St Andrews Drive, Strathalbyn (Stage 2A, 2B, 3 and 4)

Native Vegetation Clearance

Data Report

Clearance under the *Native Vegetation Regulations 2017*

09/02/2024

Prepared by J. Carpenter – EBS Ecology (NVC Accredited Consultant)

St Andrews Drive, Strathalbyn (Stage 2A, 2B, 3 and 4) Native Vegetation Clearance Data Report

09/02/2024

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Prepared by EBS Ecology for WelCo Group

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Glossary and abbreviations

A1	Vegetation association A1 - *Chloris truncata / Rytidosperma caespitosum* Open Tussock Grassland.
A2	Vegetation association A2 - *Eucalyptus camaldulensis* ssp. *camaldulensis / Eucalyptus leucoxylon* ssp. *leucoxylon +/- Eucalyptus odorata* Woodland over *Olea europaea, Acacia pycnantha, Austrostipa* sp. and *Themeda triandra.*
BAM	Bushland Assessment Method.
BDBSA	Biological Database of South Australia (maintained by DEW).
DCCEEW	Department of Climate Change, Energy, the Environment and Water (Commonwealth).
DEW	Department for Environment and Water (South Australia).
EBS Ecology	Environment and Biodiversity Services Pty Ltd (trading as EBS Ecology).
EPBC Act	*Environmental Protection and Biodiversity Conservation Act 1999*.
FHS	Fauna Habitat Score.
ha	Hectare(s).
IBRA	Interim Biogeographical Regionalisation of Australia.
km	Kilometre(s).
NatureMaps	Initiative of DEW that provides a common access point to maps and geographic information about South Australia's natural resources in an interactive online mapping format.
NPDS	Native Plant Diversity Score.
NPW Act	*National Parks and Wildlife Act 1972*.
NV Act	*Native Vegetation Act 1991*.
NVC	Native Vegetation Council.
PMST	Protected Matters Search Tool (under the EPBC Act; maintained by DCCEEW).
Project	Construction of a residential subdivision including 89 house sites and associated access roads at St Andrews Drive, Strathalbyn.
Project Area	The area where native vegetation clearance is proposed (i.e. the footprint of the Project).
SA	South Australia(n).
Search Area	5 km buffer of the Project Area considered in the desktop assessment database searches.
SEB	Significant Environmental Benefit.
sp.	Species.
spp.	Species (plural).
ssp.	Sub-species.
STAM	Scattered Tree Assessment Method.
TEC	Threatened Ecological Community.
TFlS	Threatened Flora Score.
TFS	Threatened Fauna Score.
UBS	Unit Biodiversity Score.
var.	Variety (a taxonomic rank below that of species and subspecies, but above that of form).

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Attachment 1 – Photographs of scattered trees assessed for clearance.

Attachment 2 – Bushland Assessment Method scoresheets.

Attachment 3 – Spatial data.

1. Application information

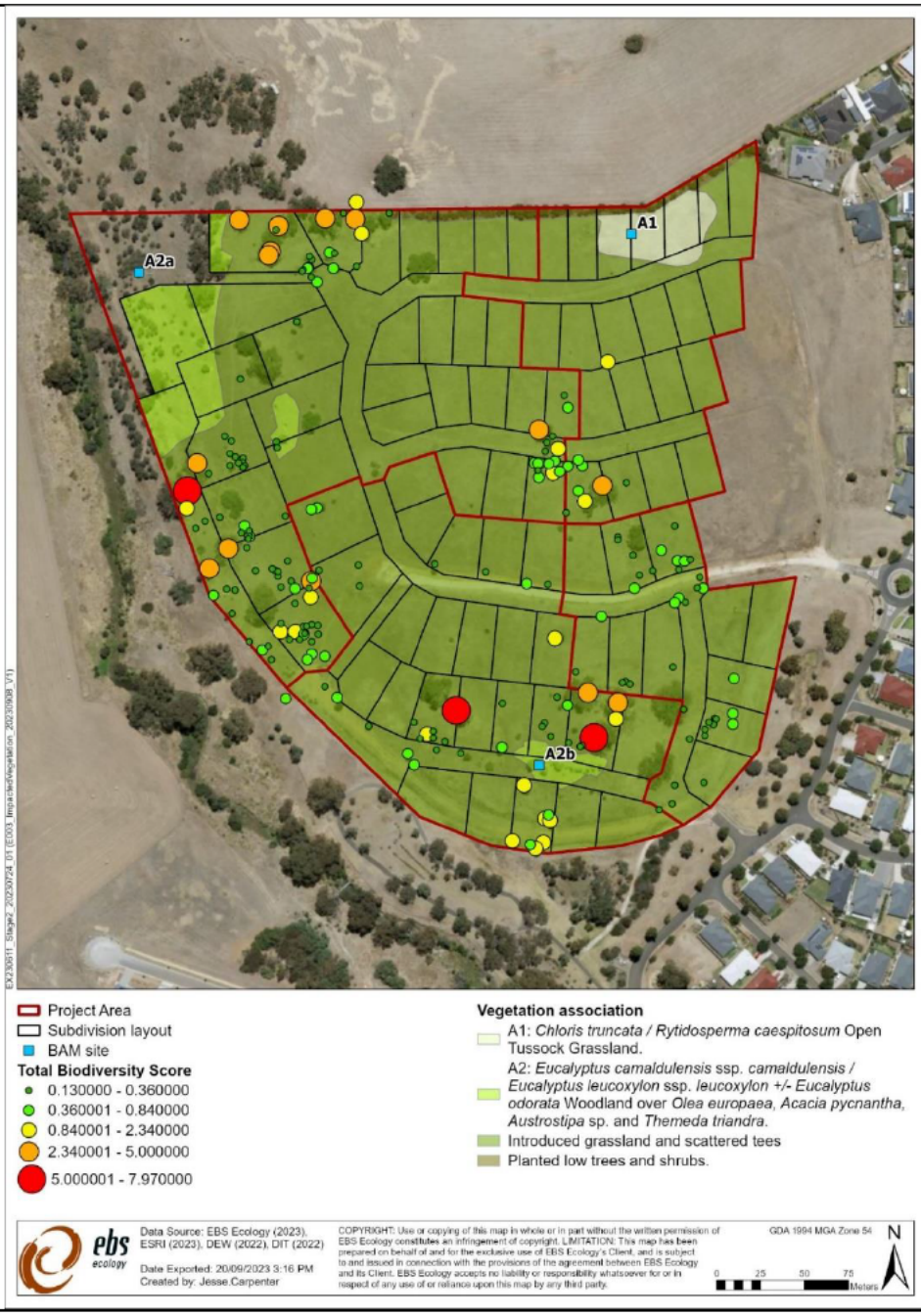
Details of the native vegetation clearance application are summarised in Table 1, with a summary of the proposed clearance provided in Table 2.

Table 1. Application details.

Applicant:	Wel.Co Group		
Key contact:	[redacted]		
Landowner:	Wel.Co		
Site Address:	St Andrews Drive, Strathalbyn SA		
Local Government Area:	Alexandrina	**Hundred:**	Macclesfield
Title ID:	CT/6047/945	**Parcel ID**	D81992 A304

Table 2. Summary of the proposed clearance.

Purpose of clearance:	Clearance required for the construction of a residential subdivision.
Native Vegetation Regulation:	Regulation 12, Schedule 1; clause 35, Residential subdivision.
Description of the vegetation under application:	The native vegetation under application includes scattered trees and two vegetation associations: **A1**: *Chloris truncata / Rytidosperma caespitosum* Open Tussock Grassland. **A2**: *Eucalyptus camaldulensis* ssp. *camaldulensis / Eucalyptus leucoxylon* ssp. *leucoxylon* +/- *Eucalyptus odorata* Woodland over *Olea europaea, Acacia pycnantha, Austrostipa* sp. and *Themeda triandra*. The scattered trees under application include four species: • *Acacia pycnantha* (Golden Wattle). • *Eucalyptus camaldulensis* ssp. *camaldulensis* (River Red Gum). • *Eucalyptus leucoxylon* ssp. *leucoxylon* (South Australian Blue Gum). • *Eucalyptus odorata* (Peppermint Box). Many are small trees of a young age, with a Total Biodiversity Score of <2.00. Remaining vegetation in the Project Area consists of planted trees and shrubs, introduced low trees and grassland dominated by introduced species.
Total proposed clearance – area (ha) and/or number of trees:	Total proposed clearance: A1: 0.557 hectares (ha). A2: 0.197 ha. Scattered trees: 279.
Level of clearance:	Level 4.
Overlay (Planning and Design Code):	Native Vegetation Overlay.

Map of proposed clearance area:	
Mitigation Hierarchy:	***Avoidance*** Given the proposed lot size is<2000 m^2, it is not possible to avoid clearing native vegetation. ***Minimization*** Where practicable, hollow-bearing trees and trees with a Total Biodiversity Score greater than or equal to 5.00 will be retained. The north-west corner of the Project Area has been set aside as a reserve. This retains 0.38 ha of vegetation association A2, including the area of that association in the best condition. All access roads, construction laydown areas, building envelopes, property boundaries and associated infrastructure will be located within the impacted areas shown in Figure 10 (page 25). To minimise the risk of accidental clearance, indirect impacts and impact to fauna, construction contractors will implement a Vegetation Management Plan. ***Rehabilitation or restoration*** The clearance is permanent in nature. No rehabilitation or restoration will be implemented.

	Offset The proponent will offset the adverse impacts of the clearance by payment of an SEB into the Native Vegetation Fund.
SEB Offset proposal	Payment of $143,747.91, including an administration fee of $7,492.40.

2. Purpose of clearance

2.1. Description

Native vegetation clearance is required for the construction of a residential subdivision including 89 house sites and associated access roads (the Project). The Project is in Strathalbyn adjacent to the existing St Andrews Drive. The construction of the residential subdivision will occur in 5 stages, with this report and clearance application focusing on Stage 2A, Stage 2B, Stage 3 and Stage 4. Stage 1 of the subdivision has been assessed previously as a Level 1 clearance application (EBS Ecology, 2023).

2.2. Background

Two terms are used to describe the location of the Project:

- Project Area – the area where native vegetation clearance is proposed (i.e. the footprint of the Project).
- Search Area – a 5 kilometre (km) buffer surrounding the Project Area and used for the desktop component of this clearance data report.

The Project Area is located at Strathalbyn, approximately 45 km south-east of Adelaide. The area consists of rolling hills rising above the Angus River, with the river and its riparian zone situated outside the southern and western boundary. There are no wetlands or watercourses inside the Project Area.

The Project Area has been historically cleared of native vegetation and used for dryland agricultural production. Currently the land is unused and is bordered to the north by cropping pasture and to the east by residential areas.

The Interim Bio-regionalisation of Australia (IBRA) classifies Australia's landscapes into geographically distinct Bioregions based on common climate, landform, geology and native vegetation. The IBRA landscape classifications for the Project Area are described in Table 3.

Table 3. IBRA classification and Remnancy of the Project Area.

IBRA Classification	Region (Project Area)	Remnant Vegetation (Remnancy)
Bioregion	Kanmantoo	-
Subregion	Fleurieu	12%
Environmental Association	Scotts Hill	10%

2.3. General location map

The Project Area and Search Area are indicated on the map in Figure 1.

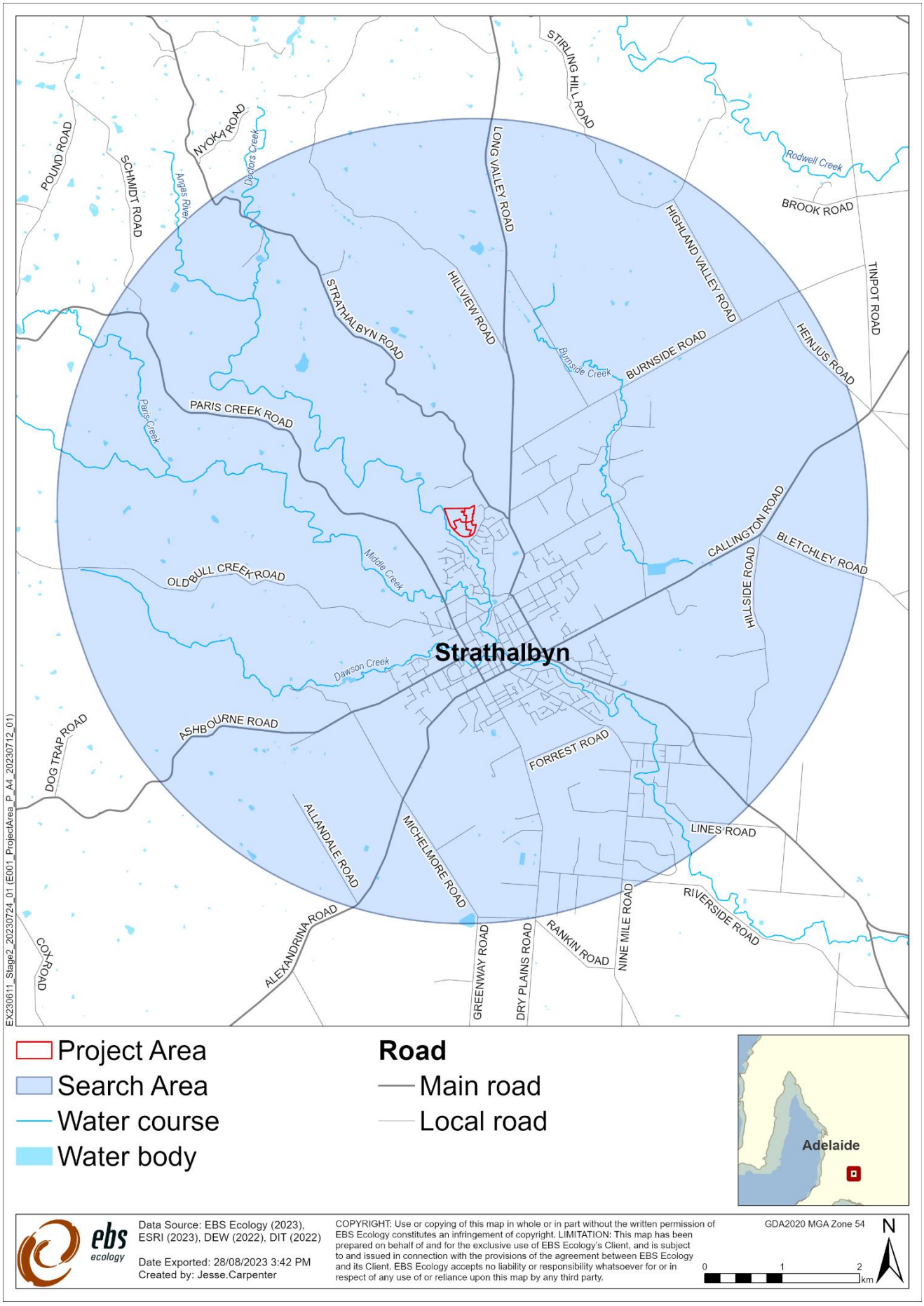


Figure 1. Location of the Project Area and Search Area.

2.4. Details of the Project

The project consists of the subdivision and development of 89 house sites and associated access roads, with each stage of the proposal as sown in Table 4. It includes the subdivision of 10.89 ha and approximately 1.57 km of new access roads.

House sites range from 657 metres squared (m^2) to 1965 m^2 in area, with an average lot size of 931.8 m^2. Access roads will be constructed to a width of no more than 15 metres (m), with approximately 1.57 km of access roads required. This is shown on the map in Figure 2.

Table 4. Details of the Project.

Development Stage	Number of Lots	Road Length (m)	Total Area (ha)
Stage 2A	21	273	1.94
Stage 2B	11	266	1.39
Stage 3	25	447	3.06
Stage 4	30	583	4.50

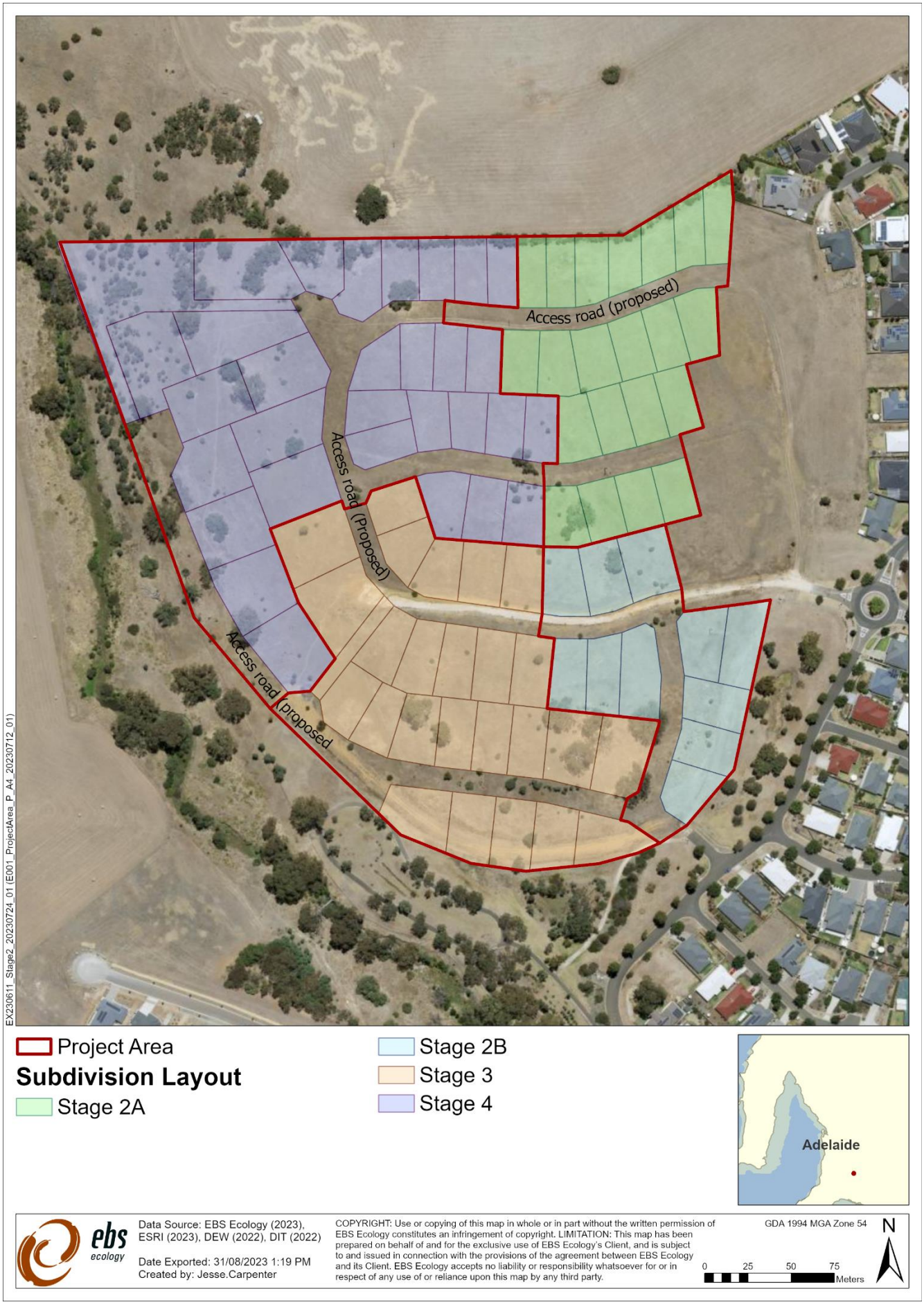


Figure 2. The proposed subdivision at St Andrews Drive, Strathalbyn.

2.5. Approvals required *or* obtained

2.5.1. Native Vegetation Act 1991

The Project Area is within the area covered by the Native Vegetation Overlay. Clearance of native vegetation will require approval under the *Native Vegetation Act 1991* (NV Act).

2.5.2. Planning, Development and Infrastructure Act 2016

Approval is required under the *Planning, Development and Infrastructure Act 2016* (DPI Act).

2.5.3. Environment Protection and Biodiversity Conservation Act 1999

No Matters of National Environmental Significance (MNES) will be significantly impacted as a result of the Project. Referral and approval under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is not required.

2.5.4. National Parks and Wildlife Act 1972

EBS Ecology holds the required scientific permit for the collection of native flora and fauna under the *National Parks and Wildlife Act 1972* (NPW Act):

- K25613-22

2.5.5. Landscapes South Australia Act 2019

During construction, a permit may be required to transport plants Declared under the *Landscape South Australia Act 2019* (LSA Act) on a public road..

2.5.6. Aboriginal Heritage Act 1988

Approval will be required if any sites, objects or remains are uncovered during the works.

2.6. Native Vegetation Regulation

This clearance application should be assessed under the following Native Vegetation Regulation:

- Regulation 12(35) – Residential subdivision.

2.7. Development Application information

DA information that is relevant to this native vegetation clearance application is listed in Table 5.

Table 5. Development Application information.

Local Government Area	Alexandrina Council
Hundred	Macclesfield
Parcel	D81992 A304
Title	CT/6047/945
Zone	Hills Neighbourhood

3. Method

3.1. Flora assessment

The flora assessment was undertaken by NVC Accredited Consultant J. Carpenter from 29 – 30 June 2023 in accordance with the Bushland Assessment Method (BAM) and the Scattered Tree Assessment Method (STAM).

3.1.1. Bushland Assessment Method

The BAM is derived from the Nature Conservation Society of South Australia's Bushland Condition Monitoring methodology (Croft *et al.* 2007, 2008a, 2008b, 2009; Milne and Croft 2012; Milne and McCallum 2012). The BAM is used to assess areas of native vegetation requiring clearance and calculate the Significant Environmental Benefit requirements.

Details of site selection/stratification and assessment protocols, and the biodiversity value components assessed and the factors that influence these components are outlined in the *Bushland Assessment Manual* (Native Vegetation Council, 2020a).

Data collected during the field survey has been entered into the BAM Scoresheets to calculate the vegetation condition and Significant Environmental Benefit (SEB) obligations of the proposed clearance.

3.1.2. Scattered Tree Assessment Method

The STAM is derived from the Scattered Tree Clearance Assessment in South Australia: Streamlining, Guidelines for Assessment and Rural Industry Extension report (Cutten and Hodder 2002). The STAM is suitable for assessing native scattered trees in the following instances:

- Individual scattered trees (i.e., canopy does not overlap). The spatial distribution of trees may vary from approaching what would be considered their original distribution (pre-European) through to single isolated trees in the middle of a paddock.
- Dead trees (when a dead tree is considered native vegetation).
- Clumps of trees (contiguous overlapping canopies) if the clump is small (approximately <0.1 ha); and
    - For both scattered trees and clumps.
    - The ground layer comprises wholly or largely of introduced species.
    - Some scattered colonising native species may be present but represent <5% of the ground cover.
- The area around the trees consists of introduced pasture or crops.

Tree measurements and data collected during the field survey has been entered into the STAM scoresheet to calculate the biodiversity value of each tree and the SEB obligations of the proposed clearance. Details of the scattered tree Point Scoring System are outlined in the *Scattered Tree Assessment Manual* (Native Vegetation Council, 2023b).

3.2. Fauna assessment

A desktop assessment was undertaken to determine the potential for any threatened fauna species and Threatened Ecological Communities (TECs) to occur within the Project Area. This included species listed under both the EPBC Act and the NPW Act.

The search was undertaken by applying a 5 km buffer around the Project Area, referred to as the Search Area. The following databases were searched to obtain records of threatened species:

- Protected Matters Search Tool (PMST). Report generated by the Department of Climate Change, Energy, Environment and Water (DCCEEW) to identify any MNES that may or are known to occur in the search Area.
- Biological Database of South Australia (BDBSA). Data extract obtained from the Department for Environment and Water (DEW) that identifies the location of historical records of flora and fauna in the Search Area.

3.2.1. Protected Matters Search Tool report

A PMST report was generated on 26 June 2023 to identify flora, fauna and TECs listed under the EPBC Act as threatened or migratory (Department of Climate Change, Energy, the Environmentand Water, 2023a). Only species and TECs identified in the PMST report as known to occur within the Search Area were assessed for their likelihood of occurrence within the Project Area.

Species identified as known to occur were entered into the scoresheets for the purposes of calculating the threatened fauna score, conservation significance score and SEB obligations of the clearance. Species assessed as unlikely to occur in the Project Area may be removed by the Native Vegetation Council (NVC) during the approvals process.

Those species that are listed in Appendix 4 of the *Scattered Tree Assessment Manual* (Native Vegetation Council, 2023b) as scattered tree using wildlife have been entered in the STAM scoresheet.

3.2.2. BDBSA data extract

A data extract from the BDBSA was obtained from the DEW to identify flora and fauna species that have been recorded within 5 km of the Project Area (Department for Environment and Water, 2023a) (data extracted 03/07/2023; Recordset number: DEWNRBDBSA230703-1).

The BDBSA is comprised of an integrated collection of species records from the South Australian Museum, conservation organisations, private consultancies, Birds SA, Birdlife Australia and the Australasian Wader Study Group, which meet the Department for Environment and Water's (DEW) standards for data quality, integrity and maintenance. Only species with records since 1995 and a spatial reliability of less than 1 km were assessed for their likelihood of occurrence.

All threatened fauna identified by the BDBSA extract were entered into the scoresheets for the purposes of calculating the threatened fauna score, conservation significance score and SEB obligations of the clearance. Species assessed as unlikely to occur in the Project Area may be removed by the Native Vegetation Council (NVC) during the approvals process.

Those species that are listed in Appendix 4 of the *Scattered Tree Assessment Manual* (Native Vegetation Council, 2023b) as scattered tree using wildlife have been entered in the STAM scoresheet.

3.2.3. Provisional List of Threatened Ecosystems

The *Provisional List of Threatened Ecosystems* (Department for Environment and Heritage, 2005) was reviewed to determine whether any vegetation associations impacted meet the criteria for listing as a threatened ecosystem at the state level.

3.2.4. Field survey

Targeted bird surveys were undertaken at each of the BAM survey sites. Bird surveys were undertaken using an area search method, with 2 ha searched for 20 minutes by an experienced observer.

All fauna species observed opportunistically were recorded, including tracks, scats and other signs. Notes were taken on the presence of habitat features that might be important for fauna, such as hollow-bearing trees and rock outcrops.

3.2.5. Likelihood of occurrence

Threatened species and TECs that were identified by the desktop assessment were assessed for their likelihood of occurrence in the Project Area. All species with historical records since 1995 with a spatial reliability of <1 km and species listed as 'known to occur' by the PMST report were assessed.

The assessment was based on recency or records, habitat preferences and the results of the field survey, with criteria for the likelihood of occurrence described in Table 6. Marine, wetland and aquatic species were not assessed, as the clearance does not impact these or associated habitats.

Table 6. Criteria for the likelihood of occurrence of threatened species within the Project Area.

Likelihood	Criteria
Highly Likely/Known	Recorded in the last 10 years, the species does not have highly specific niche requirements, the habitat is present and falls within the known range of the species distribution or; The species was recorded as part of field surveys.
Likely	Recorded within the previous 20 years, the area falls within the known distribution of the species and the area provides habitat or feeding resources for the species.
Possible	Recorded within the previous 20 years, the area falls inside the known distribution of the species, but the area provides limited habitat or feeding resources for the species. Recorded within 20 - 40 years, survey effort is considered adequate, habitat and feeding resources present, and species of similar habitat needs have been recorded in the area.
Unlikely	Recorded within the previous 20 years, but the area provides no habitat or feeding resources for the species, including perching, roosting or nesting opportunities, corridor for movement or shelter. Recorded within 20 - 40 years; however, suitable habitat does not occur, and species of similar habitat requirements have not been recorded in the area. No records despite adequate survey effort.

3.2.6. Limitations

The desktop assessment was based on existing datasets and references from a range of sources. EBS Ecology has not attempted to verify the accuracy of any such information. The findings and conclusions expressed by EBS Ecology are based solely upon information in existence at the time of the assessment.

Flora and fauna records were sourced from both the EPBC Act Protected Matters Database via the PMST, and the BDBSA via DEW. The BDBSA only includes verified flora and fauna records recorded by DEW or submitted to DEW by partner organisations. It is recognised that knowledge is poorly captured and that the spatial reliability of the data varies. It is possible that significant species occur that are not reflected by database records. Although much of the BDBSA data has been through a variety of validation processes, the lists may contain errors and should be used with caution. DEW give no warranty that the data is accurate or fit for any particular purpose of the user or any person to whom the user discloses the information.

3.2.7. Spatial data limitations

All spatial data has been captured or converted to the following coordinate reference system.

Datum: Geocentric Datum of Australia 2020 (GDA2020).

Projection: Map Grid of Australia 2020 (MGA2020), Zone 54.

All location coordinates listed in this report are expressed using this system. Spatial data converted from other coordinate reference systems may have accuracy limitations.

4. Assessment outcomes

4.1. Vegetation assessment

4.1.1. General description of the vegetation, the site and matters of significance

The Project Area is situated amongst rolling hills on moderate to gentle south-western facing slopes. Slopes rise from the Angus River to in the west to the upper slopes of the hilltop in the northern and eastern Project Area. Soils range from deeper clay-loams on lower slopes to shallow clays at higher elevations. The north-west of the Project Area is characterised by steep slopes with shallow soil and areas of rock outcrop.

The Angus River is located outside the western boundary of the Project Area. There are no water courses or wetland areas within the Project Area itself.

Vegetation is characterised by introduced grassland, dominated by introduced grass species such as *Phalaris* sp., *Cenchrus clandestinus*, *Avena barbata* and forbs such as *Oxalis pes-caprae* and *Echium plantagineum*. Emergent introduced tall shrubs or low trees of *Olea europaea, Rosa canina* and *Lycium ferocissimum* are widespread throughout (Figure 3 and Figure 4).

A planted windbreak of low trees including *Acacia pycnantha, Eucalyptus odorata* and *Melaleuca* sp. occurs on the northern boundary of the Project Area that is currently fenced from the neighbouring cropping paddock (Figure 5).

Native vegetation is restricted to scattered trees within grassland areas and two vegetation associations, listed below:

- *Chloris truncata / Rytidosperma caespitosum* Open Tussock Grassland (A1).
- *Eucalyptus camaldulensis* ssp. *camaldulensis / Eucalyptus leucoxylon* ssp. *leucoxylon* +/- *Eucalyptus odorata* Woodland over *Olea europaea, Acacia pycnantha, Austrostipa* sp. and *Themeda triandra* (A2).

These associations are limited in extent, with A1 restricted to a small area in the north-east where native grasses make up more than 5% of the vegetative cover. Vegetation Association A2 occurs in moderate condition in the north-west on steep, rocky slopes and as two, small, degraded patches in the Southern Project Area.

Both vegetation associations are modified by historic clearing activities and land use, with A1 lacking a mid-storey and upper-storey component, while A2 generally lacks any native mid-storey. Large, hollow-bearing trees occur within the boundaries of A2, with regenerating overstorey species common throughout. The vegetation associations are described further in Section 4.1.3 (Page 17). Their total extent is mapped in Section 4.1.5, Figure 10 (page 25).

Scattered trees consist of many small, juvenile saplings and seedlings (Figure 6), with some large, mature hollow-bearing individuals present (Figure 7). An electricity transmission line easement crosses the Project Area from the north-west to the south-east. Scattered trees within the maintenance zone of this easement have been regularly pruned to maintain a minimum clearance distance to the transmission line (Figure 8).

Scattered trees impacted by the Project are described further in Section 4.1.4 (Page 18). Their locations are mapped in Section 4.1.5, Figure 10 (page 25).

Figure 3. Grassland dominated by introduced plant species with emergent *Olea europaea*. This vegetation type dominates the Project Area.

Figure 4. The introduced *Olea europaea* is widespread throughout the Project Area. It occurs as juvenile plants, tall shrubs and low trees, such as that shown above.

Figure 5. Planted windbreak consisting of species such as *Acacia pycnantha, Eucalyptus odorata* and *Melaleuca* sp.

Figure 6. Juvenile *Eucalyptus camaldulensis* ssp. *camaldulensis*, here occurring amidst the grass *Phalaris* sp., were scattered throughout the Project Area.

Figure 7. Large, mature *Eucalyptus camaldulensis* ssp. *camaldulensis* tree surveyed in the project Area. This tree contains several small and large hollows. The Project currently avoids impacting this tree.

Figure 8. A power line easement crosses the Project Area from the north-west to the south-east. Scattered trees within its maintenance zone have been regularly pruned, as shown above.

4.1.2. Native and introduced plant species recorded

The field survey recorded a total of 35 plant species, and this included 17 native and 18 introduced species. Of those introduced plants recorded, five are Declared under the LSA Act. These are listed below:

- *Echium plantagineum* (Salvation Jane).
- *Lycium ferocissimum* (African Boxthorn).
- *Olea europaea* (wild European Olive).
- *Rosa canina* (Dog Rose).
- *Ulex europaeus* (Gorse).

All plant species recorded during the survey are listed in Appendix 1. The locations at which Declared plants were observed are shown on the map in Figure 9.

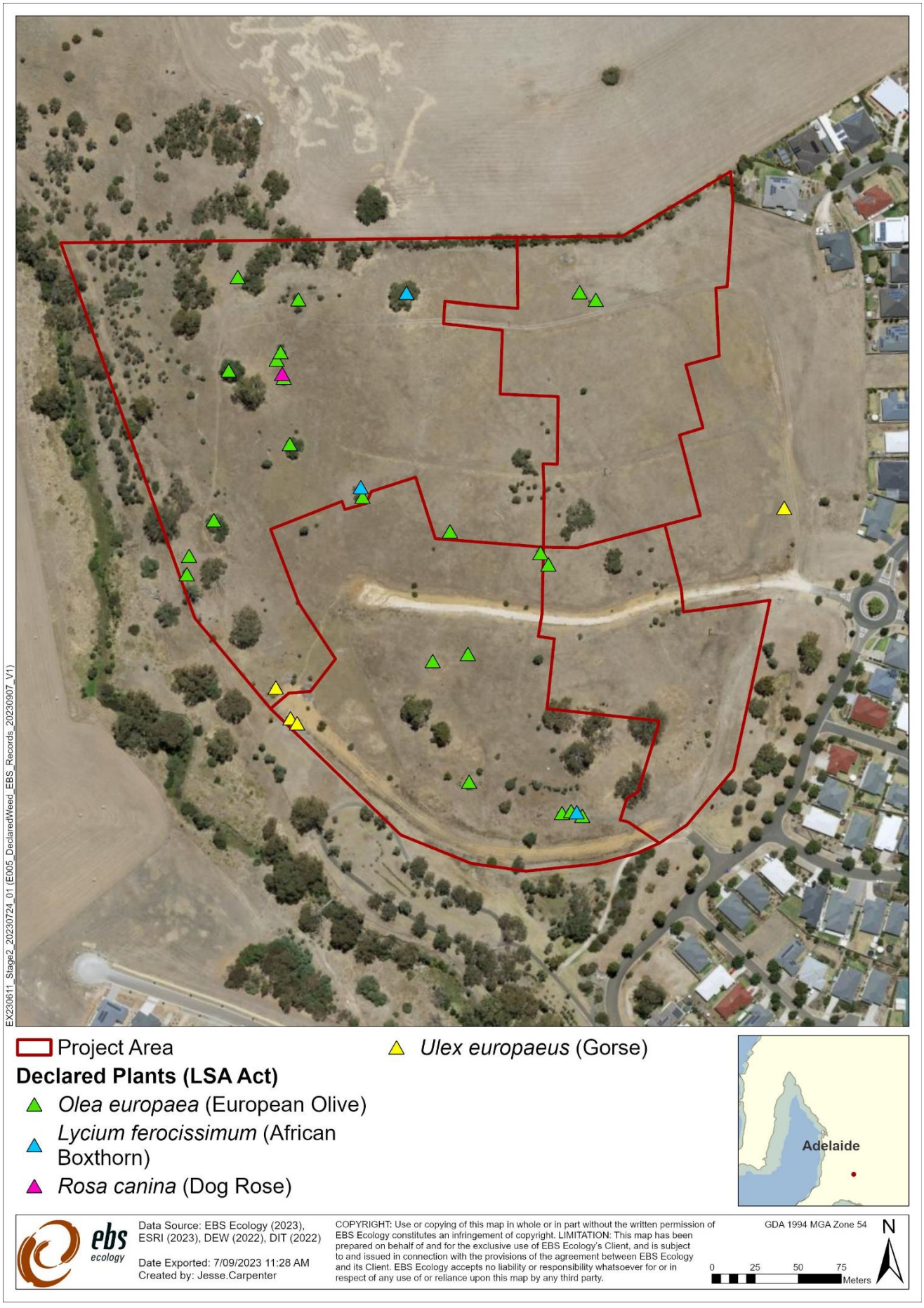


Figure 9. The locations of Declared plants that were observed during the field survey. One species, *Echium plantagineum*, was widespread in the Project Area. Individual locations of this species were not mapped.

4.1.3. Vegetation association descriptions

Vegetation associations impacted by the Project are described in Table 7 and Table 8.

Table 7. Description of A1 – *Chloris truncata / Rytidosperma caespitosum* Open Tussock Grassland.

<table>
<tr><td>Vegetation Association</td><td colspan="5">Chloris truncata / Rytidosperma caespitosum Open Tussock Grassland.</td></tr>
<tr><td>Benchmark Community</td><td colspan="5">SMLR 3.3 – Grasslands / Emergent Trees and Shrubs</td></tr>
<tr><td colspan="6"> 
BAM site A1, looking south towards the Strathalbyn township.</td></tr>
<tr><td>General description</td><td colspan="5">This association consists of native grasses recolonising a previously cleared area. It occurs on the gently sloping upper slopes in the north of the Project Area.
Overstorey is absent, although there are scattered emergent Acacia pycnantha, generally of a young age.
Although native grasses make up more than 5% of the vegetation cover, introduced plants are dominant between native tussocks, including grasses such as Phalaris sp. and forbs including Oxalis pes-caprae.
There are no rocks or outcrops, fallen timber or other significant habitat features and the vegetation lacks structural diversity.
<table>
<tr><th>Over storey</th><th>Mid storey</th><th>Under storey</th></tr>
<tr><td>Acacia pycnantha</td><td>Chloris truncata
Rytidosperma caespitosum
Phalaris sp.
Avena barbata</td><td>Oxalis pes-caprae
Echium plantagineum</td></tr>
</table></td></tr>
<tr><td>Threatened species or community</td><td colspan="5">The association does not have any features that make it a candidate for listing as a threatened ecological community. It does not provide suitable habitat for any threatened fauna.
Given that the NPW Act Rare Bothriochloa macra occur elsewhere in the Project Area, it is possible that species might colonise the site. It was not observed in this vegetation association during the field survey however.</td></tr>
<tr><td>Landscape context score</td><td>1.09</td><td>Vegetation Condition Score</td><td>8.65</td><td>Conservation significance score</td><td>1.10</td></tr>
<tr><td>Unit biodiversity Score</td><td>10.37</td><td>Area (ha)</td><td>0.197</td><td>Total biodiversity Score</td><td>2.04</td></tr>
</table>

Table 8. Description of A2 – *Eucalyptus camaldulensis* ssp. *camaldulensis / Eucalyptus leucoxylon* ssp. *leucoxylon +/- Eucalyptus odorata* Woodland over *Olea europaea, Acacia pycnantha, Austrostipa* sp. and *Themeda triandra*.

<table>
<tr><td>Vegetation Association</td><td colspan="5">A2 - Eucalyptus camaldulensis ssp. camaldulensis / Eucalyptus leucoxylon ssp. leucoxylon +/- Eucalyptus odorata Woodland over Olea europaea, Acacia pycnantha, Austrostipa sp. and Themeda triandra.</td></tr>
<tr><td>Benchmark Community</td><td colspan="5">SMLR 3.1 – Smooth-barked Gum Woodlands with an Open Shrub and Grassy Understorey.</td></tr>
<tr><td colspan="3"> 
BAM site A2a, looking south.</td><td colspan="3"> 
BAM site A2b, looking south.</td></tr>
<tr><td>General description</td><td colspan="5">Woodland with a grassy understorey situated on steep to moderate south-west facing slopes. Overstorey consists of few large, mature trees forming a sparse canopy, with many smaller trees resulting from natural regeneration.
In some areas, notable the north-west corner of the Project Area, Eucalyptus odorata is present. Nowhere in the association is it the dominant over storey species, rather occurring as sparsely scattered individuals.
Mid storey is generally sparse and limited to Acacia pycnantha and dominated by the introduced Olea europaea.
Steeper slopes in the north-western Project Area are rocky, with some outcrop, and the large trees provide some hollows, including large sized examples.
<table>
<tr><th>Over storey</th><th>Mid storey</th><th>Under storey</th></tr>
<tr><td>Eucalyptus camaldulensis
Eucalyptus leucoxylon
Eucalyptus odorata</td><td>Olea europaea
Acacia pycnantha
Eutaxia microphylla</td><td>Austrostipa sp.
Themeda triandra
Lomandra densiflora
Ehrharta calycina
Lomandra micrantha
Avena barbata</td></tr>
</table></td></tr>
<tr><td>Threatened species or community</td><td colspan="5">One threatened plant species was recorded in the association:
• Bothriochloa macra (NPW Act Rare).
In two areas, the above grass species was co-dominant in the under storey.

No threatened fauna was observed. It is likely that the mature trees and hollows present provide some habitat for threatened species, although other important habitat features and structural elements of the vegetation are lacking.</td></tr>
<tr><td>Landscape context score</td><td>1.09</td><td>Vegetation Condition Score</td><td>36.85 (A2a)
28.89 (A2b)
32.87 (Mean)</td><td>Conservation significance score</td><td>1.10 (A2a)
1.14 (A2b)</td></tr>
<tr><td>Unit biodiversity Score</td><td>44.18 (A2a)
35.90 (A2b)
40.04 (Mean)</td><td>Area (ha)</td><td>0.525</td><td>Total biodiversity Score</td><td>23.20 (A2a)
18.85 (A2b)
21.03 (Mean)</td></tr>
</table>

4.1.4. Scattered trees

A total of 185 individual scattered trees and 15 groups of trees are impacted by the Project and were surveyed. In total, 279 scattered trees will be impacted. The data collected for each tree or group of trees is listed in Table 9, with photographs provided in Attachment 1.

Most impacted scattered trees are young trees less than 4 m in height, with many 1 m or less. Most also have a stem diameter of less than 20 centimetres (cm). Four species are impacted, none of which are threatened species. Impacted species are listed below:

- *Acacia pycnantha* (14 trees).
- *Eucalyptus camaldulensis* ssp. *camaldulensis* (188 trees).
- *Eucalyptus leucoxylon* ssp. *leucoxylon* (six trees).
- *Eucalyptus odorata* (71 trees).

Table 9. Details of the 279 scattered trees proposed to be impacted. Photographs of all trees listed in the table are provided in Attachment 1.

Tree ID	Species	Number of trees	Height	Diameter	Dieback %	Hollows	Biodiversity Score	Photo Number (Attachment 1)
2	*Acacia pycnantha*	1	2.3	2.7	0	0	0.31	1
4	*Eucalyptus odorata*	1	8.5	52.5	30	0	2.19	2
5	*Eucalyptus odorata*	1	10	54	5	0	3.77	3
6	*Eucalyptus odorata*	4	3.5	4.5	0	0	1.17	4
7	*Eucalyptus odorata*	1	4.2	4.8	0	0	0.33	5
8	*Eucalyptus odorata*	1	12	74.7	20	0	4.82	6
9	*Eucalyptus odorata*	1	5.2	10.1	20	0	0.35	7
10	*Eucalyptus odorata*	1	5.5	10	10	0	0.41	8
11	*Eucalyptus odorata*	1	3	6.3	0	0	0.29	9
12	*Eucalyptus odorata*	1	4.5	10.5	5	0	0.38	10
13	*Eucalyptus odorata*	1	4.5	11.5	1	0	0.41	11
14	*Eucalyptus odorata*	1	2.4	3	0	0	0.23	12
15	*Eucalyptus odorata*	1	4.5	4.8	1	0	0.34	13
16	*Eucalyptus odorata*	1	3.8	3.5	0	0	0.30	14
17	*Eucalyptus odorata*	1	4.5	8.3	0	0	0.38	15
18	*Eucalyptus odorata*	1	4	5.8	1	0	0.32	16
19	*Eucalyptus odorata*	1	4.4	8.4	1	0	0.37	17
20	*Eucalyptus odorata*	1	4	7.1	15	0	0.29	18
22	*Eucalyptus odorata*	1	10.1	62.5	1	0	4.20	19
23	*Eucalyptus odorata*	1	4.8	7.2	5	0	0.36	20
24	*Eucalyptus odorata*	1	11	50.1	5	0	3.97	21
25	*Eucalyptus odorata*	1	9.8	54	2	0	3.78	22
26	*Eucalyptus odorata*	1	10.5	60	1	0	4.25	23
28	*Eucalyptus camaldulensis* var *camaldulensis*	1	13	128.6	2	0	4.28	24
29	*Eucalyptus camaldulensis* var *camaldulensis*	1	3	3.5	0	0	0.20	25
30	*Eucalyptus camaldulensis* var *camaldulensis*	1	18	182	5	0	7.48	26
31	*Eucalyptus camaldulensis* var *camaldulensis*	1	9	66	5	0	1.99	27
32	*Eucalyptus camaldulensis* var *camaldulensis*	1	3	4	0	0	0.21	28
33	*Eucalyptus camaldulensis* var *camaldulensis*	1	4.5	11	0	0	0.29	29
34	*Eucalyptus camaldulensis* var *camaldulensis*	1	1.9	2.5	0	0	0.18	30

Tree ID	Species	Number of trees	Height	Diameter	Dieback %	Hollows	Biodiversity Score	Photo Number (Attachment 1)
35	*Eucalyptus camaldulensis* var *camaldulensis*	1	1.9	2	0	0	0.18	31
36	*Eucalyptus camaldulensis* var *camaldulensis*	1	3.2	2.5	0	0	0.20	32
37	*Eucalyptus camaldulensis* var *camaldulensis*	1	5.5	13.5	0	0	0.33	33
38	*Eucalyptus camaldulensis* var *camaldulensis*	1	4.2	8.8	2	0	0.26	34
39	*Eucalyptus camaldulensis* var *camaldulensis*	1	4.1	8.6	0	0	0.26	35
40	*Eucalyptus camaldulensis* var *camaldulensis*	1	3	4.5	2	0	0.21	36
41	*Eucalyptus camaldulensis* var *camaldulensis*	1	3.5	6.6	2	0	0.23	37
42	*Eucalyptus camaldulensis* var *camaldulensis*	1	0.6	0	0	0	0.15	38
43	*Eucalyptus camaldulensis* var *camaldulensis*	1	0.8	0	0	0	0.15	39
45	*Eucalyptus camaldulensis* var *camaldulensis*	1	1.7	2	0	0	0.17	40
46	*Eucalyptus odorata*	1	4.5	9	10	0	0.34	41
47	*Eucalyptus odorata*	1	8	17.4	5	0	1.04	42
48	*Eucalyptus odorata*	1	1.6	1	0	0	0.19	43
49	*Eucalyptus odorata*	1	6.2	11	5	0	0.48	44
50	*Eucalyptus odorata*	1	10.5	61.5	1	0	4.30	45
51	*Eucalyptus odorata*	1	6.5	14.2	5	0	0.54	46
52	*Eucalyptus odorata*	1	4.2	8	40	0	0.23	47
53	*Eucalyptus odorata*	1	7	17	20	0	0.53	48
54	*Eucalyptus odorata*	1	7	12	20	0	0.47	49
55	*Eucalyptus odorata*	1	6	8.5	20	0	0.38	50
56	*Eucalyptus odorata*	1	5	8.5	20	0	0.33	51
57	*Eucalyptus odorata*	1	4.5	7	10	0	0.32	52
58	*Eucalyptus odorata*	1	3.5	4.5	25	0	0.22	53
59	*Eucalyptus odorata*	3	4.5	10	15	0	1.01	54
60	*Eucalyptus odorata*	1	6	8.4	5	0	0.44	55
61	*Eucalyptus odorata*	2	7	12	1	0	1.12	56
62	*Eucalyptus odorata*	1	7	11.5	15	0	0.49	57
63	*Eucalyptus odorata*	1	6	9.5	5	0	0.45	58
64	*Eucalyptus odorata*	1	6	10	2	0	0.47	59
65	*Eucalyptus odorata*	1	5	8	1	0	0.39	60
66	*Eucalyptus odorata*	1	4.8	9.6	2	0	0.40	61
67	*Eucalyptus odorata*	1	2.2	3.5	0	0	0.23	62
68	*Eucalyptus odorata*	1	5	10.5	1	0	0.42	63
69	*Eucalyptus odorata*	1	2.3	3.5	0	0	0.23	64
70	*Eucalyptus odorata*	1	11.5	57.5	50	0	3.29	65
71	*Eucalyptus odorata*	1	6	32.5	5	1	1.36	66
72	*Eucalyptus odorata*	1	2.3	4.5	0	0	0.24	67
73	*Eucalyptus odorata*	1	1.7	1.5	0	0	0.20	68
75	*Eucalyptus camaldulensis* var *camaldulensis*	1	2.4	6	0	0	0.21	69
76	*Eucalyptus odorata*	1	7	10.5	2	0	0.54	70
77	*Eucalyptus odorata*	1	2.5	12	5	0	0.30	71

Tree ID	Species	Number of trees	Height	Diameter	Dieback %	Hollows	Biodiversity Score	Photo Number (Attachment 1)
78	*Eucalyptus odorata*	1	2.3	9.2	1	0	0.28	72
79	*Eucalyptus odorata*	1	5	10.2	0	0	0.42	73
80	*Eucalyptus odorata*	1	6.5	12	5	0	0.51	74
81	*Eucalyptus odorata*	1	2.6	4	0	0	0.25	75
82	*Eucalyptus odorata*	1	4	8	0	0	0.35	76
83	*Acacia pycnantha*	1	4	8	0	0	0.55	77
84	*Eucalyptus odorata*	1	0.33	0	0	0	0.15	78
85	*Eucalyptus camaldulensis* var *camaldulensis*	1	8.2	31.8	1	0	0.63	79
86	*Eucalyptus camaldulensis* var *camaldulensis*	3	0.6	0	0	0	0.44	80
87	*Eucalyptus camaldulensis* var *camaldulensis*	1	1.75	7	0	0	0.21	81
88	*Eucalyptus camaldulensis* var *camaldulensis*	1	2.7	3	2	0	0.19	82
89	*Eucalyptus camaldulensis* var *camaldulensis*	1	1.9	0	0	0	0.16	83
90	*Eucalyptus camaldulensis* var *camaldulensis*	1	2	2	0	0	0.18	84
91	*Eucalyptus camaldulensis* var *camaldulensis*	1	13.5	91.5	5	0	3.65	85
92	*Eucalyptus camaldulensis* var *camaldulensis*	4	3	4.5	0	0	0.84	86
93	*Eucalyptus camaldulensis* var *camaldulensis*	1	1.5	2	0	0	0.17	87
94	*Eucalyptus camaldulensis* var *camaldulensis*	1	1	0	0	0	0.15	88
95	*Eucalyptus camaldulensis* var *camaldulensis*	3	3	4	0	0	0.62	89
96	*Eucalyptus camaldulensis* var *camaldulensis*	1	0.9	0	0	0	0.15	90
97	*Eucalyptus camaldulensis* var *camaldulensis*	1	0.6	0	0	0	0.15	91
98	*Eucalyptus camaldulensis* var *camaldulensis*	1	1.65	2	0	0	0.17	92
99	*Eucalyptus camaldulensis* var *camaldulensis*	1	14	74.7	25	1	3.38	93
100	*Eucalyptus camaldulensis* var *camaldulensis*	1	7	15	1	0	0.38	94
101	*Eucalyptus camaldulensis* var *camaldulensis*	1	5	6.6	20	0	0.21	95
102	*Eucalyptus camaldulensis* var *camaldulensis*	1	4	6.4	1	0	0.24	96
103	*Eucalyptus camaldulensis* var *camaldulensis*	1	2.3	4	0	0	0.20	97
105	*Eucalyptus camaldulensis* var *camaldulensis*	1	2.4	4	1	0	0.19	98
106	*Eucalyptus camaldulensis* var *camaldulensis*	1	1.5	1	1	0	0.16	99
107	*Eucalyptus camaldulensis* var *camaldulensis*	1	3	4.1	1	0	0.21	100
108	*Eucalyptus camaldulensis* var *camaldulensis*	1	3	4	1	0	0.20	101
109	*Eucalyptus camaldulensis* var *camaldulensis*	1	5	12.3	0	0	0.31	102
110	*Eucalyptus camaldulensis* var *camaldulensis*	2	0.8	0	0	0	0.30	103
111	*Eucalyptus camaldulensis* var *camaldulensis*	1	5	12.3	5	0	0.29	104
112	*Eucalyptus camaldulensis* var *camaldulensis*	1	1.8	3	2	0	0.18	105
113	*Eucalyptus camaldulensis* var *camaldulensis*	1	19	2	0	0	0.57	106
114	*Eucalyptus camaldulensis* var *camaldulensis*	1	7.5	18.2	1	0	0.43	107
115	*Eucalyptus camaldulensis* var *camaldulensis*	30	0.75	0	0	0	4.46	108
116	*Eucalyptus camaldulensis* var *camaldulensis*	1	0.9	0	0	0	0.15	109
117	*Acacia pycnantha*	1	0.85	0	0	0	0.19	110
118	*Eucalyptus camaldulensis* var *camaldulensis*	1	3.8	5.5	10	0	0.20	111
119	*Eucalyptus camaldulensis* var *camaldulensis*	1	2	3.5	2	0	0.18	112

Tree ID	Species	Number of trees	Height	Diameter	Dieback %	Hollows	Biodiversity Score	Photo Number (Attachment 1)
120	*Eucalyptus camaldulensis* var *camaldulensis*	8	2.5	3.5	1	0	1.54	113
121	*Eucalyptus camaldulensis* var *camaldulensis*	1	1.6	2	0	0	0.17	114
122	*Eucalyptus camaldulensis* var *camaldulensis*	1	0.7	0	0	0	0.15	115
123	*Eucalyptus camaldulensis* var *camaldulensis*	10	3.2	3.5	2	0	2.02	116
124	*Eucalyptus camaldulensis* var *camaldulensis*	2	0.9	0	0	0	0.30	117
125	*Eucalyptus camaldulensis* var *camaldulensis*	6	1.4	1.5	2	0	0.97	118
126	*Eucalyptus camaldulensis* var *camaldulensis*	2	1.7	1	0	0	0.33	119
127	*Eucalyptus camaldulensis* var *camaldulensis*	4	2.5	3	1	0	0.76	120
128	*Eucalyptus camaldulensis* var *camaldulensis*	1	2.5	4.4	1	0	0.20	121
129	*Eucalyptus camaldulensis* var *camaldulensis*	1	3	5	2	0	0.21	122
130	*Eucalyptus camaldulensis* var *camaldulensis*	1	2.5	4.5	1	0	0.20	123
131	*Eucalyptus camaldulensis* var *camaldulensis*	1	4.5	5.5	0	0	0.24	124
132	*Eucalyptus camaldulensis* var *camaldulensis*	1	5.5	11.5	5	0	0.30	125
133	*Eucalyptus camaldulensis* var *camaldulensis*	1	1.85	1.5	20	0	0.13	126
134	*Eucalyptus camaldulensis* var *camaldulensis*	1	2.2	2.5	0	0	0.18	127
135	*Eucalyptus camaldulensis* var *camaldulensis*	1	6.8	21	0	0	0.45	128
136	*Eucalyptus camaldulensis* var *camaldulensis*	1	6.7	21.4	0	0	0.45	129
137	*Eucalyptus camaldulensis* var *camaldulensis*	1	5.6	17.4	0	0	0.38	130
138	*Acacia pycnantha*	1	2	6	0	0	0.32	131
139	*Acacia pycnantha*	1	0.55	0	0	0	0.17	132
140	*Acacia pycnantha*	1	4	9.2	0	0	0.57	133
141	*Eucalyptus odorata*	1	3.8	9.6	0	0	0.35	134
142	*Eucalyptus odorata*	1	8	45.5	5	0	2.34	135
143	*Eucalyptus odorata*	1	4.2	13	2	0	0.40	136
144	*Eucalyptus odorata*	1	7.5	11.9	2	0	0.59	137
145	*Eucalyptus camaldulensis* var *camaldulensis*	1	7.2	13.7	1	0	0.37	138
146	*Eucalyptus camaldulensis* var *camaldulensis*	1	6.5	12.5	1	0	0.34	139
147	*Eucalyptus odorata*	1	2.2	7	10	0	0.23	140
149	*Eucalyptus odorata*	1	4.2	5	1	0	0.32	141
150	*Eucalyptus odorata*	1	4.5	12	10	0	0.37	142
152	*Eucalyptus camaldulensis* var *camaldulensis*	1	8	21.5	0	0	0.49	143
153	*Eucalyptus camaldulensis* var *camaldulensis*	1	6.2	20	5	0	0.40	144
154	*Eucalyptus camaldulensis* var *camaldulensis*	1	4	8.8	1	0	0.26	145
155	*Eucalyptus camaldulensis* var *camaldulensis*	3	2.5	4.5	2	0	0.59	146
156	*Eucalyptus camaldulensis* var *camaldulensis*	1	1.4	1	0	0	0.16	147
157	*Eucalyptus camaldulensis* var *camaldulensis*	1	3	5.5	2	0	0.21	148
158	*Acacia pycnantha*	1	2.5	4	40	0	0.22	149
159	*Acacia pycnantha*	5	0.55	0	0	0	0.84	150
160	*Eucalyptus camaldulensis* var *camaldulensis*	1	4.5	16.2	1	0	0.33	151
162	*Eucalyptus leucoxylon* ssp *leucoxylon*	1	13.5	146.5	5	7	7.38	152
163	*Eucalyptus leucoxylon* ssp *leucoxylon*	1	2.2	3.5	2	0	0.19	153

Tree ID	Species	Number of trees	Height	Diameter	Dieback %	Hollows	Biodiversity Score	Photo Number (Attachment 1)
164	*Eucalyptus leucoxylon* ssp *leucoxylon*	1	5.7	8.8	0	0	0.31	154
165	*Eucalyptus leucoxylon* ssp *leucoxylon*	1	4.6	8.8	0	0	0.28	155
166	*Acacia pycnantha*	1	3.3	7.3	0	0	0.46	156
167	*Eucalyptus camaldulensis* var *camaldulensis*	1	6.5	17.9	0	0	0.40	157
168	*Eucalyptus camaldulensis* var *camaldulensis*	1	2.3	7.1	0	0	0.22	158
169	*Eucalyptus camaldulensis* var *camaldulensis*	1	2.3	4.5	0	0	0.20	159
170	*Eucalyptus camaldulensis* var *camaldulensis*	1	95	0	0	0	1.22	160
171	*Eucalyptus camaldulensis* var *camaldulensis*	1	0.95	0	0	0	0.15	161
172	*Eucalyptus camaldulensis* var *camaldulensis*	1	0.6	0	0	0	0.15	162
173	*Eucalyptus leucoxylon* ssp *leucoxylon*	1	4.5	6.5	0	0	0.26	163
174	*Eucalyptus leucoxylon* ssp *leucoxylon*	1	7.6	25.5	0	0	0.55	164
175	*Eucalyptus camaldulensis* var *camaldulensis*	1	12	29.5	0	0	1.10	165
177	*Eucalyptus camaldulensis* var *camaldulensis*	1	12.4	36.2	0	0	1.30	166
178	*Eucalyptus camaldulensis* var *camaldulensis*	1	11.5	33.8	0	0	1.18	167
179	*Eucalyptus camaldulensis* var *camaldulensis*	1	10	23.5	0	0	0.57	168
180	*Eucalyptus camaldulensis* var *camaldulensis*	1	12	34	0	0	1.21	169
181	*Eucalyptus camaldulensis* var *camaldulensis*	1	9.5	23	0	0	0.55	170
182	*Eucalyptus camaldulensis* var *camaldulensis*	1	12	24.5	0	0	0.98	171
183	*Eucalyptus camaldulensis* var *camaldulensis*	1	1.5	1.5	0	0	0.17	172
184	*Eucalyptus camaldulensis* var *camaldulensis*	1	2.2	2	0	0	0.18	173
185	*Eucalyptus camaldulensis* var *camaldulensis*	1	0.8	0	0	0	0.15	174
186	*Eucalyptus camaldulensis* var *camaldulensis*	1	1.9	2	0	0	0.18	175
187	*Eucalyptus camaldulensis* var *camaldulensis*	1	2	2	0	0	0.18	176
188	*Eucalyptus camaldulensis* var *camaldulensis*	1	2.5	5	0	0	0.21	177
189	*Eucalyptus camaldulensis* var *camaldulensis*	1	8	22.5	0	0	0.50	178
190	*Eucalyptus camaldulensis* var *camaldulensis*	1	4	8	0	0	0.25	179
191	*Eucalyptus camaldulensis* var *camaldulensis*	1	4	7.2	0	0	0.25	180
192	*Eucalyptus camaldulensis* var *camaldulensis*	1	17.5	122.8	5	0	4.88	181
193	*Eucalyptus camaldulensis* var *camaldulensis*	1	15	90	5	0	3.86	182
194	*Eucalyptus camaldulensis* var *camaldulensis*	1	13.5	76.8	95	0	1.02	183
195	*Eucalyptus camaldulensis* var *camaldulensis*	1	4.8	7	0	0	0.26	184
196	*Eucalyptus camaldulensis* var *camaldulensis*	1	6	11.6	0	0	0.33	185
197	*Eucalyptus camaldulensis* var *camaldulensis*	1	4.5	10	0	0	0.28	186
198	*Eucalyptus camaldulensis* var *camaldulensis*	1	18.5	172.5	10	0	7.97	187
200	*Eucalyptus camaldulensis* var *camaldulensis*	1	2.5	4.4	10	0	0.18	188
201	*Eucalyptus camaldulensis* var *camaldulensis*	1	1.7	3	0	0	0.18	189
202	*Eucalyptus camaldulensis* var *camaldulensis*	1	1.4	3	0	0	0.18	190
203	*Eucalyptus camaldulensis* var *camaldulensis*	2	1.4	1	0	0	0.33	191
205	*Eucalyptus camaldulensis* var *camaldulensis*	1	2.8	5	0	0	0.21	192
206	*Eucalyptus camaldulensis* var *camaldulensis*	1	1.5	2	0	0	0.17	193
207	*Eucalyptus camaldulensis* var *camaldulensis*	1	9.5	26	0	0	0.59	194

Tree ID	Species	Number of trees	Height	Diameter	Dieback %	Hollows	Biodiversity Score	Photo Number (Attachment 1)
208	*Eucalyptus camaldulensis* var *camaldulensis*	1	7.5	13.6	0	0	0.38	195
209	*Eucalyptus camaldulensis* var *camaldulensis*	1	3	6.1	0	0	0.22	196
210	*Eucalyptus camaldulensis* var *camaldulensis*	1	5.8	13.1	0	0	0.34	197
211	*Eucalyptus camaldulensis* var *camaldulensis*	1	5	7.7	0	0	0.27	198
212	*Eucalyptus camaldulensis* var *camaldulensis*	1	2.8	5.2	0	0	0.21	199
213	*Eucalyptus camaldulensis* var *camaldulensis*	1	2.2	3.5	0	0	0.19	200
214	*Eucalyptus camaldulensis* var *camaldulensis*	1	3.9	10.5	0	0	0.27	201
215	*Eucalyptus camaldulensis* var *camaldulensis*	1	3.9	7.8	0	0	0.25	202

4.1.5. Site map showing areas of proposed impact

Vegetation impacted by the Project is shown on the map in Figure 10. The map shows both patches of native vegetation and scattered trees. Scattered trees are symbolised based on their biodiversity scores.

The map does not show patches or scattered trees that were surveyed but are not impacted. This is further discussed in Section 4.4 (Page 35).

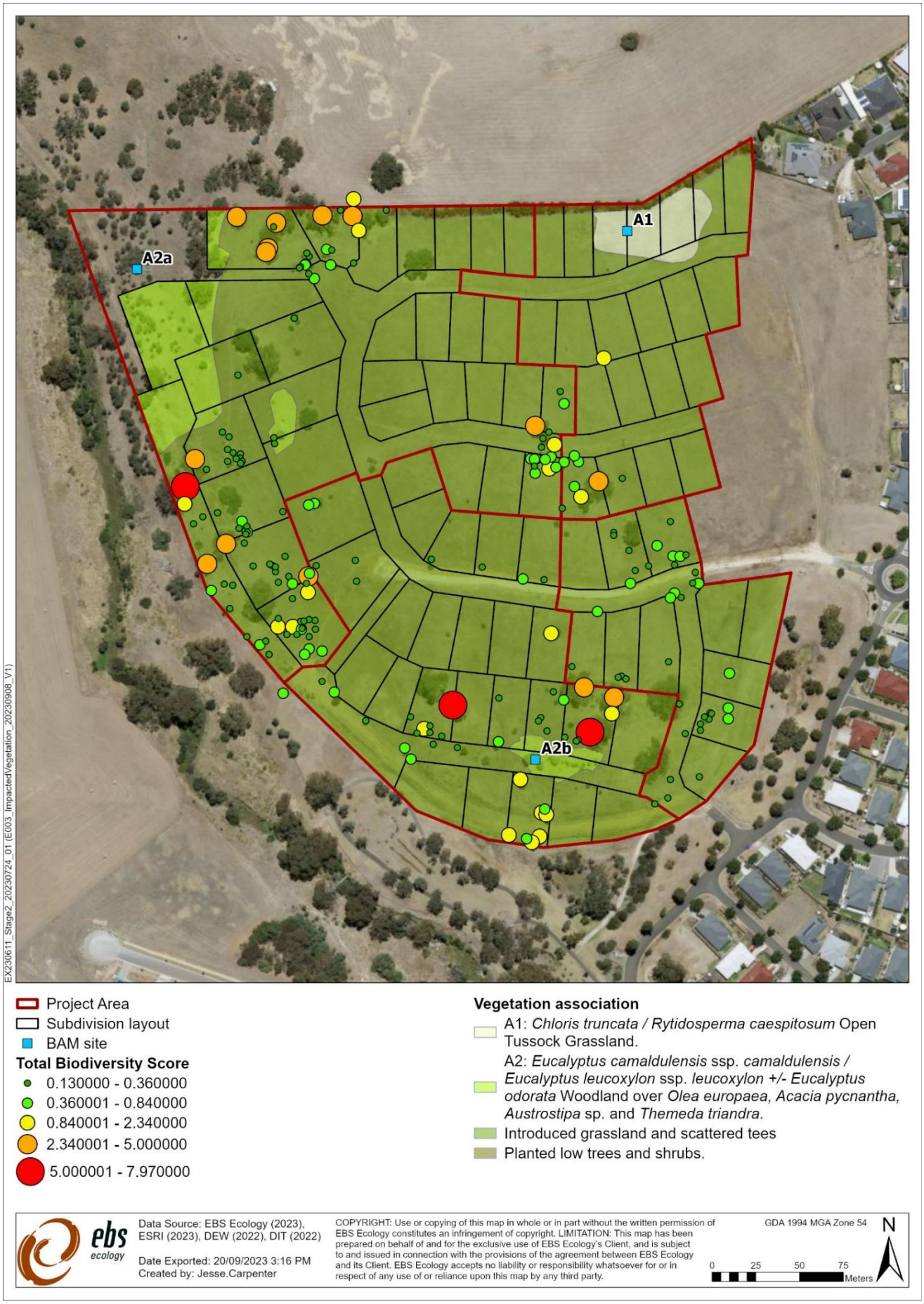


Figure 10. Scattered trees and vegetation associations impacted by the Project. The map also shows the locations where BAM surveys were undertaken. Surveyed vegetation and trees that are not impacted are not shown.

4.2. Threatened species assessment

4.2.1. Threatened flora

One threatened flora species was recorded during the survey:

- *Bothriochloa macra* (Red-leg Grass) (Figure 11 and Figure 12).

This species was found growing at two locations, shown in Figure 14 (page 28), with more than 50 individuals in open grassy woodland at each site (Figure 13). Associated species included both native and introduced grasses, such as *Austrostipa* spp., *Themeda triandra, Avena barbata* and *Phalaris* sp.

Bothriochloa macra is listed as Rare under the NPW Act. It is not listed as threatened under the EPBC Act.

The database searches identified 20 threatened flora species have the potential of occurring in the Project Area or Search Area. These species have been assessed for their likelihood of occurrence in Appendix 2. Only two threatened species, *Eucalyptus fasciculosa* (Pink Gum) and *Bothriochloa macra* (Red-leg Grass) have been recorded historically in the Search Area (Figure 15).

The likelihood of occurrence assessment found that, based on survey results, lack of historical records, habitat type and disturbance factors present on the site, all threatened flora species identified in the database searches are unlikely to occur, except *Bothriochloa macra*.

Figure 11. *Bothriochloa macra* tussock. This grass species is listed as Rare under the NPW Act.

Figure 12. *Bothriochloa macra* inflorescence showing the characteristic red colouring.

Figure 13. Tussocks of *Bothriochloa macra* growing amongst native and introduced grasses.

Figure 14. Locations where *Bothriochloa macra* was located during the field survey.

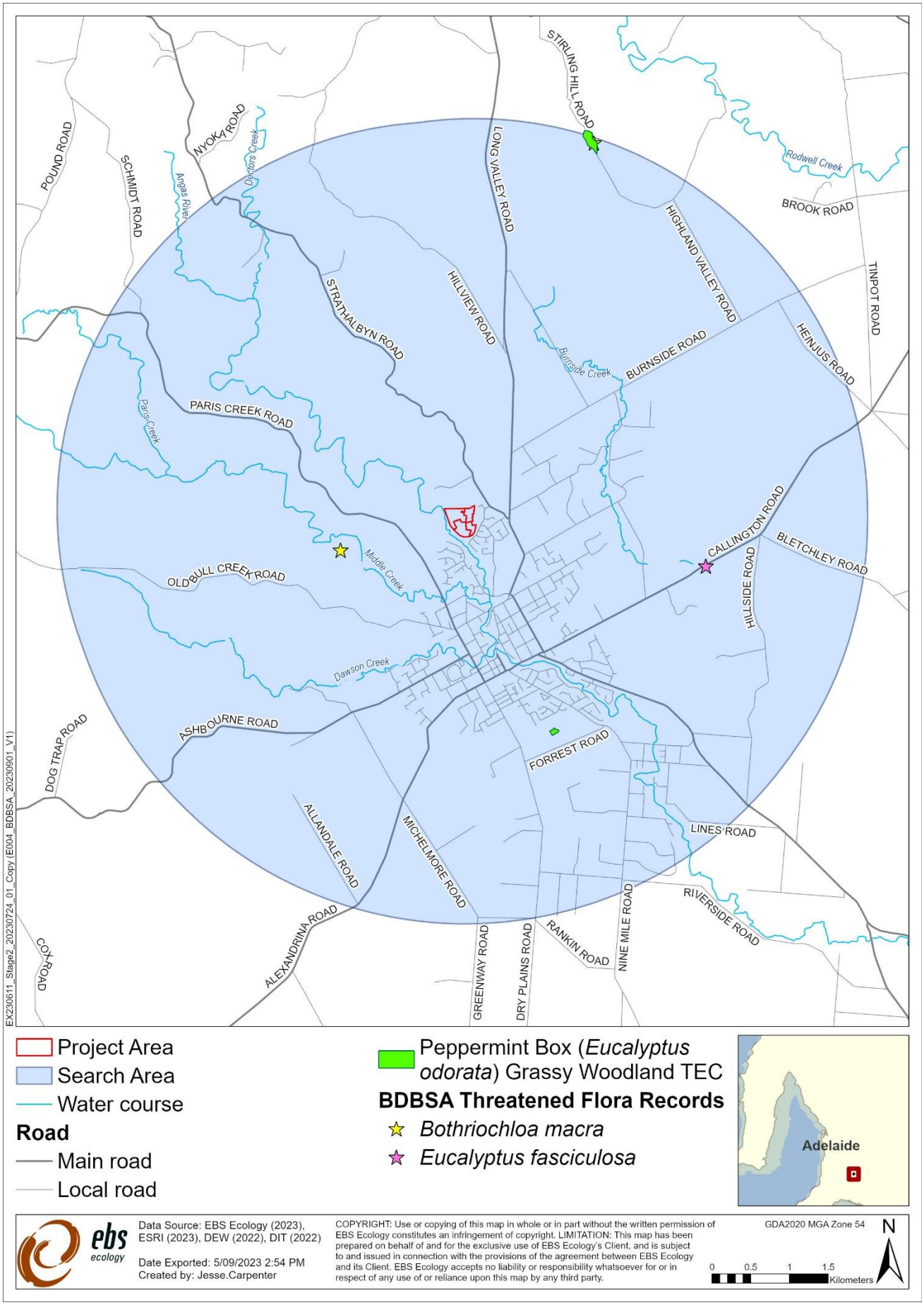


Figure 15. The location of historical threatened flora records within 5 km of the Project Area (Department for Environment and Water, 2023a).

4.2.2. Threatened fauna

During the field survey, 24 fauna species were recorded. All were species that commonly occur in disturbed native or cleared agricultural vegetation communities. None are listed as a threatened species under either the EPBC Act or the NPW Act.

Fauna recorded included 23 bird species and one mammal, with three introduced species observed. Fauna recorded in the Project Area during the survey are listed in Appendix 3.

The Project Area consists largely of grassland dominated by introduced plant species with emergent tall shrubs of *Olea europaea* (European Olive). This provides poor habitat for threatened species. Woodland patches provide some important habitat features, such as hollow-bearing trees, rock outcrops and a grassy understorey consisting of native grass species. However, mid storey is generally lacking and there is limited habitat for species that require a shrub layer habitat.

Remnant woodland patches in the Project Area are small. While they may provide a habitat resource for threatened species that are dispersing through the area, they are not likely to provide sufficient habitat to sustain a population long-term.

Most scattered trees in the Project Area are of small size, including saplings and young juvenile trees. These provide minimal habitat for threatened fauna identified by the database searches. However, there are numerous large, mature trees that provide small to large hollows, particularly in the woodland patches. These trees provide important shelter and breeding habitat for fauna, particularly in a mostly cleared agricultural landscape.

Based on the database searches, 40 threatened species were assessed for their likelihood of occurrence in the Project Area. Of these, the 13 species listed in Table 10 were assessed as possible, likely or highly likely to occur. Those species assessed as unlikely are listed in Appendix 4, with the full likelihood of occurrence assessment.

Table 10. Threatened species identified in the desktop assessment and assessed as possible, likely or highly likely to occur. The data source and threat levels are described in the table footer.

Scientific Name	Common Name	Conservation Status		Data Source	Date of last record / PMST	Likelihood of use for habitat – Comments
		NPW Act	EPBC Act			
Cereopsis novaehollandiae novaehollandiae	Cape Barren Goose	R	-	1	1998	**Possible.** There are no records in the past 20 years and no intact habitat in the Project Area. The species might occur in pasture irregularly.
Coturnix ypsilophora australis	Brown Quail	V	-	1	1999	**Possible.** There are no records in the past 20 years and no intact habitat. The species may occur irregularly in rank grass growth.
Eulamprus heatwolei	Yellow-bellied Water Skink	V	-	1	2010	**Possible.** Although recorded within the past 20 years, there is no suitable habitat in the Project Area. The species may occur in suitable habitat outside the Project Area in the nearby Angus River.
Falco subniger	Black Falcon	R	-	1	2011	**Possible.** Although there has not been a record of the species in the past 20 years near the Project Area, the

Scientific Name	Common Name	Conservation Status		Data Source	Date of last record / PMST	Likelihood of use for habitat – Comments
		NPW Act	EPBC Act			
						species may occur occasionally as wandering individuals.
Falcunculus frontatus frontatus	Eastern Shriketit	R	-	1	2017	**Highly Likely.** The species has been recorded within 5 km of the Project Area in the past 10 years. Woodland areas, especially near the Angus River, inside the Project Area are suitable habitat.
Hieraaetus morphnoides	Little Eagle	V	-	1	2017	**Possible.** Although there has not been a record of the species in the past 20 years near the Project Area, the species may occur occasionally as wandering individuals.
Melithreptus gularis	Black-chinned Honeyeater	V	-	1	2010	**Possible.** Although there has not been a record of the species in the past 10 years near the Project Area, the species may occur occasionally as wandering individuals.
Myiagra inquieta	Restless Flycatcher	R	-	1	2001	**Possible.** Although there has not been a record of the species in the past 20 years near the Project Area, the species may occur occasionally as wandering individuals.
Neophema elegans elegans	Elegant Parrot	R	-	1	2019	**Likely.** Likely to occur at least sometimes in woodland areas of the Project Area.
Pteropus poliocephalus	Grey-headed Flying-fox	R	VU	1	2019	**Possible.** Larger trees in the Project Area are suitable foraging habitat for the species. Given the distance from the nearest known roosting site, any Grey-headed Flying-foxes using the site are likely to be vagrant individuals.
Rattus lutreolus	Swamp Rat	R	-	1	2002	**Possible.** Suitable habitat may occur near the Angus River, although the species is not likely to persist inside the Project Area.
Trichosurus vulpecula	Common Brushtail Possum	R	-	1	2021	**Highly Likely.** The species has been recorded in the past 10 years and habitat is suitable, particularly the large, hollow-bearing trees that are present.
Zanda funerea whiteae	Yellow-tailed Black Cockatoo	V	-	1	2017	**Highly Likely.** The species has been recorded in the past 10 years and tree habitat in the Project Area is suitable.

Source; 1- BDBSA, 2 - Protected matters search tool, 3 – recorded during the field survey.
NPW Act; E= Endangered, V = Vulnerable, R= Rare
EPBC Act; Ex = Extinct, CR = Critically endangered, EN = Endangered; VU = Vulnerable

4.2.3. Threatened Ecological Communities

The PMST report indicated that two Threatened Ecological Communities (TEC) might occur:

- Iron-grass Natural Temperate Grassland of South Australia.
- Peppermint Box (*Eucalyptus odorata*) Grassy Woodland of South Australia.

The PMST report identified that the former may occur in the Search Area only, while the latter is identified as likely to occur in the Project Area.

The results of the field survey indicate that neither of the TECs listed above occur in the Project Area, with known occurrences of the TECs nearby mapped in Figure 15 on Page 5. This mapping shows that there are no known patches of either TEC inside the Project Area.

Vegetation in the Project Area has been assessed against the definitions of each TEC identified in Table 11. The assessment found that neither TEC occurs in the Project Area.

Table 11. Assessment for the presence of Threatened Ecological Communities in the Project Area.

Threatened Ecological Community	Conservation Status (EPBC Act)	Definition	Assessment
Iron-grass Natural Temperate Grassland of South Australia.	Critically Endangered	• Trees and tall shrubs are absent to sparse (cover less than 10%) and tussock-forming perennial grasses and Iron-grasses (*Lomandra effusa* and/or *L. multiflora* subsp. *dura*) dominate the ground layer[1]. • Iron-grasses are a characteristic feature of this ecological community, and may cover up to 70% of the ground area[1].	• Native grassland is restricted to a small area of the northern Project Area. *Lomandra* species do not occur in this grassland. • Two species of *Lomandra* were recorded in the Project Area. However, they occurred in woodland areas only with more than 10% tree cover. • The TEC does not occur in the Project Area.
Peppermint Box (*Eucalyptus odorata*) Grassy Woodland of South Australia.	Critically Endangered	• Open to dense woodland dominated by *Eucalyptus odorata*. The *E. odorata* trees are the woodland tree form, generally with a single trunk at the base and often with low branching[2]. • Other tree species may be present but they contribute less to the canopy cover and generally are not as abundant as *E. odorata*[2]. • The understorey consists mainly of native grasses and other perennial and annual native herbs[2].	• Although *E. odorata* is present in one woodland patch in the north west of the Project Area, it is not the dominant canopy species. *E. camaldulensis* and *E. leucoxylon* are far more abundant. • Where *E. odorata* is the dominant tree, it occurs as scattered trees over introduced grasses and forbs with no native understorey. • The TEC does not occur in the Project Area.

[1]National recovery Plan for the Iron-grass Natural Temperate Grassland of South Australia ecological community, 2012.
[2]National Recovery Plan for the Peppermint Box (*Eucalyptus odorata*) Grassy Woodland of South Australia ecological community, 2012.

4.3. Cumulative impacts

When exercising a power or making a decision under Division 5 of the Native Vegetation Regulations 2017, the NVC must consider the potential cumulative impact, both direct and indirect, that is reasonably likely to result from a proposed clearance activity.

This application includes all clearance required for the development of Stage 2A, Stage 2B, Stage 3 and Stage 4 of the Project. This includes all access roads, building footprints and associated infrastructure such as the connection of utilities.

The clearance also allows for subsequent clearances including fire protection buffers around future buildings and/or dwellings.

There are no future stages planned for the Project, with a clearance application previously prepared and lodged for Stage 1. Clearance for Stage 1 consisted of a Level 1 clearance application for three scattered trees, as indicated on the map in Figure 16.

Figure 16. Clearance associated with Stage 1 of the Project. Note that a separate clearance application for Stage 1 has been lodged and is not being assessed by this data report.

4.4. Addressing the Mitigation Hierarchy

When exercising a power or making a decision under Division 5 of the Native Vegetation Regulations 2017, the NVC must have regard to the mitigation hierarchy. The NVC will also consider, with the aim to minimize, impacts on biological diversity, soil, water and other natural resources, threatened species or ecological communities under the EPBC Act or listed species under the NPW Act.

a) Avoidance – outline measures taken to avoid clearance of native vegetation

Given the proposed lot size is<2000 m^2, it is not possible to avoid clearing native vegetation.

b) Minimization – if clearance cannot be avoided, outline measures taken to minimize the extent, duration and intensity of impacts of the clearance on biodiversity to the fullest possible extent (whether the impact is direct, indirect or cumulative).

Where practicable, hollow-bearing trees and trees with a Total Biodiversity Score greater than or equal to 5.00 will be retained. This includes the trees shown on the map in Figure 17.

The north-west corner of the Project Area has been set aside as a reserve. This retains 0.38 ha of vegetation association A2, including the area of that association in the best condition. This area is also shown on the map in Figure 17.

All access roads, construction laydown areas, building envelopes, property boundaries and associated infrastructure will be located within the impacted areas shown in Figure 10 (page 25).

To minimise the risk of accidental clearance, indirect impacts and impact to fauna, construction contractors will implement a Vegetation Management Plan. This plan will be approved by the proponent and, at a minimum, include the management measures listed in Table 12.

Table 12. Measures to minimise direct and indirect impacts associated with the clearance.

Management Plan	Management Strategy	Responsibility
Vegetation Management Plan	All construction personnel will be inducted to be made aware of the Vegetation Management Plan and its content.	Construction contractor
	Vegetation clearance areas will be clearly defined and marked.	
	No clearing, parking, laydown, stockpiles or other disturbance of native vegetation outside of the defined clearance area.	
	Trigger points and stop work procedures will be developed and implemented in the event of unplanned and unauthorised vegetation clearance.	
	Vegetation clearance procedures will be clearly defined and approved by the proponent.	
	Clearance and construction activities to occur during daylight hours only.	
	Limit entry/exit points to the construction footprint to the minimum number possible.	
	All fill materials required for construction (e.g., sand, soil, gravel) will be sourced from certified weed and phytophthora free sites.	
	Restrict all vehicle and machinery traffic to designated roads and access tracks that are approved by the proponent.	
	Restrict the movement of weed material to the vegetation clearance area, including by developing and implementing machinery wash-down protocols.	

Figure 17. Native vegetation that will be retained to minimise clearance. Scattered trees shown on the map are labelled according to their Total Biodiversity Score.

c) ***Rehabilitation or restoration – outline measures taken to rehabilitate ecosystems that have been degraded, and to restore ecosystems that have been degraded, or destroyed by the impact of clearance that cannot be avoided or further minimized, such as allowing for the re-establishment of the vegetation.***
The clearance is permanent in nature. No rehabilitation or restoration will be implemented.

d) ***Offset – any adverse impact on native vegetation that cannot be avoided or further minimized should be offset by the achievement of a significant environmental benefit that outweighs that impact.***

The NVC will only consider an offset once avoidance, minimization and restoration have been documented and fulfilled. The SEB Policy explains the biodiversity offsetting principles that must be met.

The proponent will offset the adverse impacts of the clearance by payment of an SEB into the Native Vegetation Fund (see Section 5 and Section 6).

4.5. Principles of Clearance (Schedule 1, *Native Vegetation Act 1991*)

The Native Vegetation Council will consider Principles 1(b), 1(c) and 1(d) when assigning a level of Risk under Regulation 16 of the Native Vegetation Regulations. The Native Vegetation Council will consider all the Principles of clearance of the Act as relevant, when considering an application referred under the Planning, Development and Infrastructure Act 2016.

The clearance is assessed against the Principles of Clearance as set out in Table 13.

Table 13. Assessment against the Principles of Clearance.

Principle of clearance	Considerations
Principle 1(a) – it comprises a high level of diversity of plant species	**Relevant information** The field survey recorded a total of 35 plant species, including 17 native and 18 introduced species. The following number of plant species were recorded in each vegetation association: A1: 15 species (4 native, 11 introduced). A2: 26 species (15 native, 11 introduced). Native Plant Species Diversity Score (NPDS) A1: 6.0. A2: 13.0 (Mean of A2a and A2b).
	Assessment against the principles Seriously at Variance Not seriously at Variance. At Variance A2 (NPDS 10-20).
	Moderating factors that may be considered by the NVC Not applicable.
Principle 1(b) – significance as a habitat for wildlife	**Relevant information** The vegetation does not support a high diversity of fauna species, with only 24 species observed during the field survey. All were species common in disturbed, largely cleared agricultural landscapes. Survey effort was not extensive, and it is possible that additional fauna species use the Project Area that were not detected. Large, hollow-bearing trees in the Project Area provide important habitat resources for fauna, including breeding habitat for some species. Although no threatened fauna species were observed, it is possible that some may use habitats in the Project Area, particularly those that are known to utilise scattered trees. Thirteen species were assessed as at least possibly occurring, listed in Table 10 (page 30).

Principle of clearance	Considerations
	While these species might occasionally occur as vagrants moving through the area, it is unlikely that the Project Area sustains any populations of threatened species long-term. Threatened Fauna Score (TFS) A1: 0.1. A2: 0.1. Unit Biodiversity Score (UBS) A1: 10.37. A2: 40.04 (Mean of A2a and A2b). Scattered Trees Fauna Habitat Score (FHS): 1.8 (all trees). Biodiversity Score: 0.13 – 7.97 (range).
	Assessment against the principles Seriously at Variance A1 (TFS >0.05) A2 (TFS >0.05) Scattered trees (FHS >1.2) At Variance Not At Variance.
	Moderating factors that may be considered by the NVC Impact Significance Given the small extent of the vegetation patches and the minimal habitat value of most of the scattered trees being cleared, it is unlikely that the clearance would have a significant impact on any threatened fauna species as it would not: • Lead to a long-term decrease in the size of a population. • Reduce the area of occupancy of a species. • Fragment an existing population into two or more populations. • Adversely affect habitat critical to the survival of a species. • Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that a species is likely to decline. • Result in invasive species that are harmful to a threatened species becoming established in the threatened species habitat. • Interfere with the recovery of the species. Non-essential habitat No threatened species were observed in the Project Area during the field survey over two days. It is unlikely that habitat in the Project Area provides essential habitat for any threatened species.
Principle 1(c) – plants of a rare, vulnerable or endangered species	**Relevant information** One threatened plant species was recorded during the field survey: • *Bothriochloa macra* (Red-leg Grass). This species is listed as Rare under the NPW Act and was found in two areas mapped as A2. The location of these areas are shown on the map in Figure 14 (Page 28). At both locations, more than 50 individual tussocks occur. Both locations will be impacted by the clearance (Figure 14). None of the scattered trees under application are threatened species. Given the disturbed nature of the Project Area, it is unlikely that any other threatened plant species occur that were not detected during the field survey. Threatened Flora Score (TFlS) A1: 0.0. A2: 0.04. Scattered trees: 0.0 (all trees).

Principle of clearance	Considerations
	Assessment against the principles Seriously at Variance Not Seriously at Variance. At Variance A2 (TFIS >0, <0.1).
	Moderating factors that may be considered by the NVC Not applicable.
Principle 1(d) – the vegetation comprises the whole or part of a plant community that is Rare, Vulnerable or endangered	**Relevant information** There are no threatened ecological communities present in the Project Area. Threatened Community Score A1: 1.0 A2: 1.0
	Assessment against the principles Seriously at Variance Not Seriously at Variance.
	Moderating factors that may be considered by the NVC Not applicable.
Principle 1€ – it is significant as a remnant of vegetation in an area which has been extensively cleared	**Relevant information** The remnancy figures for the Project Area are set out below: • IBRA association: 11% • IBRA subregion: 12% While scattered trees are mostly in good health with regeneration occurring, native vegetation patches are degraded, generally lacking a mid-storey and dominated by introduced grasses and forbs. It is likely that vegetation condition would continue to decline over time without active management. Total Biodiversity Score 180.27
	Assessment against the principles Seriously at Variance Not Seriously at Variance. At Variance The clearance is At Variance with the principle.
	Moderating factors that may be considered by the NVC Not applicable.
Principle 1(f) – it is growing in, or in association with, a wetland environment	**Relevant information** The vegetation under application is not growing in association with a wetland.
	Assessment against the principles Seriously at Variance Not Seriously at Variance. At Variance Not At Variance.
	Moderating factors that may be considered by the NVC Not applicable.
Principle 1(g) – it contributes significantly to	**Relevant information** The area is characterised by the large trees that occur close to and within the riparian zone of the Angus River. While the Project Area is private property that has no formal public access, it is visible from

Principle of clearance	Considerations
the amenity of the area in which it is growing or is situated	neighbouring reserves and residential properties, with the larger trees noticeable from publicly accessible areas. While some large trees are being retained, the removal of other large trees would be a noticeable change to the landscape. Woodland areas are located towards the north of the Project Area and, while visible from neighbouring farmland, are not likely to be visible from residential properties or public roads.
	N/A
	Moderating factors that may be considered by the NVC In determining if clearance is at variance with the principles, the NVC will have regard to the Local Council's recommendations (if any) in relation to the application.

Principles of Clearance (h-m) will be considered by comments provided by the local NRM Board or relevant Minister. The Data Report should contain information on these principles where relevant and where sufficient information or expertise is available.

4.6. Risk assessment

The *Guide for applications to clear native vegetation* (Native Vegetation Council, 2020b) sets out how the risk level of a clearance application is assessed. This is summarised in Table 14.

The risk level of this clearance application is presented in Table 15. The table indicates that this is a Level 4 clearance, due to escalating matters.

Table 14. Risk assessment for native vegetation clearance applications in the agricultural regions of South Australia.

	Patches - clearance	**Trees - clearance**	**Escalating matters** Clearance assessment will be raised to the next level if;
Level 1	**0.05ha** or less	**5 trees** or less	The site contains a listed species or contains a threatened community under either the NP&W Act or EPBC Act Or Clearance of any trees of the specified circumference.
	And clearance does not involve **any** trees with a trunk circumference measured at 1m above the ground of (for multi stemmed trees, measure the largest trunk/stem): - 50cm or more.		
Level 2	**>0.05 ha to 0.5ha**	**6 - 20 trees**	Clearance is seriously at variance with Principle of Clearance 1(b), 1(c) or 1(d).
Level 3	Total Biodiversity Score of less than or equal to **250**		Clearance is seriously at variance with Principle of Clearance 1(b), 1(c) or 1(d).
Level 4	Total Biodiversity Score of greater than **250**		

Table 15. Summary of the level of risk associated with the application.

Total clearance	No. of trees	279
	Area (ha)	0.754
	Total biodiversity Score	180.27
Seriously at variance with principle 1(b), 1(c) or 1 (d)		1(b)
Risk assessment outcome		Level 4

5. Clearance summary

Clearance summary tables for the clearance application are shown in Table 16 (native vegetation patches) and Table 17 (scattered trees), on page 42. The summary tables indicate the SEB points and SEB payment obligations of the clearances.

The total SEB obligations of the clearance are summarised in Table 18 on page 50.

Table 16. Clearance summary and total Significant Environmental Benefit (SEB) obligations for vegetation associations impacted by the Project.

Block	Site	Species diversity score	Threatened Ecological community Score	Threatened plant score	Threatened fauna score	UBS	Area (ha)	Total Biodiversity score	Loss factor	Loadings	Reductions	SEB Points required	SEB payment	Admin Fee
A	**1**	**6.0**	**1**	**0**	**0.1**	**10.37**	**0.197**	**2.04**	**1**			**2.15**	**$1,663.16**	**$89.82**
A	2a	14.0	1	0	0.1	44.18	0.557	24.61	1			25.84	$19,052.08	$1,047.86
A	2b	12.0	1	0.04	0.1	35.90	0.557	20.00	1			21.00	$15,074.37	$829.09
A	**2 Mean**	**13.0**	**1**	**0.04**	**0.1**	**40.04**	**0.557**	**22.31**	**1**			**23.42**	**$17,063.23**	**$938.48**
						Total	**0.754**	**24.35**				**25.57**	**$18,726.39**	**$1,028.30**

Table 17. Clearance summary and total Significant Environmental Benefit (SEB) obligations for scattered trees impacted by the Project.

Tree Number	Number of Trees	Fauna Habitat Score	Threatened Flora Score	Biodiversity Score	Loss Factor	SEB Points Required	SEB Payment	Admin Fee
2	1	1.8	0	0.31	1	0.33	$236.58	$13.01
4	1	1.8	0	2.19	1	2.30	$1,649.00	$90.69
5	1	1.8	0	3.77	1	3.96	$2,843.96	$156.42
6	4	1.8	0	0.29	1	1.22	$878.65	$48.33
7	1	1.8	0	0.33	1	0.34	$245.46	$13.50
8	1	1.8	0	4.82	1	5.06	$3,629.68	$199.63
9	1	1.8	0	0.35	1	0.37	$265.46	$14.60
10	1	1.8	0	0.41	1	0.43	$305.88	$16.82
11	1	1.8	0	0.29	1	0.30	$215.28	$11.84
12	1	1.8	0	0.38	1	0.40	$285.24	$15.69
13	1	1.8	0	0.41	1	0.43	$305.39	$16.80
14	1	1.8	0	0.23	1	0.25	$176.93	$9.73
15	1	1.8	0	0.34	1	0.35	$253.42	$13.94
16	1	1.8	0	0.30	1	0.31	$222.86	$12.26
17	1	1.8	0	0.38	1	0.39	$282.69	$15.55
18	1	1.8	0	0.32	1	0.34	$242.89	$13.36

Tree Number	Number of Trees	Fauna Habitat Score	Threatened Flora Score	Biodiversity Score	Loss Factor	SEB Points Required	SEB Payment	Admin Fee
19	1	1.8	0	0.37	1	0.39	$276.71	$15.22
20	1	1.8	0	0.29	1	0.30	$215.99	$11.88
22	1	1.8	0	4.20	1	4.41	$3,164.52	$174.05
23	1	1.8	0	0.36	1	0.38	$271.15	$14.91
24	1	1.8	0	3.97	1	4.17	$2,994.33	$164.69
25	1	1.8	0	3.78	1	3.97	$2,850.80	$156.79
26	1	1.8	0	4.25	1	4.46	$3,203.16	$176.17
28	1	1.8	0	4.28	1	4.49	$3,226.51	$177.46
29	1	1.8	0	0.20	1	0.21	$153.36	$8.43
30	1	1.8	0	7.48	1	7.85	$5,635.21	$309.94
31	1	1.8	0	1.99	1	2.09	$1,502.60	$82.64
32	1	1.8	0	0.21	1	0.22	$155.98	$8.58
33	1	1.8	0	0.29	1	0.30	$218.19	$12.00
34	1	1.8	0	0.18	1	0.19	$135.47	$7.45
35	1	1.8	0	0.18	1	0.19	$133.09	$7.32
36	1	1.8	0	0.20	1	0.21	$150.61	$8.28
37	1	1.8	0	0.33	1	0.35	$251.69	$13.84
38	1	1.8	0	0.26	1	0.27	$195.00	$10.72
39	1	1.8	0	0.26	1	0.27	$196.93	$10.83
40	1	1.8	0	0.21	1	0.22	$154.67	$8.51
41	1	1.8	0	0.23	1	0.24	$172.45	$9.48
42	1	1.8	0	0.15	1	0.15	$110.57	$6.08
43	1	1.8	0	0.15	1	0.16	$112.55	$6.19
45	1	1.8	0	0.17	1	0.18	$130.88	$7.20
46	1	1.8	0	0.34	1	0.36	$259.47	$14.27
47	1	1.8	0	1.04	1	1.09	$781.71	$42.99
48	1	1.8	0	0.19	1	0.20	$145.00	$7.97
49	1	1.8	0	0.48	1	0.50	$361.14	$19.86
50	1	1.8	0	4.30	1	4.52	$3,243.54	$178.39
51	1	1.8	0	0.54	1	0.57	$406.03	$22.33

Tree Number	Number of Trees	Fauna Habitat Score	Threatened Flora Score	Biodiversity Score	Loss Factor	SEB Points Required	SEB Payment	Admin Fee
52	1	1.8	0	0.23	1	0.24	$170.60	$9.38
53	1	1.8	0	0.53	1	0.56	$402.48	$22.14
54	1	1.8	0	0.47	1	0.49	$354.93	$19.52
55	1	1.8	0	0.38	1	0.39	$283.48	$15.59
56	1	1.8	0	0.33	1	0.34	$246.51	$13.56
57	1	1.8	0	0.32	1	0.34	$244.96	$13.47
58	1	1.8	0	0.22	1	0.23	$163.27	$8.98
59	3	1.8	0	0.34	1	1.06	$759.16	$41.75
60	1	1.8	0	0.44	1	0.46	$329.07	$18.10
61	2	1.8	0	0.56	1	1.18	$847.81	$46.63
62	1	1.8	0	0.49	1	0.51	$367.61	$20.22
63	1	1.8	0	0.45	1	0.47	$338.70	$18.63
64	1	1.8	0	0.47	1	0.49	$353.26	$19.43
65	1	1.8	0	0.39	1	0.41	$296.96	$16.33
66	1	1.8	0	0.40	1	0.42	$298.89	$16.44
67	1	1.8	0	0.23	1	0.24	$174.16	$9.58
68	1	1.8	0	0.42	1	0.44	$317.65	$17.47
69	1	1.8	0	0.23	1	0.25	$176.97	$9.73
70	1	1.8	0	3.29	1	3.45	$2,478.32	$136.31
71	1	1.8	0	1.36	1	1.43	$1,028.79	$56.58
72	1	1.8	0	0.24	1	0.25	$182.76	$10.05
73	1	1.8	0	0.20	1	0.21	$150.04	$8.25
75	1	1.8	0	0.21	1	0.22	$159.13	$8.75
76	1	1.8	0	0.54	1	0.56	$404.96	$22.27
77	1	1.8	0	0.30	1	0.31	$224.27	$12.33
78	1	1.8	0	0.28	1	0.29	$209.27	$11.51
79	1	1.8	0	0.42	1	0.44	$318.28	$17.51
80	1	1.8	0	0.51	1	0.54	$384.50	$21.15
81	1	1.8	0	0.25	1	0.26	$188.56	$10.37
82	1	1.8	0	0.35	1	0.36	$261.57	$14.39

Tree Number	Number of Trees	Fauna Habitat Score	Threatened Flora Score	Biodiversity Score	Loss Factor	SEB Points Required	SEB Payment	Admin Fee
83	1	1.8	0	0.55	1	0.58	$417.12	$22.94
84	1	1.8	0	0.15	1	0.16	$111.51	$6.13
85	1	1.8	0	0.63	1	0.66	$471.54	$25.93
86	3	1.8	0	0.15	1	0.46	$331.72	$18.24
87	1	1.8	0	0.21	1	0.22	$156.35	$8.60
88	1	1.8	0	0.19	1	0.20	$143.41	$7.89
89	1	1.8	0	0.16	1	0.17	$123.83	$6.81
90	1	1.8	0	0.18	1	0.19	$134.20	$7.38
91	1	1.8	0	3.65	1	3.84	$2,754.45	$151.49
92	4	1.8	0	0.21	1	0.88	$634.52	$34.90
93	1	1.8	0	0.17	1	0.18	$128.69	$7.08
94	1	1.8	0	0.15	1	0.16	$114.55	$6.30
95	3	1.8	0	0.21	1	0.65	$467.94	$25.74
96	1	1.8	0	0.15	1	0.16	$113.55	$6.24
97	1	1.8	0	0.15	1	0.15	$110.57	$6.08
98	1	1.8	0	0.17	1	0.18	$130.33	$7.17
99	1	1.8	0	3.38	1	3.55	$2,548.75	$140.18
100	1	1.8	0	0.38	1	0.40	$286.84	$15.78
101	1	1.8	0	0.21	1	0.22	$154.86	$8.52
102	1	1.8	0	0.24	1	0.25	$180.15	$9.91
103	1	1.8	0	0.20	1	0.21	$147.50	$8.11
105	1	1.8	0	0.19	1	0.20	$146.79	$8.07
106	1	1.8	0	0.16	1	0.17	$122.43	$6.73
107	1	1.8	0	0.21	1	0.22	$154.54	$8.50
108	1	1.8	0	0.20	1	0.21	$154.01	$8.47
109	1	1.8	0	0.31	1	0.33	$234.89	$12.92
110	2	1.8	0	0.15	1	0.31	$225.10	$12.38
111	1	1.8	0	0.29	1	0.31	$222.15	$12.22
112	1	1.8	0	0.18	1	0.19	$133.16	$7.32
113	1	1.8	0	0.57	1	0.60	$427.68	$23.52

Tree Number	Number of Trees	Fauna Habitat Score	Threatened Flora Score	Biodiversity Score	Loss Factor	SEB Points Required	SEB Payment	Admin Fee
114	1	1.8	0	0.43	1	0.45	$322.81	$17.75
115	30	1.8	0	0.15	1	4.68	$3,361.60	$184.89
116	1	1.8	0	0.15	1	0.16	$113.55	$6.24
117	1	1.8	0	0.19	1	0.20	$140.40	$7.72
118	1	1.8	0	0.20	1	0.21	$154.01	$8.47
119	1	1.8	0	0.18	1	0.19	$137.81	$7.58
120	8	1.8	0	0.19	1	1.62	$1,163.56	$64.00
121	1	1.8	0	0.17	1	0.18	$129.78	$7.14
122	1	1.8	0	0.15	1	0.16	$111.56	$6.14
123	10	1.8	0	0.20	1	2.12	$1,519.02	$83.55
124	2	1.8	0	0.15	1	0.32	$227.09	$12.49
125	6	1.8	0	0.16	1	1.02	$731.62	$40.24
126	2	1.8	0	0.17	1	0.35	$252.49	$13.89
127	4	1.8	0	0.19	1	0.80	$571.78	$31.45
128	1	1.8	0	0.20	1	0.21	$150.02	$8.25
129	1	1.8	0	0.21	1	0.22	$157.30	$8.65
130	1	1.8	0	0.20	1	0.21	$150.53	$8.28
131	1	1.8	0	0.24	1	0.26	$183.92	$10.12
132	1	1.8	0	0.30	1	0.31	$224.64	$12.36
133	1	1.8	0	0.13	1	0.14	$98.21	$5.40
134	1	1.8	0	0.18	1	0.19	$138.87	$7.64
135	1	1.8	0	0.45	1	0.47	$336.12	$18.49
136	1	1.8	0	0.45	1	0.47	$337.58	$18.57
137	1	1.8	0	0.38	1	0.39	$282.85	$15.56
138	1	1.8	0	0.32	1	0.33	$239.98	$13.20
139	1	1.8	0	0.17	1	0.18	$127.03	$6.99
140	1	1.8	0	0.57	1	0.60	$429.42	$23.62
141	1	1.8	0	0.35	1	0.37	$266.16	$14.64
142	1	1.8	0	2.34	1	2.45	$1,760.36	$96.82
143	1	1.8	0	0.40	1	0.42	$302.47	$16.64

Tree Number	Number of Trees	Fauna Habitat Score	Threatened Flora Score	Biodiversity Score	Loss Factor	SEB Points Required	SEB Payment	Admin Fee
144	1	1.8	0	0.59	1	0.62	$444.67	$24.46
145	1	1.8	0	0.37	1	0.39	$280.32	$15.42
146	1	1.8	0	0.34	1	0.36	$258.77	$14.23
147	1	1.8	0	0.23	1	0.24	$172.74	$9.50
149	1	1.8	0	0.32	1	0.34	$244.21	$13.43
150	1	1.8	0	0.37	1	0.39	$282.30	$15.53
152	1	1.8	0	0.49	1	0.51	$366.08	$20.13
153	1	1.8	0	0.40	1	0.42	$299.88	$16.49
154	1	1.8	0	0.26	1	0.27	$194.42	$10.69
155	3	1.8	0	0.20	1	0.62	$445.83	$24.52
156	1	1.8	0	0.16	1	0.17	$123.06	$6.77
157	1	1.8	0	0.21	1	0.22	$159.97	$8.80
158	1	1.8	0	0.22	1	0.23	$163.51	$8.99
159	5	1.8	0	0.17	1	0.88	$635.17	$34.93
160	1	1.8	0	0.33	1	0.35	$251.55	$13.84
162	1	1.8	0	7.38	1	7.75	$5,560.30	$305.82
163	1	1.8	0	0.19	1	0.20	$142.92	$7.86
164	1	1.8	0	0.31	1	0.32	$232.30	$12.78
165	1	1.8	0	0.28	1	0.30	$213.17	$11.72
166	1	1.8	0	0.46	1	0.48	$347.67	$19.12
167	1	1.8	0	0.40	1	0.42	$303.79	$16.71
168	1	1.8	0	0.22	1	0.23	$163.80	$9.01
169	1	1.8	0	0.20	1	0.21	$150.05	$8.25
170	1	1.8	0	1.22	1	1.28	$921.81	$50.70
171	1	1.8	0	0.15	1	0.16	$114.05	$6.27
172	1	1.8	0	0.15	1	0.15	$110.57	$6.08
173	1	1.8	0	0.26	1	0.27	$196.99	$10.83
174	1	1.8	0	0.55	1	0.58	$415.01	$22.83
175	1	1.8	0	1.10	1	1.15	$829.02	$45.60
177	1	1.8	0	1.30	1	1.36	$977.34	$53.75

Tree Number	Number of Trees	Fauna Habitat Score	Threatened Flora Score	Biodiversity Score	Loss Factor	SEB Points Required	SEB Payment	Admin Fee
178	1	1.8	0	1.18	1	1.24	$887.80	$48.83
179	1	1.8	0	0.57	1	0.60	$431.88	$23.75
180	1	1.8	0	1.21	1	1.27	$914.44	$50.29
181	1	1.8	0	0.55	1	0.58	$414.75	$22.81
182	1	1.8	0	0.98	1	1.03	$740.54	$40.73
183	1	1.8	0	0.17	1	0.18	$126.39	$6.95
184	1	1.8	0	0.18	1	0.19	$136.45	$7.50
185	1	1.8	0	0.15	1	0.16	$112.55	$6.19
186	1	1.8	0	0.18	1	0.19	$133.09	$7.32
187	1	1.8	0	0.18	1	0.19	$134.20	$7.38
188	1	1.8	0	0.21	1	0.22	$155.08	$8.53
189	1	1.8	0	0.50	1	0.52	$375.46	$20.65
190	1	1.8	0	0.25	1	0.27	$191.84	$10.55
191	1	1.8	0	0.25	1	0.26	$187.05	$10.29
192	1	1.8	0	4.88	1	5.12	$3,675.33	$202.14
193	1	1.8	0	3.86	1	4.05	$2,909.54	$160.02
194	1	1.8	0	1.02	1	1.07	$771.46	$42.43
195	1	1.8	0	0.26	1	0.27	$197.18	$10.85
196	1	1.8	0	0.33	1	0.34	$246.45	$13.55
197	1	1.8	0	0.28	1	0.29	$211.67	$11.64
198	1	1.8	0	7.97	1	8.37	$6,010.38	$330.57
200	1	1.8	0	0.18	1	0.19	$133.35	$7.33
201	1	1.8	0	0.18	1	0.19	$135.62	$7.46
202	1	1.8	0	0.18	1	0.18	$132.27	$7.28
203	2	1.8	0	0.16	1	0.34	$246.11	$13.54
205	1	1.8	0	0.21	1	0.22	$158.80	$8.73
206	1	1.8	0	0.17	1	0.18	$128.69	$7.08
207	1	1.8	0	0.59	1	0.62	$445.83	$24.52
208	1	1.8	0	0.38	1	0.40	$288.00	$15.84
209	1	1.8	0	0.22	1	0.23	$167.31	$9.20

Tree Number	Number of Trees	Fauna Habitat Score	Threatened Flora Score	Biodiversity Score	Loss Factor	SEB Points Required	SEB Payment	Admin Fee
210	1	1.8	0	0.34	1	0.35	$253.89	$13.96
211	1	1.8	0	0.27	1	0.28	$204.47	$11.25
212	1	1.8	0	0.21	1	0.22	$159.87	$8.79
213	1	1.8	0	0.19	1	0.20	$143.80	$7.91
214	1	1.8	0	0.27	1	0.29	$205.87	$11.32
215	1	1.8	0	0.25	1	0.26	$189.23	$10.41
176	1	1.8	0	0.45	1	0.47	$337.11	$18.54
Scattered Tree SEB Total				**142.37**		**164.18**	**$117,866.23**	**$6,482.64**

Table 18. Summary of the total SEB obligations of the clearance.

	Total Biodiversity score	Total SEB points required	SEB Payment	Admin Fee	Total Payment
Application	180.27	189.29	$136,255.51	$7,492.40	$143,747.91

Economies of Scale Factor	0.5
Rainfall (mm)	481

6. Significant Environmental Benefit

A SEB is required for approval to clear under Division 5 of the *Native Vegetation Regulations 2017*. The NVC must be satisfied that as a result of the loss of vegetation from the clearance that an SEB will result in a positive impact on the environment that is over and above the negative impact of the clearance.

ACHIEVING AN SEB

Indicate how the SEB will be achieved by ticking the appropriate box and providing the associated information:

☐ Establish a new SEB Area on land owned by the proponent.

☐ Use SEB Credit that the proponent has established.

☐ Apply to have SEB Credit assigned from another person or body.

☐ Apply to have an SEB to be delivered by a Third Party.

☒ Pay into the Native Vegetation Fund.

PAYMENT SEB

If a proponent proposes to achieve the SEB by paying into the Native Vegetation Fund, summary information must be provided on the amount required to be paid and the manner of payment:

A total payment of **$143,747.91** will be paid into the Native Vegetation Fund. This includes an administration fee of **$7,492.40**.

7. References

Carter, O. (2010). *National recovery Plan for Trailing Hop-bush Dodonaea procumbens.* Melbourne: Department of Sustainability and Environment.

Croft, S. J., Pedler, J. A., & Milne, T. I. (2007). *Bushland Condition Monitoring Manual - Northern Agricultural and Yorke Peninsula Region.* Adelaide: Nature Conservation Society of South Australia.

Croft, S. J., Pedler, J. A., & Milne, T. I. (2008a). *Bushland Condition Monitoring Manual - Eyre Peninsula Region.* Adelaide: Nature Conservation Society of South Australia.

Croft, S. J., Pedler, J. A., & Milne, T. I. (2008b). *Bushland Conditiion Monitoring Manual - Southern Mt Lofty Ranges Region.* Adelaide: Nature Conservation Society of South Australia.

Croft, S. J., Pedler, J. A., & Milne, T. I. (2009). *Bushland Condition Monitoring Manual - Murray Darling Basin Region.* Adelaide: Nature Conservation Society of South Australia.

Department for Environment and Heritage. (2005). *Provisional List of Threatened Ecosystems.* Adelaide: Unpublished and provisional list by the Department for Environment and Heritage.

Department for Environment and Heritage. (2014). *Falcunculus frontatus frontatus (Crested Shrike-tit).* Adelaide: Department for Environment and Heritage.

Department for Environment and Water. (2023a, July 3). Biological Database of South Australia - Recordset number DEWNRBDBSA230703-1. Adelaide.

Department of Climate Change, Energy, the Environment and Water. (2023b). *Conservation Advice for Aphelocephala leucopsis (Southern Whiteface).* Canberra: Department of Climate Change, Energy, the Environment and Water.

Department of Climate Change, Energy, the Environment and Water. (2023b, July 31). *Species Profile and Threats Database*. Retrieved from Department of Climate Change, Energy, the Environment and Water: http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl

Department of Climate Change, Energy, the Environmentand Water. (2023a). *EPBC Act Protected Matters Report.* Canberra: Department of Climate Change, Energy, the Environmentand Water.

Department of Environment and Natural Resources. (n.d.). *Yellow-bellied Water Skink (Eulamprus heatwolei).* Adelaide: Department of Environment and Natural Resources.

EBS Ecology. (2023). *Native Vegetation Clearance St Andrews Drive, Starthalbyn Residential Subdivision (Stage 1) - Level 1 data Report.* Adelaide: Report prepared by EBS Ecology for WelCo Group.

Milne, T. I., & Croft, T. (2012). *Bushland Condition Monitoring Manual - Benchmark Communities of the South-east.* Adelaide: Nature Conservation Society of South Australia.

Native Vegetation Council. (2017). *Guide to the Native Vegetation Regulations 2016.* Adelaide: Government of South Australia.

Native Vegetation Council. (2020a). *Bushland Assessment Manual July 2020.* Adelaide: Government of South Australia.

Native Vegetation Council. (2020b). *Guide for applications to clear native vegetation under the Native Vegetation Act 1991 and the Native Vegetation Regulations 2017.* Adelaide: Government of South Australia.

Native Vegetation Council. (2020b). *Guide for calculating a Significant Environmental Benefit.* Adelaide: Government of South Australia.

Native Vegetation Council. (2023b). *Scattered Tree Assessment Manual.* Adelaide: Government of South Australia.

Nicolle, D. (2013). *Native Eucalypts of South Australia.* Adelaide: Dean Nicolle.

Pizzey, G., & Knight, F. (2007). *Field Guide to the birds of Australia. 8th Edition.* Harper Collins Australia Pty Limited.

Threatened Species Scientific Committee. (2020). *Conservation Advice - Falco hypoleucos Grey Falcon.* Canberra: Department of Agriculture, Water and the Environment.

Threatened Species Scientific Committee. (2021). *Conservation Advice for Caldenia argocalla: White Beauty Spider-orchid.* Canberra: Department on Agriculture, Water and the Environment.

Turner, J. (2012). *National recovery Plan for the Iron-grass Natural Temperate Grassland of South Australia ecological community, 2012.* South Australia: Department of Environment and Natural Resources.

Turner, J. (2012). *National Recovery Plan for the Peppermint Box (Eucalyptus odorata) Grassy Woodland of South Australia ecological community, 2012.* South Australia: Department of Environment and Natural Recources.

8. Appendices

Appendix 1. Plant species recorded during the survey

Scientific Name	Common Name	EPBC Act	NPW Act
Acacia pycnantha	Golden Wattle	-	-
Allocasuarina verticillata	Drooping Sheoak	-	-
Austrostipa nodosa	Tall Spear-grass	-	-
Austrostipa sp.	Spear-grass	-	-
*Avena barbata**	Bearded Oat	-	-
Bothriochloa macra	Red-leg Grass	-	R
*Cenchrus clandestinus**	Kikuyu	-	-
Chloris truncata	Windmill Grass	-	-
*Dactylis glomerata**	Cocksfoot	-	-
*Echium plantagineum**	Salvation Jane	-	-
*Ehrharta calycina**	Perennial Veldt Grass	-	-
Eucalyptus camaldulensis ssp. *camaldulensis*	River Red Gum	-	-
Eucalyptus leucoxylon ssp. *leucoxylon*	South Australian Blue Gum	-	-
Eucalyptus odorata	Peppermint Box	-	-
Eutaxia microphylla	Common Eutaxia	-	-
*Hypochaeris glabra**	Smooth Cat's Ear	-	-
Juncus sp.	Rush	-	-
*Lepidium africanum**	Common Peppercress	-	-
Lomandra densiflora	Soft Tussock Mat-rush	-	-
Lomandra multiflora ssp. *dura*	Hard Mat-rush	-	-
*Lycium ferocissimum**	African Boxthorn	-	-
*Medicago minima**	Little Medic	-	-
Olea europaea ssp. *Europaea**	Olive	-	-
Olea europaea ssp.*	Olive	-	-
*Oxalis pes-caprae**	Soursob	-	-
*Phalaris sp.**	Canary Grass	-	-
*Piptatherum miliaceum**	Rice Millet	-	-
Romulea rosea var. *australis**	Common Onion-grass	-	-
*Rosa canina**	Dog Rose	-	-
Rumex sp.	Dock	-	-
Rytidosperma caespitosum	Common Wallaby-grass	-	-
*Scabiosa atropurpurea**	Pincushion	-	-
Themeda triandra	Kangaroo Grass	-	-
Trifolium arvense var. *arvense**	Hare's-foot Clover	-	-
*Ulex europaeus**	Gorse	-	-

***Denotes an introduced species.**
NPW Act; E= Endangered, V = Vulnerable, R= Rare
EPBC Act; Ex = Extinct, CR = Critically endangered, EN = Endangered; VU = Vulnerable

Appendix 2. Likelihood of occurrence assessment – threatened flora

Scientific Name	Common Name	NPW Act	EPBC Act	Data source	Date of last record	Species known habitat preferences	Likelihood of use for habitat – Comments
Acacia menzelii	Menzel's Wattle	V	VU	2	May	Confined to localised areas around Monarto and Murray Bridge, Mount Lofty Ranges and Flinders Ranges. On roadsides, or in low open shrubby woodland on more rocky sites and found in open *Eucalyptus* scrub. Often associated *Eucalyptus socialis, E. incrassata, Callitris gracilis* and *E. odorata* on calcareous loamy earths (Department of Climate Change, Energy, the Environment and Water, 2023b).	Unlikely. No records in the Search Area and no suitable habitat present in the Project Area. Not recorded during the field survey.
Acacia pinguifolia	Fat-leaved Wattle	E	EN	2	Likely	Grows in sandy or hard alkaline duplex soil in mallee, open woodland, open scrub, shrubland or heath. Associated species include *Eucalyptus odorata, E. incrassata E. dumosa, E. foecunda, E. calycogona, E. flocktoniae, E. pileata* and *Melaleuca uncinata* (Department of Climate Change, Energy, the Environment and Water, 2023b).	Unlikely. No records in the Search Area and no suitable habitat present in the Project Area. Not recorded during the field survey.
Acacia rhetinocarpa	Neat Wattle	V	VU	2	Known	Known to occur on dune crests and dunes/hills, plains and swales (Department of Climate Change, Energy, the Environment and Water, 2023b).	Unlikely. No records in the Search Area and no suitable habitat present in the Project Area. Not recorded during the field survey.
Bothriochloa macra	Red Leg Grass	R	-	1	2004	Occurs on most soil types but often dominant on poor, lower fertility soils and frequently invades degraded areas. Mainly found in open grassy woodland communities and is often found in disturbed sites.	Highly likely. Recorded by the field survey at two locations in the Project Area.
Caladenia colorata	Coloured Spider-orchid	-	EN	2	Likely	Sandy, fertile soils but also in rock outcrops and in mallee/broombush associations (Department of Climate Change, Energy, the Environment and Water, 2023b).	Unlikely. No records in the Search Area and no suitable habitat present in the Project Area.
Caladenia conferta	Coast Spider-orchid	E	EN	2	May	Mallee woodlands or *Melaleuca uncinata*, scrubs in terra-rosa soils over	Unlikely.

Scientific Name	Common Name	NPW Act	EPBC Act	Data source	Date of last record	Species known habitat preferences	Likelihood of use for habitat – Comments
						limestone, in sedgelands on sandy soils, or on fertile red-brown soils among granite outcrops (Department of Climate Change, Energy, the Environment and Water, 2023b).	No records in the Search Area and no suitable habitat present in the Project Area.
Caladenia rigida	Stiff White Spider-orchid	E	EN	2	Likely	Ridge tops and hillslopes in grey-brown loam often associated with coarse quartzite gravel or sandstone pebbles. Vegetation is usually an open-forest dominated by *Eucalyptus obliqua*, *E. goniocalyx*, *E. leucoxylon*, *E. fasciculosa* and *E. microcarpa*. Sites have a relatively open understorey of low shrubs and sedges dominated by *Xanthorrhoea semiplana*) *Acacia pycnantha*, *Hibbertia exutiacies*, *Pultenaea largiflorens*, *P. daphnoides* (Department of Climate Change, Energy, the Environment and Water, 2023b).	Unlikely. No records in the Search Area and no suitable habitat present in the Project Area.
Caladenia tensa	Greencomb Spider-orchid	-	EN	2	Likely	Various habitats have been described including Cypress Pine (Family: Cupressaceae) / Yellow Gum Woodland, Pine / Box woodland, mallee-heath sites, healthy woodland and mallee woodland, generally with rock outcrops (Department of Climate Change, Energy, the Environment and Water, 2023b).	Unlikely. No records in the Search Area and no suitable habitat present in the Project Area.
Dodonaea procumbens	Trailing Hop-bush	V	VU	2	May	In SA the species occurs near Port Lincoln, near Clare and Burra in the northern Mt Lofty Range, on Kangaroo Island and near Penola in the SE. *Dodonaea procumbens* grows in low-lying, often winter-wet areas in woodland, low open forests, heathland and grasslands, on sands and clays, with SA populations recorded in open *Eucalyptus camaldulensis, E. fasciculosa* and *E. leucoxylon* woodlands in low-lying areas (Carter, 2010).	Unlikely. No records in the Search Area and no suitable habitat present in the Project Area. Not recorded during the field survey.
Dodonaea subglandulifera	Peep Hill Hop-bush	E	EN	2	May	Populations primarily occur on low hills on loamy soils associated with rocky	Unlikely.

Scientific Name	Common Name	NPW Act	EPBC Act	Data source	Date of last record	Species known habitat preferences	Likelihood of use for habitat – Comments
						(limestone, slate, shale) outcrops. The species has also been recorded from plains country in sandy soils over limestone (Department of Climate Change, Energy, the Environment and Water, 2023b).	No records in the Search Area and no suitable habitat present in the Project Area. Not recorded during the field survey.
Eucalyptus fasciculosa	Pink Gum	R	-	1	2001	Often in poorer sandy soils, in woodland or as an emergent in low shrublands. Commonly associated with *Eucalyptus baxteri, E. cosmophylla, E. diversifolia, E. leptophylla* and *E. leucoxylon* (Nicolle, 2013).	Unlikely. The entire Project Area was surveyed, including every scattered tree. This species was not recorded and does not occur in the Project Area.
Euphrasia collina ssp. *osbornii*	Osborn's Eyebright	E	EN	2	May	Generally recorded as growing in mallee scrubland but has also been found growing in coastal heathlands, sclerophyll forests and woodlands (Department of Climate Change, Energy, the Environment and Water, 2023b).	Unlikely. No records in the Search Area and no suitable habitat present in the Project Area.
Glycine latrobeana	Clover Glycine	V	VU	2	Likely	Generally found in native grasslands, dry sclerophyll forests, woodlands and low open woodlands with a grassy ground layer growing on undulating plains, gentle south-west facing ridge slopes and lower south facing river valley slopes. Prefers grassy woodland habitats including low lying seasonally inundated woodlands (Department of Climate Change, Energy, the Environment and Water, 2023b).	Unlikely. No records in the Search Area and no suitable habitat present in the Project Area.
Olearia pannosa ssp. *pannosa*	Silver Daisy-bush	V	VU	2	Known	The silver daisy-bush occurs in sandy, flat areas and in hilly, rocky areas in woodland or mallee. Hilly area soil types include hard pedal mottled-yellow duplex and hard pedal red duplex (Department of Climate Change, Energy, the Environment and Water, 2023b).	Unlikely. No records in the Search Area and no suitable habitat present in the Project Area. Not recorded during the field survey.
Prasophyllum pallidum	Pale Leek-orchid	R	VU	2	Likely	Well-grassed open forests from the Flinders Ranges to the Northern and Southern Lofty regions of South Australia (Department of Climate	Unlikely. No records in the Search Area and no suitable habitat present in the Project

Scientific Name	Common Name	NPW Act	EPBC Act	Data source	Date of last record	Species known habitat preferences	Likelihood of use for habitat – Comments
						Change, Energy, the Environment and Water, 2023b).	Area. Not recorded during the field survey.
Pterostylis arenicola	Sandhill Greenhood Orchid	V	VU	2	Likely	Restricted to consolidated, coloured sand-hills in near coastal areas.	Unlikely. No records in the Search Area and no suitable habitat present in the Project Area.
Senecio macrocarpus	Large-fruit Fireweed	V	VU	2	May	Most commonly in depressions in low lying closed sedgeland but may occur in sedgeland, herbland, low shrubland to low open woodland where competition from understorey plants is low (Department of Climate Change, Energy, the Environment and Water, 2023b).	Unlikely. No records in the Search Area and no suitable habitat present in the Project Area.
Thelymitra epipactoides	Metallic Sun-orchid	E	EN	2	May	Habitat is mainly confined to *Allocasuarina verticillata* low woodland, *Eucalyptus cladocalyx* mid woodland, *Eucalyptus angulosa*, *E. diversifolia* ssp. *diversifolia* mid mallee woodland, +/- *Melaleuca lanceolata* +/- *Melaleuca uncinata* tall open shrubland.	Unlikely. No records in the Search Area and no suitable habitat present in the Project Area.
Thelymitra matthewsii	Spiral Sun-orchid	E	VU	2	Likely	*Thelymitra matthewsii* favours open forests and woodlands in well-drained sand and clay loams. It is a post-disturbance coloniser that is usually found in open areas around old quarries and gravel pits, on road verges, disused tracks and animal trails (Department of Climate Change, Energy, the Environment and Water, 2023b).	Unlikely. No records in the Search Area and no suitable habitat present in the Project Area.
Veronica derwentiana ssp. *homalodonta*	Mount Lofty Speedwell	E	CR	2	Likely	Found in the wetter parts of the Mount Lofty Ranges.	Unlikely. No records in the Search Area and no suitable habitat present in the Project Area.

Source; 1- BDBSA, 2 - Protected matters search tool, 3 – recorded during the field survey.
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Appendix 3. Fauna species recorded during the survey

Scientific Name	Common Name	Conservation Status	
		NPW Act	EPBC Act
Acanthiza chrysorrhoa	Yellow-rumped Thornbill	-	-
Anthochaera carunculata	Red Wattlebird	-	-
Artamus cyanopterus	Dusky woodswallow	-	-
Cacatua galerita	Sulphur-crested Cockatoo	-	-
*Columba livia**	Rock Dove	-	-
Coracina novaehollandiae	Black faced Cuckooshrike	-	-
Dacelo novaeguineae	Kookaburra	-	-
Elanus axillaris	Black-shouldered Kite	-	-
Eolophus roseicapilla	Galah	-	-
Falco cenchroides cenchroides	Nankeen Kestrel	-	-
Gymnorhina tibicen	Australian Magpie	-	-
*Lepus europaeus**	European Hare	-	-
Manorina melanocephala	Noisy Miner	-	-
Neochmia temporalis temporalis	Red-browed Finch	-	-
Pardalotus striatus	Straited pardalote	-	-
Parvipsitta porphyrocephala	Purple Crowned Lorikeet	-	-
Petrochelidon nigricans	Tree Martian	-	-
Phylidonyris novaehollandiae novaehollandiae	New Holland Honeyeater	-	-
Platycercus elegans elegans	Crimson Rosella	-	-
Psephotus haematonotus	Red Rumped Parrot	-	-
Smicrornis brevirostris occidentalis	Weebill	-	-
*Sturnus vulgaris**	Common Starling	-	-
Trichoglossus moluccanus moluccanus	Rainbow Lorikeet	-	-
Zosterops lateralis	Silvereye	-	-

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Appendix 4. Likelihood of occurrence assessment – threatened fauna

Scientific Name	Common Name	NPW Act	EPBC Act	Data source	Date of last record / PMST	Species known habitat preferences	Likelihood of use for habitat – Comments
Aphelocephala leucopsis	Southern Whiteface	-	VU	2	Likely	Critical habitat for Southern Whiteface consists of (Department of Climate Change, Energy, the Environment and Water, 2023b): • Relatively undisturbed open woodlands and shrublands with a grass/shrub understorey. • Low tree densities and an herbaceous understorey with litter cover. • Living and dead trees with hollows and crevices for roosting and breeding.	**Unlikely.** There have been no records of the species in the Search Area since 1995, there is no suitably undisturbed habitat. The Southern Whiteface was not recorded during the field survey.
Anhinga novaehollandiae novaehollandiae	Australasian Darter	R	-	1	2017	Wetland / aquatic species.	**Unlikely.** No wetland or aquatic habitat occurs in the Project Area.
Biziura lobata menziesi	Musk Duck	R	-	1	2011	Wetland / aquatic species.	**Unlikely.** No wetland or aquatic habitat occurs in the Project Area.
Botaurus poiciloptilus	Australasian Bittern	V	EN	2	Likely	Wetland / aquatic species.	**Unlikely.** No wetland or aquatic habitat occurs in the Project Area.
Calidris ferruginea	Curlew Sandpiper	E	CR	2	Likely	Wetland / aquatic species.	**Unlikely.** No wetland or aquatic habitat occurs in the Project Area.
Cereopsis novaehollandiae novaehollandiae	Cape Barren Goose	R	-	1	1998	Offshore islands and nearby mainland in areas of pasture, tussock grasslands or low shrubland.	**Possible.** There are no records in the past 20 years and no intact habitat in the Project Area. The species might occur in pasture irregularly.
Coturnix ypsilophora australis	Brown Quail	V	-	1	1999	Green pastures, bracken thickets, tall grasslands, rank grasses near wetlands (Pizzey & Knight, 2007).	**Possible.** There are no records in the past 20 years and no intact habitat. The species

Scientific Name	Common Name	NPW Act	EPBC Act	Data source	Date of last record / PMST	Species known habitat preferences	Likelihood of use for habitat – Comments
							may occur irregularly in rank grass growth.
Craterocephalus fluviatilis	Murray Hardyhead	-	EN	2	EN	Wetland / aquatic species.	**Unlikely.** No wetland or aquatic habitat occurs in the Project Area.
Eulamprus heatwolei	Yellow-bellied Water Skink	V	-	1	2010	Riparian areas, typically within one or two metres of water. Rocky watercourses with still pools are preferred. Moist, rotting logs and rocky crevices are important habitat requirements (Department of Environment and Natural Resources, n.d.).	**Possible.** Although recorded within the past 20 years, there is no suitable habitat in the Project Area. The species may occur in suitable habitat outside the Project Area in the nearby Angus River.
Falco hypoleucos	Grey Falcon	V	VU	2	Likely	Inland lowland plains including Acacia shrublands with timbered watercourses and treeless areas. In areas receiving <500 mm of annual rainfall (Threatened Species Scientific Committee, 2020).	**Unlikely.** There are no historical records of the species within 5 km and habitat is not suitable.
Falco subniger	Black Falcon	R	-	1	2011	Plains, grasslands, timbered watercourses and crops. Also sometimes occurs in towns and cities (Pizzey & Knight, 2007).	**Possible.** Although there has not been a record of the species in the past 20 years near the Project Area, the species may occur occasionally as wandering individuals.
Falcunculus frontatus frontatus	Eastern Shriketit	R	-	1	2017	Occurs predominantly in Eucalypt woodlands and forests. In South Australia, the preferred broad vegetation groups are Grassy Woodland, Heathy Woodland and Riparian (Department for Environment and Heritage, 2014).	**Highly Likely.** The species has been recorded within 5 km of the Project Area in the past 10 years. Woodland areas, especially near the Angus River, inside the Project Area are suitable habitat.
Galaxias rostratus	Flathead Galaxias	-	CR	2	May	Wetland / aquatic species.	**Unlikely.** No wetland or aquatic habitat occurs in the Project Area.
Grantiella picta	Painted Honeyeater	R	VU	2	Likely	Mistletoes in eucalypt forests/woodlands, riparian woodlands of black box and river red gum, box-ironbark-yellow gum woodlands, acacia-dominated woodlands,	**Unlikely.** There are no records of the species and no suitable habitat in the Project Area.

Scientific Name	Common Name	NPW Act	EPBC Act	Data source	Date of last record / PMST	Species known habitat preferences	Likelihood of use for habitat – Comments
						paperbarks, casuarinas, Callitris, and trees on farmland or gardens. The species prefers woodlands which contain a higher number of mature trees, as these host more mistletoes (Department of Climate Change, Energy, the Environment and Water, 2023b).	
Hieraaetus morphnoides	Little Eagle	V	-	1	2017	Widespread over diverse habitats; forest, woodland, open scrub, tree-lined watercourses of interior Australia such as the Murray River. Prefers areas where open country intermixes with wooded or forested hills, as in farmland, irrigated land (Pizzey & Knight, 2007).	**Possible.** Although there has not been a record of the species in the past 20 years near the Project Area, the species may occur occasionally as wandering individuals.
Hirundapus caudacutus	White-throated Needletail	V	VU	1	May	Almost exclusively aerial in Australia, recorded most above wooded areas (Department of Climate Change, Energy, the Environment and Water, 2023b).	**Unlikely.** There are no records of the species and no suitable habitat in the Project Area.
Isoodon obesulus obesulus	Southern Brown Bandicoot	E	EN	1	May	Areas of dense ground cover in varied habitat: heathland, shrubland, sedgeland, heathy open forest and woodland (Department of Climate Change, Energy, the Environment and Water, 2023b).	**Unlikely.** There are no records of the species and no suitable habitat in the Project Area.
Leipoa ocellata	Malleefowl	V	VU	1	May	Low woodlands dominated by mallee and associated habitats such as Broombush (*Melaleuca uncinata*) and Scrub Pine (*Callitris verrucosa*).	**Unlikely.** There are no records of the species and no suitable habitat in the Project Area.
Litoria raniformis	Growling Grass Frog	-	VU	1	May	Wetland / aquatic species.	**Unlikely.** No wetland or aquatic habitat occurs in the Project Area.
Maccullochella peelii	Murray Cod	-	VU	1	May	Wetland / aquatic species.	**Unlikely.** No wetland or aquatic habitat occurs in the Project Area.
Melanodryas cucullata cucullata	South-eastern Hooded Robin	R	EN	1	Likely	*Eucalyptus* spp. woodland and mallee and *Acacia* shrubland (Pizzey & Knight, 2007).	**Unlikely.**

Scientific Name	Common Name	NPW Act	EPBC Act	Data source	Date of last record / PMST	Species known habitat preferences	Likelihood of use for habitat – Comments
							There are no records of the species and no suitable habitat in the Project Area.
Melithreptus gularis	Black-chinned Honeyeater	V	-	1	2010	Occupies dry *Eucalyptus* woodland with an annual rainfall range of 400-700 mm, particularly associations containing ironbark and box. Favoured habitats incorporate a mixture of mature and regenerating woodland Eucalypts, although adjacent scattered paddock trees are also used.	**Possible.** Although there has not been a record of the species in the past 10 years near the Project Area, the species may occur occasionally as wandering individuals.
Myiagra inquieta	Restless Flycatcher	R	-	1	2001	Open forests and woodlands and is frequently seen in farmland (Pizzey & Knight, 2007).	**Possible.** Although there has not been a record of the species in the past 20 years near the Project Area, the species may occur occasionally as wandering individuals.
Nannoperca australis	Southern Pygmy Perch	-	VU	1	2022	Wetland / aquatic species.	**Unlikely.** No wetland or aquatic habitat occurs in the Project Area.
Nannoperca obscura	Yarra Pygmy Perch	-	VU	1	May	Wetland / aquatic species.	**Unlikely.** No wetland or aquatic habitat occurs in the Project Area.
Neophema chrysostoma	Blue-winged Parrot	V	VU	1	Likely	Prefers grasslands and grassy woodlands but will inhabit a range of habitats from coastal, sub-coastal and inland areas, right through to semi-arid zones.	**Unlikely.** There are no records of the species and no suitable habitat in the Project Area.
Neophema elegans elegans	Elegant Parrot	R	-	1	2019	Nomadic species occupying open forests, woodlands, mallee, mulga and salt marsh.	**Likely.** Likely to occur at least sometimes in woodland areas of the Project Area.
Numenius madagascariensis	Eastern Curlew	E	CR	1	May	Wetland / aquatic species.	**Unlikely.** No wetland or aquatic habitat occurs in the Project Area.
Oxyura australis	Blue-billed Duck	R	-	1	2011	Wetland / aquatic species.	**Unlikely.** No wetland or aquatic habitat occurs in the Project Area.

Scientific Name	Common Name	NPW Act	EPBC Act	Data source	Date of last record / PMST	Species known habitat preferences	Likelihood of use for habitat – Comments
Pedionomus torquatus	Plains-wanderer	E	CR	1	May	Inhabits sparse, treeless, lowland native grasslands with approximately 50% bare ground, most vegetation less than 5 cm in height, with some widely-spaced plants up to 30 cm high (Department of Climate Change, Energy, the Environment and Water, 2023b).	**Unlikely.** There are no records of the species and no suitable habitat in the Project Area.
Polytelis anthopeplus monarchoides	Regent Parrot (eastern)	V	VU	1	May	Murray Mallee region of South Australia in River Red Gum (*Eucalyptus camaldulensis*), floodplain, woodland and mallee.	**Unlikely.** The Project Area is outside the known distribution of the species. There are no records of the species and no suitable habitat in the Project Area.
Pteropus poliocephalus	Grey-headed Flying-fox	R	VU	1	2019	The Grey-headed Flying-fox requires foraging resources and roosting sites, with the closest known roosting site located in metropolitan Adelaide. Foraging habitat includes open forests, closed and open woodlands. It also feeds on commercial fruit crops and on introduced tree species in urban areas. The primary food source is blossom from *Eucalyptus* and related genera. Grey-headed Flying-foxes commute daily to foraging areas, usually within 15 km of the day roost site, but are capable of nightly flights of up to 50 km from their roost (Department of Climate Change, Energy, the Environment and Water, 2023b).	**Possible.** Larger trees in the Project Area are suitable foraging habitat for the species. Given the distance from the nearest known roosting site, any Grey-headed Flying-foxes using the site are likely to be vagrant individuals.
Rattus lutreolus	Swamp Rat	R	-	1	2002	Coastal heath, sedgelands, dune scrub and grassland areas.	**Possible.** Suitable habitat may occur near the Angus River, although the species is not likely to persist inside the Project Area.
Rostratula australis	Australian Painted Snipe		EN	1	Likely	Wetland / aquatic species.	**Unlikely.** No wetland or aquatic habitat occurs in the Project Area.

Scientific Name	Common Name	NPW Act	EPBC Act	Data source	Date of last record / PMST	Species known habitat preferences	Likelihood of use for habitat – Comments
Spatula rhynchotis	Australasian Shoveler	R	-	1	2012	Wetland / aquatic species.	**Unlikely.** No wetland or aquatic habitat occurs in the Project Area.
Stagonopleura bella samueli	Western Beautiful Firetail	R	EN	1	May	Habitat requirements not well known, but they are recorded in a range of habitats including dense heath and thick forests especially near sheoaks and tea-trees (Department of Climate Change, Energy, the Environment and Water, 2023b).	**Unlikely.** There are no records of the species and no suitable habitat in the Project Area.
Stagonopleura guttata	Diamond Firetail	V	VU	1	Likely	*Eucalyptus, Acacia* or *Casuarina* woodlands, open forests and other lightly timbered habitats, including farmland and grassland with scattered trees. They prefer areas with relatively low tree density, few large logs, and little litter cover but high grass cover (Department of Climate Change, Energy, the Environment and Water, 2023b).	**Unlikely.** There are no records of the species within 5 km and the species was not recorded during the field survey.
Trichosurus vulpecula	Common Brushtail Possum	R	-	1	2021	Anywhere where trees with suitable hollows occur, including open forests and woodlands but also urban areas and cities. The species can be common in urban areas.	**Highly Likely.** The species has been recorded in the past 10 years and habitat is suitable, particularly the large, hollow-bearing trees that are present.
Zanda funerea whiteae	Yellow-tailed Black Cockatoo	V	-	1	2017	*Eucalyptus* spp. woodland, heathlands, subalpine areas, pine plantations and occasionally in urban areas (Pizzey & Knight, 2007).	**Highly Likely.** The species has been recorded in the past 10 years and tree habitat in the Project Area is suitable.
Zoothera lunulata halmaturina	South Australian Bassian Thrush	R	EN	1	May	Damp, densely forested areas and gullies, usually with a thick canopy overhead and leaf-litter below.	**Unlikely.** There are no records of the species and no suitable habitat in the Project Area.

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