Range. The species inhabit eucalypt woodlands and forests, and 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.	**None:** This species does not occur in the locality, and the proposal site is too fragmented to support the species.
Reptile						
Aprasia parapulchella	Pink-tailed Worm Lizard	V	V	EPBC PMST	Populations occur in the Queanbeyan/Canberra district, Cooma, Yass, Bathurst, Albury and West Wyalong areas. Inhabits grassland and open woodland with substantial embedded rock cover in sunny situations. Recorded in both native and non-native grasslands. Usually recorded under small rocks (150–600 mm basal area) shallowly embedded in the soil (2–5 cm, and use ant burrows under these rocks.	**None:** No suitable grassland or rocky habitat to support the species is present within the proposal site.
Flora						
Austrostipa wakoolica	A spear-grass	E	E	EPBC PMST	Confined to the floodplains of the Murray River tributaries of central-western and south-western NSW, with localities including Manna State Forest, Matong, Lake Tooim, Merran Creek, Tulla, Cunninyeuk and Mairjimmy State Forest (now part of South West Woodland Nature Reserve). Grows on floodplains of the Murray River tributaries, in open woodland on grey, silty clay or sandy loam soils; habitats include the edges of a lignum swamp with box and mallee; creek banks in grey, silty clay; mallee and lignum sandy-loam flat; open Cypress Pine forest on low sandy range; and a low, rocky rise.	**Low:** The proposal site is highly modified by cropping and agricultural land use, and degraded by exotic pasture species and weeds. No records for this species occur in the locality This species is unlikely to occur. **Unlikely impact**
Brachyscome papillosa	Mossgiel Daisy	V	V	BioNet NSW (1 record)	The Mossgiel Daisy is endemic to NSW and chiefly occurs within the Riverina Bioregion, from Mossgiel in the north, Murrumbidgee Valley (Yanga) National Park in the south west to Urana in the south east. Sites are scattered across this Bioregion including the Jerilderie area, the Hay Plain (Maude and Oxley) and around Darlington Point. In addition, there are a number of records from the Willandra Lakes World Heritage Area (including Mungo National Park) with a north-western outlier at Byrnedale Station,	**Low:** The proposal site is highly modified by cropping and agricultural land use, and degraded by exotic pasture species and weeds. No records for this species occur in the locality This species is unlikely to occur. **Unlikely impact**

Scientific name	Common name	BC Act / FM Act	EPBC Act	Source	Habitat requirements (DAWE, 2022b; DPE, 2022c)	Likelihood of occurrence and impact justification
					north of Menindee. The only known site on South Western Slopes is Ganmain Reserve. Recorded primarily in clay soils on Bladder Saltbush (*Atriplex vesicaria*) and Leafless Bluebush (*Maireana aphylla*) plains, but also in grassland and in Inland Grey Box (*Eucalyptus microcarpa*) - Cypress Pine (*Callitris* spp.) woodland.	
Caladenia arenaria	Sand-hill Spider Orchid	E	E	EPBC PMST	*Caladenia arenaria* is found mostly on the south west plains and western south west slopes. The original description is of a plant from Nangus, west of Gundagai (1865) and there is a report of the species from Adelong near Tumut. A record near Cootamundra needs verifying. The Sand-hill Spider Orchid is currently only known to occur in the Riverina between Urana and Narranderra. Occurs in woodland with sandy soil, especially that dominated by White Cypress Pine (*Callitris glaucophylla*).	**Low:** The proposal site is highly modified by cropping and agricultural land use, and no suitable habitat occurs. No records for this species occur in the locality This species is unlikely to occur **Unlikely impact**
Diuris tricolor	Pine Donkey Orchid	V	-	BioNet NSW (4 records)	Sporadically distributed on the western slopes of NSW, extending from south of Narrandera all the way to the north of NSW. Localities in the south include Red Hill north of Narrandera, Coolamon, and several sites west of Wagga Wagga. Condobolin-Nymagee road, Wattamondara towards Cowra, Eugowra, Girilambone, Dubbo and Cooyal, in the Central West. Pilliga SCA, Pilliga National Park and Bibblewindi State Forest in the north and Muswellbrook in the east. Disturbance regimes are not known, although the species is usually recorded from disturbed habitats. Associated species include *Callitris glaucophylla*, *Eucalyptus populnea*, *Eucalyptus intertexta*, Ironbark and Acacia shrubland. The understorey is often grassy with herbaceous plants such as Bulbine species.	**Low:** The proposal site is highly modified by cropping and agricultural land use, and degraded by exotic pasture species and weeds. No suitable undisturbed habitat occurs for this species, and it is unlikely to occur. **Unlikely impact**
Lepidium aschersonii	Spiny Peppercress	V	V	EPBC PMST	Not widespread, occurring in the marginal central-western slopes and north-western plains regions of NSW (and potentially the south western plains). In the north of the State recent surveys have recorded a number of new sites including Brigalow Nature Reserve, Brigalow State Conservation Area, Leard State Conservation Area and Bobbiwaa State Conservation Area. Also known from the West Wyalong in the south of the State. Records from Barmedman and Temora areas are likely to be no longer present. Approximately 50% of the total *Lepidium aschersonii* recorded for Australia occurs in NSW. Found on ridges of gilgai clays dominated by Brigalow (*Acacia harpophylla*), Belah (*Casuarina cristata*), Buloke	**Low:** The proposal site is highly modified by cropping and agricultural land use, and degraded by exotic pasture species and weeds. No records for this species occur in the locality This species is unlikely to occur. **Unlikely impact**

Scientific name	Common name	BC Act / FM Act	EPBC Act	Source	Habitat requirements (DAWE, 2022b; DPE, 2022c)	Likelihood of occurrence and impact justification
					(*Allocasuarina luehmanii*) and Grey Box (*Eucalyptus microcarpa*). In the south has been recorded growing in Bull Mallee (*Eucalyptus behriana*). Often the understorey is dominated by introduced plants. The species grows as a component of the ground flora, in grey loamy clays. Vegetation structure varies from open to dense, with sparse grassy understorey and occasional heavy litter.	
Lepidium monoplocoides	Winged Peppercress	E	E	EPBC PMST	Widespread in the semi-arid western plains regions of NSW. Collected from widely scattered localities, with large numbers of historical records but few recent collections. Also previously recorded from Bourke, Cobar, Urana, Lake Cargelligo, Balranald, Wanganella and Deniliquin. Recorded more recently from the Hay Plain, south-eastern Riverina, and from near Pooncarie. 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.	**Low:** The proposal site is highly modified by cropping and agricultural land use, and degraded by exotic pasture species and weeds. No records for this species occur in the locality This species is unlikely to occur. **Unlikely impact**
Swainsona murrayana	Slender Darling-pea	V	V	EPBC PMST	Found throughout NSW, it has been recorded in the Jerilderie and Deniliquin areas of the southern riverine plain, the Hay plain as far north as Willandra National Park, near Broken Hill and in various localities between Dubbo and Moree. Occurs in grassland, herbland and open Black-box woodland. Associated with low chenopod shrubs *Maireana* species, wallaby-grass *Austrodanthonia* species and spear grass *Austrostipa* species. Flowers from spring to early summer. Grows on heavy grey or brown clay, loam, or red cracking clays. Grows in a variety of vegetation types including bladder saltbush, black box and grassland communities on level plains, floodplains and depressions and is often found with *Maireana* species. Plants have been found in remnant native grasslands or grassy woodlands that have been intermittently grazed or cultivated.	**Low:** The proposal site is highly modified by cropping and agricultural land use, and degraded by exotic pasture species and weeds. No records for this species occur in the locality This species is unlikely to occur. **Unlikely impact**

Scientific name	Common name	BC Act / FM Act	EPBC Act	Source	Habitat requirements (DAWE, 2022b; DPE, 2022c)	Likelihood of occurrence and impact justification
Tylophora linearis	-	V	E	EPBC PMST	Majority of records occur in the central western region. Records from Goonoo, Pilliga West, Pilliga East, Bibblewindi, Cumbil and Eura State Forests, Coolbaggie NR, Goobang NP and Beni SCA. Also has been recorded Hiawatha State Forest near West Wyalong in the south and there are old records as far north as Crow Mountain near Barraba and near Glenmorgan in the western Darling Downs. Grows in dry scrub and open forest. Recorded from low-altitude sedimentary flats in dry woodlands of *Eucalyptus fibrosa*, *Eucalyptus sideroxylon*, *Eucalyptus albens*, *Callitris endlicheri*, *Callitris glaucophylla* and *Allocasuarina luehmannii*.	**Low:** The proposal site is highly modified by cropping and agricultural land use, and degraded by exotic pasture species and weeds. No records for this species occur in the locality This species is unlikely to occur. **Unlikely impact**

Appendix C

Background searches

Data from the BioNet Atlas website, which holds records from a number of custodians. The data are only indicative and cannot be considered a comprehensive inventory, and may contain errors and omissions. Species listed under the Sensitive Species Data Policy may have their locations denatured (^ rounded to 0.1°C; ^^ rounded to 0.01°C. Copyright the State of NSW through the Department of Planning, Industry and Environment. Search criteria : Public Report of all Valid Records of Threatened (listed on BC Act 2016) ,Commonwealth listed ,CAMBA listed ,JAMBA listed or ROKAMBA listed Entities in selected area [North: -34.61 West: 147.01 East: 147.39 South: -34.96] returned a total of 84 records of 14 species.
Report generated on 23/05/2022 10:55 AM

Kingdom	Class	Family	Species Code	Scientific Name	Exotic	Common Name	NSW status	Comm. status	Records	Info
Animalia	Aves	Accipitridae	0225	*Hieraaetus morphnoides*		Little Eagle	V,P		3	
Animalia	Aves	Psittacidae	0309	*^^Lathamus discolor*		Swift Parrot	E1,P,3	CE	1	
Animalia	Aves	Psittacidae	0277	*^^Polytelis swainsonii*		Superb Parrot	V,P,3	V	20	
Animalia	Aves	Climacteridae	8127	*Climacteris picumnus victoriae*		Brown Treecreeper (eastern subspecies)	V,P		19	
Animalia	Aves	Acanthizidae	0504	*Chthonicola sagittata*		Speckled Warbler	V,P		3	
Animalia	Aves	Meliphagidae	0448	*Epthianura albifrons*		White-fronted Chat	V,P		1	
Animalia	Aves	Pomatostomidae	8388	*Pomatostomus temporalis temporalis*		Grey-crowned Babbler (eastern subspecies)	V,P		15	
Animalia	Aves	Artamidae	8519	*Artamus cyanopterus cyanopterus*		Dusky Woodswallow	V,P		10	
Animalia	Aves	Petroicidae	8367	*Melanodryas cucullata cucullata*		Hooded Robin (south-eastern form)	V,P		2	
Animalia	Aves	Petroicidae	0380	*Petroica boodang*		Scarlet Robin	V,P		1	
Animalia	Aves	Petroicidae	0382	*Petroica phoenicea*		Flame Robin	V,P		2	
Animalia	Aves	Estrildidae	0652	*Stagonopleura guttata*		Diamond Firetail	V,P		2	
Plantae	Flora	Asteraceae	6893	*Brachyscome papillosa*		Mossgiel Daisy	V	V	1	
Plantae	Flora	Orchidaceae	4457	*^Diuris tricolor*		Pine Donkey Orchid	V,P,2		4	

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: 20-Apr-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	4
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	3
Listed Threatened Species:	27
Listed Migratory Species:	10

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Lands:	6
Commonwealth Heritage Places:	None
Listed Marine Species:	17
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

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

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	3
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
Hattah-kulkyne lakes	400 - 500km 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
Weeping Myall Woodlands	Endangered	Community may occur within area	In feature area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to occur within area	In feature area

Listed Threatened Species			[Resource Information]

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

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour may 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 likely 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 likely 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
Leipoa ocellata Malleefowl [934]	Vulnerable	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
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 likely to occur within area	In feature area
FISH			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Galaxias rostratus Flathead Galaxias, Beaked Minnow, Flat-headed Galaxias, Flat-headed Jollytail, Flat-headed Minnow [84745]	Critically Endangered	Species or species habitat may occur within area	In buffer area only
Maccullochella macquariensis Trout Cod [26171]	Endangered	Species or species habitat may occur within area	In buffer area only
Maccullochella peelii Murray Cod [66633]	Vulnerable	Species or species habitat may 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 known to occur within area	In buffer area only
FROG			
Litoria raniformis Growling Grass Frog, Southern Bell Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog [1828]	Vulnerable	Species or species habitat may occur within area	In feature area
MAMMAL			
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]	Endangered	Species or species habitat likely to occur within area	In feature area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
PLANT			
Austrostipa wakoolica [66623]	Endangered	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Caladenia arenaria Sand-hill Spider-orchid [9275]	Endangered	Species or species habitat may occur within area	In feature area
Lepidium aschersonii Spiny Pepper-cress [10976]	Vulnerable	Species or species habitat may occur within area	In feature area
Lepidium monoplocoides Winged Pepper-cress [9190]	Endangered	Species or species habitat may occur within area	In feature area
Swainsona murrayana Slender Darling-pea, Slender Swainson, Murray Swainson-pea [6765]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Vincetoxicum forsteri listed as Tylophora linearis [92384]	Endangered	Species or species habitat may occur within area	In buffer area only
REPTILE			
Aprasia parapulchella Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Listed Migratory Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

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

Commonwealth Land Name	State	Buffer Status
Communications, Information Technology and the Arts - Telstra Corporation Limited		
Commonwealth Land - Australian Telecommunications Commission [15054]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [15084]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [15083]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Corporation [15053]	NSW	In buffer area only
Commonwealth Land - Telstra Corporation Limited [15051]	NSW	In buffer area only
Commonwealth Land - Telstra Corporation Limited [15052]	NSW	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 may occur within area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may 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 known to occur within area overfly marine area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Hirundapus caudacutus](#) White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area overfly marine area	In feature area
[Lathamus discolor](#) Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
[Merops ornatus](#) Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
[Motacilla flava](#) Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area	In feature area
[Myiagra cyanoleuca](#) Satin Flycatcher [612]		Species or species habitat may occur within area overfly marine area	In feature area
[Neophema chrysostoma](#) Blue-winged Parrot [726]		Species or species habitat likely to occur within area overfly marine area	In feature area
[Numenius madagascariensis](#) Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
[Rostratula australis as Rostratula benghalensis (sensu lato)](#) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area

Extra Information

EPBC Act Referrals				[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed	In feature area
Not controlled action (particular manner)				
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	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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Appendix D

BOSET

Biodiversity Values Map

983.7 0 491.83 983.7 Metres

WGS_1984_Web_Mercator_Auxiliary_Sphere

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

THIS MAP IS NOT TO BE USED FOR NAVIGATION

Legend

- Biodiversity Values that have been mapped for more than 90 days
- Biodiversity Values added within last 90 days

Notes

© NSW Department of Planning and Environment

Biodiversity Values Map and Threshold Report

Results Summary

Date of Calculation	24/05/2022 1:51 PM	**BDAR Required***
Total Digitised Area	295.6 sqm	
Minimum Lot Size Method	LEP	
Minimum Lot Size 10,000sqm = 1ha	2,000,000 sqm	
Area Clearing Threshold 10,000sqm = 1ha	10,000 sqm	
Area clearing trigger Area of native vegetation cleared	no	no
Biodiversity values map trigger Impact on biodiversity values map(not including values added within the last 90 days)?	no	no
Date of the 90 day Expiry	N/A	

*If BDAR required has:

- at least one 'Yes': you have exceeded the BOS threshold. You are now required to submit a Biodiversity Development Assessment Report with your development application. Go to https://customer.lmbc.nsw.gov.au/assessment/AccreditedAssessor to access a list of assessors who are accredited to apply the Biodiversity Assessment Method and write a Biodiversity Development Assessment Report
- 'No': you have not exceeded the BOS threshold. You may still require a permit from local council. Review the development control plan and consult with council. You may still be required to assess whether the development is '"likely to significantly affect threatened species' as determined under the test in s. 7.3 of the Biodiversity Conservation Act 2016. You may still be required to review the area where no vegetation mapping is available.

Where the area of impact occurs on land with no vegetation mapping available, the tool cannot determine the area of native vegetation cleared and if this exceeds the Area Threshold. You will need to work out the area of native vegetation cleared - refer to the BMAT user guide for how to do this.

On and after the 90 day expiry date a BDAR will be required.

Disclaimer

This results summary and map can be used as guidance material only. This results summary and map is not guaranteed to be free from error or omission. The State of NSW and Department of Planning and Environment and its employees disclaim liability for any act done on the information in the results summary or map and any consequences of such acts or omissions. It remains the responsibility of the proponent to ensure that their development application complies will all aspects of the *Biodiversity Conservation Act 2016.*

The mapping provided in this tool has been done with the best available mapping and knowledge of species habitat requirements. This map is valid for a period of 30 days from the date of calculation (above).

Acknowledgement

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

Signature_____ Date:24/05/2022 01:51 PM

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→ The Power of Commitment