



Flora and Fauna Assessment

Lauren Jackson Sports Centre
Redevelopment

Albury, New South Wales



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Flora and Fauna Assessment- Lauren Jackson Sports Centre Redevelopment – Albury, NSW			
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The EP has been prepared by Dylan McWhinney (DM Ecological) who is an experienced ecologist and project environmental manager. He has over 10 years' experience in environmental management and consulting and is a Certified Environmental Practitioner (CEnvP) as administered by the Environmental Institute of Australia and New Zealand (EIANZ).

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Executive Summary

DM Ecological was engaged by Centrum Architects to undertake a flora and fauna assessment relating to the potential impact of the redevelopment of the Lauren Jackson Sports Centre in Albury, New South Wales (NSW). Centrum Architects have been engaged by Albury City Council to design the proposed alteration works which would include an extension of the multipurpose room as well as a new pedestrian walkway and carpark. These works require the removal of existing native vegetation prior to construction.

As the subject site is not biodiversity certified land under the Albury Local Environment Plan 2010, biodiversity certification matters relating to the subject site must be addressed in consultation with Albury City Councils environmental planners. The proposal requires removal of native vegetation in a biodiversity exclusion zone, then a Threatened Species Test of Significance (ToS) per section 7.3 of the Biodiversity Conservation Act 2016 will need to be undertaken. In addition to the ToS, the applicant is required to address Part 5 (Tree Preservation) of the Albury Development Control Plan (DCP) 2010, specifically the controls and objectives of Clause 5.2, 5.3, 5.4 and 5.6.

The study area part of the Lauren Jackson Sports Centre (LJSC) precinct located at 229 North St, East Albury NSW 2640. Specifically, the vegetation to be removed is on Lot 10 of Section 112. The relevant Plan Label is DP758013. The LJSC was built in 1984 and is owned and operated by Albury City Council.

Initial assessment included identifying whether the proposed development would exceed the biodiversity offsets scheme threshold, which would trigger the requirement for a Biodiversity Development Assessment Report (BDAR). The Biodiversity Offset Scheme Entry Threshold Map (BOSET) was accessed on 9/03/2021 and a report generated on the study area (Appendix 2). The report identified that the study area is 0.56Ha in size, for which the relevant area clearing threshold is 0.25ha. As the amount of native vegetation proposed to be cleared is well under 0.25ha, a BDAR is not required. Desktop assessments were of federal and state databases were conducted to identify records or likely occurrence of significant species within the study area. As the study area is very small (0.56ha) the desktop assessments included buffers to ensure nearby records were captured and provide overall context for the study area. Records of significant species within the buffer of the study area generated from the databases are provided in Table 2 (flora) and Table 3 (fauna) in the results section of this report and the species have been assessed to determine their likelihood of occurrence (Table 5 – results)

The NSW Bionet search returned records for 7 flora species and 39 fauna species which are conservation listed within the buffered search area (Albury LGA). The protected matters search tool (PMST) report (Appendix 3) identified EPBC Act listed species which have habitat potentially occurring within the search area, but for which there are no actual records. These are listed in Table 3.

The study area is a landscaped garden surrounding the Lauren Jackson Sports Centre. There are three remnant Blakelys Red Gum (*Eucalyptus blakelyi*) trees, along with a planted Weeping Bottlebrush (*Callistemon viminalis*) and some planted paperbark species, most likely *Melaleuca bracteata*. Beneath the *Melaleucas* are some planted *Callistemon* ‘great balls of fire’ and conifer species. The area surrounding the described vegetation is highly manicured consisting of irrigated and mowed lawns and mulched garden beds. The study area is highly modified due to extensive historical clearing associated with urban development as well as maintenance operations such as mowing and applying herbicide. The remnant Blakely’s Red Gums within the study area have been subject to repeated lopping and pruning due to their proximity to the LJSC and nearby powerlines. This has resulted in limb bifurcations and epicormic growth as evidenced by figures 3-4 (next page). Each of the three *E. blakelyi* trees appears to have developed hollows (Figure 5) in areas of passed pruning where there is dead wood.

The site assessment carried out on 5th March 2021 included targeted searches for the potentially present listed flora species (see Tables 2, 3 and 5): All were confirmed absent with high confidence. Due to the nature of maintenance in the area (mowing etc.) visibility of ground cover species was excellent. The site assessment included fauna observations with the objective of recording any threatened species presence. No conservation listed species were recorded during the site assessment. The study area has limited habitat value for small hollow dependent native species including a variety of birds, microbats and the Squirrel Glider. Species identified with at least a medium chance of occurring in the study area (Table 5) are all hollow dependent species that may be able to utilize the hollows within the trees proposed for removal. They include:

- Purple-crowned Lorikeet
- Squirrel Glider and,
- Yellow-bellied Sheathtail-bat

The proposed development may contribute to three key threatening process as listed in Schedule 4 of the BC Act, namely:

- Clearing of native vegetation
- Loss of hollow bearing trees and,
- Removal of dead wood and dead trees

The loss of native vegetation and hollows from the proposed works would be minimal, with the trees already in a highly fragmented, modified, and degraded location. The hollows have the potential to provide habitat for the species listed in Section 3.6 of this report, however due to the factors mentioned they would not be preferred habitat for any of those species. Overall, it is suggested that the proposed development is not likely to increase the impact of any of the listed key threatening processes.

Remnant trees proposed for removal all are all likely hollow bearing with the potential to provide habitat for three Biodiversity Conservation Act 2016 listed species (Section 3.6). As there could be sometime between the preparation of this report and vegetation removal works being undertaken, a pre-clearing fauna survey should be undertaken to check for any sign of fauna occupancy. Particular focus should be on identifying hollows, nests, cracks/ fissures, loose bark and checking these for fauna. Where habitat is to be removed, it should be first inspected by a wildlife ecologist/ zoologist and any occupying wildlife encouraged to vacate. In the case of hollows, they should be plugged, and fauna relocated in-situ with the hollow to the nearest appropriate habitat outside of the study area.

1. Introduction

1.1 Project background

DM Ecological was engaged by Centrum Architects to undertake a flora and fauna assessment relating to the potential impact of the redevelopment of the Lauren Jackson Sports Centre in Albury, New South Wales (NSW). Centrum Architects have been engaged by Albury City Council to design the proposed alteration works which would include an extension of the multipurpose room as well as a new pedestrian walkway and carpark. These works require the removal of existing native vegetation prior to construction.

This flora and fauna investigation will assess the potential biodiversity impacts of the above project components based on the draft demolition and site plans (December 2020), Appendix 1.

1.2 Scope of assessment

As the subject site is not biodiversity certified land under the Albury Local Environment Plan 2010, biodiversity certification matters relating to the subject site must be addressed in consultation with Albury City Council's environmental planners. DM Ecological and Albury City Council met via telephone on 1st March 2021 and established that as the proposal requires removal of native vegetation in a biodiversity exclusion zone, then a Threatened Species Test of Significance (ToS) per section 7.3 of the Biodiversity Conservation Act 2016 will need to be undertaken (A. Hewitt, pers comm 2021).

In addition to the ToS, the applicant is required to address Part 5 (Tree Preservation) of the Albury Development Control Plan (DCP) 2010, specifically the controls and objectives of Clause 5.2, 5.3, 5.4 and 5.6.

The vegetation proposed for removal and requiring assessment includes three remnant Blakely's Red Gum (*Eucalyptus blakelyi*) trees as well as some planted native shrubs.

1.3 Location of the study area

The study area part of the Lauren Jackson Sports Centre (LJSC) precinct located at 229 North St, East Albury NSW 2640. Specifically, the vegetation to be removed is on Lot 10 of Section 112 (Figure 1). The relevant Plan Label is DP758013. The LJSC was built in 1984 and is owned and operated by Albury City Council (Albury City, 2021). Whilst at the time of construction some remnant vegetation was maintained and incorporated into landscaping the area is highly modified and has no connection to any significant native vegetation extents. The remnant trees that were retained are surrounded by irrigated and regularly mowed lawns and some constructed/ planted garden beds (Figure 2). All vegetation proposed for removal is shown in Appendix 2.



Figure 1: Location of the study area (Lot 10, Section 112) at the Lauren Jackson Sports Centre in East Albury



Figure 2: Trees proposed for removal showing highly modified surrounding lawn landscape

2. Methods

2.1 Desktop Assessment

Initial assessment included identifying whether the proposed development would exceed the biodiversity offsets scheme threshold, which would trigger the requirement for a Biodiversity Development Assessment Report (BDAR). The Biodiversity Offset Scheme Entry Threshold Map (BOSET) was accessed on 9/03/2021 and a report generated on the study area (Appendix 2). The report identified that the study area is 0.56Ha in size, for which the relevant area clearing threshold is 0.25ha. As the amount of native vegetation proposed to be cleared is well under 0.25ha, a BDAR is not required. These results do not preclude the requirement to address the Albury Development Control Plan or conduct an assessment to determine whether the development is likely to have an effect on threatened species (ToS per section 7.3 of the Biodiversity Conservation Act 2016.).

Desktop assessments were of federal and state databases were conducted to identify records or likely occurrence of significant species within the study area. As the study area is very small (0.56ha) the desktop assessments included buffers to ensure nearby records were captured and provide overall context for the study area.

Databases accessed to undertake the desktop assessment included:

- The Protected Matters Search Tool (Australian Government Department of Agriculture, Water and Environment) including a 10km buffer
- NSW BioNet (NSW Department of Planning, Industry and Environment) including a buffer of the entire Albury City Local Government Area

2.2 Definitions of significance

The significance of a species or ecological community is determined by its listing status under Commonwealth or State legislation / policy (Table 1).

Table 1 Criteria for determining significance of species & ecological communities

Significance	
National	Listed as critically endangered, endangered or vulnerable under the Australian Government Environment Protection and Biodiversity and Conservation Act 1999 (EPBC Act)
State	Listed as critically endangered, endangered or vulnerable in New South Wales under the Biodiversity Conservation Act 2016 (BC Act)

Records of significant species within the buffer of the study area generated from the databases are provided in Table 2 (flora) and Table 3 (fauna) in the results section of this report and the species have been assessed to determine their likelihood of occurrence (Table 5 – results) based on the process outlined below.

2.3 Determining likelihood of occurrence of significant species

Likelihood of occurrence indicates the potential for a species or ecological community to occur regularly within the study area. It is based on expert opinion, information in relevant biodiversity databases and reports, and an assessment of the habitats on site. Likelihood of occurrence is ranked as negligible, low, medium, high or recorded. The rationale for the rank assigned is provided. Those species for which there is little or no suitable habitat within the study area, or would only very occasionally occur there, are assigned a likelihood of low or negligible and are not considered further.

Species which have at least medium likelihood of occurrence are given further consideration in this report. The need for targeted survey for these species is also considered.

2.4 Determining occurrence of significant ecological communities

The EPBC Act Policy Statement for White Box – Yellow Box – Blakely’s Red Gum grassy woodlands and derived native grasslands (CoA 2006) was used to determine the absence of this threatened ecological community within the study area. Further information can be found within the policy statement:

<https://www.environment.gov.au/system/files/resources/be2ff840-7e59-48b0-9eb5-4ad003d01481/files/box-gum.pdf>

The EPBC Act Policy Statement for Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and derived native grasslands of South Eastern Australia (CoA 2012a) was used to determine the absence of this threatened ecological community within the study area. Further information can be found within the document:

<https://www.environment.gov.au/system/files/resources/e6041636-388e-40cc-9bd4-8c8b2dbe6419/files/grey-box-booklet.pdf>

The EPBC Act Policy Statement for Weeping Myall Woodlands (CoA 2009) was used to determine the absence of this threatened ecological community within the study area. Further information can be found within the document:

<https://www.environment.gov.au/system/files/resources/a887e6ec-f4db-4476-8e72-977085028dbd/files/weeping-myall-woodlands.pdf>

2.5 Site investigation

2.5.1 Flora, fauna, and habitat assessment

The ecological assessment was undertaken on 5th March 2021 and a list of flora species was collected. Desktop assessments identified the study area is mapped as non-native for both vegetation formation and vegetation class in the state vegetation type map for Riverina – accessed on The Central Resource for Sharing and Enabling Environmental Data in NSW (SEED) database.

2.6 Limitations

Ecological surveys provide a sampling of flora and fauna at the given time and season. There are several reasons why a species may not be detected at the site during survey, such as low abundance, patchy distribution, species dormancy, seasonal conditions, and migration and breeding behaviours. If a species is not detected, it doesn’t necessarily mean that it is not present. In most cases these factors do not present a significant limitation to assessing the overall biodiversity values of a site.

2.7 Legislation and policy

The implications for the project were assessed in relation to key biodiversity legislation and policy including:

- Matters listed under the EPBC Act, associated policy statements, significant impacts guidelines, listing advice and key threatening processes
- Threatened taxa, communities and threatening processes listed under the NSW Biodiversity Conservation Act 2016 (BC Act)

3. Results

The NSW Bionet search returned records for 7 flora species and 39 fauna species which are conservation listed within the buffered search area (Albury LGA). Records of significant (listed) species within a 5km buffer of the study area generated from the databases, which are provided in Table 2 below.

Table 2 Listed flora species recorded within a buffer of the study area (Albury LGA)

Kingdom	Class	Scientific Name	Common Name	NSW status	Comm. status	Records
Animalia	Amphibia	<i>Crinia sloanei</i>	Sloane's Froglet	V,P	E	61
Animalia	Amphibia	<i>Litoria raniformis</i>	Southern Bell Frog	E1,P	V	2
Animalia	Reptilia	<i>Aprasia parapulchella</i>	Pink-tailed Legless Lizard	V,P	V	19
Animalia	Aves	<i>Anseranas semipalmata</i>	Magpie Goose	V,P		2
Animalia	Aves	<i>Oxyura australis</i>	Blue-billed Duck	V,P		3
Animalia	Aves	<i>Stictonetta naevosa</i>	Freckled Duck	V,P		1
Animalia	Aves	<i>Hirundapus caudacutus</i>	White-throated Needletail	P	V,C,J,K	1
Animalia	Aves	<i>Botaurus poiciloptilus</i>	Australasian Bittern	E1,P	E	1
Animalia	Aves	<i>Circus assimilis</i>	Spotted Harrier	V,P		1
Animalia	Aves	<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	V,P		9
Animalia	Aves	<i>Hieraaetus morphnoides</i>	Little Eagle	V,P		4
Animalia	Aves	<i>Falco hypoleucos</i>	Grey Falcon	E1,P,2		1
Animalia	Aves	<i>Falco subniger</i>	Black Falcon	V,P		1
Animalia	Aves	<i>Burhinus grallarius</i>	Bush Stone-curlew	E1,P		6
Animalia	Aves	<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo	V,P,3		12
Animalia	Aves	<i>Glossopsitta porphyrocephala</i>	Purple-crowned Lorikeet	V,P,3		3
Animalia	Aves	<i>Glossopsitta pusilla</i>	Little Lorikeet	V,P		22
Animalia	Aves	<i>Lathamus discolor</i>	Swift Parrot	E1,P,3	CE	14
Animalia	Aves	<i>Neophema pulchella</i>	Turquoise Parrot	V,P,3		32
Animalia	Aves	<i>Polytelis swainsonii</i>	Superb Parrot	V,P,3	V	1
Animalia	Aves	<i>Ninox connivens</i>	Barking Owl	V,P,3		13
Animalia	Aves	<i>Climacteris picumnus victoriae</i>	Brown Treecreeper (eastern subspecies)	V,P		32
Animalia	Aves	<i>Chthonicola sagittata</i>	Speckled Warbler	V,P		32
Animalia	Aves	<i>Anthochaera phrygia</i>	Regent Honeyeater	E4A,P	CE	42
Animalia	Aves	<i>Grantiella picta</i>	Painted Honeyeater	V,P	V	1
Animalia	Aves	<i>Melithreptus gularis gularis</i>	Black-chinned Honeyeater (eastern subspecies)	V,P		30
Animalia	Aves	<i>Pomatostomus temporalis temporalis</i>	Grey-crowned Babbler (eastern subspecies)	V,P		1
Animalia	Aves	<i>Daphoenositta chrysoptera</i>	Varied Sittella	V,P		9
Animalia	Aves	<i>Artamus cyanopterus cyanopterus</i>	Dusky Woodswallow	V,P		40
Animalia	Aves	<i>Melanodryas cucullata cucullata</i>	Hooded Robin (south-eastern form)	V,P		9
Animalia	Aves	<i>Petroica boodang</i>	Scarlet Robin	V,P		23

Kingdom	Class	Scientific Name	Common Name	NSW status	Comm. status	Records
Animalia	Aves	<i>Petroica phoenicea</i>	Flame Robin	V,P		10
Animalia	Aves	<i>Stagonopleura guttata</i>	Diamond Firetail	V,P		30
Animalia	Mammalia	<i>Dasyurus maculatus</i>	Spotted-tailed Quoll	V,P	E	1
Animalia	Mammalia	<i>Phascolarctos cinereus</i>	Koala	V,P	V	1
Animalia	Mammalia	<i>Petaurus norfolcensis</i>	Squirrel Glider	V,P		208
Animalia	Mammalia	<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	V,P	V	63
Animalia	Mammalia	<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheath-tail-bat	V,P		1
Animalia	Mammalia	<i>Falsistrellus tasmaniensis</i>	Eastern False Pipistrelle	V,P		1
Plantae	Flora	<i>Leucochrysum albicans</i> var. <i>tricolor</i>	Hoary Sunray		E	1
Plantae	Flora	<i>Senecio garlandii</i>	Woolly Ragwort	V		4
Plantae	Flora	<i>Swainsona sericea</i>	Silky Swainson-pea	V		2
Plantae	Flora	<i>Pilularia novae-hollandiae</i>	Austral Pillwort	E1,3		1
Plantae	Flora	<i>Caladenia concolor</i>	Crimson Spider Orchid	E1,P,2	V	18
Plantae	Flora	<i>Caladenia rosella</i>	Rosella Spider Orchid	E4,P,2	E	1
Plantae	Flora	<i>Amphibromus fluitans</i>	Floating Swamp Wallaby-grass	V	V	32

The protected matters search tool (PMST) report (Appendix 3) identified EPBC Act listed species which have habitat potentially occurring within the search area, but for which there are no actual records. These are listed in Table 3 (below).

Table 3 EPBC Listed species with potential habitat within 5km buffer of study area but no records

Scientific Name	Common Name	EPBC Act	PMST Comments
<i>Calidris ferruginea</i>	Curlew Sandpiper	Critically Endangered	Species or species habitat may occur within area
<i>Numenius madagascariensis</i>	Eastern Curlew	Critically Endangered	Species or species habitat may occur within area
<i>Pedionomus torquatus</i>	Plains Wanderer	Critically Endangered	Species or species habitat may occur within area
<i>Rostratula australis</i>	Australian Painted Snipe	Endangered	Species or species habitat likely to occur within area
<i>Galaxias rostratus</i>	Flathead Galaxias	Critically Endangered	Species or species habitat known to occur within area
<i>Maccullochella macquariensis</i>	Trout Cod	Endangered	Species or species habitat known to occur within area
<i>Maccullochella peelii</i>	Murray Cod	Vulnerable	Species or species habitat known to occur within area
<i>Macquaria australasica</i>	Macquarie Perch	Endangered	Species or species habitat may occur within area
<i>Synemon plana</i>	Golden Sun Moth	Critically Endangered	Species or species habitat

Scientific Name	Common Name	EPBC Act	PMST Comments
			may occur within area
<i>Dasyurus maculatus</i>	Spotted-tail Quoll	Endangered	Species or species habitat known to occur within area
<i>Nyctophilus corbeni</i>	Corben's Long-eared Bat	Vulnerable	Species or species habitat may occur within area
<i>Phascolarctos cinereus</i>	Koala	Vulnerable	Species or species habitat known to occur within area
<i>Delma impar</i>	Striped Legless Lizard	Vulnerable	Species or species habitat may occur within area
<i>Prasophyllum petilum</i>	Tarengo Leek Orchid	Endangered	Species or species habitat may occur within area
<i>Prasophyllum validum</i>	Sturdy Leek Orchid	Vulnerable	Species or species habitat may occur within area
<i>Swainsona recta</i>	Small Purple Pea	Endangered	Species or species habitat known to occur within area

3.1 Vegetation and fauna habitat

The study area is a landscaped garden surrounding the Lauren Jackson Sports Centre. There are three remnant Blakelys Red Gum (*Eucalyptus blakelyi*) trees, along with a planted Weeping Bottlebrush (*Callistemon viminalis*) and some planted paperbark species, most likely *Melaleuca bracteata*. Beneath the *Melaleucas* are some planted Callistemon 'great balls of fire' and conifer species. The area surrounding the described vegetation is highly manicured consisting of irrigated and mowed lawns and mulched garden beds. A summary of the vegetation proposed for removal is detailed in Table 4 (below).

Table 4 Site inspection data collected pertaining to proposed tree removal.

Tree ID	Common Name	Scientific Name	Latitude	Longitude	Diameter at Breast Height (DBH) (cm)	Height (m)	Spread (m)	Condition
001	Blakelys Red Gum	<i>Eucalyptus blakelyi</i>	-36.0702391	146.938148205	51.75	9	5	Poor
002	Blakelys Red Gum	<i>Eucalyptus blakelyi</i>	-36.070305225	146.937940333	72.93	10.5	8	Good
003	Blakelys Red Gum	<i>Eucalyptus blakelyi</i>	-36.070230428	146.937944357	97.13	11	7	Good
004	Bottlebrush	<i>Callistemon viminalis</i>	-36.070078667	146.937976543	12.10	3	3	Good
005a	White Cloud Tree	<i>Melaleuca bracteata</i>	-36.069938829	146.938224648	9.71	3	2	Good
005b	White Cloud Tree	<i>Melaleuca bracteata</i>	-36.069938829	146.938224648	18.47	4	2	Good
005c	White Cloud Tree	<i>Melaleuca bracteata</i>	-36.069938829	146.938224648	15.92	4	2	Good

Photographs of the vegetation proposed for removal are provided in Appendix 2.

The study area is highly modified due to extensive historical clearing associated with urban development as well as maintenance operations such as mowing and applying herbicide. The remnant Blakely's Red Gums within the study area have been subject to repeated lopping and pruning due to their proximity to the LISC and nearby powerlines. This has resulted in limb bifurcations and epicormic growth as evidenced by figures 3-4 (next page). Each of the three *E. blakelyi* trees appears to have developed hollows (Figure 5) in areas of passed pruning where there is dead wood. Whilst only a ground inspection was undertaken, the hollows appear small and would not be suitable for larger birds (e.g., Cockatoos, Galahs etc.) or larger possums (e.g., Common Brushtail Possum). The hollows could provide habitat for smaller parrot species, Squirrel Gliders and microbats. Tree 001 as identified in above table was displaying significant crown dieback – a sign of poor health.



Figure 3: Tree 001 displaying crown dieback and reshooting from branch unions - signs of stress



Figure 4: Tree 002 showing historical pruning and bifurcations.



Figure 5: Tree 003 potential spouts/ hollows providing habitat

3.2 Landscape context

The study area is part of the rural city of Albury NSW and is part of a sporting precinct, surround by sporting grounds and parks to the west. It is a highly developed area, with residential subdivisions to the south and east and industrial lots to the north (Figure 6). The area is highly isolated from any key patches of vegetation which would be considered habitat. The hollows identified in the trees within the study area could provide habitat, but likely only for highly mobile, non-terrestrial species (i.e., birds, gliders).

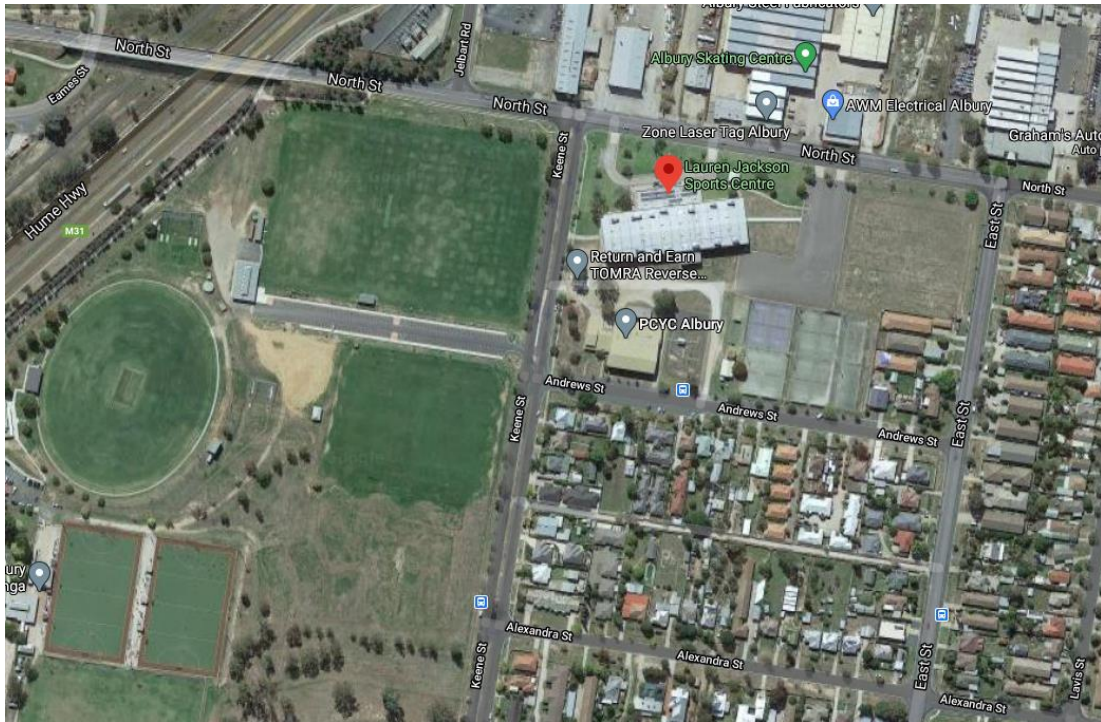


Figure 6: LJSC and surrounding landscape (Google Maps 2021)

3.3 Listed Threatened Species

3.3.1 EPBC Act and BC Act listed species

Lists of EPBC Act and BC Act listed species recorded or predicted to occur within buffered study area are provided in Tables 2 and 3. An assessment of the likelihood of these species occurring in the study area and an indication of where within the site (i.e., which habitats or features of relevance to the species) is included in Table 5 (next page). Species which record a likelihood of medium or above are considered further.

Table 5 Summary of EPBC and Biodiversity Conservation (BC) Act listed species most likely to occur in the study area

Species name	Listing status	Habitat	Likely occurrence in study area	Rational for likelihood ranking
Regent Honeyeater <i>Anthochaera phrygia</i>	Critically Endangered under EPBC Act Critically Endangered under BC Act	A range of dry woodlands and forests dominated by nectar producing tree species.	Low	Likelihood is considered low mainly due to the lack of extensive stands of ironbark, white box or yellow box eucalypts
Swift Parrot <i>Lathamus discolor</i>	Critically Endangered under EPBC Act Endangered under BC Act	A range of forests and woodlands, especially those supporting nectar-producing tree species. Also well-treed urban areas.	Low	Could utilise study area when in mainland Australia however would expect it to forage in areas with more diversity of flowering species.
Curlew Sandpiper <i>Calidris ferruginea</i>	Critically Endangered under EPBC Act Endangered under BC Act	Occur on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons, and also around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms. They are also recorded inland, though less often, including around ephemeral and permanent lakes, dams, waterholes and bore drains, usually with bare edges of mud or sand.	Negligible	No suitable habitat in study area
Flathead Galaxias <i>Galaxias rostratus</i>	Critically Endangered under EPBC Act Endangered under BC Act	Flathead Galaxias are found in still or slow-moving water bodies such as wetlands and lowland streams. They have been associated with a range of habitats including rock and sandy bottoms and aquatic vegetation	Negligible	No suitable habitat in study area
Eastern Curlew <i>Numenius madagascariensis</i>	Critically Endangered under EPBC Act Listed under FFG Act	Intertidal mudflats and sandflats, often with beds of seagrass, on sheltered coasts, especially estuaries, mangrove swamps, bays, harbours and lagoons.	Negligible	No suitable habitat in study area
Plains Wanderer <i>Pedionomus torquatus</i>	Critically Endangered under EPBC Act Endangered under BC Act	Semi-arid, lowland native grasslands that typically occur on hard red-brown soils. These grasslands support a high diversity of plant species, including a number of state and nationally threatened species. Preferred habitat of the Plains-wanderer typically comprises 50% bare ground, 10% fallen litter, and 40% herbs, forbs and grasses.	Negligible	No suitable habitat in study area

Species name	Listing status	Habitat	Likely occurrence in study area	Rational for likelihood ranking
Golden Sun Moth <i>Synemon plana</i>	Critically Endangered under EPBC Act Endangered under BC Act	Occurs in Natural Temperate Grasslands and grassy Box-Gum Woodlands in which ground layer is dominated by wallaby grasses <i>Austrodanthonia</i> spp.	Negligible	No suitable habitat in study area
Australasian Bittern <i>Botaurus poiciloptilus</i>	Endangered under EPBC Act Endangered under BC Act	Lives and forages in wetlands amongst rushes and reeds	Negligible	No suitable habitat in study area
Rosella Spider Orchid <i>Caladenia rosella</i>	Endangered under EPBC Act Presumed extinct in NSW	In VIC, woodlands and low forests of Red Box (<i>Eucalyptus polyanthemos</i>), Long-leafed Box (<i>E. goniacalyx</i>) and Red Stringybark (<i>E. macrorhyncha</i>) in well-drained, skeletal soils.	Negligible	No suitable habitat in study area
Sloane's Froglet <i>Crinia Cloanei</i>	Endangered under EPBC Act Vulnerable under BC Act	Temporary and permanent waterbodies including oxbows off creeks and rivers, farm dams, large and small natural wetlands, constructed frog ponds and temporary puddles. It prefers wetlands that contain riparian and aquatic vegetation. Most often it has been found in waterbodies that contain grasses and reeds that are of medium height and have small stem diameters, such as couch, water couch or the common spike rush (<i>Eleocharis acuta</i>).	Negligible	No suitable habitat in study area
Spotted-tail Quoll <i>Dasyurus maculatus</i>	Endangered under EPBC Act Vulnerable under BC Act	Recorded across a range of habitat types, including rainforest, open forest, woodland, coastal heath and inland riparian forest, from the sub-alpine zone to the coastline. Quolls use hollow-bearing trees, fallen logs, other animal burrows, small caves and rock outcrops as den sites.	Negligible	No suitable habitat in study area
Hoary Sunray <i>Leucochrysum albicans</i>	Endangered under EPBC Act	Occurs in a wide variety of grassland, woodland and forest habitats, generally on relatively heavy soils. Can occur in modified habitats such as semi-urban areas and roadsides. Highly dependent on the presence of bare ground for germination. In some areas, disturbance is required for successful establishment	Low	Habitat generalist but unlikely to be viable with regular mowing, spraying in a manicured environment such as study area.
Trout Cod <i>Maccullochella macquariensis</i>	Endangered under EPBC Act	Cooler upper reaches of streams, usually in flowing pools between falls and rapids where the stream bottom is bedrock, boulders and sand or gravel	Negligible	No suitable habitat in study area.

Species name	Listing status	Habitat	Likely occurrence in study area	Rational for likelihood ranking
		substrates. Larger fish are usually found in the deeper holes, smaller fish beneath and amongst boulders.		
Macquarie Perch <i>Macquaria australasica</i>	Endangered under EPBC Act	Naturally a riverine fish, preferring deep holes. Cool, upper reaches of tributaries of the Murray-Darling system. Does well in impoundments with suitable spawning streams	Negligible	No suitable habitat in study area.
Tarengo Leek Orchid <i>Prasophyllum petilum</i>	Endangered under EPBC Act Endangered under BC Act	Open sites within Natural Temperate Grasslands. Also grows in grassy woodland in association with River Tussock Poa labillardieri, Black Gum Eucalyptus aggregata and tea-trees Leptospermum spp. near Queanbeyan and within the grassy groundlayer dominated by Kanagaroo Grass under Box-Gum Woodland	Negligible	No suitable habitat in study area.
Australian Painted Snipe <i>Rostratula australis</i>	Endangered under EPBC Act Endangered under BC Act	Shallow, brackish or freshwater terrestrial wetlands, especially temporary ones which have muddy margins and small, low-lying islands.	Negligible	No suitable habitat in study area.
Small Purple Pea <i>Swainsona recta</i>	Endangered under EPBC Act Endangered under BC Act	Grassy understorey of woodlands and open-forests dominated by Blakely's Red Gum Eucalyptus blakelyi, Yellow Box E. melliodora, Candlebark Gum E. rubida and Long-leaf Box E. goniocalyx. Grows in association with understorey dominants that include Kangaroo Grass Themeda australis, poa tussocks Poa spp. and spear-grasses Austrostipa spp.	Negligible	No suitable habitat in study area.
Floating Swamp Wallby-grass <i>Amphibromus fluitans</i>	Vulnerable under EPBC Act Vulnerable under BC Act	Gilgai depressions in seasonally wet Kangaroo Grass (Themeda triandra) dominated grassland, a seasonal soak dominated by Common Bog-rush (Schoenus Apogon) and in a stand of Sedge Carex sp. aff. bichenoviana.	Negligible	No suitable habitat in study area.
Pink-tailed Legless Lizard <i>Aprasia parapulchella</i>	Vulnerable under EPBC Act Vulnerable under BC Act	Sloping, open woodland areas with predominantly native grassy ground layers, particularly those dominated by Kangaroo Grass (Themeda australis). Sites are typically well-drained, with rocky outcrops or scattered, partially-buried rocks. Commonly found beneath small, partially-embedded rocks	Negligible	No suitable habitat in study area.

Species name	Listing status	Habitat	Likely occurrence in study area	Rational for likelihood ranking
Striped Legless Lizard <i>Delma impar</i>	Vulnerable under EPBC Act Vulnerable under BC Act	Habitat is where grassland is dominated by perennial, tussock-forming grasses such as Kangaroo Grass <i>Themeda australis</i> , spear-grasses <i>Austrostipa</i> spp. and poa tussocks <i>Poa</i> spp., and occasionally wallaby grasses <i>Austrodanthonia</i> spp.	Negligible	No suitable habitat in study area.
Painted Honeyeater <i>Grantiella picta</i>	Vulnerable under EPBC Act Vulnerable under BC Act	Found in dry open forests and woodlands and is strongly associated with mistletoe. It may also be found along rivers, on plains with scattered trees and on farmland with remnant vegetation. It has been seen in urban parks and gardens where large eucalypts are available.	Low	Not preferred habitat any occupancy would only be temporary.
White-throated Needletail <i>Hirundapus caudacutus</i>	Vulnerable under EPBC Act	Almost exclusively aerial but will roost in trees on occasion	Low	Could possibly occupy airspace over study area temporarily
Southern Bell Frog <i>Litoria rainformis</i>	Vulnerable under EPBC Act Endangered under BC Act	Water bodies, including slow flowing streams and rivers, or off-stream wetlands, which contain water at least periodically	Negligible	No suitable habitat in study area.
Murray Cod <i>Maccullochella peelii</i>	Vulnerable under EPBC Act	Waterways of the Murray–Darling Basin in a wide range of warm water habitats that range from clear, rocky streams to slow flowing turbid rivers and billabongs.	Negligible	No suitable habitat in study area.
Corben's Long-eared Bat <i>Nyctophilus corbeni</i>	Vulnerable under EPBC Act Vulnerable under BC Act	Inhabits a variety of vegetation types, including mallee, bulloke and box eucalypt dominated communities, but it is distinctly more common in box/ironbark/cypress-pine vegetation.	Low	Not preferred habitat but hollows may provide refuge for travelling/ itinerant individuals.
Koala <i>Phascolarctos cinereus</i>	Vulnerable under EPBC Act Vulnerable under BC Act	Eucalypt woodlands and forests	Negligible	No suitable habitat in study area.
Superb Parrot <i>Polytelis swainsonii</i>	Vulnerable under EPBC Act Vulnerable under BC Act	Timbered waterways and nearby well-watered woodlands, especially in River Red Gums along the Murray and Murrumbidgee Rivers.	Low	Whilst there is suitable habitat on site for nesting, they require Black Box trees for foraging which are not in required proximity to the site.
Sturdy Leek Orchid <i>Prasophyllum validum</i>	Vulnerable under EPBC Act Vulnerable under BC Act	Little is known of the ecology or biology of the species, although it seems to prefer relatively dry woodland habitats.	Low	Little known about preferred habitat but viability of orchids in this highly maintained landscape is very low.

Species name	Listing status	Habitat	Likely occurrence in study area	Rational for likelihood ranking
Grey-headed Flying Fox <i>Pteropus poliocephalus</i>	Vulnerable under EPBC Act Vulnerable under BC Act	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.	Low	Not preferred habitat any occupancy would only be temporary.
Austral Pillwort <i>Pilularia novae-hollandiae</i>	Endangered under BC Act	Shallow swamps and waterways, often among grasses and sedges. It is most often recorded in drying mud as this is when it is most conspicuous.	Negligible	No suitable habitat in study area
Bush Stone Curlew <i>Burhinus grallarius</i>	Endangered under BC Act	Inhabits open forests and woodlands with a sparse grassy ground layer and fallen timber.	Low	Mowing of grass and lack of understory makes study area less than preferable compared to nearby areas.
Grey Falcon <i>Falco hypoleucos</i>	Endangered under BC Act	Usually restricted to shrubland, grassland and wooded watercourses of arid and semi-arid regions, although it is occasionally found in open woodlands near the coast.	Low	Not preferred habitat any occupancy would only be temporary.
Magpie Goose <i>Anseranas semipalmata</i>	Vulnerable under BC Act	Shallow wetlands (less than 1 m deep) with dense growth of rushes or sedges. Equally at home in aquatic or terrestrial habitats; often seen walking and grazing on land; feeds on grasses, bulbs and rhizomes	Low	Not preferred habitat any occupancy would only be temporary.
Dusky Woodswallow <i>Artamus cyanopterus cyanopterus</i>	Vulnerable under BC Act	Primarily inhabit dry, open eucalypt forests and woodlands, including mallee associations, with an open or sparse understory of eucalypt saplings, acacias and other shrubs, and groundcover of grasses or sedges and fallen woody debris. It has also been recorded in shrublands, heathlands and very occasionally in moist forest or rainforest. Also found in farmland, usually at the edges of forest or woodland.	Low	Habitat generalist with records in the Albury LGA. Could be present in study area but only temporarily.
Gang-gang Cockatoo <i>Callocephalon fimbriatum</i>	Vulnerable under BC Act	In spring and summer, generally found in tall mountain forests and woodlands, particularly in heavily timbered and mature wet sclerophyll forests. In autumn and winter, the species often moves to lower altitudes in drier more open eucalypt forests and woodlands, particularly box-gum and box-ironbark assemblages, or in dry forest in coastal areas and often found in urban	Low	Size of trees and associated hollows not preferable for nesting. Any occupancy would only be temporary

Species name	Listing status	Habitat	Likely occurrence in study area	Rational for likelihood ranking
		areas. Favours old growth forest and woodland attributes for nesting and roosting. Nests are located in hollows that are 10 cm in diameter or larger and at least 9 m above the ground in eucalypts		
Purple-crowned Lorikeet <i>Callocephalon fimbriatum</i>	Vulnerable under BC Act	Open forests and woodlands, particularly where there are large flowering eucalypts. Also recorded from mallee habitats. Breeds away from feeding areas, utilising hollow branches or holes in trees. Also roosts in dense vegetation up to several kilometers away from feeding areas	Medium	Records in Albury LGA from as recent as 2004. Hollows may present opportunity for breeding.
Speckled Warbler <i>Chthonicola sagittata</i>	Vulnerable under BC Act	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	Not preferred habitat any occupancy would only be temporary.
Spotted Harrier <i>Circus assimilis</i>	Vulnerable under BC Act	Grassy open woodland including Acacia and mallee remnants, inland riparian woodland, grassland and shrub steppe. It is found most commonly in native grassland, but also occurs in agricultural land, foraging over open habitats including edges of inland wetlands.	Low	Not preferred habitat. No nests identified in study area. Any occupancy would only be temporary.
Brown Treecreeper <i>Climacteris picumnus victoriae</i>	Vulnerable under BC Act	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 (<i>Eucalyptus camaldulensis</i>) Forest bordering wetlands with an open understorey of acacias, saltbush, lignum, cumbungi and grasses; usually not found in woodlands with a dense shrub layer; fallen timber is an important habitat component for foraging	Low	Not preferred habitat any occupancy would only be temporary.
Varied Sitella <i>Daphoenositta chrysoptera</i>	Vulnerable under BC Act	Eucalypt forests and woodlands, especially those containing rough-barked species and mature smooth-barked gums with dead branches, mallee and Acacia woodland.	Low	Not preferred habitat any occupancy would only be temporary.

Species name	Listing status	Habitat	Likely occurrence in study area	Rational for likelihood ranking
Black Falcon <i>Falco subniger</i>	Vulnerable under BC Act	Wide ranging use of vegetation classes and geographic areas	Low	Limited opportunities for prey and nesting. any occupancy would only be temporary.
Eastern False Pipistrelle <i>Falsistrellus tasmaniensis</i>	Vulnerable under BC Act	Prefers moist habitats, with trees taller than 20 m. Generally, roosts in eucalypt hollows, but has also been found under loose bark on trees or in buildings.	Low	Not preferred habitat but hollows may provide refuge for travelling/ itinerant individuals.
Little Lorikeet <i>Glossopsitta pusilla</i>	Vulnerable under BC Act	Forages primarily in the canopy of open Eucalyptus forest and woodland, yet also finds food in Angophora, Melaleuca and other tree species. Riparian habitats are particularly used. Nests in proximity to feeding areas if possible, most typically selecting hollows in the limb or trunk of smooth-barked Eucalypts. Entrance is small (3 cm) and usually high above the ground (2–15 m)	Low	Not preferred habitat but hollows may present opportunity for breeding.
White-bellied Sea-eagle <i>Haliaeetus leucogaster</i>	Vulnerable under BC Act	Coastal areas such as beaches and estuaries, inland wetlands and major inland streams.	Low	Could be seen along Goulburn River but presence within study area would be temporary roost only. No current nests in study area observed.
Little Eagle <i>Hieraaetus morphnoides</i>	Vulnerable under BC Act	Occupies open eucalypt forest, woodland or open woodland. Sheoak or Acacia woodlands and riparian woodlands of interior NSW are also used. Nests in tall living trees within a remnant patch, where pairs build a large stick nest in winter.	Low	Not preferred habitat any occupancy would only be temporary.
Hooded Robin <i>Melanodryas cucullata cucullata</i>	Vulnerable under BC Act	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. Often perches on low dead stumps and fallen timber or on low-hanging branches, using a perch-and-pounce method of hunting insect prey.	Low	Not preferred habitat any occupancy would only be temporary.
Black-chinned Honeyeater <i>Melithreptus gularis gularis</i>	Vulnerable under BC Act	Mostly upper levels of drier open forests or woodlands dominated by box and ironbark eucalypts. Also inhabits open forests of smooth-barked gums, stringybarks, ironbarks, river sheoaks (nesting habitat).	Low	Not preferred habitat any occupancy would only be temporary.

Species name	Listing status	Habitat	Likely occurrence in study area	Rational for likelihood ranking
Barking Owl <i>Ninox connivens</i>	Vulnerable under BC Act	Woodland and open forest, including fragmented remnants and partly cleared farmland. It is flexible in its habitat use, and hunting can extend in to closed forest and more open areas.	Low	Hollows not suitable site for breeding. Any occupancy would only be temporary.
Turquoise Parrot <i>Neophema pulchella</i>	Vulnerable under BC Act	Open, grassy woodland with dead trees near permanent water	Low	Study area presents hollows suitable as nest sites but not preferred habitat.
Blue-billed Duck <i>Oxyura australis</i>	Vulnerable under BC Act	Prefers deep water in large permanent wetlands and swamps with dense aquatic vegetation. The species is completely aquatic, swimming low in the water along the edge of dense cover	Negligible	No suitable habitat in study area
Squirrel Glider <i>Petaurus norfolcensis</i>	Vulnerable under BC Act	River Red Gum forests, and mixed species dry forests (including 'box-ironbark' forests) and woodlands. Both of these general habitat types typically contain many mature trees and characteristically include a substantial understory of Silver Wattle or Black Wattle.	Medium	Study area is highly fragmented and not appropriate for Squirrel Glider preferred habitat, however, hollows to provide opportunity for refuge and or breeding
Scarlet Robin <i>Petroica boodang</i>	Vulnerable under BC Act	Lives in dry eucalypt forests and woodlands. The understory is usually open and grassy with few scattered shrubs. Habitat usually contains abundant logs and fallen timber: these are important components of its habitat.	Low	Not preferred habitat any occupancy would only be temporary.
Flame Robin <i>Petroica phoenicea</i>	Vulnerable under BC Act	Breeds in upland tall moist eucalypt forests and woodlands, often on ridges and slopes. Prefers clearings or areas with open understories. The ground layer of the breeding habitat is dominated by native grasses and the shrub layer may be either sparse or dense. Occasionally occurs in temperate rainforest, and also in herb fields, heathlands, shrublands and sedgelands at high altitudes.	Low	Not preferred habitat any occupancy would only be temporary.

Species name	Listing status	Habitat	Likely occurrence in study area	Rational for likelihood ranking
Grey-crowned Babbler <i>Pomatostomus temporalis temporalis</i>	Vulnerable under BC Act	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.	Low	Not preferred habitat any occupancy would only be temporary.
Yellow-bellied Sheathtail-bat <i>Saccolaimus flaviventris</i>	Vulnerable under BC Act	Roosts singly or in groups of up to six, in tree hollows and buildings; in treeless areas they are known to utilise mammal burrows. Forages in most habitats across its very wide range, with and without trees; appears to defend an aerial territory	Medium	Habitat generalist with wide range including study area. Hollows may provide opportunities for roosting and breeding.
Woolly Ragwort <i>Senecio garlandii</i>	Vulnerable under BC Act	occurs on sheltered slopes of rocky outcrops.	Negligible	No suitable habitat in study area
Diamond Firetail <i>Stagonopleura guttata</i>	Vulnerable under BC Act	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	Not preferred habitat any occupancy would only be temporary.
Freckled Duck <i>Stictonetta naevosa</i>	Vulnerable under BC Act	Prefers permanent freshwater swamps and creeks with heavy growth of cumbungi (bullrushes), lignum or tea-tree.	Negligible	No suitable habitat in study area.
Silky Swainson-pea <i>Swainsona sericea</i>	Vulnerable under BC Act	Found in Natural Temperate Grassland and Snow Gum Eucalyptus pauciflora Woodland on the Monaro. Found in Box-Gum Woodland in the Southern Tablelands and South West Slopes. Sometimes found in association with cypress-pines Callitris spp.	Negligible	No suitable habitat in study area. Requires fire to germinate.

3.4 Site Flora Survey

The site assessment carried out on 5th March 2021 included targeted searches for the potentially present listed flora species (see Tables 2, 3 and 5):

All were confirmed absent with high confidence. Due to the nature of maintenance in the area (mowing etc.) visibility of ground cover species was excellent.

3.5 Site Fauna Survey

The site assessment carried out on 5th March 2021 included fauna observations with the objective of recording any threatened species presence. No conservation listed species were recorded during the site assessment.

3.6 Other ecological values

The study area has limited habitat value for small hollow dependent native species including a variety of birds, microbats and the Squirrel Glider. Species identified with at least a medium chance of occurring in the study area (Table 5) are all hollow dependent species that may be able to utilize the hollows within the trees proposed for removal. They include:

- Purple-crowned Lorikeet
- Squirrel Glider and,
- Yellow-bellied Sheath-tail-bat

3.7 Areas of outstanding biodiversity value

Per section 2.2 of the Threatened Species Test of Significance Guidelines, the study area was assessed against mapped areas of outstanding biodiversity value (AOBV). Figure 7 (below) demonstrates that there are no AOBV overlays associated with the study area. The minor nature of the proposed works in an already significantly disturbed area is unlikely to have any indirect impacts on any AOBV's.

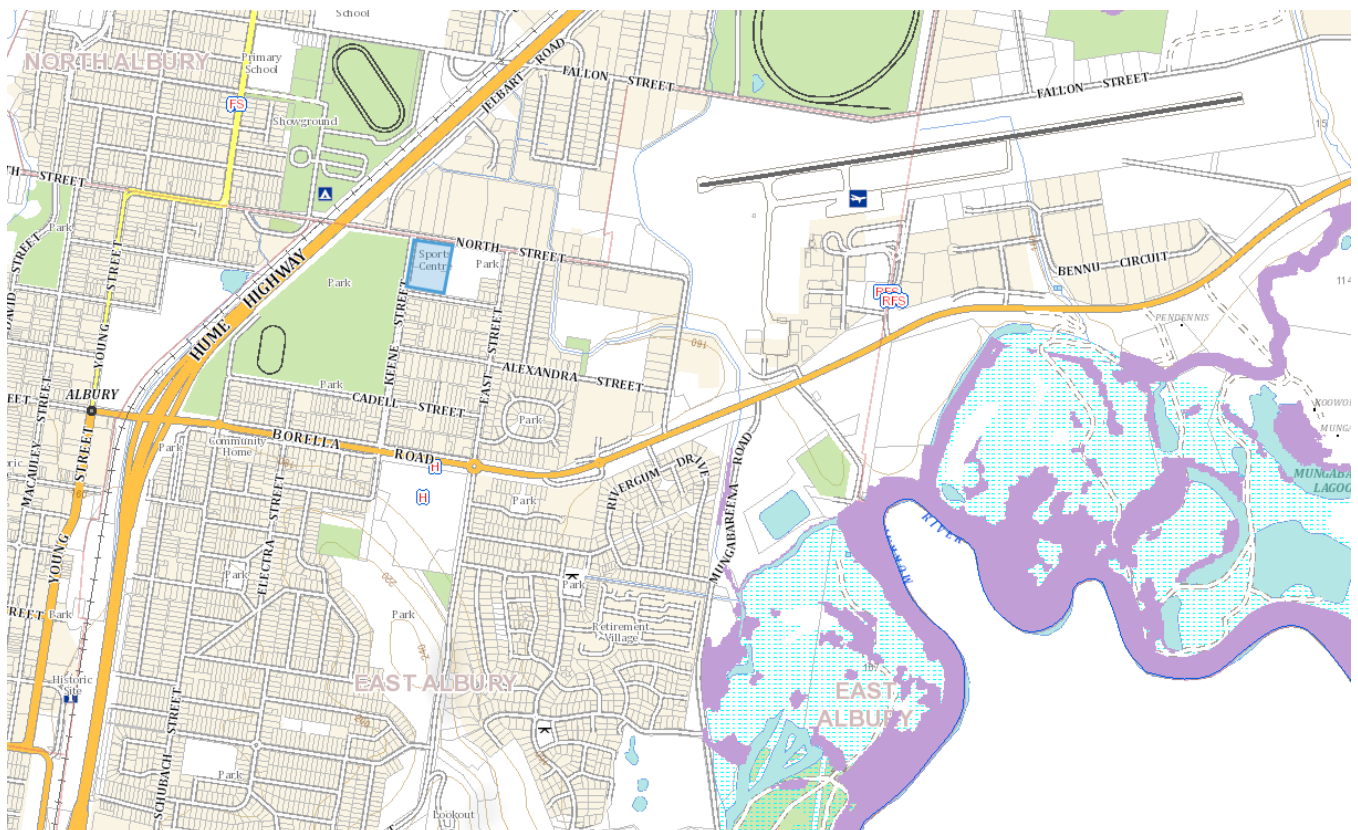


Figure 7: Study area (blue polygon) showing no AOBV overlays (NSW Government Biodiversity Values Map and Threshold Tool, 2021)

1. 3.8 Key threatening processes.

The proposed development may contribute to three key threatening process as listed in Schedule 4 of the BC Act, namely:

- Clearing of native vegetation
- Loss of hollow bearing trees and,
- Removal of dead wood and dead trees

The latter is only attributable to dead wood, not entire dead trees. The loss of native vegetation and hollows from the proposed works would be minimal, with the trees already in a highly fragmented, modified, and degraded location. The hollows have the potential to provide habitat for the species listed in Section 3.6 of this report, however due to the factors mentioned they would not be preferred habitat for any of those species. Overall, it is suggested that the proposed development is not likely to increase the impact of any of the listed key threatening processes.

4. Albury Development Control Plan

4.2 Tree preservation order

Control

An application for the Council's approval must be accompanied by an appropriately qualified specialist (i.e. Arborist) report outlining the following information:

- The location, size, species and condition (i.e., diseased, healthy, etc). [See Appendix 2 of this report](#)
- A statement that details any anticipated impacts on vegetation that may have derived from endangered ecological communities and/or that may be habitat for threatened species. [See Sections 2 and 3 of this report.](#)
- The purpose of removal and whether the pruning of the tree would be a more practical and desirable alternative. [See Section 1.1 and Appendix 1 of this report](#)
- Whether a replacement tree or trees should be planted. [Discussed below](#)
- The location, size and species of any trees proposed to replace those intended for removal. [Discussed below](#)
- The owners consent to the application being lodged. [Albury City Council \(owner\) has engaged Centrum Architects to design the redevelopment of the LJSC. They have played an active part in the commissioning of this report \(application\).](#)
- Any other relevant information regarding the tree to be removed (i.e., photographs). [See Appendix 2 of this report.](#)

Replacement trees and relevant decisions pertaining to species, size and placement will ultimately be up to Albury City Council. There is a list of recommended species in Appendix I of the Albury Development Control Plan (2010) including small and medium trees (up to 20m in height). Replacement trees should have the objective of amenity rather than habitat, as enticing fauna to this location is likely to their detriment given the lack of connectivity and exposure to pressures including light, noise, and predation from domestic animals. After discussion with Albury City, it was suggested that the most suitable species to replace the proposed *E. blakelyi* (n=3) would be Blackwood (*Acacia melanoxylon*). This is considering the information above, and also height requirements associated with nearby Albury airport.

4.3 Guidelines for the protection of trees during construction

Control

The project should implement all controls identified in Section 5.3, Part 5 of the Albury DCP. These are:

- i. Prior to commencement of development/building works, (at the site analysis stage) a comprehensive assessment of each tree on the site should be undertaken by an appropriately qualified specialist.
- ii. Where possible, no excavation or soil addition should take place within the Tree Protection Zone (TPZ) as specified in the Australian Standard – Protection of trees on development sites (AS 4970-2009). This protection may be achieved by defining the area to be protected with fences and barriers throughout the construction period. The underboring of a tree, as opposed to open trenching, may also avoid damage to the root system. No damage (either through trenching, earthworks or soil compaction) to the TPZ is permitted within the E3 Environmental Management or E4 Environmental Living zones, as trees in these areas have been counted as part of the offsets for tree losses within the 'development' areas as part of the biodiversity certification of the Albury Local Environmental Plan 2010.
- iii. Avoid drainage changes that may cause waterlogging or excess loss of soil moisture.
- iv. Avoid the spillage of chemicals, oil, fuel, detergent and other contaminants.
- v. Provide access to trees for the purposes of maintenance and irrigation.

4.4 Selection and siting of trees

Control

The project should implement all controls identified in Section 5.4, Part 5 of the Albury DCP. These are:

-
- i. The selection of trees should take into account (as a minimum) the following matters:
- Environmental tolerance and impact,
 - Drought tolerance,
 - Appearance and size,
 - Performance record,
 - Resistance to disease, and
 - Maintenance costs.

4.5 The Murray River

This part and its controls are not relevant to this project/ report as the proposed works are not within 400m of the Murray River.

4.6 Threatened Species

This report contains a Threatened Species Test of Significance in accordance with the Biodiversity Conservation Act 2016.

5. Recommendations

Remnant trees proposed for removal all are all likely hollow bearing with the potential to provide habitat for three Biodiversity Conservation Act 2016 listed species (Section 3.6). As there could be sometime between the preparation of this report and vegetation removal works being undertaken, a pre-clearing fauna survey should be undertaken to check for any sign of fauna occupancy. Particular focus should be on identifying hollows, nests, cracks/ fissures, loose bark and checking these for fauna. Where habitat is to be removed, it should be first inspected by a wildlife ecologist/ zoologist and any occupying wildlife encouraged to vacate. In the case of hollows, they should be plugged, and fauna relocated in-situ with the hollow to the nearest appropriate habitat outside of the study area.

6. References

Albury City, 2021. Albury Development Control Plan 2010

<https://www.alburycity.nsw.gov.au/strategies-and-plans/albury-development-control-plan-2010>

Albury City, 2021. Local Environment Plan 2010.

<https://www.alburycity.nsw.gov.au/strategies-and-plans/albury-local-environmental-plan-2010>

Australian Government Department of Agriculture, Water and the Environment Protected Matters Search Tool

<http://www.environment.gov.au/webgis-framework/apps/pmst/pmst.jsf>

NSW Government 2021. Biodiversity Conservation Act 2016 No 63.

<https://www.legislation.nsw.gov.au/view/html/inforce/current/act-2016-063#sch.1-pt.2-div.1>

NSW Government 2021. Biodiversity Values Map and Threshold Tool

<https://www.lmbc.nsw.gov.au/Maps/index.html?viewer=BOSETMap>

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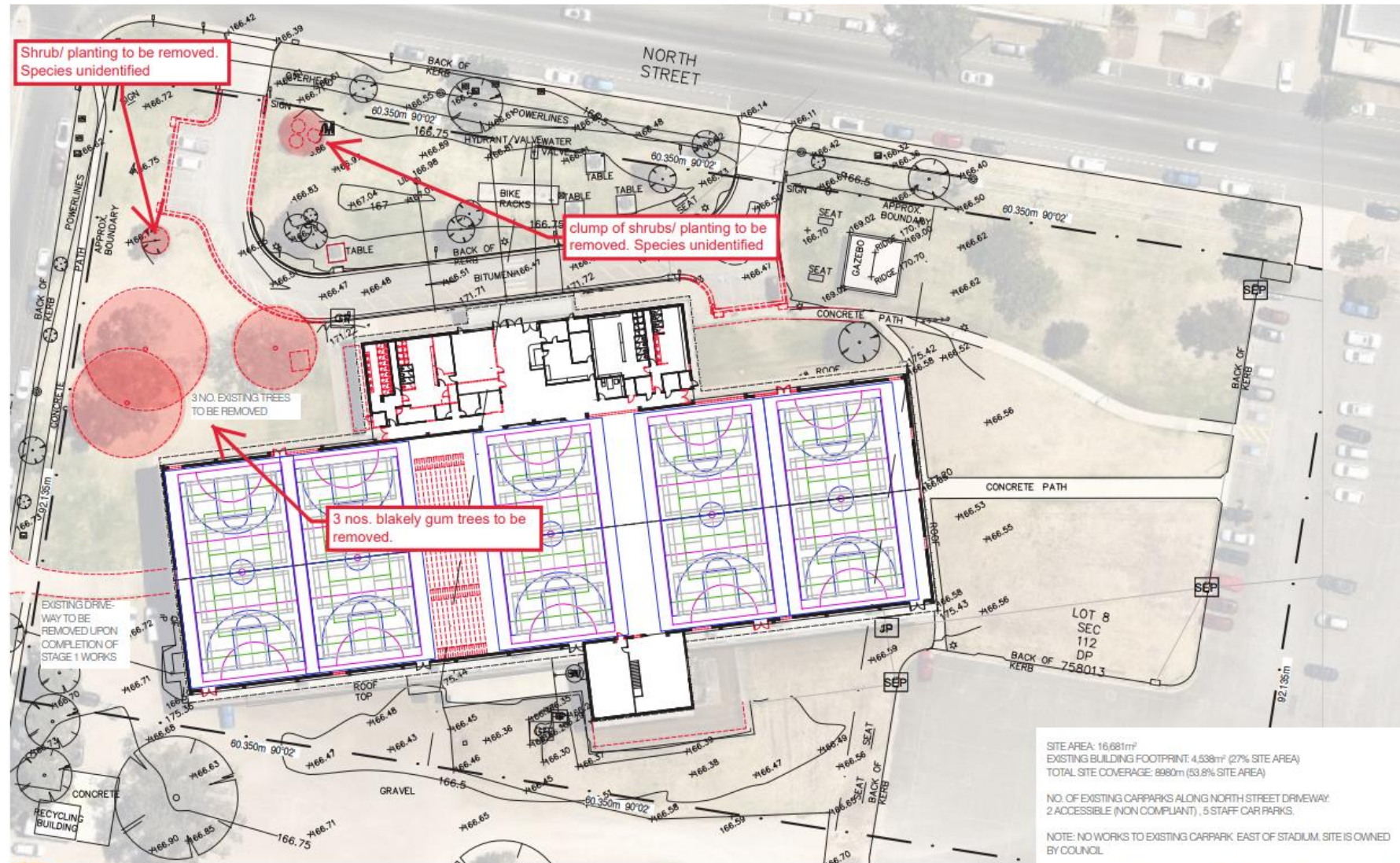
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Appendix 1- Proposed Demolition Plan and Site Plan



NOTE:

RED DOTTED LINES INDICATE ELEMENTS TO BE DEMOLISHED.

DEMOLITION PLAN 1:500

DRAFT



CENTRUM ARCHITECTS

376 Punt Road South Yarra Vic 3141
03 9821 4644 info@Centrum.com.au
www.CentrumArchitects.com.au



LAUREN JACKSON SPORTS CENTRE RE-DEVELOPMENT

229 NORTH STREET, EAST ALBURY 2640 NSW

SCALE
1:500@A3

DATE
17 Dec 2020

JOB No.
203619

TP REV
05

- STAGE 2 WORKS
(NOT INCLUDED IN CURRENT
SUBMISSION)

NOTE: NO WORKS TO EXISTING CARPARK EAST OF STADIUM. SITE IS OWNED BY COUNCIL.

TP REV
06

Appendix 2- Vegetation Proposed for Removal

LCSC Redevelopment

Proposed Tree Removal



Disclaimer: This report has been generated by various sources and is provided for information purposes only. Spatial Services does not warrant or represent that the information is free from errors or omission, or that it is exhaustive. Spatial Services gives no warranty in relation to the information, especially material supplied by third parties. Spatial Services accepts no liability for loss, damage, or costs that you may incur relating to any use or reliance upon the information in this report.

Tree ID	Common Name	Scientific Name	Latitude	Longitude	Diameter at Breast Height (DBH) (cm)	Height (m)	Spread (m)	Condition
001	Blakelys Red Gum	<i>Eucalyptus blakelyi</i>	-36.0702391	146.938148205	51.75	9	5	Poor
002	Blakelys Red Gum	<i>Eucalyptus blakelyi</i>	-36.070305225	146.937940333	72.93	10.5	8	Good
003	Blakelys Red Gum	<i>Eucalyptus blakelyi</i>	-36.070230428	146.937944357	97.13	11	7	Good
004	Bottlebrush	<i>Callistemon viminalis</i>	-36.070078667	146.937976543	12.10	3	3	Good
005a	White Cloud Tree	<i>Melaleuca bracteata</i>	-36.069938829	146.938224648	9.71	3	2	Good
005b	White Cloud Tree	<i>Melaleuca bracteata</i>	-36.069938829	146.938224648	18.47	4	2	Good
005c	White Cloud Tree	<i>Melaleuca bracteata</i>	-36.069938829	146.938224648	15.92	4	2	Good



Figure 8: Tree 001



Figure 9: Tree 002



Figure 10: Tree 003



Figure 11: Tree 004



Figure 12: Trees 005a (left), 005b (middle) and 005c (right)

Appendix 3 Protected Matters Search Tool Report



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.

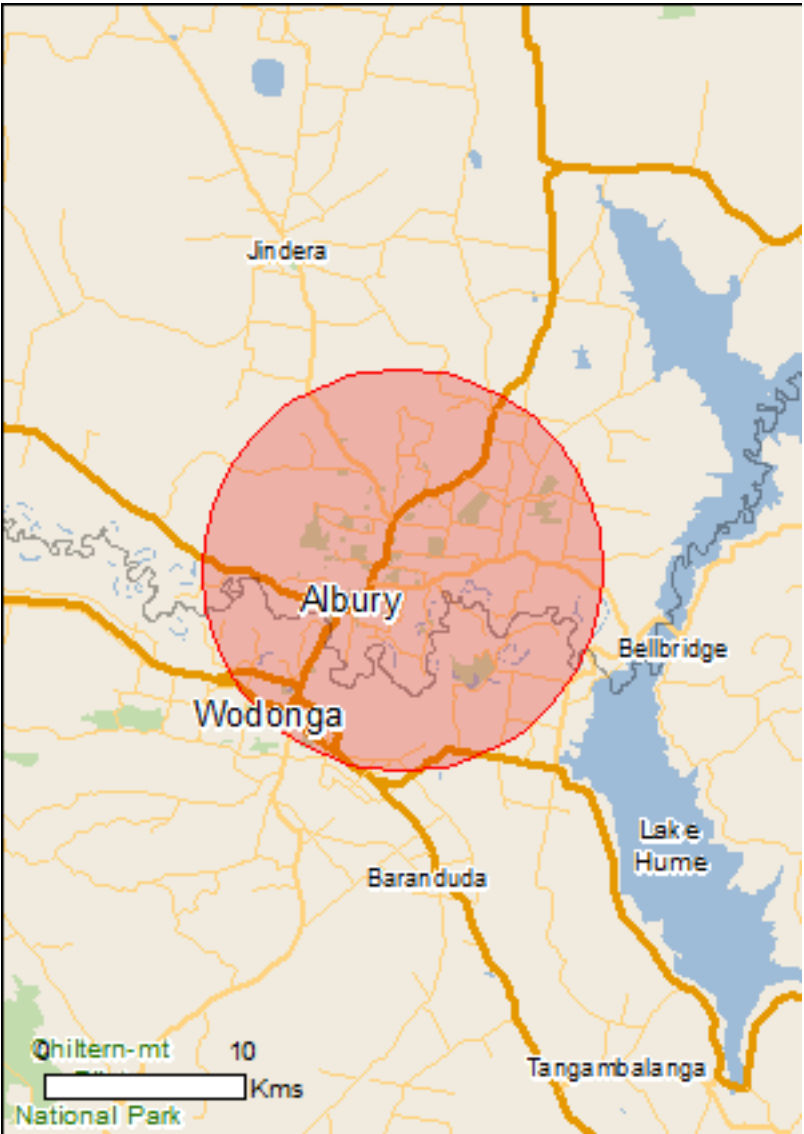
Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 10/03/21 14:20:10

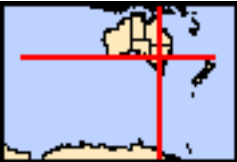
- [Summary](#)
- [Details](#)

[Matters of NES](#)[Other Matters Protected by the EPBC Act](#)[Extra Information](#)
- [Caveat](#)
- [Acknowledgements](#)



This map may contain data which are
©Commonwealth of Australia
(Geoscience Australia), ©PSMA 2015

[Coordinates](#)
Buffer: 10.0Km



Summary

Matters of National Environmental 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:	7
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	3
Listed Threatened Species:	30
Listed Migratory Species:	13

Other Matters Protected by the EPBC Act

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

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <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 Land:	12
Commonwealth Heritage Places:	1
Listed Marine Species:	20
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

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

State and Territory Reserves:	6
Regional Forest Agreements:	1
Invasive Species:	35
Nationally Important Wetlands:	1
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

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

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.

Name	Status	Type of Presence
Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	Endangered	Community likely to occur within area
Weeping Myall Woodlands	Endangered	Community may occur within area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to occur within area

Listed Threatened Species	[Resource Information]
---------------------------	--------------------------

Name	Status	Type of Presence
Birds		
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Breeding known to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species

Name	Status	Type of Presence
		habitat may occur within area
Pedionomus torquatus Plains-wanderer [906]	Critically Endangered	Species or species habitat may occur within area
Polytelis swainsonii Superb Parrot [738]	Vulnerable	Species or species habitat known to occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Fish		
Galaxias rostratus Flathead Galaxias, Beaked Minnow, Flat-headed Galaxias, Flat-headed Jollytail, Flat-headed Minnow [84745]	Critically Endangered	Species or species habitat known to occur within area
Maccullochella macquariensis Trout Cod [26171]	Endangered	Species or species habitat known to occur within area
Maccullochella peelii Murray Cod [66633]	Vulnerable	Species or species habitat known to occur within area
Macquaria australasica Macquarie Perch [66632]	Endangered	Species or species habitat may occur within area
Frogs		
Crinia sloanei Sloane's Froglet [59151]	Endangered	Species or species habitat known to occur within area
Litoria raniformis Growling Grass Frog, Southern Bell Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog [1828]	Vulnerable	Species or species habitat known to occur within area
Insects		
Synemon plana Golden Sun Moth [25234]	Critically Endangered	Species or species habitat may occur within area
Mammals		
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat known to occur within area
Nyctophilus corbeni Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat may occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat known to occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area
Plants		
Amphibromus fluitans River Swamp Wallaby-grass, Floating Swamp Wallaby-grass [19215]	Vulnerable	Species or species habitat known to occur within area
Caladenia concolor Crimson Spider-orchid, Maroon Spider-orchid [5505]	Vulnerable	Species or species habitat likely to occur within area
Leucochrysum albicans subsp. tricolor Hoary Sunray, Grassland Paper-daisy [89104]	Endangered	Species or species habitat known to occur

Name	Status	Type of Presence
within area		
Prasophyllum petilum Tarengo Leek Orchid [55144]	Endangered	Species or species habitat may occur within area
Prasophyllum validum Sturdy Leek-orchid, Mount Remarkable Leek-orchid [10268]	Vulnerable	Species or species habitat may occur within area
Swainsona recta Small Purple-pea, Mountain Swainson-pea, Small Purple Pea [7580]	Endangered	Species or species habitat known to occur within area
Reptiles		
Aprasia parapulchella Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat known to occur within area
Delma impar Striped Legless Lizard, Striped Snake-lizard [1649]	Vulnerable	Species or species habitat may occur within area
Listed Migratory Species [Resource Information]		
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat likely to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur

Name	Threatened	Type of Presence
		within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land

[[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.

Name
Commonwealth Land - Commonwealth Land - Airservices Australia Commonwealth Land - Australian Postal Commission Commonwealth Land - Australian Postal Corporation Commonwealth Land - Australian Telecommunications Commission Commonwealth Land - Commonwealth Trading Bank of Australia Commonwealth Land - Defence Housing Authority Commonwealth Land - Defence Service Homes Corporation Commonwealth Land - Director of War Service Homes Defence - ARMY RECRUITING OFFICE - ALBURY Defence - BANDIANA MILITARY AREA Defence - WIRLINGA ORDNANCE DEPOT

Commonwealth Heritage Places

[[Resource Information](#)]

Name	State	Status
Historic		
Albury Post Office	NSW	Listed place

Listed Marine Species

[[Resource Information](#)]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Breeding known to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area

Name	Threatened	Type of Presence
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Chrysococcyx osculans Black-eared Cuckoo [705]		Species or species habitat likely to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat may occur within area

Extra Information

State and Territory Reserves		[Resource Information]
Name		State
Bonegilla N.C.R.		VIC
Bonegilla Wetland B.R.		VIC
River Murray Reserve		VIC
River Murray Reserve (non-PV)		VIC
Ryans Lagoon N.C.R.		VIC
Wodonga B.R		VIC

Regional Forest Agreements		[Resource Information]
Note that all areas with completed RFAs have been included.		
Name		State
North East Victoria RFA		Victoria

Invasive Species		[Resource Information]
Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.		

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Alauda arvensis Skylark [656]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Carduelis chloris European Greenfinch [404]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Passer montanus Eurasian Tree Sparrow [406]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species

Name	Status	Type of Presence
		habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Capra hircus Goat [2]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Anredera cordifolia Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]		Species or species habitat likely to occur within area
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Cytisus scoparius Broom, English Broom, Scotch Broom, Common Broom, Scottish Broom, Spanish Broom [5934]		Species or species habitat likely to occur within area
Eichhornia crassipes Water Hyacinth, Water Orchid, Nile Lily [13466]		Species or species habitat likely to occur within area
Genista monspessulana Montpellier Broom, Cape Broom, Canary Broom, Common Broom, French Broom, Soft Broom [20126]		Species or species habitat likely to occur within area
Lycium ferocissimum African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur within area
Nassella neesiana Chilean Needle grass [67699]		Species or species habitat likely to occur within area
Nassella trichotoma Serrated Tussock, Yass River Tussock, Yass		Species or species

Name	Status	Type of Presence
Tussock, Nassella Tussock (NZ) [18884]		habitat likely to occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Solanum elaeagnifolium Silver Nightshade, Silver-leaved Nightshade, White Horse Nettle, Silver-leaf Nightshade, Tomato Weed, White Nightshade, Bull-nettle, Prairie-berry, Satansbos, Silver-leaf Bitter-apple, Silverleaf-nettle, Trompillo [12323] Ulex europaeus Gorse, Furze [7693]		Species or species habitat likely to occur within area

Nationally Important Wetlands		[Resource Information]
Name		State
Ryan's Lagoon		VIC

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

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.

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

Where very little information is available for 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 reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

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

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

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

Coordinates

-36.069956 146.938567,-36.070771 146.938427,-36.070701 146.937773,-36.069869 146.937934,-36.069956 146.938567

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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