Native Vegetation Clearance Data Report

Lots 81-82 Paech Road, Mt Barker Data Report

Final

June 2026

umwelt

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Final

Prepared by
Umwelt (Australia) Pty Limited

On behalf of
The Trustee for Heysen Hills Unit Trust

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Report No.: 32104 – RO1
Date: June 2026

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Document Status

Rev No.	Reviewer Name	Date	Approved for Issue Name	Date
V1	Dr Travis How	15/05/2026	Dr Travis How	15/05/2026
V2	A. Carpenter	15/06/2026	Dr Travis How	17/06/2026

Abbreviations

Abbreviation	Description
BDBSA	Biological Database of South Australia (managed by DEW)
DCCEEW	Department of Climate Change, Energy, the Environment and Water (Commonwealth)
DEW	Department for Environment and Water (South Australia)
EBS	Environment and Biodiversity Services Pty Ltd (trading as EBS Ecology)
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth)
Ha	Hectare(s)
IBRA	Interim Biogeographic Regionalisation for 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
NPW Act	*National Parks and Wildlife Act 1972* (South Australia)
NV Act	*Native Vegetation Act 1991* (South Australia)
NVC	Native Vegetation Council
PIRSA	Department of Primary Industries and Regions
PMST	Protected Matters Search Tool Report
Project	Proposed construction of residential allotments, and associated infrastructure within Lot 81 and 82 Paech Road, Mt Barker
Project Area	As shown in
SA	South Australia(n)
Search Area	5 km buffer of the Project Area considered in the desktop assessment database searches
SEB	Significant Environmental Benefit

Abbreviation	Description
sp.	Species
spp.	Species (plural)
ssp.	Sub-species
STAM	Scattered Tree Assessment Method
TEC	Threatened Ecological Community
Umwelt	Umwelt (Australia) Pty Ltd
var.	Variety (a taxonomic rank below that of species and subspecies, but above that of form)

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1.0 Application Information

Application information, including contact details of the applicant, is summarised in **Table 1.1**. A summary of the proposed clearance, including the Significant Environmental Benefit (SEB) obligations is provided in **Table 1.2**.

Table 1.1 Application Details

Applicant	The Trustee for Heysen Hills Unit Trust		
Key Contact	[redacted] Director The Trustee for Heysen Hills Unit Trust [redacted]		
Landowner	The applicant is the landowner.		
Site Address	Lots 81 and 82 Paech Road, Mount Barker		
Local Government Area	Mount Barker District Council	**Hundred**	Macclesfield
Title ID	CT6229/813 CT6150/108	**Parcel ID**	D94498AL81 D94498AL82

Table 1.2 Summary of Proposed Clearance

Purpose of Clearance	Clearance is required for a residential subdivision
Native Vegetation Regulation	Regulation 12, Schedule 1; clause 35, Residential subdivision.
Description of the Vegetation under Application	Scattered trees of species *Eucalyptus camaldulensis* var. *camaldulensis* (River Red Gum) (357 trees, of which 355 are seedlings/saplings of low biodiversity score and two are moderate biodiversity score), *Eucalyptus leucoxylon* ssp. *leucoxylon* (South Australian Blue Gum) (7 trees, of which three are low biodiversity score, two are moderate biodiversity score and two are high biodiversity score), *Acacia melanoxylon* (Blackwood) (12 seedlings), *Allocasuarina verticillata* (Drooping Sheoak) (5 seedlings), *Eucalyptus viminalis* ssp. *cygnetensis* (Manna Gum) (1 seedling) and *Eucalyptus cosmophylla* (Cup Gum) (1 seedling).
Total proposed clearance – area (ha) and/or number of trees:	383 scattered trees are proposed to be cleared, of which 377 are low biodiversity score trees, four are moderate biodiversity score trees and two are high biodiversity score trees.
Level of clearance	**Level 4**
Overlay (Planning and Design Code)	Native Vegetation Overlay
Map of proposed clearance area	See **Figure 4.1**
Mitigation Hierarchy	**Avoidance** The subdivision design has undergone many iterations since the early concept design in 2022. The Project sought guidance from Umwelt (previously EBS Ecology) as to the biodiversity score of the trees within the Project Area to inform the design process and assist in avoiding high biodiversity score trees where practicable. The early concept design was discussed with the Native Vegetation Branch in 2023. The proponent has

	subsequently worked with the Mt Barker District Council to refine the design in an effort to retain as many high and moderate value trees as possible and thus avoid impacts. This has resulted in the design being adapted to retain a number of high, moderate and low biodiversity value trees within reserves and along road reserves/boundaries, including additional trees in Stage 4 following further design refinement. **Minimisation** 377 of the 383 trees proposed to be removed are low biodiversity score trees, including *Eucalyptus* sp. seedlings at the base of a dam, which had emerged since the dam water level receded. The remaining low biodiversity score trees to be removed are generally young *Eucalyptus camaldulensis* (River Red Gum) which have emerged in and around buildings in the southwestern corner of the Project Area and under existing planted vegetation as self-seeded juveniles. Seedlings have low biodiversity value. Impacts to moderate and high biodiversity score trees have been minimised through the design process where practicable. The design has larger reserve areas which retain more trees of varying age classes, which will have lower edge effects and better habitat value into the long term as compared to smaller reserves around individual trees. Overall, the design has been reworked to retain an additional four high biodiversity score trees and 1 moderate biodiversity score tree from the initial design presented in 2023. The design aimed to retain all high biodiversity score trees, however the final design has arrived at a larger reserve in the southeastern corner which retains more trees in groups and has a lower impact on total biodiversity score than the previous design. **Rehabilitation** Revegetation using endemic species will occur in reserves within the Project Area after construction is completed. The plantings will be a mixture of lifeforms which will increase the current diversity of species and life-forms as all understorey is currently exotic pasture species dominated by Phalaris aquatica, providing minimal habitat value. The rehabilitated reserve areas are envisaged to be relatively open, consistent with open woodland, and not densely forested by regenerating saplings.
SEB Offset proposal	Payment of **$188,224.59**, which includes **$9,812.65** administration fee into the NV fund.

2.0 Purpose of Clearance

2.1 Description

Umwelt was engaged by the Trustee for Heysen Hills Unit Trust to undertake an updated native vegetation clearance assessment for tree clearance in relation to the construction of residential allotments, and associated infrastructure within Lot 81 and 82 Paech Road, Mt Barker (the Project).

The subdivision design has undergone many iterations since the early concept design in 2022. The Project sought guidance from Umwelt (previously EBS Ecology) in 2023 as to ecological constraints to inform the design process. Scattered native trees were ranked and mapped based on their biodiversity score to inform the design process. The Native Vegetation Branch was contacted by the proponent (in 2023) to gain early advice on which trees should be avoided, based on their biodiversity score. In the intervening years, the Project has gone through several changes of ownership. The proponent has been negotiating closely with Mt Barker District Council to arrive at which trees to retain and which to remove to receive development approval. Further design refinement has enabled additional trees to be retained within reserve areas, including trees within Stage 4. This report seeks approval to clear 383 scattered trees within the Project Area. This includes 377 low biodiversity score trees, four moderate biodiversity score trees and two high biodiversity score trees.

The Project involves the proposed clearance of 383 scattered trees, comprised of the following:

- 357 *Eucalyptus camaldulensis* (River Red Gum) – 355 seedlings/saplings of low biodiversity score and five of moderate biodiversity score
- 7 *Eucalyptus leucoxylon* (South Australian Blue Gum) – three low biodiversity score and two moderate biodiversity score trees and two high biodiversity score trees
- 12 *Acacia melanoxylon* (Blackwood) – two groups of seedlings, self-seeded from planted trees
- 5 *Allocasuarina verticillata* (Drooping Sheoak) – self-seeded
- 1 *Eucalyptus viminalis ssp. cygnetensis* (Manna Gum) – self-seeded
- 1 *Eucalyptus cosmophylla* (Cup Gum) – self-seeded.

Objectives

The objectives of the Project were to undertake a flora and fauna assessment for the proposed land division:

- Undertake a desktop assessment of the likelihood of occurrence and status of threatened flora and fauna protected under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and State *National Parks and Wildlife Act 1972* (NPW Act)
- Assess native vegetation within the Project Area for clearance using the Native Vegetation Council (NVC) endorsed Scattered Trees Assessment Method (STAM)
- Calculate the SEB offset requirements based on the impact footprint

This report presents findings of the desktop assessment, in addition to results of the STAM required for assessing trees proposed for clearance under the Native Vegetation Regulations

2.2 Background

Current and surrounding land use

The Project Area subdivision is on old farmland with large remnant scattered trees and is located on the south-east edge of Mount Barker and is approximately 31.4 kilometres (km) southeast of the Adelaide central business district. The property was cleared and farmed for approximately 150 years since the 1870's and has also been planted at various stages with native and non-native flora species. The proposed residential development consists of approximately 174 allotments. The surrounding land use is current or future residential subdivision projects. The location of the residential development is provided in **Figure 2.1**.

The design was further refined in June 2026, following feedback from Mt Barker District Council, to retain additional scattered trees within reserve areas, consistent with trees considered by Council to be of medium and high value.

Administrative boundaries

The Project Area occurs within the Mt Barker Local Government Area, Hills and Fleurieu Landscape region, the Macclesfield Hundred and the Hindmarsh County (DEW 2023a).

Bioregions

The Interim Biogeographical Regionalisation of Australia (IBRA) identifies geographically distinct bioregions based on common climate, geology, landform, native vegetation and species information. The bioregions are further refined into subregions and environmental associations. The Project Area is located in the Flinders Lofty Block IBRA Bioregion, the Mt Lofty Ranges IBRA Subregion and the Hahndorf IBRA Environmental Association.

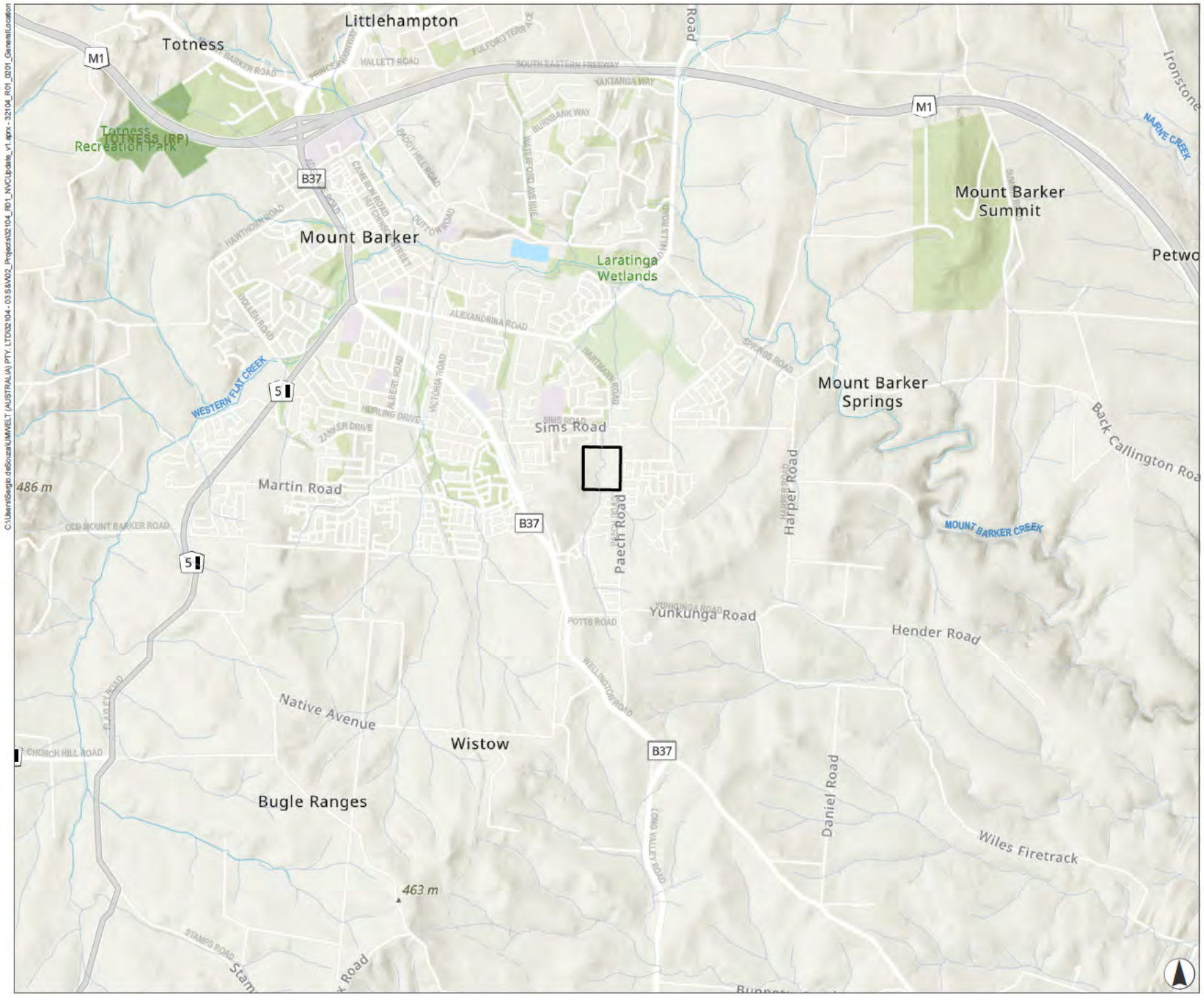

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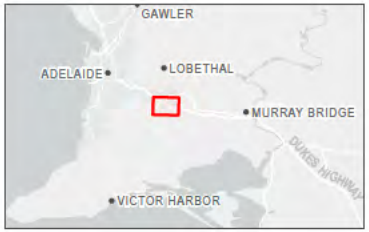
FIGURE 2.1

General Location Map with Respect to Surrounding Suburbs

Legend

- Project Area
- Conservation Reserves
- Roads
- Watercourses



0 1 2

Kilometres

Scale 1:50,000 at A4
GDA2020 MGA Zone 54

umwelt

Image Source: ESRI Basemap (2026) | **Data Source:** Umwelt, DIT, DEW (2026)

2.3 Details of the Proposal

The proposed design for the residential development includes the construction of approximately 174 allotments and a large central reserve running north-south along the creek line. Six smaller reserves have been incorporated into the layout to retain high biodiversity value trees identified in early surveys. The reserve areas occupy 26% of the Project Area. The latest design has been agreed with Mount Barker District Council and reflects further refinement of the layout to retain additional trees within reserve areas. The progression of the proposed development design is illustrated in **Figure 2.2** to **Figure 2.4**.

Figure 2.2 shows an earlier design from June 2023, which would have had greater impacts to high biodiversity value trees. **Figure 2.3** shows the plan with contours provided to Umwelt by Future Urban on 10 March 2026. The latest design iteration is shown in **Figure 2.4** and demonstrates further refinement of the layout to retain additional trees within reserves.

It is intended that the reserves will be relatively open spaces, with native ground layers planted, similar to nearby areas. Dense *Eucalyptus* saplings that have self-seeded are proposed to be cleared, whilst large remnant trees and some planted vegetation that has been identified as having high value by Mt Barker District Council or arborists will be retained.

Figure 2.2 Early Design June 2023, Which Did Not Avoid Impacts to a Number of High Biodiversity Value Trees

Plan SA
Development No. / /
Mount Barker District Council

Proposed Plan of Division
Allotment 82 in D94498
Allotment 63 in D136969
Hundred of Macclesfield
in the area named
MOUNT BARKER

CT 6150/108, 6316/208
REGISTERED OWNER(S) :
HEYSEN HILLS PTY LTD

N
W E
S

0 10 20 40 60 80 100 m

1:1000

Plan with contours provided to Umwelt by Future Urban on 10 March 2026.

Basin design

Refer CT 6316/208 for Easement details.

No. of proposed allotments	173
Total area	14.60ha
Reserve area	(25%) 3.652ha
Length of new roads	2950m

Contour interval 2m.
Datum AHD.

Road pavements shown are indicative only.

All road reserves are 14m wide unless shown.

Not to be used for detailed engineering design.

Dimensions and areas are subject to survey.

Original Sheet Size A1

MARK WILLIAMS
LICENSED SURVEYOR

REF:	**23A1454**
DWG NO.:	23A1454PROP(C)
REVISION:	C
BAT/RHF	29/01/2026

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Kaurna Country
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+ Construction + Mining +
+ Spatial Information Management +

Alexander Symonds Surveying Consultants

Plan SA
Development No. / /
Mount Barker District Council

Proposed Plan of Division
Allotment 82 in D94498
Allotment 63 in D136969
Hundred of Macclesfield
in the area named

MOUNT BARKER

CT 6150/108, 6316/208
REGISTERED OWNER(S) :
HEYSEN HILLS PTY LTD

N
W E
S

0 10 20 40 60 80 100 m

1:1000

Refinement of the layout to retain additional trees within the reserves provided to Umwelt by Future Urban on 09 June 2026.

Basin design

Tree to be removed

Refer to CT 6316/208 and CT 6150/108 for Easement details.

No. of proposed allotments	174
Total area	14.60ha
Reserve area	(26%) 3.797ha
Length of new roads	2663m

Contour interval 2m.
Datum AHD.

Road pavements shown are indicative only.

All road reserves are 14m wide unless shown.

Not to be used for detailed engineering design.

Dimensions and areas are subject to survey.

Original Sheet Size A1

MARK WILLIAMS
LICENSED SURVEYOR

REF: 23A1454	LOT 63 & 225 PAECH ROAD
DWG NO.: 23A1454PROP(H)	MOUNT BARKER
REVISION: H	
BAT/RHF/MS 09/06/2026	

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2.4 Approvals Required or Obtained

- ***Native Vegetation Act 1991* (NV Act)** – this data report is supplied to fulfil requirements under the NV Act.
- ***Planning, Development and Infrastructure Act 2016*** (PDI Act) – Approval is required for this Project.
- ***Environment Protection and Biodiversity Conservation Act 1999*** (EPBC Act) – EPBC approval is unlikely to be required for this Project.
- ***National Parks and Wildlife Act 1972* (NPW Act)** – Umwelt (formerly EBS Ecology) has the required flora collection permit (K25613-28).
- ***Landscape SA Act 2019* (LSA Act)** – A water affecting activity (WAA) permit may be required for the proposed Project. Environmental management plans should consider the impact of erosion / runoff into the existing creek. Declared Weeds were observed in the Project Area. All land managers have a duty to manage environmental and Declared Weeds on their property. A permit to transport Declared Weeds on a public road may be required for the proposed Project (i.e. for contaminated topsoil which may be removed from site).
- ***Aboriginal Heritage Act 1988*** – Approval will be required if any sites, objects or remains are uncovered during the works.

2.5 Native Vegetation Regulation

1. Clearance of vegetation in connection with the division of land for use for residential purposes (including clearance for the construction of roads and other infrastructure), provided that—
   a. any development authorisation for the division of the land and for the use of the land for residential purposes required by or under the **Development Act 1993* has been obtained; and
   b. the Council has been given written notification of the full extent of the clearance expected to occur in connection with the division of the land.
2. Subclause (1) does not apply to—
   a. clearance of vegetation established in accordance with a condition of a consent for clearance of vegetation; or
   b. clearance that would be contrary to—
      i. a condition of a consent for clearance of vegetation; or
      ii. a condition imposed in connection with clearance of vegetation permitted under these regulations; or
      iii. a condition in respect of clearance permitted under the revoked regulations.

Note that the *Development Act 1993* has been superseded by the *Planning, Development and Infrastructure Act 2016*.

2.6 Development Approval Information

Planning zones and overlays that apply to the Project Area are provided in **Table 2.1** below.

Zones

Zones and subzones are primary organisational spatial layers in the Planning and Design Code, that provide guidance on what can happen in an area by setting out the policies and rules for types of development.

Overlays

Overlays are spatially applied policies throughout the state and are used to allow for and/or avoid specific forms of development. The primary use of overlays is to apply planning policies to issues that are of a state interest (e.g. Heritage, Environment, Native Vegetation) and indicate maters that facilitate specialised or expert assessment. Overlays have precedence over zones, subzones and general policies, and they can alter both assessment pathways and the policies or rules applying to development.

Table 2.1 Zones and Overlays that Exist within the Project Area

Zone and Subzone	Overlays
Master Planned Neighbourhood – MPN Emerging Activity Centre - AEC	Affordable Housing
	Hazards (Flooding)
	Hazards (Bushfire – Medium Risk)
	Hazards (Flooding – General)
	Murray-Darling Basin
	Native Vegetation
	Prescribed Water Resources Area
	River Murray Tributaries Protection Area
	Regulated and Significant Tree
	Significant Retirement Facility Supported Accom Sites
	Water Resources

3.0 Methodology

3.1 Desktop Assessment

A desktop assessment was undertaken to determine the potential for any threatened fauna species and Threatened Ecological Communities (TECs) (both Commonwealth and State listed) to occur within the Project Area. This was achieved by undertaking database searches using a 5 km buffer of the Project Area (Search Area).

3.1.1 PMST Report

A Protected Matters Search Tool (PMST) report was generated on 05 May 2026 to identify nationally threatened flora and fauna, migratory fauna and TECs under the EPBC Act relevant to the Project Area (DCCEEW 2026). Only species and TECs identified in the PMST report that are likely or known to occur within the Search Area were assessed for their likelihood of occurrence within the Project Area.

3.1.2 BDBSA Data Extract

A data extract from the Biological Database of South Australia (BDBSA) was obtained from the Department for Environment and Water (DEW) to identify flora and fauna species that have been recorded within 5 km of the Project Area (data extracted 5 May 2026; DEW 2026). 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.

3.1.3 Likelihood of Occurrence

The criteria for the likelihood of occurrence of threatened species within the Project Area are described in **Table 3.1**.

Table 3.1 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
Likely	The species was recorded as part of field surveys.
Possible	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.
Unlikely	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.

3.2 Flora Assessment

An initial flora assessment was undertaken by NVC Accredited Consultant A. Carpenter and J. Thorsteinsson on the 27 September 2022. A second assessment was carried out by A. Carpenter on 19 June 2023 in the south of the Project Area. A third assessment was undertaken by A. Carpenter and N. Piscioneri on 8 August 2023 to record scattered trees around the derelict dwelling in the south-east corner of the Project Area. The fourth and final assessment was carried out by A. Carpenter and C. De Assis on 6 May 2026 to record trees along the boundary of the Project Area in two locations which have been confirmed as needing to be removed. All assessments were in accordance with the Scattered Tree Assessment Method (STAM) (NVC 2020).

3.2.1 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 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. or
- Dead trees (when a dead tree is considered native vegetation). or
- 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

Details of the scattered tree Point Scoring System are outlined in the Scattered Tree Assessment Manual (NVC 2024).

The numbers of uncommon and threatened scattered tree using fauna species entered into the Scattered Tree Scoresheet were calculated by cross-referring the BDBSA data extract (see **Section 3.2.1**) and the list of scattered trees using fauna in the Scattered Tree Assessment Manual (NVC 2024). The resource use of each species identified was considered when determining each tree's suitability for threatened fauna species (e.g. species that only use hollows in scattered trees were only assigned to scattered trees containing hollows).

3.3 Fauna Assessment

3.3.1 Field Survey

All native and exotic fauna species that were opportunistically encountered (directly observed, or tracks, scats, burrows, nests and other indicators of presence) during the native vegetation clearance

assessment were recorded. Potential fauna refuge sites (such as tree-hollows) were noted as an indication of availability of habitat suitability. Particular attention was paid to identifying habitat for threatened species. For each opportunistic fauna observation, the species, the number of individuals, GPS location, detection methodology (sight, sound or sign) and habitat were recorded.

A desktop assessment was undertaken to determine the potential for any threatened fauna species and Threatened Ecological Communities (TECs) (both Commonwealth and State listed) to occur within the Project Area. This was achieved by undertaking database searches using a 5 km buffer of the Project Area (creating the Search Area).

3.4 Limitations

3.4.1 Desktop Assessment

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

Flora and fauna records were sourced from the PMST and BDBSA. The BDBSA only includes verified flora and fauna records submitted to DEW or partner organisations. It is recognised that knowledge is poorly captured, and 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.

The EPBC Act protected matters report and BDBSA flora and fauna records were limited to a 5 km buffer around the Project Area. Fauna species, in particular birds can traverse distances in excess of 20 km. It is also acknowledged that the presence of species may not be adequately represented by database records. Hence the EPBC and BDBSA results may not highlight all potential threatened flora and fauna species that may occur in the area, within a 5 km radius. A precautionary approach has therefore been adopted, with reference to existing EPBC and BDBSA records and native vegetation cover. The combination of database records and background research have provided a solid baseline foundation for determining the flora and fauna that are likely to, or are known to, occur within the Project Area.

3.4.2 Flora

The ecological assessments were conducted in spring, winter and autumn. It is still possible that some species that were present in winter, may not have been detectable at the time of the field surveys, however the probability is low due to the number of field surveys that have been carried out in the Project Area and the disturbed nature of the site.

4.0 Assessment Outcomes

4.1 Vegetation Assessment

4.1.1 General Description of the Vegetation, the Site and Matters of Significance

The Project Area is on gently sloping topography on brown clay loam soil and was previously old farmland. Large remnant scattered trees including regeneration of trees, and planted trees over an understorey consisting of primarily of introduced flora species is present. Planted amenity trees are also present around an abandoned dwelling in the southeast of the Project Area. The understorey in the Project Area was largely dominated by *Phalaris aquatica* (Phalaris) and *Dactylis glomerata* (Cocksfoot). Several Declared Weed species under the LSA Act were identified in the Project Area including:

- *Allium triquetrum* (Three-cornered Garlic)
- *Fraxinus angustifolia* ssp. *Angustifolia* (Narrow-leaved Ash)
- *Gazania linearis* (Gazania)
- *Olea europaea* ssp. (Olive)
- *Rosa canina* (Dog Rose)
- *Rubus fruticosus* (Blackberry)
- *Salix* sp. (Willow)
- *Ulex europaeus* (Gorse)
- *Zantedeschia aethiopica* (White Arum Lily)

Specific information on the recommended manual and chemical control options, legal obligations for landholders, restrictions on their movement and sale, reporting requirements, as well as links to state policies is available on the Department of Primary Industries and Regions (PIRSA) website: https://pir.sa.gov.au/biosecurity/weeds/controlling-weeds

A total of 52 flora species were observed in the Project Area, which included nine native and 43 introduced species. Flora recorded during the field survey is provided in **Appendix 1**.

A total of 435 scattered trees were recorded during the field assessments. These included:

- 402 *Eucalyptus camaldulensis* var. *camaldulensis* (River Red Gum) (the majority of which were regenerating seedlings adjacent to the dam in the Project Area)
- One *Eucalyptus cosmophylla* (Cup Gum), which was a regenerated sapling from a planted specimen
- One *Eucalyptus viminalis* ssp. (Manna Gum) seedling
- 12 *Eucalyptus leucoxylon* ssp. *leucoxylon* (South Australian Blue Gum)
- Two State Rare *Eucalyptus viminalis* ssp. *viminalis* (Manna Gum), in poor to excellent health

- 12 *Acacia melanoxylon* (Blackwood) seedlings
- 5 *Allocasuarina verticillata* (Drooping Sheoak) saplings

Some of the larger trees contained hollows which can provide suitable habitat for fauna species in the Project Area. A map of all the native scattered trees recorded in the Project Area is provided in **Figure 4.1**. Only trees considered native under the NV Act are shown in **Figure 4.1**. All other vegetation within the Project Area was assessed as planted amenity vegetation or weed species.

No flora species listed as threatened under the EPBC Act were recorded in the Project Area.

One flora species listed under the NPW Act as Rare, *Eucalyptus viminalis ssp. viminalis* (Manna Gum) was recorded in the Project Area. This species was identified as Trees 35 and 74 (**Figure 4.1**). Tree 35 is in the southwest corner of the Project Area while Tree 74 is in the roadside corridor along Paech Rd in the southeast of the Project Area.

A total of 22 fauna species (including 18 birds, three mammals and one amphibian) were recorded in the Project Area. The scat of one introduced fauna species, the Red Fox (*Vulpes vulpes*) was recorded in the Project Area. Fauna recorded during the field survey is provided in **Appendix 2**.

One fauna species listed under the NPW Act as Rare, the Common Brushtail Possum (*Trichosurus vulpecula*), was recorded in the Project Area. This species was observed in a low tree hollow in Tree 1 in the Project Area (**Figure 4.1**).

No fauna species listed as threatened under the EPBC Act were recorded in the Project Area.

An ephemeral drainage line runs from south to north through the Project Area to a small dam. During the field assessments, frogs were heard calling and shrimp were present in the creek line. The dam level had receded with many *Eucalyptus* sp. emerged within the base. Aerial imagery shows that the dam was full in late 2020; therefore, the seedlings have most likely emerged over the last few years.

The Project Area is slashed once or twice annually to reduce fire hazard depending on the growth rate of grass (personal communication K. Rogers, former proponent). Residential subdivisions surround the Project Area on all sides.

4.1.2 Details of the Scattered Trees Proposed to be Impacted

A total of 383 scattered trees are proposed to be impacted within the Project Area (**Table 4.1**).

Further information on scattered trees is provided in the Scattered Tree Assessment scoresheet (Attachment 2).

Scattered tree using fauna species in the Project Area are provided in **Appendix 3**.

Photographs of scattered trees are provided in the Scattered Tree Photo File (Attachment 3).

Table 4.1 Details of the Scattered Trees Proposed to be Impacted Colour Coded by Biodiversity Score

Tree #	Tree spp.	No. of trees	Height (m)	Hollows	Diameter (cm)	Canopy dieback (%)	Biodiversity Score	Total Biodiversity Score
3	*Eucalyptus cosmophylla*	1	1.5	0	3	0	0.1	0.1
4	*Eucalyptus viminalis* ssp. *cygnetensis*	1	1.7	0	3	0	0.08	0.08
6	*Eucalyptus camaldulensis*	1	1	0	2	0	0.06	0.06
7	*Eucalyptus camaldulensis*	1	1	0	2	0	0.06	0.06
15	*Eucalyptus camaldulensis*	1	15	0	136	10	4.86	4.86
19	*Eucalyptus camaldulensis*	1	3.2	0	9	5	0.11	0.11
21	*Eucalyptus camaldulensis*	1	0.6	0	1	0	0.06	0.06
22	*Eucalyptus camaldulensis*	1	0.6	0	1	0	0.06	0.06
23	*Eucalyptus camaldulensis*	1	0.6	0	1	0	0.06	0.06
24	*Eucalyptus camaldulensis*	1	0.6	0	1	0	0.06	0.06
25	*Eucalyptus camaldulensis*	1	0.6	0	1	0	0.06	0.06
26	*Eucalyptus camaldulensis*	1	0.6	0	1	0	0.06	0.06
27	*Eucalyptus camaldulensis*	1	0.6	0	1	0	0.06	0.06
32	*Eucalyptus camaldulensis*	1	10.3	1 sml	81.2	40	2.32	2.32
38	*Eucalyptus camaldulensis*	1	9.4	0	38	0	1.17	1.17
39	*Eucalyptus camaldulensis*	1	16.7	0	124.8	0	5.95	5.95
40	*Eucalyptus camaldulensis*	23	6.8	0	3	0	0.27	6.21
41	*Eucalyptus camaldulensis*	84	10.7	0	10	0	0.43	36.12
42	*Eucalyptus camaldulensis*	1	6.8	0	40.9	0	1.08	1.08
43	*Eucalyptus camaldulensis*	1	9.3	0	53	0	1.4	1.4
44	*Eucalyptus camaldulensis*	1	14.3	0	46.2	0	2.2	2.2
45	*Eucalyptus leucoxylon*	1	24.3	3 sml; 1 med; 3lrg	117.5	35	8.52	8.52
46	*Eucalyptus leucoxylon*	1	20.2	1 sml; 1 med; 1 lrg	86.9	8	7.94	7.94
47	*Eucalyptus camaldulensis*	1	19.2	1 sml	74.2	40	3.9	3.9
49	*Eucalyptus camaldulensis*	1	7.1	0	17.5	5	0.42	0.42
52	*Eucalyptus leucoxylon*	1	20	0	85	25	4.25	4.25
54	*Eucalyptus camaldulensis*	1	8.8	0	19.2	0	0.49	0.49
64	*Eucalyptus camaldulensis*	4	9	0	17	0	0.47	1.88
67	*Eucalyptus camaldulensis*	1	0.9	0	0.5	0	0.06	0.06
75	*Eucalyptus camaldulensis*	1	3.5	0	11.2	0	0.13	0.13

Tree #	Tree spp.	No. of trees	Height (m)	Hollows	Diameter (cm)	Canopy dieback (%)	Biodiversity Score	Total Biodiversity Score
76	*Eucalyptus camaldulensis*	1	7.4	0	24.6	0	0.52	0.52
77	*Eucalyptus camaldulensis*	1	5.5	0	12	0	0.33	0.33
78	*Eucalyptus camaldulensis*	1	6.5	0	20.2	0	0.44	0.44
79	*Eucalyptus camaldulensis*	1	7	0	26.3	0	0.52	0.52
80	*Eucalyptus camaldulensis*	1	11.3	0	68.1	70	1.06	1.06
81	*Eucalyptus leucoxylon*	1	9.4	0	22.5	0	0.58	0.58
82	*Eucalyptus camaldulensis*	1	10.2	0	39.5	5	1.26	1.26
83	*Eucalyptus camaldulensis*	1	4.4	0	12.5	0	0.31	0.31
84	*Eucalyptus leucoxylon*	1	11	0	42.5	0	1.93	1.93
85	*Eucalyptus camaldulensis*	1	8.9	0	25.7	0	0.58	0.58
86	*Eucalyptus camaldulensis*	1	2.7	0	3.5	0	0.08	0.08
87	*Eucalyptus camaldulensis*	1	3	0	5.9	0	0.1	0.1
88	*Eucalyptus camaldulensis*	1	2.6	0	3.5	0	0.08	0.08
89	*Eucalyptus camaldulensis*	1	11.8	0	44	0	1.44	1.44
90	*Eucalyptus camaldulensis*	1	6.1	0	13.6	5	0.36	0.36
91	*Eucalyptus camaldulensis*	1	3.5	0	5.2	0	0.1	0.1
92	*Eucalyptus camaldulensis*	1	12.4	0	43.3	10	1.96	1.96
93	*Eucalyptus camaldulensis*	1	7.3	0	26.2	0	0.53	0.53
94	*Eucalyptus camaldulensis*	1	2.3	0	1.6	0	0.07	0.07
95	*Eucalyptus camaldulensis*	1	8.8	0	35	0	1.07	1.07
96	*Eucalyptus camaldulensis*	200	1	0	0.5	0	0.06	12
97	*Eucalyptus camaldulensis*	1	1	0	1	0	0.06	0.06
98	*Eucalyptus camaldulensis*	1	1	0	1	0	0.06	0.06
99	*Eucalyptus camaldulensis*	1	7	0	32.2	40	0.44	0.44
100	*Eucalyptus leucoxylon*	1	18	2 sml	113.2	20	5.93	5.93
101	*Eucalyptus camaldulensis*	1	8	0	10.2	0	0.18	0.18
102	*Allocasuarina verticillata*	1	2	0	5.2	0	0.12	0.12
103	*Eucalyptus camaldulensis*	1	1	0	2	0	0.06	0.06
104	*Eucalyptus camaldulensis*	1	1.8	0	2	0	0.07	0.07
105	*Eucalyptus leucoxylon*	1	3	0	3.2	0	0.09	0.09
106	*Allocasuarina verticillata*	2	4.3	0	2.8	0	0.17	0.34
107	*Allocasuarina verticillata*	1	3.5	0	2.2	0	0.14	0.14
108	*Allocasuarina verticillata*	1	1.4	0	1	0	0.08	0.08
109	*Acacia melanoxylon*	6	2.5	0	2.5	0	0.1	0.6
110	*Acacia melanoxylon*	6	0.3	0	1	0	0.06	0.36
	Total	383					67.57	120.22

Purple = High 7+, **Orange** = moderate biodiversity score 4-7, **Green** = Low biodiversity score 0-4.

4.1.3 Photo Log

Photos are provided on the following page to give a general idea of the vegetation and landscape in the Project Area (**Photo 4.1** to **Photo 4.6**).

4.1.4 Site Map Showing Areas of Proposed Impact

A map of the proposed impact is provided in **Figure 4.1**.

Photo 4.1 General View of Creek Running Through Project Area, Facing South

Photo 4.2 A State Rare, Common Brushtail Possum (*Trichosurus vulpecula*), in a Hollow in Tree 1

Photo 4.3 Declared Weeds *Ulex europaeus* (Gorse) and *Rubus fruticosus* (Blackberry) Around the Dam in the Project Area

Photo 4.4 A mix of planted species observed in the north-east corner of the Project Area, facing west

Photo 4.5 A mix of planted species in rows observed adjacent to the abandoned dwelling in the Project Area

Photo 4.6 Pacific Black Ducks (*Anas superciliosa*) observed in the dam in the Project Area

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FIGURE 4.1

Scattered Trees Marked to be Removed within the Project Area

Legend

- Project Area
- Roads
- Watercourses

Scattered Tree

- Remove
- Retain

0 50 100

Metres

Scale 1:2,300 at A4
GDA2020 MGA Zone 54

umwelt

Image Source: ESRI Basemap (2026) | **Data Source:** Umwelt, DIT, DEW (2026)

4.2 Threatened Species Assessment

4.2.1 Matters of National Environmental Significance

A PMST search identified several Matters of National Environmental Significance (MNES) relevant to the Project Area including (**Table 4.2**):

- One Wetland of International Importance, The Coorong, and Lakes Alexandrina and Albert Wetlands.
- One TEC, Peppermint Box (*Eucalyptus odorata*) Grassy Woodland of South Australia.
- 39 threatened species (including 16 flora and 23 fauna species). and
- 14 migratory species.

Note that some of these matters are not impacted by, or relevant to, the Project (e.g., fish, whales and listed marine species such as albatross and petrel which are afforded specific protection within Commonwealth marine areas), and these matters are therefore not discussed further.

Table 4.2 Summary of the EPBC Act Protected Matters Search Tool results (5 km buffer).

Matters of National Environment Significance under EPBC Act 1999	Identified within the search area
World Heritage Properties	None
National Heritage Properties	None
Wetlands of International Importance	1
Great Barrier Reef Marine Park	None
Commonwealth Marine Areas	None
Listed Threatened Ecological Communities	1
Listed Threatened Species	39 (16 flora and 23 fauna)
Listed Migratory Species	14
World Heritage Properties	None

4.2.2 Wetlands of International Importance

A PMST search identified that The Coorong, and Lakes Alexandrina and Albert Wetlands may potentially occur in the Project Area. This Wetland of International Importance does not occur within the Project Area itself and is situated approximately 20 – 30 km upstream. It is unlikely to be impacted upon by the Project.

4.2.3 Threatened Ecological Communities

The PMST search identified one Critically Endangered TEC that occurs within the broader area:

- Peppermint Box (*Eucalyptus odorata*) Grassy Woodland of South Australia.

This TEC was not identified during the field survey and is therefore not relevant to the Project.

4.2.4 Threatened Flora

Of the 16 nationally listed threatened flora species identified in the PMST, seven were listed as 'likely' to occur within 5 km of the Project Area. Based on known distributions, records, and suitability of habitat, no nationally listed flora species have been assessed as potentially occurring within the Project Area. All nationally listed flora species were assessed as unlikely to occur in the Project Area.

A BDBSA data extract from DEW found an additional 11 State listed species with records within 5 km of the Project Area since 1995. Based on known distributions, records, and suitability of habitat, one species has been assessed as known to occur within the Project Area (**Table 4.3**):

- *Eucalyptus viminalis* ssp. *viminalis* (Manna Gum) (NPW Act: R, with two individuals observed in the Project Area).

A detailed likelihood assessment of threatened flora species information including distribution and preferred habitat information for the Project Area is provided in **Appendix 4**.

Table 4.3 Threatened Flora Identified by the BDBSA Search in the Project Area (DEW 2022b)

Scientific Name	Common Name	EPBC Act	NPW Act	Data source	PMST likelihood/ Year of last record	Likelihood of use for habitat – Comments
Eucalyptus viminalis ssp. *viminalis*	Manna Gum		R	1, 3	2014	Known

Green Shading = Known to Occur

Conservation status:

Aus: Australia (EPBC Act). SA: South Australia (NPW Act). Conservation Codes: CE: Critically Endangered. EN/E: Endangered. VU/V: Vulnerable. R: Rare.

PMST result: Likelihood of species or species habitat to occur within 5 km of the Project Area.

Year of last record: Latest record within 5 km of the Project Area, obtained from the BDBSA Database.

Source of Information:

1: BDBSA (DEW 2022b) – 5 km buffer applied to Project Area

3: Recorded during a field assessment.

4.2.5 Threatened Fauna

Of the 32 nationally listed threatened fauna and migratory species identified in the PMST search, 21 were listed as 'known' or 'likely' to occur within 5 km of the Project Area. Species that are exclusively marine have been excluded from this report (see **Section 4.1.2**). Based on known distribution, records, and suitability of habitat, one nationally listed fauna species was assessed as likely to occur within the Project Area:

- Grey-headed Flying-fox (GHFF) (*Pteropus poliocephalus*) (EPBC Act: VU; NPW Act: R)

Additionally, based on known distributions, records, and suitability of habitat, one nationally listed fauna species has been assessed as possible to occur within the Project Area:

- Diamond Firetail (*Stagonopleura guttata*) (EPBC Act: VU; NPW Act: V)

A BDBSA data extract from DEW found an additional 33 State listed species with records within 5 km of the Project Area since 1995. Based on known distributions, records, and suitability of habitat, eight are considered known, highly likely or likely to occur within the Project Area:

- Common Brushtail Possum (*Trichosurus vulpecula*) (NPW Act: R and observed in the Project Area)
- Eastern Shriketit (*Falcunculus frontatus frontatus*) (NPW Act: R)
- Elegant Parrot (*Neophema elegans elegans*) (NPW Act: R)
- Glossy Ibis (*Plegadis falcinellus*) (NPW Act: R)
- Jacky Winter (*Microeca fascinans fascinans*) (NPW Act: R)
- Little Eagle (*Hieraaetus morphnoides*) (NPW Act: V)
- Peregrine Falcon (*Falco peregrinus macropus*) (NPW Act: R)
- Yellow-tailed Black Cockatoo (*Zanda funerea whiteae*) (NPW Act: V)

Additionally, based on known distributions, records, and suitability of habitat, five State listed species are assessed as possible to occur within the Project Area:

- Brown Quail (*Coturnix ypsilophora australis*) (NPW Act: V)
- Little Egret (*Egretta garzetta nigripes*) (NPW Act: R)
- Plumed Egret (*Ardea intermedia plumifera*) (NPW Act: R)
- Scarlet Robin (*Petroica boodang boodang*) (NPW Act: R)
- White-winged Chough (*Corcorax melanorhamphos*) (NPW Act: R)

A detailed likelihood assessment of threatened fauna species information including distribution and preferred habitat information for the Project Area is provided in **Appendix 5**.

Table 4.4 Threatened Fauna Identified by the PMST and/or BDBSA Search in the Project Area (DCCEEW 2026; DEW 2026)

Scientific Name	Common Name	EPBC Act	NPW Act	Data source	PMST likelihood/ Year of last record	Scattered tree using species	Likelihood of use for habitat – Comments
AVES (BIRDS)							
Ardea intermedia plumifera	Plumed Egret		R	1	2012		Possible
Corcorax melanorhamphos	White-winged Chough		R	1	2021		Possible
Coturnix ypsilophora australis	Brown Quail		V	1	2012		Possible
Egretta garzetta nigripes	Little Egret		R	1	2012		Possible
Falco peregrinus macropus	Peregrine Falcon		R	1	2022	P, H, N, w/r	Highly Likely
Falcunculus frontatus frontatus	Eastern Shriketit		R	1	2020	F, w	Likely
Hieraaetus morphnoides	Little Eagle		V	1	2016	P, w	Likely
Microeca fascinans fascinans	Jacky Winter		R	1	2014	P, w	Likely
Neophema elegans elegans	Elegant Parrot		R	1	2020	P, H, w	Likely
Petroica boodang boodang	Scarlet Robin		R	1	1999	P, w	Possible
Plegadis falcinellus	Glossy Ibis		R	1	2017		Likely
Stagonopleura guttata	Diamond Firetail	VU	V	1, 2	2015	P, N, w	Possible
Zanda funerea whiteae	Yellow-tailed Black Cockatoo		V	1	2019	P, H, w	Likely
MAMMALIA (MAMMALS)							

Scientific Name	Common Name	EPBC Act	NPW Act	Data source	PMST likelihood/ Year of last record	Scattered tree using species	Likelihood of use for habitat – Comments
Pteropus poliocephalus	Grey-headed Flying-fox	VU	R	1, 2	Likely /2020	F, s	Likely
Trichosurus vulpecula	Common Brushtail Possum		R	1	2021	H, f, w	Known

Green Shading = Known / Highly Likely or Likely to Occur

Orange Shading = Possible to Occur

Conservation status:

Aus: Australia (EPBC Act). SA: South Australia (NPW Act). Conservation Codes: CE: Critically Endangered. EN/E: Endangered. VU/V: Vulnerable. R: Rare. Mi: listed as migratory under the EPBC Act. Mi (W): listed as a Migratory Wetland species under the EPBC Act. Mi (Ma): listed as a Migratory Marine species under the EPBC Act.

PMST result: Likelihood of species or species habitat to occur within 5 km of the Project Area.

Year of last record: Latest record within 5 km of the Project Area, obtained from the BDBSA Database.

Scattered tree using species:

Resource use: P = perching / roosting, N = nesting, H = using hollow for nesting/roosting, F = feeding.

Habitat status: s = seasonal (includes waterbirds using trees near seasonal wetlands, seasonal and nomadic species), w = woodland birds that occasionally use adjacent scattered trees,

r = species that can reside in scattered trees.

Source of Information:

1: BDBSA (DEW 2026) – 5 km buffer applied to Project Area.

2: PMST (DCCEEW 2026) – 5 km buffer applied to Project Area.

3: Recorded during a field assessment.

4.2.6 Threatened Species Discussion

Two scattered trees (Tree 35 and Tree 74) of the State Rare, *Eucalyptus viminalis ssp. viminalis* (Manna Gum) were observed in the Project Area (**Figure 4.1**). Both trees are located on the boundaries of the Project Area. Impact will be avoided to both Tree 74 and Tree 35.

The GHFF is nationally listed as Vulnerable and State listed as Rare and was assessed as likely to occur within the Project Area. GHFF forage over a wide area, with individuals capable of travelling 40 km between their roost and feeding sites in a night (DAWE 2021b; Eby and Law 2008). The Grey-headed Flying-fox consume fleshy fruits and blossoms, and within the Botanic Park area have been observed feeding on the fruits of the Morton Bay Fig (Ficus macrophylla) and the blossoms of eucalypts (*Eucalyptus* spp.) (Van Weenen 2015). *Eucalyptus* spp. was observed flowering in the Project Area. There were no roosts recorded within the Project Area however and the location of the Project is approximately 32km southeast of the Botanic Park roost (Eby and Law 2008), where individuals are less likely to forage (McDonald-Madden et al. 2005). It is unlikely that the trees constitute important foraging or breeding habitat for the Grey-headed Flying-fox, due to the scattered and isolated nature of the trees.

Many trees, both native and planted in the Project Area, provide suitable perching, roosting, foraging and nesting habitat for several nationally and state threatened fauna species. Given the retention of 52 native scattered trees in the Project Area, fauna habitat for threatened and common species will remain.

Several nationally and state threatened water birds have been recorded within 5 km of the Project Area at Laratinga Wetlands in Mt Barker. Those species that prefer a large body of permanent water have been assessed as unlikely to occur in the Project Area. The Project Area has a small dam and an ephemeral drainage line that is considered marginal habitat for aquatic species.

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.

The cumulative impacts that are likely to result from the Project include the following:

- Clearance directly required for building envelopes
- Clearance required for residential access
- Clearance required for construction access
- Roadside clearance associated with increased traffic
- Clearance required for safety (including trees deemed unsafe but which may provide good habitat)
- Subsequent clearance that will be permitted or required (e.g., 10 m around a building, and CFS clearance requirements such as 20 m around a dwelling)
- Clearance required for new fences along the perimeter of the lots and for maintenance of fences

- Indirect clearance that may occur as a result of the development (e.g., dust generation smoothing vegetation, altered hydrology inundating or drying vegetation, impacting on tree root zones (the application of fill) impacting on tree health)
- Any clearance required for connection to services, including power, water, telecommunications, storm water, gas or sewer
- Cumulative development in the surrounding Mount Barker region

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

The subdivision design has undergone many iterations since the early concept design in 2022. The Project sought guidance from Umwelt (previously EBS Ecology) as to the biodiversity score of the trees within the Project Area to inform the design process and assist in avoiding high biodiversity score trees where practicable. The early concept design was discussed with the Native Vegetation Branch in 2023. The proponent has subsequently worked with Mt Barker District Council to refine the design in an effort to retain as many high and moderate value trees as possible and thus avoid impacts.

This has resulted in the design being adapted to retain a number of high, moderate and low biodiversity value trees within reserves and along road reserves/boundaries, including additional trees in Stage 4 following further design refinement. The latest design iteration was able to retain more trees within the reserves and is consistent with trees that Mt Barker District Council considers to be medium and high value trees.

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).

Three hundred and seventy-seven (377) of the 383 trees proposed to be removed are low biodiversity score trees, including *Eucalyptus* sp. seedlings at the base of a dam, which had emerged since the dam water level receded. The remaining low biodiversity score trees to be removed are generally young *Eucalyptus camaldulensis* (River Red Gum) which have emerged in and around buildings in the southwestern corner of the Project Area and under existing planted vegetation as self-seeded juveniles. Seedlings have low biodiversity value. Impacts to moderate and high biodiversity score trees have been minimised through the design process where practicable.

The design has larger reserve areas which retain more trees of varying age classes, which will have lower edge effects and better habitat value into the long term as compared to smaller reserves around individual trees. Overall, the design has been reworked to retain an additional four high biodiversity score trees and 1 moderate biodiversity score tree from the initial design presented in 2023. The design aimed to retain all high biodiversity score trees, however the final design has opted for a larger reserve in the south eastern corner which retains more trees in groups, and has a lower impact on total biodiversity score than the previous design.

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.***

Revegetation using endemic species will occur in reserves within the Project Area after construction is completed. The plantings will be a mixture of lifeforms which will increase the current diversity of species and life-forms as all understorey is currently exotic pasture species dominated by *Phalaris aquatica*, providing minimal habitat value. The rehabilitated reserve areas are envisaged to be relatively open (consistent with open woodland) and not densely forested by regenerating saplings.

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 total biodiversity score of the trees and groups of trees proposed to be impacted is **120.22**. The SEB Points required for the trees proposed to be removed is **less than 250 SEB Points (at 132.31)**, which does not trigger an on-ground offset.

The proponent wishes to offset any adverse impact on native vegetation that is not able to be avoided, minimise or replaced by planting with a payment into the Significant Environmental Benefit fund.

5.0 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*.

An assessment against the Principles of Clearance is provided in **Table 5.1**, relevant for a Data Report associated with a Development Application.

Table 5.1 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 vegetation in the Project Area consists of native remnant scattered trees and planted trees. A total of 52 flora species were observed in the Project Area, which included nine native and 43 introduced species. One species listed under the NPW Act as Rare was identified as two scattered trees in the Project Area: • *Eucalyptus viminalis* ssp. *viminalis* (Manna Gum). Scattered trees proposed to be impacted comprise *Eucalyptus camaldulensis* var. *camaldulensis* (River Red Gum) (357 trees, of which 355 are seedlings/saplings of low biodiversity score and two are moderate biodiversity score), *Eucalyptus leucoxylon* ssp. *leucoxylon* (South Australian Blue Gum) (7 trees, of which three are low biodiversity score, two are moderate biodiversity score and two are high biodiversity score), *Acacia melanoxylon* (Blackwood) (12 seedlings), *Allocasuarina verticillata* (Drooping Sheoak) (5 seedlings), *Eucalyptus viminalis* ssp. *cygnetensis* (Manna Gum) (1 seedling) and *Eucalyptus cosmophylla* (Cup Gum) (1 seedling). Threatened Flora Score – 0 all trees proposed to be impacted. Assessment against the principles Not at Variance Moderating factors that may be considered by the NVC N/A

Relevant information

A total of nine fauna species listed as threatened under the EPBC Act and/or NPW Act were assessed as highly likely/known or likely to occur in the Project Area:

- Common Brushtail Possum (*Trichosurus vulpecula*) (NPW Act: R and observed in the Project Area)
- Eastern Shriketit (*Falcunculus frontatus frontatus*) (NPW Act: R)
- Elegant Parrot (*Neophema elegans elegans*) (NPW Act: R)
- Glossy Ibis (*Plegadis falcinellus*) (NPW Act: R)
- GHHF (*Pteropus poliocephalus*) (EPBC Act: VU; NPW Act: R)
- Jacky Winter (*Microeca fascinans fascinans*) (NPW Act: R)
- Little Eagle (*Hieraaetus morphnoides*) (NPW Act: V)
- Peregrine Falcon (*Falco peregrinus macropus*) (NPW Act: R)
- Yellow-tailed Black Cockatoo (*Zanda funerea whiteae*) (NPW Act: V)

Principle 1(b) – significance as a habitat for wildlife

An additional six fauna species listed as threatened under the EPBC Act and/or NPW Act were assessed as possible to occur in the Project Area:

- Brown Quail (*Coturnix ypsilophora australis*) (NPW Act: V)
- Diamond Firetail (*Stagonopleura guttata*) (EPBC Act: VU; NPW Act: V
- Little Egret (*Egretta garzetta nigripes*) (NPW Act: R)
- Plumed Egret (*Ardea intermedia plumifera*) (NPW Act: R)
- Scarlet Robin (*Petroica boodang boodang*) (NPW Act: R)
- White-winged Chough (*Corcorax melanorhamphos*) (NPW Act: R)

Mature trees, both native and planted in the Project Area, provide suitable perching, roosting, foraging and nesting habitat for several nationally and State threatened fauna species.

Several nationally and State threatened water birds have been recorded within 5 km of the Project Area at Laratinga Wetlands in Mt Barker. Further discussion relating to the area, in relation to providing significant habitat for wildlife, is provided in **Section 4.2.6**.

Principle of clearance	Considerations
	Trees: Fauna Habitat Score – 0 – 1.8 (immature trees and/or saplings have been assessed as unsuitable for fauna species. All other mature trees provide habitat for fauna species, see Attachment 2 for more details). Biodiversity Score – 0.06 – 8.52 Two trees with a Total Biodiversity Score of >7 are proposed to be impacted. These trees are *Eucalyptus leucoxylon* ssp. *leucoxylon* (South Australian Blue Gum). The design has been refined to retain high and moderate biodiversity value trees where practicable, including additional trees within reserve areas following the latest design iteration.
	Assessment against the principles **Seriously At Variance** All trees with a threatened fauna habitat score of 1.8 (see Attachment 2 for tree numbers).
	Moderating factors that may be considered by the NVC *Impact significance* Given the understorey of the Project Area is highly degraded, scattered trees in the Project Area, represent some of the remaining native vegetation in the general area. Given the understorey of the Project Area is highly degraded, scattered trees in the Project Area represent some of the remaining native vegetation in the general area. Clearance of four moderate biodiversity score trees and two high biodiversity score trees may impact threatened species. The design has been refined through several iterations to retain high and moderate biodiversity value trees where practicable, including additional trees within reserve areas following the latest design iteration. Therefore, the impact to the population is considered negligible.
Principle 1(c) – plants of a rare, vulnerable or endangered species	Relevant information One flora species listed under the NPW Act as Rare, *Eucalyptus viminalis* ssp. *viminalis* (Manna Gum) was recorded in the Project Area. This species was identified as Trees 35 and 74. Tree 35 is present in the southwest corner of the Project Area while Tree 74 is present in the roadside corridor along Paech Rd in the southeast of the Project Area. Both trees are located on the boundaries of the Project Area. Both trees are being retained. Threatened Flora Scores – 0

Principle of clearance	Considerations
	Assessment against the principles **Not at Variance**
	Moderating factors that may be considered by the NVC N/A
Principle 1(d) – the vegetation comprises the whole or part of a plant community that is Rare, Vulnerable or endangered	Relevant information No listed threatened ecological communities (EPBC Act) or State provisionally listed threatened ecological communities were identified within the Project Area. Threatened Community Score – 0
	Assessment against the principles Not at Variance
	Moderating factors that may be considered by the NVC N/A

Principle of clearance	Considerations
Principle 1(e) – it is significant as a remnant of vegetation in an area which has been extensively cleared	<u>Relevant information</u> Remnancy figures for the IBRA Association and Subregion present in the Project Area is provided below: • Hahndorf IBRA Association remnancy – 8%. • Mount Lofty Ranges IBRA Subregion remnancy – 15%. The Mount Lofty Ranges subregion predominantly consists of undulating to low hilly upland with steeper marginal ranges and hills. Woodlands of *Eucalyptus leucoxylon* ssp. *leucoxylon* (South Australian Blue Gum) sometimes with *Eucalyptus camaldulensis* var. *camaldulensis* (River Red Gum) and open forest of *Eucalyptus obliqua* (Messmate Stringybark) and/or *Eucalyptus baxteri* (Brown Stringybark) commonly occur. Several native scattered trees are present within the Project Area and range from poor to excellent in health. Most trees were of a mature age and several contained hollows which could provide suitable habitat for fauna species. Total Biodiversity Score – **120.22** <u>Assessment against the principles</u> **Seriously at Variance** <u>Moderating factors that may be considered by the NVC</u> *Impact significance* Proposed impacts to 383 scattered trees in the Project Area include 377 low biodiversity value trees that are mostly seedlings or young trees, four moderate biodiversity value trees and two high biodiversity value trees. Species proposed to be removed have been selectively removed in the Hahndorf IBRA Association to facilitate agriculture, development and pastoral grazing. The design has been refined through several iterations to retain high and moderate biodiversity value trees where practicable, including additional trees within reserve areas following the latest design iteration. Remnant trees to be retained are in relatively good condition and represent vegetation that has been largely degraded in the IBRA Association. The understorey is highly degraded.
Principle 1(f) – it is growing in, or in association	<u>Relevant information</u> An ephemeral drainage line runs from south to north through the Project Area to a small dam. Many scattered immature tree saplings were recorded in this area but given their size and maturity they do not provide habitat for threatened or common fauna species in the Project Area.

Principle of clearance	Considerations
with, a wetland environment	Assessment against the principles **Seriously at Variance** Moderating factors that may be considered by the NVC The drainage line running through the Project Area is previously disturbed. This area is proposed to be retained and formed into a basin which will remain in a reserve. This area is likely to be substantially modified in the construction phase; however, the wetland is not intact or considered high value habitat (in its present state) and is likely to recover from construction and be rehabilitated with a broader range of native species following construction.
Principle 1(g) – it contributes significantly to the amenity of the area in which it is growing or is situated	Relevant information The Project Area is on the outskirts of Mount Barker and is surrounded by other residential subdivisions. Scattered trees and native vegetation in the area enhance the landscape and any proposed removal of scattered trees, particularly those trees that are large or contain several hollows, in the Project Area may influence the surrounding landscape and its character. The design has been refined to retain high and moderate biodiversity value trees where practicable, including additional scattered trees within reserve areas following the latest design iteration. Trees retained within the Project Area, particularly larger trees and those within reserves, will continue to contribute to the landscape character and amenity of the area.
	Assessment against the principles N/A
	Moderating factors that may be considered by the NVC N/A

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.

5.1 Risk Assessment

The level of risk associated with the application is provided in **Table 5.2**. This is based on the Risk Assessment matrix for clearance of native vegetation (**Table 5.3**).

Table 5.2 Summary of the Level of Risk Associated with the Application

Total clearance	No. of trees	383
	Area (ha)	-
	Total biodiversity Score	120.22
Seriously at variance with principle 1(b), 1(c) or 1 (d)		1(b)
Risk assessment outcome		**Level 4**

Table 5.3 Risk Assessment Matrix for Clearance of Native Vegetation

	Agricultural (EP, GA, H&F, KI, LC, M&R and N&Y Landscape Management Regions plus Port Augusta city Council and the Flinders Ranges Council).		**Pastoral** (SAAL and AW Landscape Management Regions excluding Port Augusta city Council and the Flinders Ranges Council).		**Escalating matters** Clearance assessment will be raised to the next level if;
	Patches – clearance	**Trees – clearance**	**Patches – clearance**	**Trees - clearance**	
Level 1	**0.05ha** or less	**5 trees** or less	**3ha** 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 for Agricultural zone, or - 30cm of more for the Pastoral zone.				
Level 2	**>0.05 ha to 0.5ha**	**6 - 20 trees**	**>3ha to 10 ha**	**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**		Total Biodiversity Score of less than or equal to **2500**		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**		Total Biodiversity Score of greater than **2500**		

6.0 Clearance Summary

A summary table of the scattered trees proposed to be impacted is provided in **Table 6.1**. The total summary associated with the proposal is provided in **Table 6.2**. The Economies of Scale and Rainfall (mm) in the Project Area is provided in **Table 6.3**.

Note that total numbers differ in the STAM scoresheet due to rounding issues.

Scattered trees Summary table

Table 6.1 Summary of Scattered Trees Proposed to be Impacted

Tree or Cluster ID	Number of trees	Fauna Habitat score	Threatened flora score	Biodiversity score	Loss factor	SEB Points required	SEB Payment	Admin Fee	Total SEB Payment
3	1	0	0	0.1	1	0.11	$148.33	$8.16	$156.49
4	1	0	0	0.08	1	0.09	$121.36	$6.67	$128.03
6	1	0	0	0.06	1	0.07	$94.39	$5.19	$99.58
7	1	0	0	0.06	1	0.07	$94.39	$5.19	$99.58
15	1	1.8	0	4.86	1	5.35	$7,214.15	$396.78	$7610.93
19	1	0	0	0.11	1	0.12	$161.81	$8.90	$170.71
21	1	0	0	0.06	1	0.07	$94.39	$5.19	$99.58
22	1	0	0	0.06	1	0.07	$94.39	$5.19	$99.58
23	1	0	0	0.06	1	0.07	$94.39	$5.19	$99.58
24	1	0	0	0.06	1	0.07	$94.39	$5.19	$99.58
25	1	0	0	0.06	1	0.07	$94.39	$5.19	$99.58
26	1	0	0	0.06	1	0.07	$94.39	$5.19	$99.58
27	1	0	0	0.06	1	0.07	$94.39	$5.19	$99.58
32	1	1.8	0	2.32	1	2.55	$3,438.52	$189.12	$3627.64
38	1	1.8	0	1.17	1	1.29	$1,739.49	$95.67	$1835.16
39	1	1.8	0	5.95	1	6.55	$8,832.27	$485.77	$9318.05
40	23	1.8	0	0.27	1	6.83	$9,209.84	$506.54	$9716.38
41	84	1.8	0	0.43	1	39.73	$53,573.48	$2,946.54	$56520.02
42	1	1.8	0	1.08	1	1.19	$1,604.64	$88.26	$1692.9
43	1	1.8	0	1.4	1	1.54	$2,076.60	$114.21	$2190.81
44	1	1.8	0	2.2	1	2.42	$3,263.22	$179.48	$3442.7

Tree or Cluster ID	Number of trees	Fauna Habitat score	Threatened flora score	Biodiversity score	Loss factor	SEB Points required	SEB Payment	Admin Fee	Total SEB Payment
45	1	1.8	0	8.52	1	9.37	$12,634.87	$694.92	$13,329.79
46	1	1.80	0.00	7.94	1	8.73	$11,771.87	$647.45	$12,419.32
47	1	1.80	0.00	3.99	1	4.39	$5,919.65	$325.58	$6,245.23
49	1	1.8	0	0.42	1	0.46	$620.28	$34.12	$654.4
52	1	1.8	0	4.25	1	4.68	$6,310.69	$347.09	$6657.78
54	1	1.8	0	0.49	1	0.54	$728.16	$40.05	$768.21
64	4	1.8	0	0.47	1	2.07	$2,791.27	$153.52	$2944.79
67	1	0	0	0.06	1	0.07	$94.39	$5.19	$99.58
75	1	0	0	0.13	1	0.14	$188.78	$10.38	$199.16
76	1	1.8	0	0.52	1	0.57	$768.61	$42.27	$810.88
77	1	1.8	0	0.33	1	0.36	$485.44	$26.70	$512.14
78	1	1.8	0	0.44	1	0.48	$647.25	$35.60	$682.85
79	1	1.8	0	0.52	1	0.57	$768.61	$42.27	$810.88
80	1	1.8	0	1.06	1	1.17	$1,577.67	$86.77	$1664.45
81	1	1.8	0	0.58	1	0.64	$863.00	$47.47	$910.47
82	1	1.8	0	1.26	1	1.39	$1,874.33	$103.09	$1977.42
83	1	1.8	0	0.31	1	0.34	$458.47	$25.22	$483.69
84	1	1.8	0	1.93	1	2.12	$2,858.69	$157.23	$3015.92
85	1	1.8	0	0.58	1	0.64	$863.00	$47.47	$910.47
86	1	0	0	0.08	1	0.09	$121.36	$6.67	$128.03
87	1	0	0	0.1	1	0.11	$148.33	$8.16	$156.49
88	1	0	0	0.08	1	0.09	$121.36	$6.67	$128.03
89	1	1.8	0	1.44	1	1.58	$2,130.53	$117.18	$2247.71
90	1	1.8	0	0.36	1	0.40	$539.38	$29.67	$569.04
91	1	0	0	0.1	1	0.11	$148.33	$8.16	$156.49
92	1	1.8	0	1.96	1	2.16	$2,912.63	$160.19	$3072.82
93	1	1.80	0.00	0.53	1	0.58	$782.09	$43.02	$825.11
94	1	0.00	0.00	0.07	1	0.08	$107.88	$5.93	$113.81
95	1	1.80	0.00	1.07	1	1.18	$1,591.16	$87.51	$1,678.67
96	200	0.00	0.00	12.00	1	13.20	$17,799.39	$978.97	$18,778.36
97	1	0.00	0.00	0.06	1	0.07	$94.39	$5.19	$99.58
98	1	0.00	0.00	0.06	1	0.07	$94.39	$5.19	$99.58
99	1	1.80	0.00	0.44	1	0.48	$647.25	$35.60	$682.85

Tree or Cluster ID	Number of trees	Fauna Habitat score	Threatened flora score	Biodiversity score	Loss factor	SEB Points required	SEB Payment	Admin Fee	Total SEB Payment
100	1	1.80	0.00	5.93	1	6.52	$8,791.82	$483.55	$9,275.37
101	1	0.00	0.00	0.18	1	0.20	$269.69	$14.83	$284.52
102	1	0.00	0.00	0.12	1	0.13	$175.30	$9.64	$184.94
103	1	0.00	0.00	0.06	1	0.07	$94.39	$5.19	$99.58
104	1	0.00	0.00	0.07	1	0.08	$107.88	$5.93	$113.81
105	1	0.00	0.00	0.09	1	0.10	$134.84	$7.42	$142.26
106	2	0.00	0.00	0.34	1	0.37	$498.92	$27.44	$526.36
107	1	0.00	0.00	0.14	1	0.15	$202.27	$11.12	$213.39
108	1	0.00	0.00	0.08	1	0.09	$121.36	$6.67	$128.03
109	6	0.00	0.00	0.60	1	0.66	$889.97	$48.95	$938.92
110	6	0.00	0.00	0.36	1	0.40	$539.37	$29.67	$569.04
Total	383	-	-	120.22	-	132.31	$178,411.94	**$9,812.65**	**$188,224.59**

Table 6.2 Totals Summary Associated with the Proposal

	Total Biodiversity score	Total SEB points required	SEB Payment	Admin Fee	Total Payment
Application	120.22	132.31	$178,411.94	$9,812.65	$188,224.59

Table 6.3 The Economies of Scale Factor and Rainfall (mm) in the Project Area

Economies of Scale Factor	0.5
Rainfall (mm)	743

7.0 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. The Data Report must propose how the SEB will be achieved in accordance with the SEB Policy and Guide, by providing the following information.

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. Provide information below.

☐ Use SEB Credit that the proponent has established. Provide the SEB Credit Ref. No. _____

☐ Apply to have SEB Credit assigned from another person or body. The application form needs to be submitted with this Data Report.

☐ Apply to have an SEB to be delivered by a Third Party. The application form needs to be submitted with this Data Report.

☒ Pay into the Native Vegetation Fund. Provide details below.

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:

Payment amount required (including admin. fee)

Clearance associated with this Project will be offset by payment of **$188,224.59** into the Native Vegetation Fund, inclusive of **$9,812.65** in admin fees.

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Appendix 1

Flora Species Recorded During the Field Assessments

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Appendix Table A1.1 Flora Species Recorded During the Field Assessments

Scientific Name	Common Name	Conservation Rating		Exotic	Declared Weed under the LSA Act
		NPW	EPBC		
Acacia melanoxylon	Blackwood			Planted and self-seeded	
Acacia dealbata ssp. Dealbata	Silver Wattle			Planted	
Agapanthus praecox ssp. *minimus*	Agapanthus			Planted	
Aizoon pubescens	Coastal Galenia			*	
Allium triquetrum	Three-cornered Garlic			*	Y
Allocasuarina verticillata	Drooping Sheoak			Planted and self-seeded	
Aloysia citriodora	Lemon verbena			Planted	
Arctotheca calendula	Cape Weed			*	
Artemisia arborescens	Silver Wormwood			Planted	
Avena barbata	Bearded Oat			*	
Callistemon sp.	Bottlebrush			Planted	
Corymbia citriodora	Lemon-scented Gum			Planted	
Cupressus sp.	Cypress			Planted	
Dactylis glomerata	Cocksfoot			*	
Ehrharta calycina	Perennial Veldt Grass			*	
Eucalyptus baxteri	Brown Stringybark			Planted	
Eucalyptus camaldulensis var. *camaldulensis*	River Red Gum				
Eucalyptus cosmophylla	Cup Gum			Planted and regenerating	
Eucalyptus leucoxylon ssp. *leucoxylon*	South Australian Blue Gum				
Eucalyptus leucoxylon ssp. *megalocarpa*	Large-fruit Blue Gum			Planted	

Scientific Name	Common Name	Conservation Rating		Exotic	Declared Weed under the LSA Act
		NPW	EPBC		
Eucalyptus viminalis ssp. *cygnetensis*	Rough-bark Manna Gum				
Eucalyptus viminalis ssp. *viminalis*	Manna Gum	R			
Foeniculum vulgare	Fennel			*	
Fraxinus angustifolia ssp. *angustifolia*	Narrow-leaved Ash			Planted	Y
Fumaria capreolata	White-flower Fumitory			*	
Galium sp.	Bedstraw			*	
Gazania linearis	Gazania			*	Y
Hypochaeris glabra	Smooth Cat's Ear			*	
Juncus sp.	Rush				
Juncus sp.	Rush				
Juniperus conferta	Blue Pacific			Planted	
Laurus nobilis	Bay laurel			Planted	
Medicago polymorpha	Burr-medic			*	
Melaleuca armillaris ssp. *armillaris*	Bracelet Honey-myrtle			Planted	
Narcissus pseudonarcissus	Common Daffodil			Planted	
Olea europaea ssp.	Olive			Planted	Y
Oxalis pes-caprae	Soursob			*	
Phalaris aquatica	Phalaris			*	
Pittosporum sp.	Pittosporum			Planted	
Plantago lanceolata var. *lanceolata*	Ribwort			*	
Prunus sp.				Planted	
Quercus robur	English Oak			Planted	
Rosa canina	Dog Rose			Planted	Y
Rubus fruticosus	Blackberry			*	Y
Rumex acetosella	Sorrel			*	
Rytidosperma sp.	Wallaby-grass				

Scientific Name	Common Name	Conservation Rating		Exotic	Declared Weed under the LSA Act
		NPW	EPBC		
Salix sp.	Willow			*	Y
Salvia rosmarinus	Rosemary			Planted	
Schinus molle	Pepper-tree			*	
Sonchus oleraceus	Common Sow-thistle			*	
Ulex europaeus	Gorse			*	Y
Vinca major	Blue Periwinkle			*	
Zantedeschia aethiopica	White Arum Lily			Planted	Y
Ulex europaeus	Gorse			Planted	
Vinca major	Blue Periwinkle			Planted	
Zantedeschia aethiopica	White Arum Lily			*	

NPW Act; R = Rare

*Denotes a species that is exotic or not indigenous

Appendix 2

Fauna Species Recorded During the Field Assessments

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Appendix Table A2.1 Fauna Species Recorded During the Field Assessments

CLASS	Species	Common name	NPW Act	EPBC Act	Resource use	Habitat/Status
AMPHIBIA	*Crinia signifera*	Common Eastern Froglet				
AVES	*Acanthiza chrysorrhoa*	Yellow-rumped Thornbill			P, N	w / r
AVES	*Anas superciliosa*	Pacific Black Duck			H	s
AVES	*Anthochaera carunculata*	Red Wattlebird			P, F	w / r
AVES	*Chenonetta jubata*	Maned Duck			H	s
AVES	*Daceloa novaeguineae*	Laughing Kookaburra			P, H	w / r
AVES	*Eolophus roseicapilla*	Galah			P, H	w / r
AVES	*Glossopsitta concinna*	Musk Lorikeet			P, H, F	w / r
AVES	*Gymnorhina tibicen*	Australian Magpie			P, N	r
AVES	*Hirundo neoxena*	Welcome Swallow			P	s
AVES	*Manorina melanocephala*	Noisy Miner			P, F	w / r
AVES	*Pardalotus striatus*	Striated Pardalote			P, H, F	w / s
AVES	*Petrochelidon nigricans*	Tree Martin			P, H	w / s
AVES	*Phylidonyris novaehollandiae*	New Holland Honeyeater			P, F	w
AVES	*Platycercus elegans*	Crimson Rosella			P, H, F	w / r
AVES	*Platycercus eximius*	Eastern Rosella			P, H, F	w / r
AVES	*Psephotus haematonotus*	Red-rumped Parrot			P, H	w / r
AVES	*Sturnus vulgaris**	Common Starling				
AVES	*Tachybaptus novaehollandiae*	Australasian Grebe				
MAMMALIA	*Pseudocheirus peregrinus*	Common Ringtail Possum			P, N, H, F	r

CLASS	Species	Common name	NPW Act	EPBC Act	Resource use	Habitat/Status
MAMMALIA	*Trichosurus vulpecula*	Common Brushtail Possum	R		P, N, H, F	r
MAMMALIA	*Vulpes vulpes**	Red Fox*				
AMPHIBIA	*Crinia signifera*	Common Eastern Froglet				
AVES	*Acanthiza chrysorrhoa*	Yellow-rumped Thornbill			P, N	w / r
AVES	*Anas superciliosa*	Pacific Black Duck			H	s
AVES	*Anthochaera carunculata*	Red Wattlebird			P, F	w / r
AVES	*Chenonetta jubata*	Maned Duck			H	s
AVES	*Daceloa novaeguineae*	Laughing Kookaburra			P, H	w / r
AVES	*Eolophus roseicapilla*	Galah			P, H	w / r
AVES	*Glossopsitta concinna*	Musk Lorikeet			P, H, F	w / r
AVES	*Gymnorhina tibicen*	Australian Magpie			P, N	r
AVES	*Hirundo neoxena*	Welcome Swallow			P	s
AVES	*Manorina melanocephala*	Noisy Miner			P, F	w / r
AVES	*Pardalotus striatus*	Striated Pardalote			P, H, F	w / s
AVES	*Petrochelidon nigricans*	Tree Martin			P, H	w / s
AVES	*Phylidonyris novaehollandiae*	New Holland Honeyeater			P, F	w
AVES	*Platycercus elegans*	Crimson Rosella			P, H, F	w / r
AVES	*Platycercus eximius*	Eastern Rosella			P, H, F	w / r
AVES	*Psephotus haematonotus*	Red-rumped Parrot			P, H	w / r
AVES	*Sturnus vulgaris**	Common Starling				
AVES	*Tachybaptus novaehollandiae*	Australasian Grebe				

CLASS	Species	Common name	NPW Act	EPBC Act	Resource use	Habitat/Status
MAMMALIA	*Pseudocheirus peregrinus*	Common Ringtail Possum			P, N, H, F	r
MAMMALIA	*Trichosurus vulpecula*	Common Brushtail Possum	R		P, N, H, F	r
MAMMALIA	*Vulpes vulpes**	Red Fox*				

*Denotes exotic species.

NPW Act; R = Rare

Resource Use: P=perching/roosting, N=nesting, H=using hollow for nesting/roosting, F=feeding

Habitat/status: s=seasonal (includes waterbirds using trees near seasonal wetlands, seasonal and nomadic species), w=woodland birds that occasionally use adjacent scattered trees, r=species that can reside in scattered trees.

Appendix 3

Scattered Tree Using Fauna Species in the Project Area

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Appendix Table A3.1 Scattered Tree Using Fauna Species in the Project Area

Scientific Name	Common Name	EPBC Act	NPW Act	MLR	Resource Use	Habitat / Status
AVES (BIRDS)						
Acanthiza chrysorrhoa	Yellow-rumped Thornbill			NT	P, N	w/r
Acanthiza nana	Yellow Thornbill			NT	P, F	w
Chalcites basalis	Horsefield's Bronze Cuckoo			NT	P	s
Falco peregrinus macropus	Peregrine Falcon		R	RA	P, H, N	w/r
Falcunculus frontatus frontatus	Eastern Shriketit		R	RA	F	w
Hieraaetus morphnoides	Little Eagle		V	EN	P	w
Lophochroa leadbeateri leadbeateri	Major Mitchell's Cockatoo	EN	R		P, F	w/r
Melithreptus brevirostris pallidiceps	Brown-headed Honeyeater			NT	P, F	w
Melithreptus lunatus	White-naped Honeyeater			NT	P, F	w
Microeca fascinans fascinans	Jacky Winter		R	CR	P	w
Neophema elegans elegans	Elegant Parrot		R	VU	P, H	w
Ninox boobook	Australian Boobook			NT	P, H	w
Pachycephala rufiventris rufiventris	Rufous Whistler			NT	P, F	w/s
Pardalotus punctatus	Spotted Pardalote			NT	P, F	w
Parvipsitta porphyrocephala	Purple-crowned Lorikeet			NT	P, H, F	w/s
Petrochelidon nigricans	Tree Martin			NT	P, H	w/s
Petroica boodang boodang	Scarlet Robin		R	VU	P	w
Psephotus haematonotus haematonotus	Red-rumped Parrot			NT	P, H	w/s

Scientific Name	Common Name	EPBC Act	NPW Act	MLR	Resource Use	Habitat / Status
Rhipidura leucophrys leucophrys	Willie Wagtail			NT	P, N, F	w/r
Stagonopleura guttata	Diamond Firetail	VU	V	VU	P, N	w
Todiramphus sanctus sanctus	Sacred Kingfisher			NT	P. H	w
Zanda funerea whiteae	Yellow-tailed Black Cockatoo		V	VU	P, H	w
Zosterops lateralis pinarochrous	Silvereye			NT	P, F	w/s
MAMMALIA (MAMMALS)						
Pteropus poliocephalus	Grey-headed Flying-fox	VU	R	RA	P, F	r
Trichosurus vulpecula	Common Brushtail Possum		R	LC	H, N, F	w/r

EPBC Act: Ex = Extinct, CR = Critically endangered, EN = Endangered; VU = Vulnerable

NPW Act: CE = Critically endangered, E = Endangered, V = Vulnerable, R = Rare

MLR: LC = Least Concern (Common), NT = Near Threatened (Uncommon), RA = Rare, VU = Vulnerable, EN = Endangered, CR = Critically Endangered

Resource use: P = perching/roosting, N = nesting, H = using hollow for nesting/roosting, F = feeding

Habitat/status: s = seasonal (includes waterbirds using trees near seasonal wetlands, seasonal and nomadic species), w = woodland birds that occasionally use adjacent scattered trees, r=species that can reside in scattered trees.

Sources: BSBSA records within 5 km of the Project Area (DEW 2026), Scattered Tree Assessment Manual (NVC 2024).

Appendix 4

Assessment of Likelihood of National (EPBC Act) and State (NPW Act) Listed Threatened Flora Identified by the PMST (DCCEEW 2026) and BDBSA (DEW 2026) to Occur in the Project Area

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Appendix Table A5.1 Assessment of Likelihood of National (EPBC Act) and State (NPW Act) Listed Threatened Flora Identified by the PMST (DCCEEW 2023a) and BDBSA (DEW 2022b) to Occur in the Project Area

Scientific Name	Common Name	EPBC Act	NPW Act	Data source	PMST likelihood/ Year of last record	Species known habitat preferences	Likelihood of use for habitat – Comments
Caladenia leptochila ssp. *leptochila*	Narrow-lip Spider-orchid		R	1	2014	Found growing in clay or gravelly soils in shrubby forest in the Mount Lofty Ranges ((Jones 2006)).	**Unlikely** – Despite recent records, the understorey in the Project Area is heavily degraded and there is no suitable habitat in the Project Area.
Caladenia rigida	Stiff White Spider-orchid	EN		2	Likely	The stiff spider orchid is only known from the Mount Lofty Ranges where it grows on the upper slopes of hills in open forest with an open shrub layer.(*Atlas of Living Australia Website* 2025)	**Unlikely** – The Project Area is highly degraded and lacks suitable open forest habitat with an open shrub layer. The understorey is dominated by exotic pasture species and there is no suitable habitat present.
Caladenia tensa	Greencomb Spider-orchid	EN		2	Likely	Found in the upper South-east in South Australia, growing in dry woodland and mallee on sandy loams (SSCC 2018).	**Unlikely** – No recent records, the understorey in the Project Area is heavily degraded and there is no suitable habitat in the Project Area.

Scientific Name	Common Name	EPBC Act	NPW Act	Data source	PMST likelihood/ Year of last record	Species known habitat preferences	Likelihood of use for habitat – Comments
Deyeuxia densa	Heath Bent-grass		R	1	2014	Commonly in heaths, sedgelands and in stream banks in damp, open to lightly shaded sites (Sharp and Simon 2002).	**Unlikely** – Despite recent records, the understorey in the Project Area is heavily degraded and there is no suitable habitat in the Project Area.
Echinopogon ovatus	Rough-beard Grass		R	1	2014	Occurs in all states except in the NT where it is commonly found in wet sclerophyll woodland and by creeks and running water (Sharp and Simon 2002).	**Unlikely** – Despite recent records, the understorey in the Project Area is heavily degraded and there is no suitable habitat in the Project Area.
Eucalyptus fasciculosa	Pink Gum		R	1	2015	Grows on moist, well-drained alluvial soils near watercourses but also grows on drier sites at higher altitudes. Tolerates snow and some flooding (Nicolle, 2013).	**Unlikely** – Despite recent records, this species is known to occur just north of the Project Area on higher slopes and was not recorded during the field survey.

Scientific Name	Common Name	EPBC Act	NPW Act	Data source	PMST likelihood/ Year of last record	Species known habitat preferences	Likelihood of use for habitat – Comments
Eucalyptus viminalis ssp. *viminalis*	Manna Gum		R	1, 3	2014	Generally recorded as growing in mallee scrubland but has also been found growing in coastal heathlands, sclerophyll forests and woodlands. It is also found in heathy openings in wet sclerophyll forest and in a swamp at Mt Compass (Nicolle, 2013).	**Known** – was recorded within the Project Area in 2023.
Glycine latrobeana	Clover Glycine	VU	V	2	Likely	Inhabits native grasslands, dry sclerophyll forests, woodlands and low open woodlands, typically with a grassy ground layer, and growing on undulating plains. Prefers gentle south-west facing ridge slopes and lower south facing river valley slopes(Carter 2010).	**Unlikely** – No recent records, the understorey in the Project Area is heavily degraded and there is no suitable habitat in the Project Area.

Scientific Name	Common Name	EPBC Act	NPW Act	Data source	PMST likelihood/ Year of last record	Species known habitat preferences	Likelihood of use for habitat – Comments
Olearia pannosa ssp. pannosa	Silver Daisy-bush	VU	V	2	Likely	Endemic to SA, scattered throughout agricultural areas. Occurring in sandy flat areas and in hilly rocky areas in woodland or mallee, including overlapping with Peppermint Box Grassy Woodland of SA (DOE 2013b).	**Unlikely** – No recent records, the understorey in the Project Area is heavily degraded and there is no suitable habitat in the Project Area.
Prasophyllum pallidum	Pale Leek-orchid	VU	R	2	Likely	Pale Leek-orchid is known singly or in groups in better soils of woodland and grassy open forest. Recorded in woodlands and forests dominated by *Eucalyptus leucoxylon*, *E. goniocalyx*, *E. fasciculosa*, *E. microcarpa*, *Callitris gracilis/Eucalyptus fasciculosa*, and *Allocasuarina verticillata(South Australian Native Orchids. Compact Disc 2009)*.	**Unlikely** – No recent records, the understorey in the Project Area is heavily degraded and there is no suitable habitat in the Project Area.

Scientific Name	Common Name	EPBC Act	NPW Act	Data source	PMST likelihood/ Year of last record	Species known habitat preferences	Likelihood of use for habitat – Comments
Ptilotus erubescens	Hairy-tails		R	1	2014	Occurs in SA in FR, NL, MU, SL and SE where it occurs in fertile soils in grassland, woodland and scrubland communities but not in mallee (Royal Botanic Gardens Victoria 2020).	**Unlikely** – Despite recent records, the understorey in the Project Area is heavily degraded and there is no suitable habitat in the Project Area.
Senecio pinnatifolius var. *pinnatifolius*			R	1	2014	A highly variable species occurring mostly within 300-400 km of the coast. It occurs predominantly in areas of moderate to high rainfall and areas that are rocky or in higher elevations (PlantNET 2023).	**Unlikely** – Despite recent records, the understorey in the Project Area is heavily degraded and there is no suitable habitat in the Project Area.
Thelymitra aristata	Great Sun-orchid		E	1	2014	Found primarily in the south-east in South Australia, north of Mt Gambier, growing in clay or gravel soils in forest or scrubland around swamp margins in damp sands (SSCC 2018).	**Unlikely** – Despite recent records, the understorey in the Project Area is heavily degraded and there is no suitable habitat in the Project Area.

Scientific Name	Common Name	EPBC Act	NPW Act	Data source	PMST likelihood/ Year of last record	Species known habitat preferences	Likelihood of use for habitat – Comments
Thelymitra batesii			R	1	2010	Endemic to South Australia and found in the southern Flinders Ranges and the Mount Lofty Ranges, growing in heathy woodlands and heathy open forest on sandy and gravelly clay loam soils (SSCC 2018).	**Unlikely** – Despite recent records, the understorey in the Project Area is heavily degraded and there is no suitable habitat in the Project Area.
Thelymitra grandiflora	Great Sun-orchid		R	1	2014	Occurs singly or as small clumps of plants in forest clearings, woodland and scrub in well drained gravelly clay soils which may be laterite or podsols, or mixed with sand, extending to dry rocky ridges in better soils(*South Australian Native Orchids. Compact Disc* 2009).	**Unlikely** – Despite recent records, the understorey in the Project Area is heavily degraded and there is no suitable habitat in the Project Area.

Scientific Name	Common Name	EPBC Act	NPW Act	Data source	PMST likelihood/ Year of last record	Species known habitat preferences	Likelihood of use for habitat – Comments
Thelymitra ixioides	Spotted Sun-orchid		E	1	2014	Found in the southern Mount Lofty Ranges and the lower South-east in South Australia, growing in woodland or swampy ground (SSCC 2018).	**Unlikely** – Despite recent records, the understorey in the Project Area is heavily degraded and there is no suitable habitat in the Project Area.
Thelymitra matthewsii	Spiral Sun-orchid	VU	E	2	Likely	Favours open forests and woodlands in well-drained sand and clay loams. Grows in heathy open forest and woodlands on well-drained sand, gravel and clay loams, especially where there has been soil disturbance. Open ground layer is common (Duncan 2010).	**Unlikely** – No recent records, the understorey in the Project Area is heavily degraded and there is no suitable habitat in the Project Area.

Scientific Name	Common Name	EPBC Act	NPW Act	Data source	PMST likelihood/ Year of last record	Species known habitat preferences	Likelihood of use for habitat – Comments
Veronica derwentiana ssp. *homalodonta*	Mount Lofty Speedwell	CE	E	2	Likely	Occurs in moist areas, gullies, creeklines and high rainfall areas. Largely occurs in Eucalyptus obliqua Forests with or without additional overstorey species (such as *Eucalyptus fasciculosa*, *Eucalyptus viminalis* ssp. *cygnetensis* & *Eucalyptus leucoxylon*) (TSSC 2009).	**Unlikely** – No recent records, the understorey in the Project Area is heavily degraded and there is no suitable habitat in the Project Area.
Caladenia leptochila ssp. *leptochila*	Narrow-lip Spider-orchid		R	1	2014	Found growing in clay or gravelly soils in shrubby forest in the Mount Lofty Ranges (Jones, 2006).	**Unlikely** – Despite recent records, the understorey in the Project Area is heavily degraded and there is no suitable habitat in the Project Area.
Caladenia tensa	Greencomb Spider-orchid	EN		2	Likely	Found in the upper South-east in South Australia, growing in dry woodland and mallee on sandy loams (SSCC 2018).	**Unlikely** – No recent records, the understorey in the Project Area is heavily degraded and there is no suitable habitat in the Project Area.

Scientific Name	Common Name	EPBC Act	NPW Act	Data source	PMST likelihood/ Year of last record	Species known habitat preferences	Likelihood of use for habitat – Comments
Deyeuxia densa	Heath Bent-grass		R	1	2014	Commonly in heaths, sedgelands and in stream banks in damp, open to lightly shaded sites (Sharp and Simon 2002).	**Unlikely** – Despite recent records, the understorey in the Project Area is heavily degraded and there is no suitable habitat in the Project Area.
Echinopogon ovatus	Rough-beard Grass		R	1	2014	Occurs in all states except in the NT where it is commonly found in wet sclerophyll woodland and by creeks and running water (Sharp and Simon 2002).	**Unlikely** – Despite recent records, the understorey in the Project Area is heavily degraded and there is no suitable habitat in the Project Area.
Eucalyptus fasciculosa	Pink Gum		R	1	2015	Grows on moist, well-drained alluvial soils near watercourses but also grows on drier sites at higher altitudes. Tolerates snow and some flooding (Nicolle, 2013).	**Unlikely** – Despite recent records, this species is known to occur just north of the Project Area on higher slopes and was not recorded during the field survey.

Scientific Name	Common Name	EPBC Act	NPW Act	Data source	PMST likelihood/ Year of last record	Species known habitat preferences	Likelihood of use for habitat – Comments
Eucalyptus viminalis ssp. *viminalis*	Manna Gum		R	1, 3	2014	Generally recorded as growing in mallee scrubland but has also been found growing in coastal heathlands, sclerophyll forests and woodlands. It is also found in heathy openings in wet sclerophyll forest and in a swamp at Mt Compass (Nicolle, 2013).	**Known** – was recorded within the Project Area in 2023.
Glycine latrobeana	Clover Glycine	VU	V	2	Likely	Inhabits native grasslands, dry sclerophyll forests, woodlands and low open woodlands, typically with a grassy ground layer, and growing on undulating plains. Prefers gentle south-west facing ridge slopes and lower south facing river valley slopes(Carter 2010).	**Unlikely** – No recent records, the understorey in the Project Area is heavily degraded and there is no suitable habitat in the Project Area.

Scientific Name	Common Name	EPBC Act	NPW Act	Data source	PMST likelihood/ Year of last record	Species known habitat preferences	Likelihood of use for habitat – Comments
Olearia pannosa ssp. pannosa	Silver Daisy-bush	VU	V	2	Likely	Endemic to SA, scattered throughout agricultural areas. Occurring in sandy flat areas and in hilly rocky areas in woodland or mallee, including overlapping with Peppermint Box Grassy Woodland of SA (DOE 2013b).	**Unlikely** – No recent records, the understorey in the Project Area is heavily degraded and there is no suitable habitat in the Project Area.
Prasophyllum pallidum	Pale Leek-orchid	VU	R	2	Likely/2021	Pale Leek-orchid is known singly or in groups in better soils of woodland and grassy open forest. Recorded in woodlands and forests dominated by *Eucalyptus leucoxylon*, *E. goniocalyx*, *E. fasciculosa*, *E. microcarpa*, *Callitris gracilis*/*Eucalyptus fasciculosa*, and *Allocasuarina verticillata* (Bates 2009).	**Unlikely** – No recent records, the understorey in the Project Area is heavily degraded and there is no suitable habitat in the Project Area.

Scientific Name	Common Name	EPBC Act	NPW Act	Data source	PMST likelihood/ Year of last record	Species known habitat preferences	Likelihood of use for habitat – Comments
Ptilotus erubescens	Hairy-tails		R	1	2014	Occurs in SA in FR, NL, MU, SL and SE where it occurs in fertile soils in grassland, woodland and scrubland communities but not in mallee (Royal Botanic Gardens Victoria 2020).	**Unlikely** – Despite recent records, the understorey in the Project Area is heavily degraded and there is no suitable habitat in the Project Area.
Senecio pinnatifolius var. *pinnatifolius*			R	1	2014	A highly variable species occurring mostly within 300-400 km of the coast. It occurs predominantly in areas of moderate to high rainfall and areas that are rocky or in higher elevations (PlantNET 2023).	**Unlikely** – Despite recent records, the understorey in the Project Area is heavily degraded and there is no suitable habitat in the Project Area.
Thelymitra aristata	Great Sun-orchid		E	1	2014	Found primarily in the south-east in South Australia, north of Mt Gambier, growing in clay or gravel soils in forest or scrubland around swamp margins in damp sands (SSCC 2018).	**Unlikely** – Despite recent records, the understorey in the Project Area is heavily degraded and there is no suitable habitat in the Project Area.

Scientific Name	Common Name	EPBC Act	NPW Act	Data source	PMST likelihood/ Year of last record	Species known habitat preferences	Likelihood of use for habitat – Comments
Thelymitra batesii			R	1	2010	Endemic to South Australia and found in the southern Flinders Ranges and the Mount Lofty Ranges, growing in heathy woodlands and heathy open forest on sandy and gravelly clay loam soils (SSCC 2018).	**Unlikely** – Despite recent records, the understorey in the Project Area is heavily degraded and there is no suitable habitat in the Project Area.
Thelymitra grandiflora	Great Sun-orchid		R	1	2014	Occurs singly or as small clumps of plants in forest clearings, woodland and scrub in well drained gravelly clay soils which may be laterite or podsols, or mixed with sand, extending to dry rocky ridges in better soils(*South Australian Native Orchids. Compact Disc* 2009).	**Unlikely** – Despite recent records, the understorey in the Project Area is heavily degraded and there is no suitable habitat in the Project Area.

Scientific Name	Common Name	EPBC Act	NPW Act	Data source	PMST likelihood/ Year of last record	Species known habitat preferences	Likelihood of use for habitat – Comments
Thelymitra ixioides	Spotted Sun-orchid		E	1	2014	Found in the southern Mount Lofty Ranges and the lower South-east in South Australia, growing in woodland or swampy ground (SSCC 2018).	**Unlikely** – Despite recent records, the understorey in the Project Area is heavily degraded and there is no suitable habitat in the Project Area.
Thelymitra matthewsii	Spiral Sun-orchid	VU	E	2	Likely	Favours open forests and woodlands in well-drained sand and clay loams. Grows in heathy open forest and woodlands on well-drained sand, gravel and clay loams, especially where there has been soil disturbance. Open ground layer is common (Duncan 2010).	**Unlikely** – No recent records, the understorey in the Project Area is heavily degraded and there is no suitable habitat in the Project Area.

Scientific Name	Common Name	EPBC Act	NPW Act	Data source	PMST likelihood/ Year of last record	Species known habitat preferences	Likelihood of use for habitat – Comments
Veronica derwentiana ssp. *homalodonta*	Mount Lofty Speedwell	CE	E	2	Likely	Occurs in moist areas, gullies, creeklines and high rainfall areas. Largely occurs in Eucalyptus obliqua Forests with or without additional overstorey species (such as *Eucalyptus fasciculosa*, *Eucalyptus viminalis* ssp. *cygnetensis* & *Eucalyptus leucoxylon*) (TSSC 2009).	**Unlikely** – No recent records, the understorey in the Project Area is heavily degraded and there is no suitable habitat in the Project Area.

Green Shading = Known / Highly Likely to Occur

Conservation status:

Aus: Australia (EPBC Act). SA: South Australia (NPW Act). Conservation Codes: CE: Critically Endangered. EN/E: Endangered. VU/V: Vulnerable. R: Rare.

PMST result: Likelihood of species or species habitat to occur within 5 km of the Project Area.

Year of last record: Latest record within 5 km of the Project Area, obtained from the BDBSA Database.

Source of Information:

1: BDBSA (DEW 2022b) – 5 km buffer applied to Project Area.

2: PMST (DCCEEW 2023a) – 5 km buffer applied to Project Area.

3: Recorded during a field assessment.

Abbreviations within Distribution and preferred habitat:

EP: Eyre Peninsula; FP: Fleurieu Peninsula; FR: Flinders Ranges; KI: Kangaroo Island; MLR: Mount Lofty Ranges; MU: Murraylands; NL: Northern Lofty; NP: National Park; NSW: New South Wales QLD: Queensland; SL: Southern Lofty; SE: Southeast / South-Eastern; SW: South-Western; Tas: Tasmania; Vic: Victoria; WA: Western Australia; YP: Yorke Peninsula.

Appendix 5

Assessment of Likelihood of National (EPBC Act) and State (NPW Act) Listed Threatened Fauna Identified by the PMST (DCCEEW 2023a) and BDBSA (DEW 2022b) to Occur in the Project Area

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Appendix Table A7.1 Assessment of likelihood of national (EPBC Act) and State (NPW Act) Listed Threatened Fauna Identified by the PMST (DCCEEW 2023a) and BDBSA (DEW 2022b) to Occur in the Project Area

Scientific Name	Common Name	EPBC Act	NPW Act	Data source	PMST likelihood/ Year of last record	Species known habitat preferences	Scattered tree using species	Likelihood of use for habitat – Comments
AVES (BIRDS)								
Actitis hypoleucos	Common Sandpiper	Mi (W)	R	1, 2	Likely / 2015	Varied coastal and interior wetlands: narrow muddy edges of billabongs, river pools, mangroves, among rocks reefs and rocky beaches (Morcombe 2021).		**Unlikely** – Despite recent records, no coastal habitat is present in the Project Area.
Anhinga novaehollandiae novaehollandiae	Australasian Darter		R	1	2024	Prefers lakes, rivers, swamps, reservoirs and tidal inlets; rarely coastal (Pizzey and Knight 2021).		**Unlikely** – Despite recent records, no suitable habitat is present in the Project Area.
Aphelocephala leucopsis leucopsis	Southern Whiteface	VU		2	Likely	Occurs in open woodland and shrubland habitat with an understorey of grasses and / or low shrubs. Suitable habitat is usually dominated by Acacia spp. or Eucalyptus spp. on ranges, foothills, lowlands and plains (DCCEEW 2023b).	P, H, w	**Unlikely** – No recent records despite some suitable habitat in the Project Area.
Apus pacificus	Fork-tailed Swift	Mi (Ma)		1, 2	Likely / 2017	Widespread but almost exclusively aerial. Mostly occur over inland plains and dry or open habitats (Morcombe 2021).		**Unlikely** – Despite recent records, this species is almost exclusively aerial and is unlikely to occur. May occur as flyover only.
Ardea intermedia plumifera	Plumed Egret		R	1	2012	Frequents freshwater wetlands, pastures, croplands and tidal		**Possible** – Recent records and some

Scientific Name	Common Name	EPBC Act	NPW Act	Data source	PMST likelihood/ Year of last record	Species known habitat preferences	Scattered tree using species	Likelihood of use for habitat – Comments
						mudflats and floodplains (Pizzey and Knight 2021).		suitable habitat in the Project Area.
Biziura lobata menziesi	Musk Duck		R	1	2023	Lakes, reservoirs and wetlands including well-vegetated swamps and fresh and brackish habitats (Pizzey and Knight 2021).		**Unlikely** – Despite recent records, no suitable habitat is present in the Project Area.
Botaurus poiciloptilus	Australasian Bittern	EN	E	1, 2	Known / 2017	Freshwater wetlands and rarely in estuaries or tidal wetlands, favouring wetlands dominated by sedges, rushes and reeds growing over a muddy or peaty substrate (TSSC 2019).		**Unlikely** – Despite recent records, no suitable habitat is present in the Project Area.
Calidris subminuta	Long-toed Stint		R	1	2014	Associated mainly with shallow freshwater or brackish wetlands, including lakes, swamps, floodplains, lagoons, sewage ponds, reservoirs and artificial lakes. It prefers muddy wetland margins with short grass, sedges, reeds, rushes, low or floating aquatic vegetation, and is commonly found around drying ephemeral wetlands. It forages on wet mud or shallow water, often among vegetation at wetland edges or islets, and roosts in sparse vegetation or damp mud near shallow water.(*Handbook of Australian, New Zealand and Antarctic Birds* 1996)		**Unlikely** – Despite a relatively recent records, suitable habitat for this species is not present within the Project Area.
Cereopsis novaehollandiae novaehollandiae	Cape Barren Goose		R	1	2009	Mostly inhabits small, windswept and generally uninhabited offshore islands, but ventures to adjacent		**Unlikely** – Despite recent records, no suitable habitat is

Scientific Name	Common Name	EPBC Act	NPW Act	Data source	PMST likelihood/ Year of last record	Species known habitat preferences	Scattered tree using species	Likelihood of use for habitat – Comments
						mainland farming areas in search of food in summer(*Birdlife Australia* 2023a).		present in the Project Area.
Cladorhynchus leucocephalus	Banded Stilt		V	1	2013	Endemic to Australia, mainly in the south and inland. Found mainly in saline and hypersaline (very salty) waters of the inland and coast, typically large, open and shallow (*Birds in Backyards* 2023)		**Unlikely** – Despite recent records, no suitable habitat is present in the Project Area.
Corcorax melanorhamphos	White-winged Chough		R	1	2022	Prefers drier forests, woodlands of Eucalyptus sp., crops and pastures (Pizzey and Knight 2021).		**Possible** – Recent records and some albeit marginal habitat is present in the Project Area.
Coturnix ypsilophora australis	Brown Quail		V	1	2012	Prefers dense grasslands, often on the edges of open forests, and bracken(*Birdlife Australia* 2023b).		**Possible** – Recent records and some suitable habitat in the Project Area.
Egretta garzetta nigripes	Little Egret		R	1	2012	Found in tidal mudflats, saltmarshes, mangroves and freshwater wetlands (Pizzey and Knight 2021).		**Possible** – Recent records and some suitable habitat in the Project Area, may occur as flyover only.

Scientific Name	Common Name	EPBC Act	NPW Act	Data source	PMST likelihood/ Year of last record	Species known habitat preferences	Scattered tree using species	Likelihood of use for habitat – Comments
Falco hypoleucos	Grey Falcon	VU	R	2	Likely	This species is mainly found where annual rainfall is less than 500 mm and is essentially confined to the arid and semi-arid zones at all times. The species frequents timbered lowland plains, particularly acacia shrublands that are crossed by tree-lined water courses (Schoenjahn 2018).		**Unlikely** – No recent records and despite some suitable habitat in the Project Area, this species is a vagrant to the area and is unlikely to occur.
Falco peregrinus macropus	Peregrine Falcon		R	1	2022	Found everywhere from woodlands to open grasslands and coastal cliffs – though less frequently in desert regions. This species prefers open habitats such as grasslands, tundra and meadows and nests on cliff faces and in crevices (Pizzey and Knight 2021).	P, H, N, w/r	**Highly Likely** – Very recent records and suitable habitat is present in the Project Area.
Falcunculus frontatus frontatus	Eastern Shriketit		R	1	2024	Eucalyptus woodlands and forest, within a wide range of woodland/forest communities. Prefers dense grasslands, often on the edges of open forests, and bracken(*Birdlife Australia* 2023b).	F, w	**Likely** – Recent records and some suitable foraging habitat is present in the Project Area.
Gallinago hardwickii	Latham's Snipe	VU Mi (W)	R	1, 2	Known / 2024	This is a wetland species that occurs on shallow water with tussocks and other green or dead growth (Pizzey and Knight 2021).		**Unlikely** – Despite recent records, no suitable habitat is present in the Project Area.
Grantiella picta	Painted Honeyeater	VU	R	2	Likely	Forest, woodland, dry scrub, often with abundant mistletoe. Dependent on mistletoe berries (DAWE 2021a).		**Unlikely** – No recent records or suitable habitat is present in the Project Area.

Scientific Name	Common Name	EPBC Act	NPW Act	Data source	PMST likelihood/ Year of last record	Species known habitat preferences	Scattered tree using species	Likelihood of use for habitat – Comments
Haematopus fuliginosus fuliginosus	Sooty Oystercatcher		R	1	2009	The Sooty Oystercatcher is strictly coastal, usually within 50 m of the ocean. It prefers rocky shores but will be seen on coral reefs or sandy beaches near mudflats. (Pizzey and Knight 2021).		**Unlikely** – Recent records but no suitable coastal habitat is present in the Project Area.
Haematopus longirostris	Pied Oystercatcher		R	1	2010	Prefers sandy, shellgrit or pebble beaches, tidal mudflats, and coastal islands (Pizzey and Knight 2021).		**Unlikely** – Recent records but no suitable coastal habitat is present in the Project Area.
Haliaeetus leucogaster	White-bellied Sea Eagle		E	1	2006	Coastal and wetland raptor associated with large areas of open water, including seas, estuaries, bays, lagoons, rivers, lakes, swamps, reservoirs and billabongs. Also occurs over nearby terrestrial habitats such as dunes, grasslands, woodlands, forests and urban areas. Breeds close to water, usually in tall forest or woodland, and forages mainly over open water. (*Protected Matters Search Tool* 2025)		**Unlikely** – Despite a previous BDBSA record from 2006, suitable habitat for this species is not present within the Project Area.
Hieraaetus morphnoides	Little Eagle		V	1	2016	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 (Morcombe, 2021).	P, w	**Likely** – Recent records and suitable habitat in the Project Area for perching. Most likely to occur as flyover.

Scientific Name	Common Name	EPBC Act	NPW Act	Data source	PMST likelihood/ Year of last record	Species known habitat preferences	Scattered tree using species	Likelihood of use for habitat – Comments
Hirundapus caudacutus	White-throated Needletail	VU Mi (T)	V	2	Likely	Almost exclusively aerial in Australia, recorded most commonly above wooded areas (Pizzey and Knight 2021).		**Unlikely** – No recent records despite suitable habitat in the Project Area. May occur as flyover only.
Hirundapus caudacutus	White-throated Needletail	VU Mi (T)		2	Likely	White-throated Needletails are aerial birds and for a time it was commonly believed that they did not land while in Australia. It has now been observed that birds will roost in trees, and radio-tracking has since confirmed that this is a regular activity. (*Birds in Backyards* 2023)		**Possible** – Listed in the PMST as likely to occur and may forage aerially over the Project Area. However, the species is highly mobile and largely aerial, with limited reliance on terrestrial habitat within the Project Area. Occasional flyover or aerial foraging may occur, and roosting may be possible where suitable mature trees are present.
Ixobrychus dubius	Black-backed Bittern		E	1	2006	Occurs in freshwater habitats, mainly where tall rushes, reeds and/or shrub thickets or other dense cover is present(*Birdlife Australia* 2023b).		**Unlikely** – Despite recent records, no suitable habitat is present in the Project Area.

Scientific Name	Common Name	EPBC Act	NPW Act	Data source	PMST likelihood/ Year of last record	Species known habitat preferences	Scattered tree using species	Likelihood of use for habitat – Comments
Leipoa ocellata	Malleefowl	VU	V	2	Likely	Occupies shrublands and low woodlands that are dominated by mallee vegetation. It also occurs in other habitat types including eucalypt or native pine Callitris woodlands, acacia shrublands, Broombush Melaleuca uncinata vegetation or coastal heathlands(Benshemesh 2007).		**Unlikely** – No recent records or suitable mallee habitat is present in the Project Area.
Lewin pectoralis pectoralis	Lewin's Rail		V	1	2006	Swamp woodlands; ruches, reeds, rank grass in swamps, creeks paddocks; wet heaths, tree ferns; samphire in saltmarsh (Pizzey and Knight 2021).		**Unlikely** – Despite recent records, no suitable habitat is present in the Project Area.
Limosa lapponica baueri	Bar-tailed Godwit	VU Mi (W)	R	1.2	Known / 2002	Found in coastal habitats including large intertidal sandflats, mudflats and estuaries. Has also been recorded in salt lakes and brackish or saline wetlands (Marchant and Higgins 1993).		**Unlikely** – Despite recent records, no suitable habitat is present in the Project Area.
Lophochroa leadbeateri leadbeateri	Major Mitchell's Cockatoo	EN	R	1	2015	The Major Mitchell's Cockatoo occurs only in Australia, where it usually inhabits semi-arid and arid regions. The species usually inhabit dry woodlands in arid and semi-arid areas, usually where eucalypts or acacias dominate the vegetation. They require old trees which support hollows that are large enough to be suitable for nesting in(*Birdlife Australia* 2023b).	P, f, w/r	**Unlikely** – Despite recent records and some suitable habitat in the Project Area, this species is a vagrant to the area.
Melanodryas cucullata cucullata	Hooded Robin	EN	R	2	Likely	Prefers dry eucalypt and acacia woodlands and shrublands with an open understorey, some grassy		**Unlikely** – No recent records despite some

Scientific Name	Common Name	EPBC Act	NPW Act	Data source	PMST likelihood/ Year of last record	Species known habitat preferences	Scattered tree using species	Likelihood of use for habitat – Comments
						areas and a complex ground layer. They avoid woodlands with tall trees or dense tree cover but sometimes occur in tall, dense heaths with scattered open areas. Sub-populations in SA are recorded from the Barossa, Monarto, Onkaparinga River, Ashbourne, Port Willunga areas as well as isolated records from elsewhere in the hills and Fleurieu. Requires large remnants (>50 ha) with open areas, young eucalypts or shrubs for nesting and numerous perches for foraging (DCCEEW 2023c).		suitable habitat in the Project Area.
Microeca fascinans fascinans	Jacky Winter		R	1	2014	Widely distributed throughout mainland Australia. Prefer open woodland (Eucalypt and mallee) with an open shrub layer and bare ground. Often seen in farmland and parks (Morcombe, 2021).	P, w	**Likely** – Recent records and some suitable perching and open foraging habitat in the Project Area.
Myiagra cyanoleuca	Satin Flycatcher	Mi (T)	E	2	Likely	Known inhabitant of forest, woodland, mangroves and coastal heath scrub. Prefers dense, wet gullies of heavy eucalypt forest in breeding season (Morcombe 2021).		**Unlikely** – No recent records despite some suitable habitat in the Project Area.
Myiagra inquieta	Restless Flycatcher		R	1	2013	Found throughout northern and eastern mainland Australia, as well as in south-western Australia. The Restless Flycatcher is found in open forests and woodlands and is frequently seen in farmland(*Birdlife Australia* 2023b).		**Unlikely** – Despite recent records, no suitable habitat is present in the Project Area.

Scientific Name	Common Name	EPBC Act	NPW Act	Data source	PMST likelihood/ Year of last record	Species known habitat preferences	Scattered tree using species	Likelihood of use for habitat – Comments
Neophema chrysostoma	Blue-winged Parrot	VU	V	2	Known	Blue-winged parrots inhabit a range of habitats from coastal, sub-coastal and inland areas, through to semi-arid zones. They tend to favour grasslands and grassy woodlands and are often found near wetlands both near the coast and in semi-arid zones (DCCEEW 2023d).	P, H, w	**Unlikely** – No recent records despite some suitable habitat in the Project Area.
Neophema elegans elegans	Elegant Parrot		R	1	2020	Wide variety of habitats, including grasslands, shrublands, mallee, woodlands and thickets, bluebush plains, heathlands, saltmarsh and farmland (Pizzey and Knight 2021).	P, H, w	**Likely** – Recent records and some suitable habitat occurs in the Project Area.
Oxyura australis	Blue-billed Duck		R	1	2021	Prefers large dams and lakes and well-vegetated freshwater swamps (Pizzey and Knight 2021).		**Unlikely** – Despite recent records, no suitable habitat is present in the Project Area.
Petroica boodang boodang	Scarlet Robin		R	1	1999	This species occurs in foothill forests, woodlands and watercourses. In autumn-winter, they occur in more open habitats such as river red gum woodlands, golf courses, parks, orchards and gardens(*Birdlife Australia* 2023b).	P, w	**Possible** – Records over 20 years old, though some suitable habitat occurs in the Project Area.
Plegadis falcinellus	Glossy Ibis		R	1	2017	Generally located on Eyre Peninsula in South Australia. Preferred habitat for foraging and breeding are freshwater marshes at the edges of lakes and rivers, lagoons, flood-plains, wet meadows, swamps, reservoirs, sewage ponds, rice-fields and		**Likely**– Recent records and some suitable habitat including foraging areas are present in the Project Area.

Scientific Name	Common Name	EPBC Act	NPW Act	Data source	PMST likelihood/ Year of last record	Species known habitat preferences	Scattered tree using species	Likelihood of use for habitat – Comments
						cultivated areas under irrigation (Marchant and Higgins 1990).		
Podiceps cristatus australis	Great Crested Grebe		R	1	2010	Found almost exclusively on lakes, larger lagoons and swamps, reservoirs and bays or inlets (Pizzey and Knight 2021).		**Unlikely** – Despite recent records, no suitable habitat is present in the Project Area.
Rostratula australis	Australian Painted-snipe	EN	E	1, 2	Likely / 2012	Generally, inhabits shallow terrestrial freshwater (occasionally brackish) wetlands, including temporary and permanent lakes, swamps and claypans. They also use inundated or waterlogged grassland or saltmarsh, dams, rice crops, sewage farms and bore drains (DCCEEW 2022).		**Unlikely** – Despite recent records, no suitable habitat is present in the Project Area.
Spatula rhynchotis	Australasian Shoveler		R	1	2021	Prefers fresh and saline lakes and well-vegetated freshwater wetlands. Also occurs in coastal inlets, floodwaters and sewage ponds (Morcombe 2021).		**Unlikely** – Despite recent records, no suitable habitat is present in the Project Area.
Stagonopleura guttata	Diamond Firetail	VU	V	1, 2	2015 / Known	Endemic to Australia, occurring mainly on the inland slopes of the Great Dividing Range and in the AMLR/Eyre Peninsula region of SA. Reside in a wide range of Eucalypt dominated vegetation communities that have a grassy understorey, including woodland, forest and mallee. Most occur on the inland slopes of the Great Dividing Ranges, with only small pockets near the coast (DCCEEW 2023e).	P, N, w	**Possible** – Recent records and some suitable habitat in the Project Area.

Scientific Name	Common Name	EPBC Act	NPW Act	Data source	PMST likelihood/ Year of last record	Species known habitat preferences	Scattered tree using species	Likelihood of use for habitat – Comments
Stictonetta naevosa	Freckled Duck		V	1	2020	Prefer permanent freshwater swamps and creeks with heavy growth of Cumbungi, Lignum or Tea-tree. During drier times they move from ephemeral breeding swamps to more permanent waters such as lakes, reservoirs, farm dams and sewage ponds(*Birds in Backyards* 2023).		**Unlikely** – Despite recent records, no suitable habitat is present in the Project Area.
Tringa glareola	Wood Sandpiper		R	1	2009	Prefers the muddy margins of wetlands, tidal mudflats and salt marshes (Pizzey and Knight 2021).		**Unlikely** – Despite recent records, no suitable habitat is present in the Project Area.
Tringa nebularia	Common Greenshank	Mi (W)		2	Likely	Found in a wide variety of inland wetlands and sheltered coastal habitats of varying salinity. It occurs in sheltered coastal habitats, typically with large mudflats and saltmarsh, mangroves or seagrass (Pizzey and Knight 2021).		**Unlikely** – No recent records or suitable habitat is present in the Project Area.
Zanda funerea whiteae	Yellow-tailed Black Cockatoo		V	1	2019	Eucalyptus forests and woodlands. Plantations of Eucalyptus and introduced Pinus sp. (Pizzey and Knight 2021).	P, H, w	**Likely** – Recent records and suitable habitat is present in the Project Area.
Zapornia tabuensis	Spotless Crake		R	1	2020	Mostly found in well vegetated freshwater wetlands with rushes and reeds. Will also frequent muddy areas, reedbeds or wetlands (Wilson and Bignall 2009).		**Unlikely** – Despite recent records, no suitable habitat is present in the Project Area.
Zoothera lunulata halmaturina	Bassian Thrush	EN	R	1, 2	Likely / 2015	Damp, densely forested areas and gullies are favoured by the Bassian Thrush, usually with a thick canopy		**Unlikely** – Despite recent records, no suitable habitat is

Scientific Name	Common Name	EPBC Act	NPW Act	Data source	PMST likelihood/ Year of last record	Species known habitat preferences	Scattered tree using species	Likelihood of use for habitat – Comments
						overhead and leaf-litter below (DAWE 2022).		present in the Project Area.
Stictonetta naevosa	Freckled Duck		V	1	2020	Prefer permanent freshwater swamps and creeks with heavy growth of Cumbungi, Lignum or Tea-tree. During drier times they move from ephemeral breeding swamps to more permanent waters such as lakes, reservoirs, farm dams and sewage ponds(*Birds in Backyards* 2023).		**Unlikely** – Despite recent records, no suitable habitat is present in the Project Area.
MAMMALIA (MAMMALS)								
Isoodon obesulus obesulus	Southern Brown Bandicoot	EN	V	2	Likely	This species prefers dense ground cover, tall grass and low shrubbery. They live near swamps and rivers as well as in thick scrub in drier areas. They make their nests on the ground and in logs. The nests consist of sticks, leaves, grass, and soil (TSSC 2016).		**Unlikely** – No recent records despite some suitable habitat (thickets of dense understorey such as *Rubus fruticosus* (Blackberry)) in the Project Area.
Pteropus poliocephalus	Grey-headed Flying-fox	VU	R	1, 2	Likely /2020	Grey-headed Flying-foxes forage up to 40 km from their roost at Botanic Park each night. Food plants are typically planted trees, both native and exotic, that provide fruit or a rich source of nectar (DAWE 2021a). This species may occur within the Project Area; however, they would only be expected to visit for short periods if suitable flower or fruit resources are available.	F, s	**Likely** – Recent records and suitable foraging habitat is present in the Project Area. The Project Area is not within 20km of nearest camp and is therefore not considered

Scientific Name	Common Name	EPBC Act	NPW Act	Data source	PMST likelihood/ Year of last record	Species known habitat preferences	Scattered tree using species	Likelihood of use for habitat – Comments
								critical habitat for this species.
Trichosurus vulpecula	Common Brushtail Possum		R	1	2021	Utilises various woodland habitats and suburban environs. Feeds on flowers, fruit, buds and leaves of native vegetation. Requires hollows (within dead or alive tree) or on ground for daytime nesting (Strahan & van Dyck 2008).	H, f, w	**Known** – was recorded within the Project Area in 2023.
REPTILIA (REPTILES)								
Aprasia pseudopulchella	Flinders Ranges Worm-lizard	VU		2	Likely	Small fossorial legless lizard associated with rocky native grassland, grassy woodland and open woodland habitats. Shelters beneath surface rocks and loose stones, often where ant activity is present, with rocky ground cover providing key refuge and foraging habitat.		**Unlikely** – Although the species is listed in the PMST as likely to occur, suitable habitat is not present within the Project Area.
Emydura macquarii	Macquarie River Turtle		V	1	2017	A species with a number of morphological variations that occur in the Murray-Darling drainage in NSW, SA, VIC and QLD as well as near headwaters west of the Great Dividing Range. They can be found in open water, including lagoons but prefer permanent areas of slow-moving water. They rarely come out of the water, but they can sometimes be seen basking on logs (LSA 2022).		**Unlikely** – Despite recent records, no suitable habitat is present in the Project Area.

Exclusively Marine Species Have Been Omitted
Green Shading = Highly Likely or Likely to Occur, Orange Shading = Possible to Occur
Conservation status:

Scientific Name	Common Name	EPBC Act	NPW Act	Data source	PMST likelihood/ Year of last record	Species known habitat preferences	Scattered tree using species	Likelihood of use for habitat – Comments
Aus: Australia (EPBC Act). SA: South Australia (NPW Act). Conservation Codes: CE: Critically Endangered. EN/E: Endangered. VU/V: Vulnerable. R: Rare. Mi: listed as migratory under the EPBC Act. Mi (W): listed as a Migratory Wetland species under the EPBC Act. Mi (Ma): listed as a Migratory Marine species under the EPBC Act. PMST result: Likelihood of species or species habitat to occur within 5 km of the Project Area. Year of last record: Latest record within 5 km of the Project Area, obtained from the BDBSA Database. Scattered tree using species: Resource use: P = perching / roosting, N = nesting, H = using hollow for nesting/roosting, F = feeding. Habitat status: s = seasonal (includes waterbirds using trees near seasonal wetlands, seasonal and nomadic species), w = woodland birds that occasionally use adjacent scattered trees, r = species that can reside in scattered trees. Source of Information: 1: BDBSA (DEW 2022b) – 5 km buffer applied to Project Area 2: PMST (DCCEEW 2023a) – 5 km buffer applied to Project Area 3: Recorded during a field assessment. Abbreviations within Distribution and preferred habitat: EP: Eyre Peninsula; FP: Fleurieu Peninsula; FR: Flinders Ranges; KI: Kangaroo Island; MLR: Mount Lofty Ranges; MU: Murraylands; NL: Northern Lofty; NP: National Park; NSW: New South Wales QLD: Queensland; SL: Southern Lofty; SE: Southeast / South-Eastern; SW: South-Western; Tas: Tasmania; Vic: Victoria; WA: Western Australia; YP: Yorke Peninsula.								

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