Native Vegetation Clearance

Lot 99, Carpenter Rocks
Data Report

Clearance under the *Native Vegetation Regulations 2017*

09/08/2024

Prepared by Ecosphere Ecological Solutions

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1 Application Information

Table 1. Application details.

Applicant:	Frank Brennan Consulting Services		
Key contact:	E: T:		
Landowner:			
Site Address:	Lot 99 Gerloff Street, Carpenter Rocks, South Australia, 5291		
Local Government Area:	The District Council of Grant	Hundred:	Kongorong
Title ID:	CT6019/810	Parcel ID	F206460AL99

Table 2. Summary of proposed clearance.

Purpose of clearance	Clearance required in relation to a proposed land division.
Native Vegetation Regulation	Regulation 12(35) – Residential subdivision.
Description of the vegetation under application	Size, type and general condition: Native vegetation within the Project area is predominantly composed of moderately degraded tall coastal shrubland of *Leucopogon parviflorus* (Coast Beard-heath), *Acacia longifolia* ssp. *sophorae* (Coastal Wattle), and *Olearia axillaris* (Coast Daisy-bush) with emergent shrubs / trees of the declared weed *Coprosma repens* (Mirror Bush) over a mixture of native sedges, *Tetragonia implexicoma* (Bower Spinach), and introduced grasses. The Project area was divided into three vegetation associations based on differences in shrub cover and abundance of native flora.
Total proposed clearance - area (ha) and number of trees	1.377 ha
Level of clearance	Level 4
Overlay (Planning and Design Code)	Native Vegetation

Mitigation hierarchy	• The proposed residential subdivision utilises the entire allotment and thus avoidance of vegetation clearance is not possible. • Ample access and storage space for future construction works is possible within vegetation association 3, which is currently maintained as an open, grassy area allowing access to the allotment, and vegetation clearance external to the allotment should not be required. • No rehabilitation or restoration works are planned as the proposed residential subdivision utilises the entire allotment.
SEB Offset proposal	The SEB will be met through a payment into the NV fund. Total payment is $59,480.19.

2 Purpose of Clearance

2.1 Description

Frank Brennan Consulting Services is currently working with landowner in relation to a proposed residential subdivision of Lot 99 Gerloff Street, Carpenter Rocks (i.e., the Project area), located approximately 368.5 km south-east of Adelaide in the south-east costal region of South Australia (Figure 1 and Figure 2). The proponent requires a native vegetation assessment and report to support the proposed residential subdivision.

2.2 Background

2.2.1 Interim Biogeographic Regionalisation for Australia (IBRA)

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 lies within the Naracoorte Coastal Plain IBRA Bioregion, the Bridgewater IBRA Subregion, and the Lake George IBRA Environmental Association. The Bridgewater IBRA Subregion and the Lake George IBRA Environmental Association have 14 % and 11 % of their area composed of remnant native vegetation, respectively. And of this, 43 % and 35 % of remaining native vegetation is formally protected within the Bridgewater IBRA Subregion and the Lake George IBRA Environmental Association, respectively.

2.2.2 Climate

The Bridgewater IBRA Subregion has a mostly temperate climate, with cool wet winters and relatively dry summers. Mean annual rainfall from 1976 – 2005, as accessed via NatureMaps (2024), is 752 mm at the Project area. The nearest weather station with available rainfall data to the Project area is Tantanoola (Station Number: 26027), which records an average of 778.1 mm rainfall per year (1950 – 2015). The maximum average monthly rainfall is recorded in July at 118.4 mm, with the lowest average rainfall occurring in February at 22.0 mm. The nearest weather station with available temperature data is Mount Gambier Aero (Station Number: 26021). Here, the highest average maximum monthly temperature is recorded as occurring in January at 25.5 degrees, with the lowest occurring in July which has a maximum monthly temperature of 13.2 degrees (1942 – 2023). Conversely the mean minimum monthly temperature for January and July across the same period is 11.3 degrees and 5.2 degrees, respectively.

2.2.3 Native Vegetation Information System (NVIS)

The NVIS represents the State Government's key extant native floristic vegetation mapping layer for South Australia. It provides floristic and structural information, and / or presence of native vegetation in South Australia. Coastal shrubland was mapped as occurring in the Project area. Specifically, *Leucopogon parviflorus*, *Acacia longifolia* ssp. *sophorae*, *Olearia axillaris*, +/- *Myoporum insulare* tall shrubland over *Lepidosperma gladiatum*, *Pimelea serpyllifolia* ssp. *serpyllifolia*, *Isolepis nodosa* sedges over *Carpobrotus rossii*, *Clematis microphylla* var. *microphylla*. In addition, immediately north to north-east of the Project area occurred rushland / sedgeland mapped as emergent +/- *Melaleuca halmaturorum* shrubs over *Gahnia filum*, +/- *Juncus kraussii* tall sedgeland over *Samolus repens*, +/- *Tetragonia implexicoma*, +/- *Selliera radicans*, +/- *Acaena novae-zelandiae*.

2.3 General Location

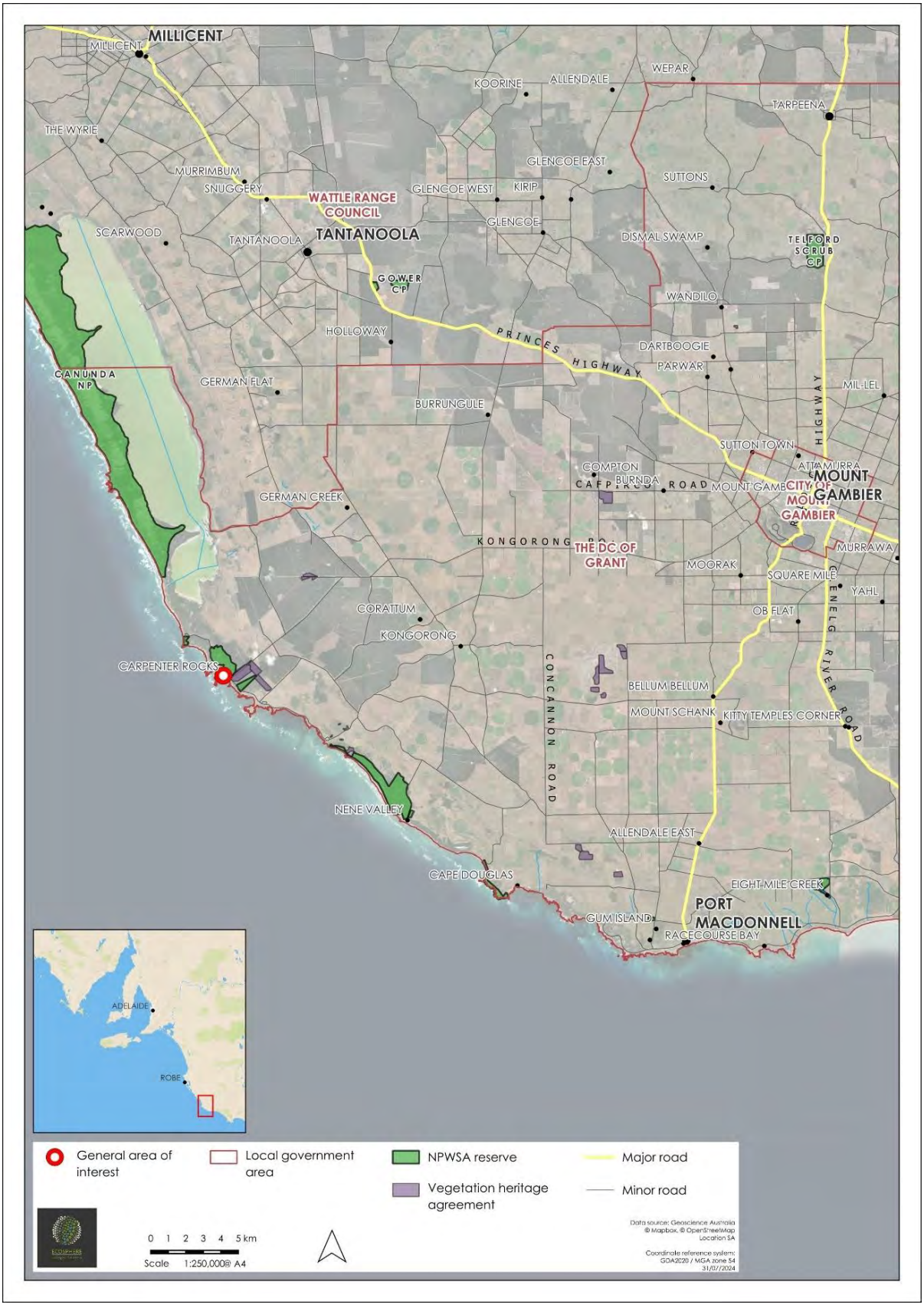

Figure 1 Regional location of the Project area.

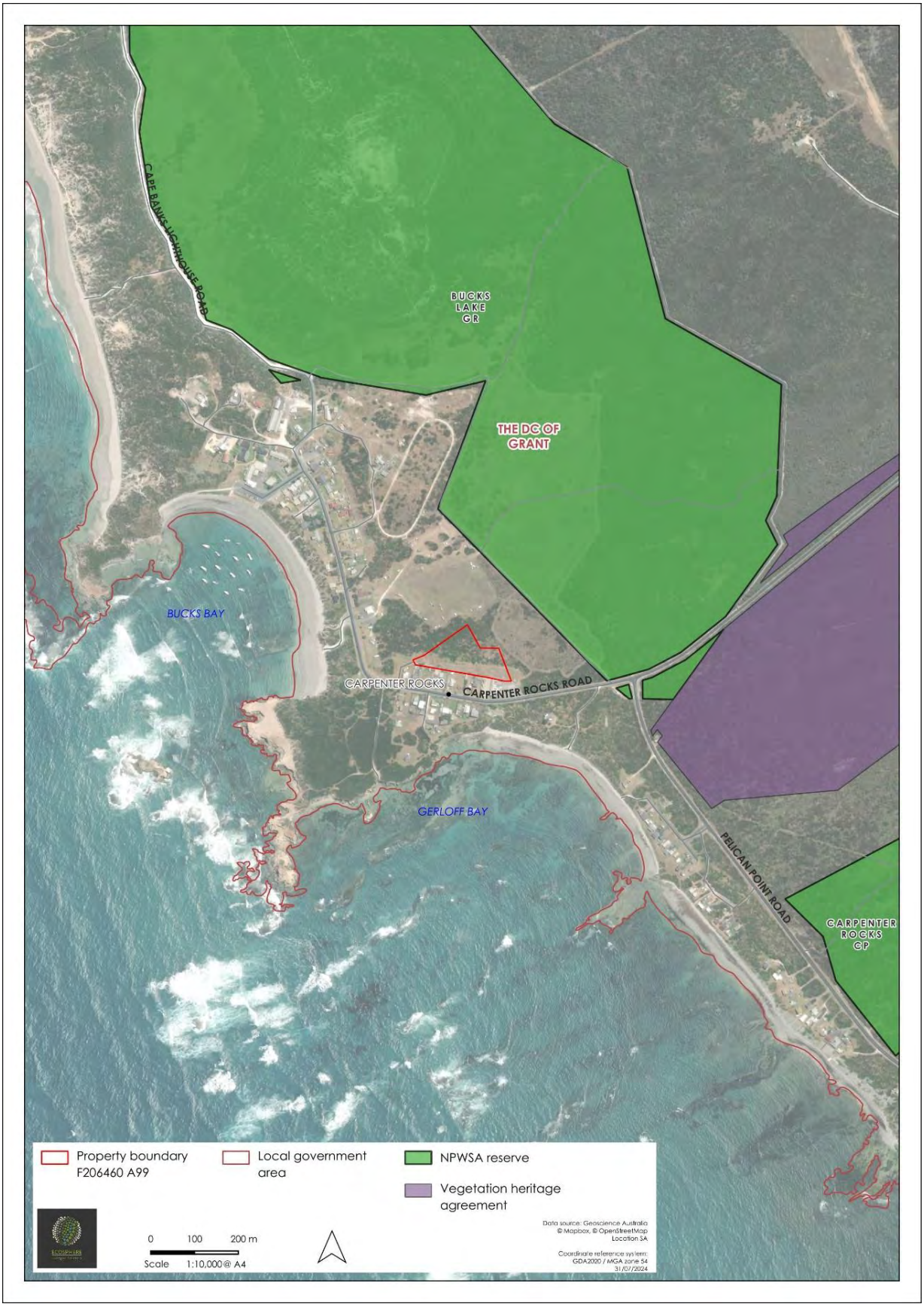

Figure 2 General location of the Project area.

2.4 Details of the Proposal

Frank Brennan Consulting Services is currently working with landowner in relation to a proposed residential subdivision of Lot 99 Gerloff Street, Carpenter Rocks (Figure 3). The proposed residential subdivision consist of dividing the allotment into nine residential blocks connected by a new central, residential road (Figure 4).

2.5 Approvals Required or Obtained

Provide details of the following approvals or applications under the following legislation, where relevant:

- *Native Vegetation Act 1991* (Clearance under the act is the subject of the current proposal)
- *Planning, Development and Infrastructure Act 2016* (Approval required for the current project)
- *Environment Protection and Biodiversity Conservation Act 1999* (Desktop assessment and field survey undertaken to determine if Matters of National environmental Significance (MNES) occur within the Project area, detailed below)
- *National Parks and Wildlife Act 1972* (Desktop assessment and field survey undertaken to determine if state level threatened flora and fauna occur within the Project area, detailed below)
- *Landscape South Australia Act 2019* (Desktop assessment and field survey undertaken to determine if weeds of concern occur within the Project area, detailed below)

2.6 Native Vegetation Regulation

The Native Vegetation Regulation under which the proposed clearance is suggested to be assessed is Regulation 12(35) – Residential subdivision.

To allow clearance of vegetation in connection with residential subdivision, associated house sites, roads and other associated infrastructure.

Proponent must comply with the following additional requirements:

- Development authorisation for the division of land and construction of roads and other infrastructure under the *Development Act 1993* (now superseded by the *Planning, Development and Infrastructure Act 2016*) must have been obtained.
- The NVC must be given written notification of the full extent of the clearance expected to occur in connection with the division of land, to determine the required SEB.

Note that in determining the SEB, the NVC must be provided with written notification of the entire clearance footprint at the allotment scale which includes clearance for the dwelling and any associated structures; clearance within 10 metres of a building for maintenance; fences; vehicle tracks; and any additional clearance for fire safety. Individual regulations for these clearance activities will not apply in connection to new subdivisions and must be considered at this stage. Clearance can only occur once development approval has been granted and the NVC have approved the clearance and SEB.

2.7 Development Application Information

Under the *Planning, Development and Infrastructure Act 2016* Lot 99 Gerloff Street, Carpenter Rocks is zoned as Rural Settlement and falls within the following overlays:

- Hazards (Bushfire - General)
- Hazards (Bushfire - Medium Risk)
- Hazards (Flooding - Evidence Required)
- Native Vegetation
- Prescribed Wells Area
- Water Protection Area
- Water Resource

Figure 3 Project area consisting of Lot 99 Gerloff Street, Carpenter Rocks.

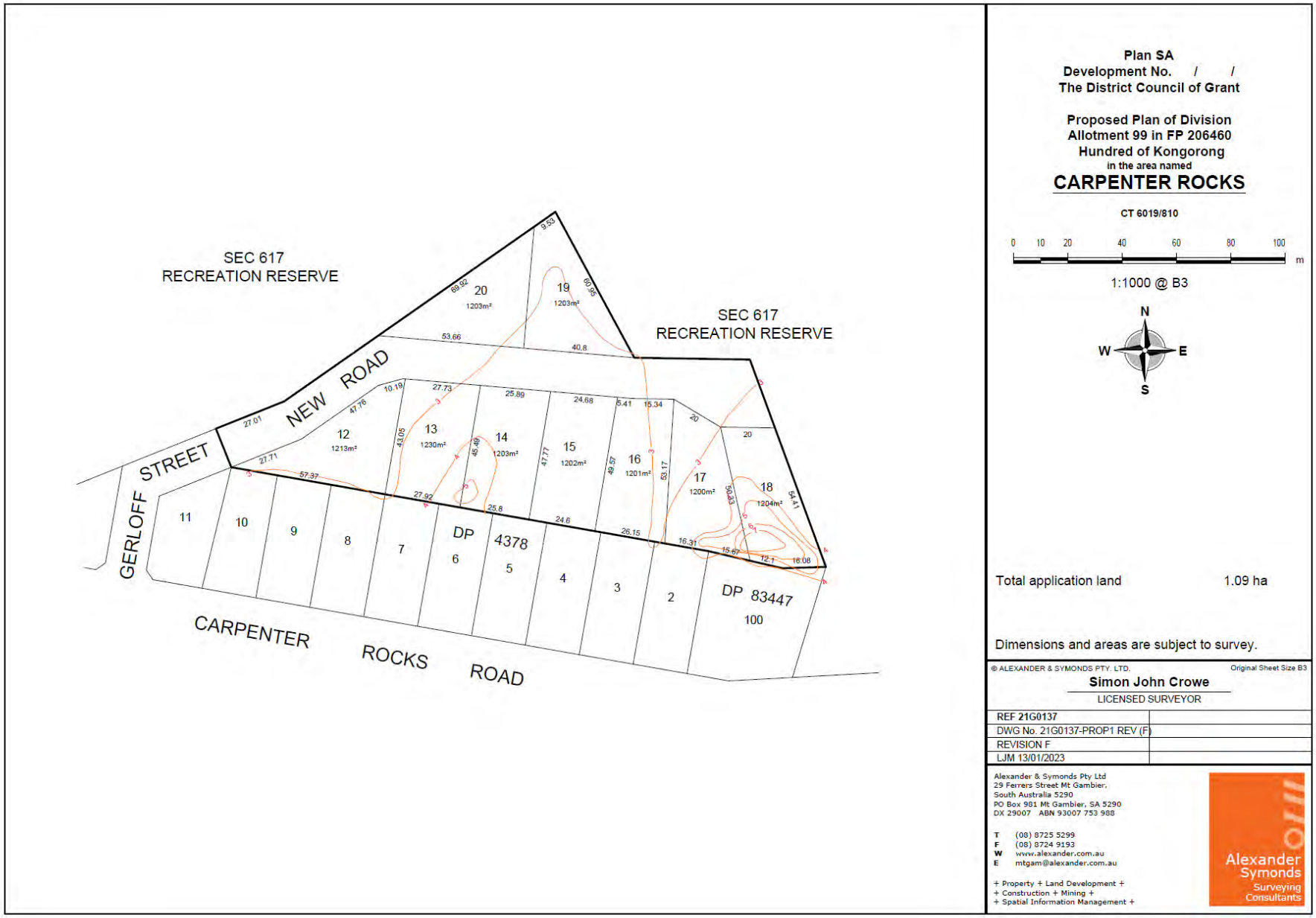

Figure 4 Details of the proposed residential subdivision.

3 Methods

3.1 Desktop Assessment

A desktop assessment was used to search for records of threatened communities, threatened flora, and threatened and / or migratory fauna that are known to, or possibly occur, within 5 km of the Project area.

3.1.1 Protected Matters Search Tool (PMST)

A PMST report was generated on 16th July 2024 to identify MNES under the EPBC Act relevant to the Project area (DCCEEW 2024a). The PMST is maintained by the Department of Climate Change, Energy the Environment and Water (DCCEEW) and was used to identify flora and fauna species / subspecies or ecological communities of national environmental significance that may occur or are likely to have suitable habitat within 5 km of the Project area. The results returned by the PMST are based on a modelled distribution of each community and each flora and fauna species / subspecies and thus require additional information to clarify their possible presence in the Project area.

3.1.2 Biological Database of South Australia (BDBSA)

Records for threatened flora and fauna and migratory fauna listed under the EPBC Act and / or NPW Act were assessed using the BDBSA Supertable (DEW 2024a), accessed via the general query tool on NatureMaps (NatureMaps 2024). The BDBSA is comprised of an integrated collection of corporate databases which meet the Department for Environment and Wildlife (DEW) standards for data quality, integrity, and maintenance. In addition to DEW biological data the BDBSA also includes data from partner organisations (Birds Australia, Birds SA, Australasian Wader Study Group, SA Museum, and other State Government Agencies). This data is included under agreement with the partner organisation for ease of distribution, but they remain owners of the data and should be contacted directly for further information. The dataset was obtained on 16th July 2024 and was used to identify records of conservation significant flora and fauna (i.e., threatened and / or migratory) that have been recorded within 5 km of the Project area, have a spatial reliability of < 1 km, and were recorded during or after 1995, as per the Bushland Assessment Method (BAM) (NVC 2020). In addition, denatured records (i.e., records that have had their coordinates denatured by 1 decimal (approximately 10 km) due to sensitivity concerns) of conservation significant flora and fauna were also considered where appropriate.

3.2 Assessment of the Likelihood of Occurrence

A likelihood of occurrence assessment for conservation significant flora and fauna highlighted by the PMST report and the BDBSA search as occurring within 5 km of the Project area was conducted. This assessment was used to filter the outputs of the PMST report and BDBSA search results to derive a subset of conservation significant flora and fauna with potential to occur in the Project area for consideration during the field survey. The assessment was updated with habitat suitability information obtained during the field survey.

A likelihood of occurrence rating (Highly Likely, Likely, Possible, and Unlikely) was assigned to each of the conservation significant flora and fauna identified in the desktop PMST report and BDBSA search based on the combination of records existing within 5 km of the Project area and knowledge of suitable habitat occurring in the Project area (It should be noted that the likelihood of a conservation significant species / subspecies occurring within the Project area does not necessarily equate to the Project area being of importance to the conservation of the species / subspecies.

Table 3). Conservation significant flora and fauna observed during the field survey(s) were given a rating of Known.

Information on the habitat preferences and other relevant ecological attributes of the flora and fauna identified via the desktop assessment were sourced from their respective profile pages listed by the DCCEEW (2024b, c), Electronic Flora of South Australia (DEW 2024b), and other relevant resources where required.

It should be noted that the likelihood of a conservation significant species / subspecies occurring within the Project area does not necessarily equate to the Project area being of importance to the conservation of the species / subspecies.

Table 3. Criteria for the likelihood of occurrence of conservation significant flora and fauna within the Project area based on BDBSA records[1] and the field survey(s).

Likelihood	Criteria
Known	Recorded in or adjacent to the Project area as part of the field survey(s).
Highly Likely	Recorded in the last 10 years, the species / subspecies does not have highly specific niche requirements, the habitat is largely intact and falls within the known range of the species / subspecies distribution.
Likely	Recorded within the previous 20 years, the area falls within the known distribution of the species / subspecies and the area provides habitat which is largely intact.
Possible	Recorded within the previous 20 years, the area falls inside the known distribution of the species / subspecies, but the area does not provide habitat which is largely intact. Recorded within 20-40[2] years, survey effort is considered adequate, habitat is present and intact, and flora or fauna of similar habitat needs have been recorded in the area.
Unlikely	Recorded within 20-40 years; however, suitable habitat does not occur, and flora or fauna of similar habitat requirements have not been recorded in the area. No records within the previous 40 years despite suitable habitat being known to occur in the area. No records despite adequate survey effort.

[1] The final likelihood of occurrence of conservation significant flora and fauna within the Project area was modified based on local knowledge and information obtained during the field survey(s).
[2] Note that in some cases records prior to 1995 were considered.

3.3 Desktop study limitations

The content of the desktop study was derived from existing datasets and references from a range of sources. Flora and fauna records were sourced from the PMST report and the BDBSA search via NatureMaps. The BDBSA only includes verified flora and fauna records submitted to DEW or partner organisations. It is recognised that drawing conclusions can be unreliable within areas that have been underrepresented in terms of biological studies. It is possible, therefore, that conservation significant flora and fauna occur within the Project area that were not reflected by database records. As such, conservation significant flora and fauna highlighted by the PMST report but without BDBSA records within the 5 km buffer of the Project area may still be classified as Possible, Likely, or Highly Likely to occur within the Project area based on suitable habitat alone.

3.4 Field Survey

A field survey was undertaken by ecologist Alex Blackall with help from NVC accredited ecologist Andrew Sinel from Ecosphere Ecological Solutions on 30th July 2024.

3.4.1 Vegetation Survey

The vegetation survey was performed in accordance with the BAM (NVC 2020). The BAM was designed for assessing vegetation that is located within the agricultural region of South Australia. The BAM uses biodiversity 'surrogates' or 'indicators' to measure biodiversity value against benchmark communities. Each area to be

assessed is termed an application area ('Block'), within which different vegetation associations ('Sites') are identified. For the BAM, three components of the biodiversity value of the Site are measured and scored (Vegetation Condition, Landscape Context, and Conservation Significance). These three component scores are combined to provide a 'Unit Biodiversity Score' (UBS) for a hectare and then multiplied by the size (hectares) of the Site to provide a 'Total Biodiversity Score' for the Site. Multiple Sites within a Block are totalled to reach the final overall score.

4 Assessment Outcomes

4.1 Vegetation Assessment

The Project area is located within the coastal town of Carpenter Rocks, approximately 368.5 km south-east of Adelaide on the south-east coastal region of South Australia. This area lies within the Lake George IBRA Environmental Association which has 11 % of its area composed of remnant native vegetation. Broadly the soil within the Project area consists of saline soil and carbonate sand (NatureMaps 2024).

There are no landform features of significance within the Project area. The project area occurs near to areas of seasonal and ephemeral, intermittent wetlands of moderate to very high environmental value (NatureMaps 2024).

Native vegetation within the Project area is predominantly composed of moderately degraded tall coastal shrubland of *Leucopogon parviflorus* (Coast Beard-heath), *Acacia longifolia* ssp. *sophorae* (Coastal Wattle), and *Olearia axillaris* (Coast Daisy-bush) with emergent shrubs / trees of the declared weed *Coprosma repens* (Mirror Bush) over a mixture of native sedges, *Tetragonia implexicoma* (Bower Spinach), and introduced grasses. The Project area was divided into three vegetation associations based on differences in shrub cover and abundance of native flora (see below).

The Project area was divided into three vegetation associations (Figure 5):

Vegetation association 1: *Leucopogon parviflorus* (Coast Beard-heath), *Acacia longifolia* ssp. *sophorae* (Coastal Wattle), *Olearia axillaris* (Coast Daisy-bush) tall coastal shrubland with emergent shrubs / trees of *Coprosma repens* (Mirror Bush) over *Alyxia buxifolia* (Sea Box), native sedges, and *Tetragonia implexicoma* (Bower Spinach).

Vegetation association 2: Area of native sedges interspersed with the introduced grass *Festuca arundinacea* (Tall Meadow Fescue) growing within a depression.

Vegetation association 3: Scattered occurrences of *Leucopogon parviflorus* (Coast Beard-heath), *Acacia longifolia* ssp. *sophorae* (Coastal Wattle), and native sedges over an introduced herbaceous ground layer maintained as a fire break.

The Project area is located within close proximity to existing infrastructure consisting of residential buildings and businesses, Carpenter Rocks Road, and open areas maintained by regular mowing. Three National Parks and Wildlife South Australia (NPWSA) reserves, five heritage agreements, and one SEB Area occur within 5 km of the Project area.

Figure 5 Vegetation associations within the Project area.

4.2 Vegetation associations

Three vegetation associations were recorded within the Project area during the field survey.

None of the vegetation associations recorded within the Project area were associated with a Threatened Ecological Community under the EPBC Act or considered a threatened community at the state level.

Vegetation Association 1	**_Leucopogon parviflorus_ (Coast Beard-heath), _Acacia longifolia_ ssp. _sophorae_ (Coastal Wattle), _Olearia axillaris_ (Coast Daisy-bush) tall coastal shrubland with emergent shrubs / trees of _Coprosma repens_ (Mirror Bush) over _Alyxia buxifolia_ (Sea Box), native sedges, and _Tetragonia implexicoma_ (Bower Spinach).**
	
General description	Tall coastal shrubland of *Leucopogon parviflorus* (Coast Beard-heath), *Acacia longifolia* ssp. *sophorae* (Coastal Wattle), and *Olearia axillaris* (Coast Daisy-bush) over smaller shrubs of *Alyxia buxifolia* (Sea Box). The native sedges *Lepidosperma gladiatum* (Coast Sword-sedge), *Ficinia nodosa* (Knobby Club-rush), *Gahnia filum* (Thatching Grass), and *Hypolaena fastigiata* (Tassel Rope-rush) were common, with dense patches of *Lepidosperma gladiatum* (Coast Sword-sedge) occurring in some areas. Dense areas of *Tetragonia implexicoma* (Bower Spinach) occurred covering both the ground layer and shrubs as a vine. Natural regeneration of *Acacia longifolia* ssp. *sophorae* (Coastal Wattle) and *Alyxia buxifolia* (Sea Box) was observed. The site was in relatively good condition, with a moderate biodiversity score but weeds were prevalent. Emergent large shrubs / small trees of *Coprosma repens* (Mirror Bush) occurred across the Site, particularly towards the Site's southern boundary, and scattered large shrubs of *Lycium ferocissimum* (African Boxthorn) also occurred.
Threatened species or community	No threatened communities or flora were recorded in the Site. The vegetation association is likely to provide potential habitat for the following threatened fauna: • *Antechinus minimus maritimus* (Swamp Antechinus (mainland), EPBC: VU, NPW: E) • *Dasyornis broadbenti* (Rufous Bristlebird, NPW: R) • *Pachycephala olivacea hesperus* (Olive Whistler, NPW: E) • *Stagonopleura bella interposita* (Beautiful Firetail (SE), NPW: R)

Vegetation Association 2	**Area of native sedges interspersed with the introduced grass *Festuca arundinacea* (Tall Meadow Fescue) growing within a depression.**

General description	A low-lying depression within the Block occupied by native sedges of *Lepidosperma gladiatum* (Coast Sword-sedge), forming dense thickets in some areas, and more scattered occurrences of *Ficinia nodosa* (Knobby Club-rush) and *Juncus kraussii* (Sea Rush). Tussocks of the introduced grass *Festuca arundinacea* (Tall Meadow Fescue) formed a dominant component, with more scattered occurrences of the herbaceous weed *Scabiosa atropurpurea* (Pincushion) and the woody weed *Lycium ferocissimum* (African Boxthorn). The site was in relatively poor condition, although the dense vegetation has habitat value. No natural regeneration of native perennial shrubs was observed.
Threatened species or community	No threatened communities or flora were recorded in the Site. The vegetation association is likely to provide potential habitat for the following threatened fauna: • *Antechinus minimus maritimus* (Swamp Antechinus (mainland), EPBC: VU, NPW: E) • *Dasyornis broadbenti* (Rufous Bristlebird, NPW: R) • *Pachycephala olivacea hesperus* (Olive Whistler, NPW: E) • *Stagonopleura bella interposita* (Beautiful Firetail (SE), NPW: R)

Vegetation Association 3	**Scattered occurrences of *Leucopogon parviflorus* (Coast Beard-heath), *Acacia longifolia* ssp. *sophorae* (Coastal Wattle), and native sedges over an introduced herbaceous ground layer.**

General description	Native vegetation consists of scattered individuals of young regenerating shrubs of *Leucopogon parviflorus* (Coast Beard-heath) and *Acacia longifolia* ssp. *sophorae* (Coastal Wattle) and scattered occurrences of the native sedges *Lepidosperma gladiatum* (Coast Sword-sedge) and *Ficinia nodosa* (Knobby Club-rush) over an introduced herbaceous ground layer. The small amount of native vegetation present represents recent regrowth of less than 5 years. Dominant introduced species include the grasses *Cenchrus clandestinus* (Kikuyu grass), *Festuca arundinacea* (Tall Meadow Fescue), and *Dactylis glomerata* (Cocksfoot). The Site is currently maintained as an open grassy area allowing access to the allotment.
Threatened species or community	No threatened communities or flora were recorded in the Site and no threatened fauna were observed or considered likely to use the vegetation.

4.3 Exotic Flora

A number of introduced flora were observed across the Project area. This included three Declared weeds under the *Landscape South Australia Act 2019*, one of which was also a Weed of National Significance (WoNS):

- *Allium triquetrum* (Three-cornered Garlic)
- *Coprosma repens* (Mirror Bush)
- *Lycium ferocissimum* (African Boxthorn, WoNS)

Steps to kill and prevent the spread of *Allium triquetrum* (Three-cornered Garlic) are not specifically recommended for landowners in the Limestone Coast region. However, plants must not be sold or traded or transported on a public road, including as a contaminant (e.g., in the form of a cutting, seed, or potted specimen). Care must be taken that these weeds are destroyed prior to any cleared vegetation being transported from the Project area.

Landowners in the Limestone Coast region are required to take reasonable steps to kill plants of *Lycium ferocissimum* (African Boxthorn) and prevent their spread and plants must also not be sold or traded or transported on a public road, including as a contaminant (e.g., in the form of a cutting, seed, or potted specimen). Care must be taken that these weeds are destroyed prior to any cleared vegetation being transported from the Project area.

Steps to kill and prevent the spread of *Coprosma repens* (Mirror Bush) are not specifically recommended for landowners in the Limestone Coast region. However, plants must not be sold or traded, including as a contaminant (e.g., in the form of a cutting, seed, or potted specimen).

4.4 Threatened Species Assessment

4.4.1 EPBC PMST Report Summary

A total of 77 listed threatened species and 58 migratory species were identified by the EPBC Act PMST report as potentially occurring or having suitable habitat potentially occurring within 5 km of the Project area (Table 4). The ecological MNES protected under the EPBC Act relevant to this report are discussed in detail below.

Table 4 PMST report ecological MNES results summary.

Search area (5km buffer)	Matters of National Environmental Significance	Identified within search area
	World Heritage Properties	0
	National Heritage Places	0
	Wetlands of International Importance (RAMSAR)	0
	Great Barrier Reef Marine Park	0
	Commonwealth Marine Area	0
	Listed Threatened Ecological Communities	2
	Listed Threatened Species	77
	Listed Migratory Species	58
	Other Matters Protected by the EPBC Act	
	Commonwealth Lands	0
	Commonwealth Heritage Places	0
	Listed Marine Species	97
	Whales and Other Cetaceans	13
	Critical Habitats	0
	Commonwealth Reserves Terrestrial	0
	Australian Marine Parks	0
	Habitat Critical to the Survival of Marine Turtles	0
	Extra Information	
	State and Territory Reserves	6
	Regional Forest Agreements	0
	Nationally Important Wetlands	0
	EPBC Act Referrals	8
	Key Ecological Features	1
	Biologically Important Areas	3
	Bioregional Assessments	0
	Geological and Bioregional Assessments	0

4.4.3 Threatened Ecological Communities.

Two Threatened Ecological Communities (TECs) were identified in the PMST report as potentially occurring within 5 km of the Project area (Table 5). No TECs were detected during the field survey of the Project area.

Table 5 Threatened ecological communities listed under the EPBC Act identified within 5 km of the Project area.

Threatened Ecological Community	**EPBC status**	**Likelihood of occurrence in the Project area**
Karst springs and associated alkaline fens of the Naracoorte Coastal Plain Bioregion	Endangered	Unlikely
Giant Kelp Marine Forests of South East Australia	Endangered	Unlikely

4.4.4 EPBC Act and State Threatened Flora

Twelve flora species / subspecies listed as threatened under the EPBC Act were identified in the PMST report as potentially occurring or having suitable habitat within 5 km of the Project area (Table 6). Of these, one subspecies threatened under the EPBC Act had records of occurrence within 5 km of the Project area, as returned via the NatureMaps BDBSA search (Figure 6):

- *Pomaderris halmaturina* subsp. *halmaturina* (Kangaroo Island Pomaderris, EPBC: VU, NPW: V)

Pomaderris halmaturina* subsp. *halmaturina (Kangaroo Island Pomaderris, EPBC: VU, NPW: V) was considered possible to occur within the Project area based on nearby records, although habitat within the Project area was not particularly suitable or largely intact. The subspecies is endemic to South Australia, occurring on Kangaroo Island and on the mainland in the south-east of South Australia. A perennial, tall shrub, the subspecies grows in estuarine and riparian vegetation and on slopes and plateaus overlooking river valleys on a wide variety of soil types. In particular, on the mainland, the subspecies typically occurs in *Eucalyptus baxteri* open forest and *E. ovata* low woodland. The state Vulnerable *Pomaderris halmaturina* ssp. *continentis* also occurs near Carpenter Rocks and taxonomic issues remain between the two subspecies.

Four flora species of state conservation significance but not national significance had historical records within 5 km of the Project area from the NatureMaps BDBSA search (Table 6 and Figure 6). Of these, *Grevillea aquifolium* (Prickly Grevillea, NPW: R) and *Veronica gracilis* (Slender Speedwell, NPW: R) were considered Possible to occur within the Project area.

No threatened flora was observed during the field survey.

Table 6. Threatened flora listed under the EPBC Act and NPW Act identified within 5 km of the Project area via the PMST (Source 1), BDBSA (Source 2), or observed during the field survey. Likelihood of occurrence refers to presence within the Project area. Denatured records of conservation significant flora and fauna are also considered where appropriate in the table.

Scientific name	Common name	EPBC Act	NP&W Act	Data source	Date of last record	Species known habitat preferences	Likelihood of occurrence
Brachyscome graminea	Grass Daisy		R	2	09/01/2008	Perennial herb of moist areas. Suitable habitat includes swamps, saline marshes, and along watercourses.	Unlikely
Caladenia tensa	Greencomb Spider-orchid, Rigid Spider-orchid	EN		1		Within South Australia the species is widespread, ranging from the west coast, throughout Eyre Peninsula and adjacent pastoral zone, the Flinders Ranges, being rare in the Mount Lofty Ranges, including absent from the Adelaide Hills, and more common in the Murray and upper south-east. The species may occur within various habitats, including dry Cypress-pine (family Cupressaceae) / Yellow Gum Woodland, Pine / Box woodland, mallee-heath sites, heathy woodland, and mallee woodland, which generally contain rock outcrops.	Unlikely
Eucalyptus arcana	Carpenters Rocks Manna Gum		V	2	01/09/2014	Population in South Australia known from an area near Carpenter Rocks and 10 km south of this location. Grows on low rises of red clay-loam with outcropping limestone.	Unlikely
Glycine latrobeana	Clover Glycine, Purple Clover	VU	V	1		Small perennial herbaceous legume. Widespread across south-eastern Australia where it occurs as scattered populations within native grasslands, dry sclerophyll forests, woodlands and low open woodlands with a grassy understorey. Population sizes likely fluctuate with fire events. Detectability is difficult unless plants are in flower or with fruits.	Unlikely
Grevillea aquifolium	Prickly Grevillea		R	2	17/01/2022	Perennial woody shrub growing on calcareous sand in sclerophyllous woodland and in heath growing on sand, limestone pavements, and sandstone outcrops.	Possible
Ixodia achillaeoides subsp. *arenicola*	Sand Ixodia, Ixodia	VU	E	1		Endemic to south-eastern Australia. Confined to windswept, exposed limestone headlands in low coastal shrublands. Only four populations are known, two occurring in South Australia. Single denatured record within 5 km of the Project area (23/10/1979). Denatured record not mapped.	Unlikely

Scientific name	Common name	EPBC Act	NP&W Act	Data source	Date of last record	Species known habitat preferences	Likelihood of occurrence
Pomaderris halmaturina subsp. *halmaturina*	Kangaroo Island Pomaderris	VU	V	1,2	21/04/2015	Endemic to South Australia where it occurs on Kangaroo Island and on the mainland near Carpenter Rocks, north of Donovans, in Dry Creek Nature Forest Reserve, and Honan and Snow Gum Forest Reserves. Grows in estuarine and riparian vegetation and on slopes and plateaus overlooking river valleys on a wide variety of soil types. On the mainland the subspecies typically occurs in *Eucalyptus baxteri* open forest and *E. ovata* low woodland. The state Vulnerable *Pomaderris halmaturina* ssp. *continentis* also occurs near Carpenter Rocks. Taxonomic issues remain between the two subspecies.	Possible
Pterostylis chlorogramma	Green-striped Greenhood	VU	E	1		Grows in sandy or clay loam soils in open areas of damp forest containing a shrubby understorey and often *Pteridium esculentum* as a dominant understorey plant.	Unlikely
Pterostylis cucullata	Leafy Greenhood	VU	E	1		Once thought to be extinct in the southeast of South Australia, a population was recorded at Donovans in 2015. Coastal form is usually found in sheltered areas of stabilised coastal sand dunes under open to closed scrub dominated by *Leptospermum laevigatum* and / or *Melaleuca lanceolata*, with an open ground stratum with deep leaf litter and moss.	Unlikely
Pterostylis tenuissima	Swamp Greenhood, Dainty Swamp Orchid	VU	V	1		Grows with *Leptospermum lanigerum* and native grasses on perennially damp alkaline soils in black mud and deep leaf litter of swamps and edges of rivers and creeks, often forming dense colonies.	Unlikely
Scaevola calendulacea	Dune Fanflower		V	2		Prostrate semi-succulent shrub of coastal cliffs and dunes. Locally common along the south-east coastal region of South Australia. Single denatured record within 5 km of the Project area (26/04/1981). Denatured record not mapped.	Unlikely
Senecio macrocarpus	Large-fruit Fireweed, Large-fruit Groundsel	VU	V	1		Small perennial shrub to subshrub. Historical records exist from the Yorke Peninsula, the Flinders and Mount Lofty Ranges, and the south-east of South Australia. Currently known from 14 locations across South Australia and Victoria with 4 occurring in South Australia. Grows in a variety of sparsely vegetated habitats, within	Unlikely

Scientific name	Common name	EPBC Act	NP&W Act	Data source	Date of last record	Species known habitat preferences	Likelihood of occurrence
						grasslands, sedgelands, shrublands and woodlands, often in depressions that are waterlogged in winter. Messent Conservation Park represents the stronghold of the species, with 23 populations and approximately 35 000 plants occurring in the reserve. Known populations are not close to the Project area.	
Senecio psilocarpus	Swamp Fireweed, Smooth-fruited Groundsel	VU	V	1		Populations in South Australia are located at Honans Scrub and Piccaninnie Ponds. The species grows with a variety of herbs, grasses, sedges, and aquatic plants on open plain wetlands inundated in winter but drying out in summer.	Unlikely
Thelymitra epipactoides	Metallic Sun-orchid	EN	E	1		Scattered populations of this orchid occur from the Eyre Peninsula to East Gippsland in Victoria. Occurs in open sites of mesic coastal heathlands, open forests, and woodlands growing on sandy soils. Seedling recruitment responds well to disturbance by fire.	Unlikely
Thelymitra matthewsii	Spiral Sun-orchid	VU	E	1		Occurs in Victoria and South Australia where it grows in heathy open forest and woodlands on well-draining sandy or gravelly soils with an open ground layer. Mainly occurs after disturbance events.	Unlikely
Thelymitra orientalis	Hoary Sun-orchid	CR	R	1		Two subpopulations occur in South Australia located within The Marshes Native Forest Reserve and on Mount Taylor Road, Kangaroo Island. Habitat is mostly damp heathy flats and seepage areas usually close to sedge-dominated wetlands.	Unlikely
Veronica gracilis	Slender Speedwell		V	1	26/11/2020	Perennial herb of damp areas (i.e., creek lines, seepage areas, dams, etc.), grasslands, and grassy woodlands of the Southern Mount Lofty Ranges and lower south-eastern South Australia.	Possible

NP&W Act; E = Endangered, V = Vulnerable, R = Rare.
EPBC Act; Ex = Extinct, CR = Critically Endangered, EN = Endangered; VU = Vulnerable.

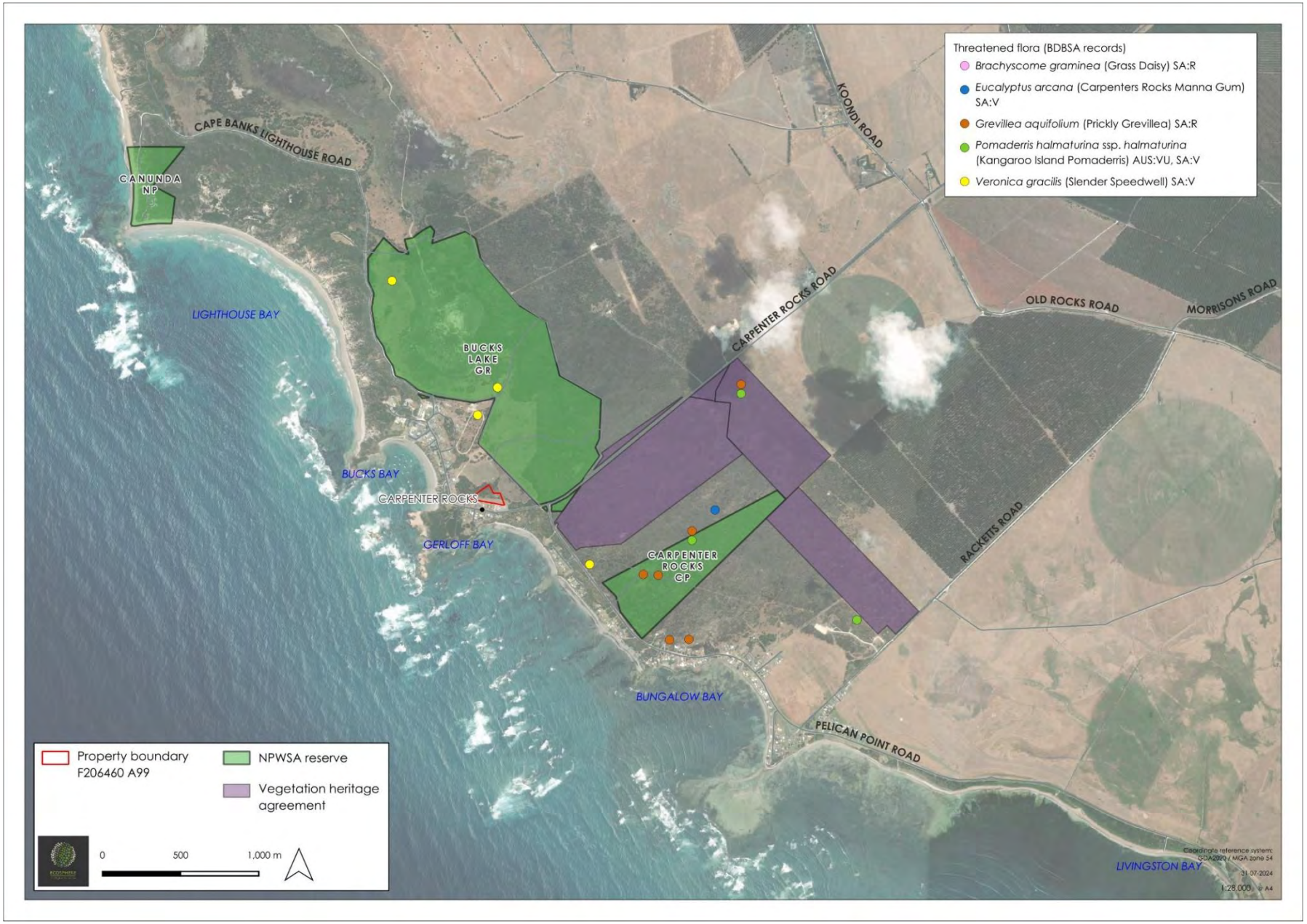

Figure 6 Threatened flora records within 5 km of the Project area.

4.4.5 EPBC Act Threatened Fauna

Sixty-five fauna species / subspecies listed as threatened under the EPBC Act were identified by the PMST report as having suitable habitat potentially occurring within 5 km of the Project area (Table 7). This included 45 bird, 10 mammal, 4 reptile, 1 frog, 3 fish, and 2 shark species / subspecies. Ten fauna species / subspecies threatened under the EPBC Act and identified in the PMST report also had records of occurrence within 5 km of the Project area, as returned via the NatureMaps BDBSA search (Table 7 and Figure 7). These included:

- *Calidris tenuirostris* (Great Knot, EPBC: VU / Mi, NPW: E)
- *Gallinago hardwickii* (Latham's Snipe, EPBC: VU / Mi, NPW: R)
- *Halobaena caerulea* (Blue Petrel, EPBC: VU)
- *Hirundapus caudacutus* (White-throated Needletail, EPBC: VU, NPW: V)
- *Limosa lapponica baueri* (Bar-tailed Godwit, EPBC: EN / Mi, NPW: R)
- *Neophema chrysostoma* (Blue-winged Parrot, EPBC: VU, NPW: V) (Two older records (1997) occur approximately 5.2 km from the Project area and have been included)
- *Numenius madagascariensis* (Eastern Curlew, EPBC: CR / Mi, NPW: E)
- *Thalassarche cauta cauta* (Shy Albatross, EPBC: VU / Mi, NPW: V)
- *Antechinus minimus maritimus* (Swamp Antechinus (mainland), EPBC: VU, NPW: E)
- *Lissolepis coventryi* (Swamp Skink, EPBC: EN, NPW: E)

One species was considered Possible to occur within the Project area:

Neophema chrysostoma (Blue-winged Parrot, EPBC: VU, NPW: V) was added to the threatened fauna list under the EPBC Act on 31st March 2023 due to continued population decline (DCCEEW 2023). The species occurs throughout mainland south-eastern Australia and Tasmania and inhabits a wide range of habitats but favours grasslands and grassy woodlands. The species is a partial migrant, with some birds breeding in Tasmania. Blue-winged Parrot are often found near wetlands, which represent critical habitat for both foraging and staging. The species is transient and may move throughout the greater landscape during the non-breeding season. In South Australia breeding occurs in coastal south-eastern South Australia, although the species mostly breeds in areas of Victoria and Tasmania. *Eucalyptus* forests and woodlands providing trees with hollows are required for breeding. Two older records (1997) occur approximately 5.2 km from the Project area, but the Project area is unsuitable for breeding. Vegetation clearance within the Project area is highly unlikely to negatively impact any important population(s) of the species as per the Significant impact criteria for a Vulnerable species listed in the Significant Impact Guidelines 1.1 Matters of National Environmental Significance (2013) (SIG 1.1).

Two species were considered Likely to occur within the Project area:

Antechinus minimus maritimus (Swamp Antechinus (mainland), EPBC: VU, NPW: E) was added to the threatened fauna list under the EPBC Act on 5th May 2016 due to continued population decline and a limited and fragmented area of occupancy (TSSC 2016). The subspecies has a highly fragmented distribution across coastal areas of Victoria and far south-eastern South Australia. Suitable habitat occurs in mostly damp areas of low dense vegetation growing in dense wet heathlands, tussock grasslands, sedgelands, damp gullies, swamps, and shrubby woodlands, with dense vegetation about 1 – 2 m above ground level. The subspecies is heavily reliant on *Leptospermum lanigerum* dominated wetlands / wet heath in the south-east of South Australia. The Project area however does not represent critical habitat (i.e., *Leptospermum lanigerum* dominated wetlands / wet heath) and occurrence of the subspecies within the Project area may be somewhat irregular given the areas adjacency to residential infrastructure. Nevertheless, Swamp Antechinus has been recorded in drier habitats such as coastal heaths and Swamp Antechinus may also survive and reproduce, at least in the short-term, in small, isolated areas of one to two hectares. Thirteen records totalling 14 observations occur within 5 km of the Project area, with the closest record approximately 245 m to the east. Older pre-1995 records also occur within coastal shrubland vegetation growing on the headland at Carpenter Rocks. It is also possible that a prescribed burn in 2019 adjacent to the Project area within Bucks Lake Game Reserve has reduced the amount of suitable habitat available to Samp Antechinus and, in turn, increased the habitat refuge value of vegetation within the Project area. Particularly given that Swamp Antechinus is a late post-fire succession recoloniser of habitat.

- It is possible that vegetation clearance within the Project area may negatively impact an important population of this subspecies as per the Significant impact criteria for a Vulnerable species listed in the Significant Impact Guidelines 1.1 Matters of National Environmental Significance (2013) (SIG 1.1). Thus, the self-assessment process indicates the need for a referral. Further information regarding this decision can be found in section 7.

Hirundapus caudacutus (White-throated Needletail, EPBC: VU / Mi, NPW: V) was added to the threatened fauna list under the EPBC Act on 4th July 2019 due to continued population decline (TSSC 2019). White-throated Needletail is a trans-equatorial migrant breeding in the Northern Hemisphere and migrating to non-breeding grounds in Australia during the boreal winter. The species has a widespread distribution across eastern and south-eastern Australia and is mostly aerial during its stay. The species forages on a wide range of insect prey from heights of less than 1 m up to more than 1000 m above the ground across wide range of landscapes. In particular, White-throated Needletail often forage along the edges of low-pressure systems which lift their food sources and assist with flight and may even follow low pressure systems across the country. Three records totalling four observations of the species occur within 5 km of the Project area, and it is considered that the species is likely to occur as a flyover only above the Project area. The Project area is unsuitable for roosting and the small area of vegetation clearance is highly unlikely to impact the availability of food resources due to the large areas covered by individuals of the species. Vegetation clearance within the Project area is highly unlikely to negatively impact any important population(s) of the species as per the Significant impact criteria for a Vulnerable species listed in the Significant Impact Guidelines 1.1 Matters of National Environmental Significance (2013) (SIG 1.1).

Lastly, one subspecies of conservation significance without records within 5 km of the Project area was also considered Possible to occur within the Project area:

Miniopterus orianae bassanii (Southern Bent-wing Bat, EPBC: CR, NPW: E) was added to the threatened fauna list under the EPBC Act on 18th December 2007 due to continued population decline and a limited and fragmented area of occupancy (TSSC 2021). The subspecies is distributed from south-eastern South Australia to south-western Victoria. In South Australia, the subspecies largely occurs between Robe and Naracoorte, south to Port MacDonnell and north to Marcollat. Roosting takes place underground, predominantly in caves and mines, and Naracoorte Bat Cave represents the main maternity cave used by the subspecies in South Australia. Aerial predation of insects takes place over a range of habitats, including forested areas, volcanic plains, wetlands, coastal vegetation, including beaches, cleared agricultural and grazing land, and urban areas. The subspecies is capable of flying large distances (e.g., 140 km in 24 hours). Although no records occur within 5 km of the Project area, this may be a due to the nocturnal, cryptic nature of the subspecies. Nevertheless, given the extensive range of habitats used by the subspecies for foraging and the unsuitability of the Project area for roosting, vegetation clearance within the Project area is highly unlikely to negatively impact any population(s) of the species as per the Significant impact criteria for a Critically endangered species listed in the Significant Impact Guidelines 1.1 Matters of National Environmental Significance (2013) (SIG 1.1).

4.4.6 Migratory Fauna

Fifty-eight EPBC Act listed migratory species / subspecies were identified by the PMST report as having suitable habitat potentially occurring within 5 km of the Project area. The migratory birds identified are all unlikely to directly utilise the Project area other than as a brief perching location. These migratory birds are largely associated with waterbodies used for feeding and or refuge areas which are not present within the Project area. Suitable habitat for some species may however occur outside of the Project area in surrounding areas of seasonal and ephemeral, intermittent wetland. They may occur above the Project area as a brief flyover. However, the proposed residential subdivision is unlikely to impact this behaviour.

All other migratory fauna returned by the PMST report represented marine only species / subspecies of reptile, mammal, and shark which are all unlikely to interact with the Project area.

4.4.7 State Threatened Fauna

Nine species / subspecies of state conservation significance but not national significance had historical records from the NatureMaps BDBSA search within 5 km of the Project area (Figure 7).

Of these, five were considered Unlikely to occur within the Project area, one was considered Possible, two were considered Likely, and one was considered Highly Likely (Table 7).

The one subspecies considered Possible to occur was:

Stipiturus malachurus polionotum (Southern Emuwren (South-East), NPW: R). A single older (1997) record for this subspecies occurred approximately 3.2 km from the Project area. The subspecies inhabits areas of low, dense coastal vegetation.

The two subspecies considered Likely to occur were:

Pachycephala olivacea hesperus (Olive Whistler, NPW: E). Three records occurred approximately 1 km from the Project area. The subspecies inhabits thick, shrubby vegetation of eucalypt forests, rainforests, paperbarks, alpine forests, and coastal scrubs and heathlands.

Stagonopleura bella interposita (Beautiful Firetail (SE), NPW: R). Three records totalling four observations occurred approximately 1 km from the Project area. The subspecies inhabits dense, damp vegetation. Habitat can include coastal heath, and forests and woodlands of *Melaleuca*, *Eucalyptus*, and *Allocasuarina*.

The one species considered Highly Likely to occur was:

Dasyornis broadbenti (Rufous Bristlebird, NPW: R). Five records totalling 11 observations occurred within 5 km of the Project area, the closest approximately 700 m away. The species inhabits coastal scrub and thickets, and gullies with dense undergrowth. Known to be locally common.

Table 7. Threatened fauna listed under the EPBC Act and NPW Act and EPBC listed migratory fauna identified within 5 km of the Project area via the PMST (Source 1), BDBSA (Source 2), or observed during the field survey. Likelihood of occurrence refers to presence within the Project area. Denatured records of conservation significant flora and fauna are also considered where appropriate in the table.

Scientific Name	Common Name	EPBC Act	NP&W Act	Data Source	Date of last record	Species known habitat preferences	Likelihood of occurrence
BIRD							
Actitis hypoleucos	Common Sandpiper	Mi	R	1		Migratory shorebird. Found in coastal or inland wetlands, both saline and fresh, and mainly on muddy edges or rocky shores. Prefers freshwater lakes and shallow rivers during the breeding season in the northern hemisphere. Mostly found in northern and western Australia.	Unlikely
Apus pacificus	Fork-tailed Swift	Mi		1,2	08/02/1997	Migratory species of Asian origin. Species is aerial and highly mobile during its stay in Australia where it follows low pressure systems across the country predating on airborne insects.	Unlikely
Ardenna carneipes	Flesh-footed Shearwater, Fleshy-footed Shearwater	Mi	R	1		Pelagic marine species.	Unlikely
Ardenna grisea	Sooty Shearwater	VU, Mi		1		Pelagic marine species.	Unlikely
Arenaria interpres	Ruddy Turnstone	VU, Mi	R	1		Migratory species, non-breeding grounds in Australia. Widespread within coastal regions of Australia. Preference for rocky shores or beaches with large deposits of rotting seaweed.	Unlikely
Biziura lobata menziesi	Musk Duck		R	2	24/08/2003	Inhabits deep bodies of freshwater with extensive reedbeds and / or may be found in more sheltered coastal areas (e.g., estuaries and lagoons).	Unlikely
Botaurus poiciloptilus	Australasian Bittern	EN	E	1		Well vegetated freshwater and brackish wetlands.	Unlikely
Calidris acuminata	Sharp-tailed Sandpiper	VU, Mi		1		Prefers the grassy edges of shallow inland freshwater wetlands. It is also found around sewage farms, flooded fields, mudflats, mangroves, rocky shores, and beaches.	Unlikely

Scientific Name	Common Name	EPBC Act	NP&W Act	Data Source	Date of last record	Species known habitat preferences	Likelihood of occurrence
						Its breeding habitat in Siberia is the peat-hummock and lichen tundra of the high Arctic.	
Calidris alba	Sanderling	Mi	R	1		Migratory species, non-breeding grounds in Australia. Widespread across coastal areas around Australia. Habitat is mostly open, exposed sandy beaches and exposed sandbars and spits, and shingle banks, where they forage in the wave-wash zone and rotting seaweed.	Unlikely
Calidris canutus	Red Knot, Knot	VU, Mi	E (*Calidris canutus rogersi*)	1		The Red Knot is common in all the main suitable habitats around the coast of Australia. In Australasia, the Red Knot mainly inhabit intertidal mudflats, sandflats, and sandy beaches of sheltered coasts, in estuaries, bays, inlets, lagoons and harbours; sometimes on sandy ocean beaches or shallow pools on exposed wave-cut rock platforms or coral reefs. They are occasionally seen on terrestrial saline wetlands near the coast, such as lakes, lagoons, pools, and pans.	Unlikely
Calidris ferruginea	Curlew Sandpiper	CR, Mi	E	1		Curlew Sandpipers in Australia are present within coastal and subcoastal habitats. The habitats within which they occur range from fresh to hypersaline, and include intertidal mudflats, saltworks, sewage farms, wetlands, lakes, swamps, and lagoons.	Unlikely
Calidris melanotos	Pectoral Sandpiper	Mi	R	1		Pectoral Sandpiper prefers shallow fresh to saline wetlands. The species is found at coastal lagoons, estuaries, bays, swamps, lakes, inundated grasslands, saltmarshes, river pools, creeks, floodplains, and artificial wetlands.	Unlikely
Calidris ruficollis	Red-necked Stint	Mi		1		Widespread across coastal areas around Australia. Habitat occurs in sheltered inlets, bays, lagoons and estuaries with intertidal mudflats on which the species forages.	Unlikely

Scientific Name	Common Name	EPBC Act	NP&W Act	Data Source	Date of last record	Species known habitat preferences	Likelihood of occurrence
Calidris tenuirostris	Great Knot	VU, Mi	E	1,2	19/06/2002	A migratory species that breeds in northeast Siberia and has its non-breeding grounds predominantly in northern Australia. Found along the coast Australia but much less common in the south. Forages on intertidal mudflats and nests in nearby sheltered coastal habitats (e.g., bays and lagoons).	Unlikely
Callocephalon fimbriatum	Gang-gang Cockatoo	EN		1		Endemic to south-eastern Australia. Occurs in temperate eucalypt forests and woodlands. The species is an altitudinal migrant, inhabiting montane forests during summer and woodland assemblages at lower, drier altitudes during winter. Nesting mostly occurs in old growth forest and woodland within tree hollows.	Unlikely
Calyptorhynchus banksii graptogyne	South-eastern Red-tailed Black-Cockatoo	EN	E	1		Occurs as a single population in a small area of south-eastern Australia delimited by Keith to Lucindale to Mount Gambier in South Australia and Portland to Casterton, Toolondo, Natimuk, Dimboola, Nhill, and Kaniva in Victoria. Restricted to *Eucalyptus arenacea* and *E. baxteri* woodlands in the Glenelg, Wimmera and Naracoorte Plains, and adjacent woodlands of *E. camaldulensis*, *E. leucoxylon* and *Allocasuarina luehmannii*. Feeds primarily on the seeds of *Eucalyptus baxteri* and *E. arenacea*, and seasonally on the seeds of *A. luehmannii*. Nests within very old, large, hollow eucalypts.	Unlikely
Charadrius bicinctus	Double-banded Plover	Mi		1		Suitable habitat occurs within littoral, estuarine and fresh or saline terrestrial wetlands, saltmarsh, grasslands, and pasture.	Unlikely
Charadrius leschenaultii	Greater Sand Plover, Large Sand Plover	VU, Mi	R	1		Occurs in coastal areas across all states, and in South Australia is mostly seen in The Coorong, the Gulf Saint Vincent, and the Spencer Gulf, and on the Eyre Peninsula, west to about Streaky Bay. A migratory species that breeds in central Asia. Non-breeding grounds in Australia	Unlikely

Scientific Name	Common Name	EPBC Act	NP&W Act	Data Source	Date of last record	Species known habitat preferences	Likelihood of occurrence
						are mostly sheltered beaches with large intertidal mudflats and / or sandbanks or sandy estuarine lagoons.	
Dasyornis broadbenti (NC)	Rufous Bristlebird		R	2	30/05/2004	Coastal scrub and thickets, and gullies with dense undergrowth. Locally common.	Highly Likely
Diomedea antipodensis	Antipodean Albatross	VU, Mi		1		Pelagic marine species.	Unlikely
Diomedea epomophora	Southern Royal Albatross	VU, Mi	V	1		Pelagic marine species.	Unlikely
Diomedea exulans	Wandering Albatross	VU, Mi	V	1		Pelagic marine species.	Unlikely
Diomedea sanfordi	Northern Royal Albatross	EN, Mi	E	1		Pelagic marine species.	Unlikely
Falco hypoleucos	Grey Falcon	VU	R	1		The species is mainly found where annual rainfall is less than 500 mm, except when wet years are followed by drought, when the species might become marginally more widespread. Occurs at low densities, often in areas of *Acacia* shrubland interspersed by tree-lined watercourses, tussock grassland, and open woodlands. Nests in tall trees along watercourses, particularly River Red Gum.	Unlikely
Gallinago hardwickii	Latham's Snipe, Japanese Snipe	VU, Mi	R	1,2	01/09/2022	Coastal shorebird that prefers vegetated wetlands; however, it may utilise water points and dam areas as a stopover point.	Unlikely
Gallinago megala	Swinhoe's Snipe	Mi		1		Few definite records exist in Australia. Mainly distributed across northern Australia. Typically found at the edges of wetlands, swamps, and freshwater streams.	Unlikely
Gallinago stenura	Pin-tailed Snipe	Mi		1		Distribution within Australia somewhat unclear but mainly distributed across north-western Australia. Typically	Unlikely

Scientific Name	Common Name	EPBC Act	NP&W Act	Data Source	Date of last record	Species known habitat preferences	Likelihood of occurrence
						found at the edges of shallow freshwater swamps, ponds and lakes with emergent vegetation.	
Grantiella picta	Painted Honeyeater	VU	R	1		Dry open forests and woodlands. Associated with the fruiting of mistletoe and follows the availability of this seasonal food resource throughout the year. More common in wider blocks of remnant woodland than in narrower strips.	Unlikely
Haematopus fuliginosus fuliginosus	Sooty Oystercatcher		R	2	10/11/2012	Shorebird which rarely travels far from the coast.	Unlikely
Haematopus longirostris	Pied Oystercatcher		R	2	16/11/2014	Shorebird which rarely travels far from the coast.	Unlikely
Haliaeetus leucogaster	White-bellied Sea Eagle		E	2		Distributed along the coastline and some larger waterways of mainland Australia and Tasmania. Breeding territories are located close to open areas of water, and mainly in tall open forest and woodland. Denatured records occur within 5 km of the Project area. Denatured records not mapped.	Unlikely
Halobaena caerulea	Blue Petrel	VU		1,2	06/09/2000	Pelagic marine species.	Unlikely
Hirundapus caudacutus	White-throated Needletail	VU, Mi	V	1,2	16/02/2005	Migratory species, non-breeding grounds in Australia. Widespread distribution across eastern and south-eastern Australia. Species is mostly aerial during its stay in Australia, where it forages from heights of less than 1 m up to more than 1000 m above the ground. The species often forages along the edges of low-pressure systems which lift their food sources and assist with flight. May follow low pressure systems across the country. Three records within 5 km of the Project area. Likely as flyover only.	Likely
Larus dominicanus dominicanus	Kelp Gull		R	2	04/04/2001	Coastal areas, breeds on offshore islands.	Unlikely
Lathamus discolor	Swift Parrot	CR	E	1		Breedng grounds are in Tasmania. Population migrates to mainland Australia for the winter, where the species	Unlikely

Scientific Name	Common Name	EPBC Act	NP&W Act	Data Source	Date of last record	Species known habitat preferences	Likelihood of occurrence
						disperses widely to forage on flowers, fruits, and psyllid lerps. Mostly found in Victoria and New South Wales, with less frequent occurrence in the Bordertown-Naracoorte area in south-eastern South Australia.	
Limosa lapponica baueri	Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit	EN, Mi	R	1,2	17/01/2003	Bar-tailed Godwits arrive in Australia each year in August from breeding grounds in the northern hemisphere. Birds are more numerous in northern Australia. Bar-tailed Godwits inhabit estuarine mudflats, beaches, and mangroves.	Unlikely
Limosa limosa	Black-tailed Godwit	EN, Mi	R	1		Migratory species, non-breeding grounds in Australia. Widespread within coastal regions across Australia, with the largest populations found along Australia's tropical northern coastline. Commonly found in sheltered bays, estuaries and lagoons with large intertidal mudflats or sandflats, or spits and banks of mud, sand or shell-grit. Mostly forages within intertidal areas.	Unlikely
Macronectes giganteus	Southern Giant-Petrel, Southern Giant Petrel	EN, Mi	V	1		Pelagic marine species.	Unlikely
Macronectes halli	Northern Giant Petrel	VU, Mi		1		Pelagic marine species.	Unlikely
Melanodryas cucullata cucullata	South-eastern Hooded Robin, Hooded Robin (south-eastern)	EN	R	1		Open dry woodland or shrubland of *Acacia* and / or *Eucalyptus* with a complex ground layer for foraging.	Unlikely
Motacilla flava	Yellow Wagtail	Mi		1		Vagrant. Breeds in Europe and Alaska before migrating south into Asia and Africa. Regular summer visitor to northern Australia, however, has been recorded in all states. Prefers grasslands and swamps as well as saltmarshes or prepared lands (e.g., sports fields, airfields, etc.).	Unlikely

Scientific Name	Common Name	EPBC Act	NP&W Act	Data Source	Date of last record	Species known habitat preferences	Likelihood of occurrence
Neophema chrysogaster	Orange-bellied Parrot	CR	E	1,2		Breedng grounds are in Tasmania. Low visitation rates to South Australia. Mostly forage within saltmarshes on fruits and seeds of sedges, low shrubs, and groundcovers, such as Beaded Glasswort (*Salicornia quinqueflora*), Austral Seablite (*Suaeda australis*), and Shrubby Glasswort (*Tecticornia arbuscula*), and within 50 m of a waterbody. A number of denatured records occur within 5 km of the Project area prior to 1995. Denatured records not mapped.	Unlikely
Neophema chrysostoma	Blue-winged Parrot	VU	V	1,2		Partial migrant, with some birds breeding in Tasmania. Woodlands, coastal heaths, and grasslands. Favours grasslands and grassy woodlands, often near wetlands. Two older (1997) records occur approximately 5.2 km from the Project area. Records have not been mapped.	Possible
Numenius madagascariensis	Eastern Curlew, Far Eastern Curlew	CR, Mi	E	1,2	27/07/2002	Migratory species, non-breeding grounds in Australia. Occurs in sheltered estuaries, mangrove swamps, saltmarshes, and intertidal flats.	Unlikely
Numenius minutus	Little Curlew, Little Whimbrel	Mi		1		Mainly distributed across northern Australia. Typically found in short, dry grassland and sedgeland, with scattered, shallow freshwater pools or areas of seasonal inundation.	Unlikely
Numenius phaeopus	Whimbrel	Mi	R	1		Widespread across coastal areas around Australia. Typically forages on intertidal mudflats, the muddy banks of estuaries, and in coastal lagoons, either unvegetated or among mangroves. Regularly roost in mangroves.	Unlikely
Pachycephala olivacea hesperus	Olive Whistler		E	2	05/10/2022	Endemic to south-eastern Australia. Occurs in thick, shrubby vegetation. Suitable habitat can include eucalypt forests, rainforests, paperbarks, alpine forests, and coastal scrubs and heathlands.	Likely
Pachyptila turtur subantarctica	Fairy Prion (southern)	VU		1		Pelagic marine species.	Unlikely

Scientific Name	Common Name	EPBC Act	NP&W Act	Data Source	Date of last record	Species known habitat preferences	Likelihood of occurrence
Pandion haliaetus	Osprey	Mi	E	1		Mostly coastal bird of prey which requires large open areas of fresh, brackish, or saline water for foraging. Moderately common in Australia but with low numbers in South Australia. Breeding range across the coast of northern Australia with an isolated breeding population on the coast of South Australia.	Unlikely
Phoebetria fusca	Sooty Albatross	VU, Mi	E	1		Pelagic marine species.	Unlikely
Pterodroma leucoptera leucoptera	Gould's Petrel, Australian Gould's Petrel	EN		1		Pelagic marine species.	Unlikely
Pterodroma mollis	Soft-plumaged Petrel	VU		1		Pelagic marine species.	Unlikely
Pluvialis fulva	Pacific Golden Plover	Mi	R	1		Widespread across coastal areas around Australia. Typically found on beaches, mudflats, and sandflats occurring in sheltered areas.	Unlikely
Rhipidura rufifrons	Rufous Fantail	Mi		1		Migratory, predominantly within Australia. Moist, dense habitats, including mangroves, rainforest, riparian forests and thickets, and wet eucalypt forests with a dense understorey.	Unlikely
Rostratula australis	Australian Painted Snipe	EN	E	1		Shallow terrestrial freshwater (occasionally brackish) wetlands, including temporary and permanent lakes, swamps and claypans.	Unlikely
Stagonopleura bella interposita	Beautiful Firetail (SE)		R	2	30/05/2004	Occurs in dense, damp vegetation. Habitat can include coastal heath, and forests and woodlands of *Melaleuca*, *Eucalyptus*, and *Allocasuarina*.	Likely
Stagonopleura guttata	Diamond Firetail	VU	V	1		Open grassy woodland, heath, and farmland or grassland with scattered trees. Preference for areas with high grass cover. Roost within dense shrubs and feed at ground level on seeds and insects. Somewhat transient populations.	Unlikely

Scientific Name	Common Name	EPBC Act	NP&W Act	Data Source	Date of last record	Species known habitat preferences	Likelihood of occurrence
Sternula albifrons	Little Tern	Mi	E	1		Generally rare to the west of Corner Inlet in Victoria. Inhabit sheltered coastal environments where they forage in shallow waters.	Unlikely
Sternula nereis nereis	Australian Fairy Tern	VU	E	1		Occurs along the coasts of Victoria, Tasmania, South Australia, and Western Australia. Fairy Tern nest on sheltered sandy beaches, spits, and banks above the high tide line and below vegetation.	Unlikely
Stipiturus malachurus polionotum	Southern Emuwren (South-East)		R	2	19/07/1997	Occurs in areas of low, dense coastal vegetation. Single older record within 5 km of the Project area.	Possible
Thalassarche bulleri	Buller's Albatross, Pacific Albatross	VU, Mi	V (*Thalassarche bulleri bulleri*)	1		Pelagic marine species.	Unlikely
Thalassarche bulleri platei	Northern Buller's Albatross, Pacific Albatross	VU		1		Pelagic marine species.	Unlikely
Thalassarche carteri	Indian Yellow-nosed Albatross	VU, Mi	E	1		Pelagic marine species.	Unlikely
Thalassarche cauta	Shy Albatross	VU, Mi	V (*Thalassarche cauta cauta*)	1,2	25/03/2003	Pelagic marine species.	Unlikely
Thalassarche impavida	Campbell Albatross, Campbell Black-browed Albatross	VU, Mi	V	1		Pelagic marine species.	Unlikely
Thalassarche melanophris	Black-browed Albatross	VU, Mi		1		Pelagic marine species.	Unlikely

Scientific Name	Common Name	EPBC Act	NP&W Act	Data Source	Date of last record	Species known habitat preferences	Likelihood of occurrence
Thalassarche salvini	Salvin's Albatross	VU, Mi	V	1		Pelagic marine species.	Unlikely
Thalassarche steadi	White-capped Albatross	VU, Mi		1		Pelagic marine species.	Unlikely
Thinornis cucullatus cucullatus	Eastern Hooded Plover, Eastern Hooded Plover	VU	V	1,2		Coastal shorebird occurring mainly on wide beaches backed by dunes that have large amounts of seaweed, at creek mouths, and inlet entrances. Denatured records occur within 5 km of the Project area. Denatured records not mapped.	Unlikely
Tringa brevipes	Grey-tailed Tattler	Mi	R	1		Widespread across coastal areas around Australia, but typically found along the northern coastline of Australia. Uncommon in South Australia. Often occurs on sheltered coasts with reefs and rock platforms or with intertidal mudflats.	Unlikely
Tringa nebularia	Common Greenshank, Greenshank	EN, Mi		1		Migratory species, non-breeding grounds in Australia. Widespread in coastal regions of Australia where it forages within wetlands, mudflats, and shallows around the edge of waterbodies. Nests are constructed in association with waterbodies both coastal (e.g., estuaries and mudflats) and inland (e.g., swamps and flooded crops).	Unlikely
Tringa stagnatilis	Marsh Sandpiper, Little Greenshank	Mi		1		Coastal and inland wetlands throughout Australia. Occurs in permanent and ephemeral wetlands of varying salinity along with sewage farms and saltworks.	Unlikely
MAMMAL							
Antechinus minimus maritimus	Swamp Antechinus (mainland)	VU	E	1,2	01/05/2010	Highly fragmented distribution across coastal areas of Victoria and far south-eastern South Australia. Mostly occurs in damp areas, with dense vegetation about 1 - 2 m above ground level. Suitable habitat can include dense	Likely

Scientific Name	Common Name	EPBC Act	NP&W Act	Data Source	Date of last record	Species known habitat preferences	Likelihood of occurrence
						wet heathlands, tussock grasslands, sedgelands, damp gullies, swamps, and shrubby woodlands. Heavily reliant on *Leptospermum lanigerum* dominated wetlands / wet heath in the south-east of South Australia. Late post-fire succession recoloniser of habitat. A number of records occur within 5 km of the Project area, with the closest record approximately 245 m to the east. Older pre-1995 records also occur within coastal shrubland vegetation growing on the headland at Carpenter Rocks.	
Balaenoptera borealis	Sei Whale	VU, Mi	V	1		Marine only species.	Unlikely
Balaenoptera musculus	Blue Whale	EN. Mi	E	1		Marine only species.	Unlikely
Balaenoptera physalus	Fin Whale	VU, Mi	V	1		Marine only species.	Unlikely
Eubalaena australis	Southern Right Whale	EN. Mi	V	1		Marine only species.	Unlikely
Isoodon obesulus obesulus	Southern Brown Bandicoot (eastern), Southern Brown Bandicoot (south-eastern)	EN	V	1		Found across a variety of habitats including heathland, shrubland, sedgeland, heathy open forest and woodland. Prefers areas of dense ground cover. Exotic vegetation, such as Blackberry (*Rubus* spp.), can provide important habitat in areas where suitable native vegetation is limited.	Unlikely
Lagenorhynchus obscurus	Dusky Dolphin	Mi		1		Marine only species.	Unlikely
Megaptera novaeangliae	Humpback Whale	Mi	V	1		Marine only species.	Unlikely
Miniopterus orianae bassanii	Southern Bent-wing Bat	CR	E	1		Largely occurs between Robe and Naracoorte, south to Port MacDonnell and north to Marcollat in South Australia. Roosts underground, predominantly in caves and mines. Naracoorte Bat Cave represents the main	Possible

Scientific Name	Common Name	EPBC Act	NP&W Act	Data Source	Date of last record	Species known habitat preferences	Likelihood of occurrence
						maternity cave used by the subspecies in South Australia, with a greater number of non-maternity caves used. Aerial predation of insects takes place over a range of habitats, including forested areas, volcanic plains, wetlands, coastal vegetation, including beaches, cleared agricultural and grazing land, and urban areas. The subspecies primary habitat is predominantly woodlands near large natural wetlands, river basins, and agricultural areas. Able to fly large distances (e.g., 140 km in 24 hours). No records within 5 km of the Project area, but this may be a result of the nocturnal, cryptic nature of the subspecies.	
Neophoca cinerea	Australian Sea-lion, Australian Sea Lion	EN	V	1		Marine only species.	Unlikely
Orcinus orca	Killer Whale, Orca	Mi		1		Marine only species.	Unlikely
Petaurus australis australis	Yellow-bellied Glider (south-eastern)	VU	E	1		Widespread but patchy distribution from south-eastern Queensland to far south-eastern South Australia. Occurs in *Eucalyptus* woodlands and forests. Subpopulations in the region of the Victorian and South Australian border are isolated from the subspecies main distribution. No known records of the subspecies in South Australia since 2010 and is potentially locally extinct.	Unlikely
Pteropus poliocephalus	Grey-headed Flying-fox	VU	R	1		Habitats that contain flowering and fruiting trees including closed and open forests, woodlands, and vegetation within urban areas.	Unlikely
Rattus lutreolus	Swamp Rat		R	2	26/11/2020	Dense vegetation along watercourses and swamps.	Unlikely
REPTILE							
Caretta caretta	Loggerhead Turtle	EN, Mi	E	1		Marine only species.	Unlikely

Scientific Name	Common Name	EPBC Act	NP&W Act	Data Source	Date of last record	Species known habitat preferences	Likelihood of occurrence
Chelonia mydas	Green Turtle	VU, Mi	V	1		Marine only species.	Unlikely
Dermochelys coriacea	Leatherback Turtle, Leathery Turtle, Luth	EN, Mi	V	1		Marine only species.	Unlikely
Lissolepis coventryi	Swamp Skink, Eastern Mourning Skink	EN	E	1,2	05/02/1997	Endemic to south-eastern Australia. Occurs in coastal and some inland densely vegetated freshwater and saltwater wetlands.	Unlikely
FROG							
Litoria raniformis	Southern Bell Frog, Growling Grass Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog	VU	V	1		Endemic to south-eastern Australia. Variety of still or slow-flowing natural and artificial wetlands, riverine floodplains, farm dams, quarries, and irrigation channels. Reliant on permanent freshwater lagoons for breeding.	Unlikely
FISH							
Galaxiella toourtkoourt	Little Galaxias	VU		2	24/08/2016	*Galaxiella toourtkoourt* was once included as conspecific with the currently EPBC listed Vulnerable species *Galaxiella pusilla* (Dwarf Galaxias). No habitat directly available within the Project area.	Unlikely
Nannoperca australis	Southern Pygmy Perch	VU		2	24/08/2016	No habitat directly available within the Project area. Suitable habitat for Southern Pygmy Perch was not highlighted by the PMST report as occurring within 5 km of the Project area.	Unlikely
Nannoperca obscura	Yarra Pygmy Perch	EN		1		No habitat directly available within the Project area.	Unlikely
Seriolella brama	Blue Warehou	CD		1		Marine only species.	Unlikely
Thunnus maccoyii	Southern Bluefin Tuna	CD		1		Marine only species.	Unlikely
SHARK							

Scientific Name	Common Name	EPBC Act	NP&W Act	Data Source	Date of last record	Species known habitat preferences	Likelihood of occurrence
Carcharodon carcharias	White Shark, Great White Shark	VU, Mi		1		Marine only species.	Unlikely
Galeorhinus galeus	School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark	CD		1		Marine only species.	Unlikely
Lamna nasus	Porbeagle, Mackerel Shark	Mi		1		Marine only species.	Unlikely

NP&W Act; E = Endangered, V = Vulnerable, R = Rare.
EPBC Act; Ex = Extinct, CR = Critically Endangered, EN = Endangered; VU = Vulnerable; CD = Conservation Dependent; Mi = Migratory.

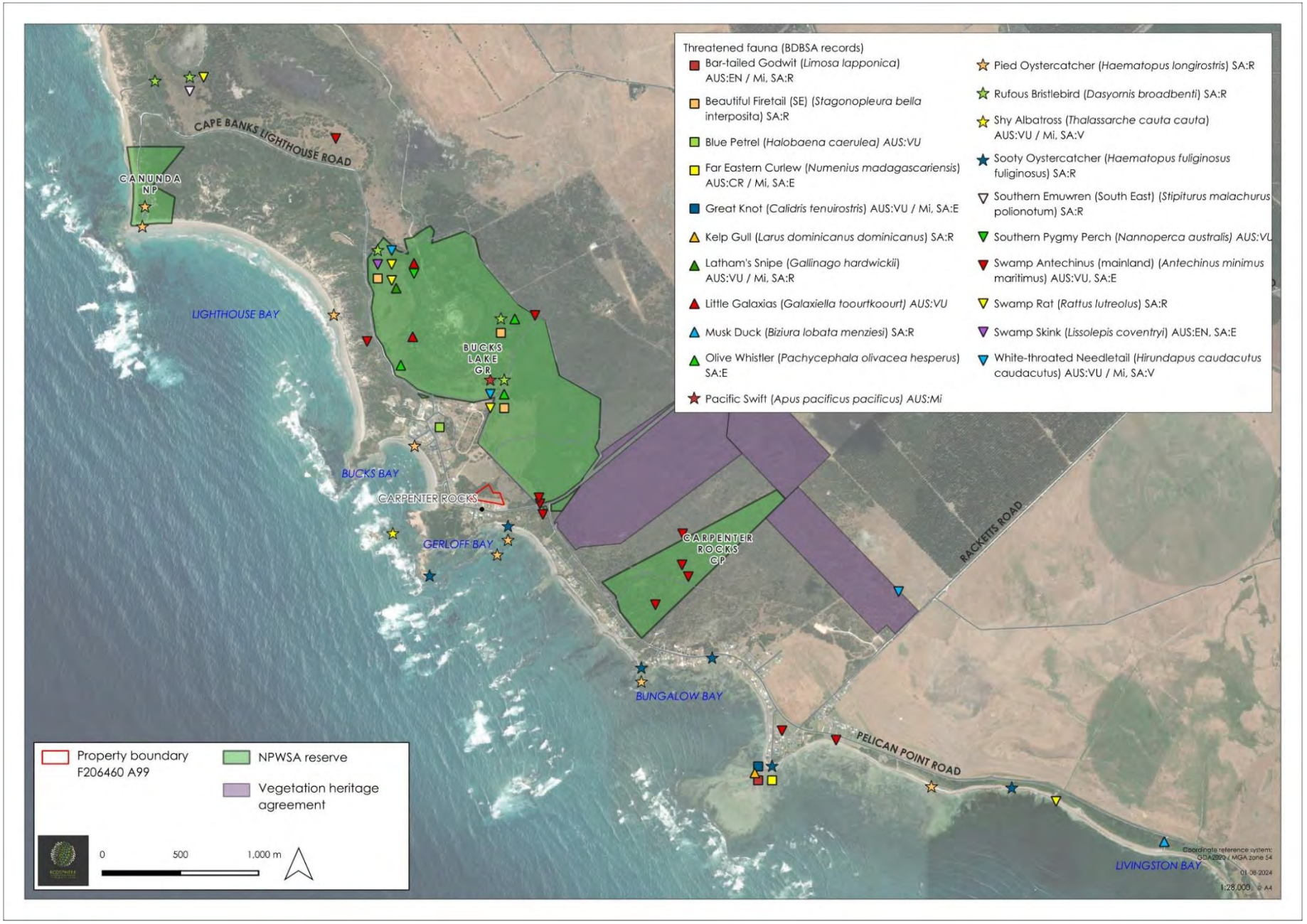

Figure 7 Threatened fauna records within 5 km of the Project area.

4.5 Cumulative Impact

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.

There are no additional areas expected to be impacted as part of the residential subdivision. Ample access for future construction works is possible from the already established access point located at the western end of the property and the adjoining open, degraded, grassy area of vegetation association 3, which is currently maintained as an open area to allow access to the allotment.

4.6 Adress 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 NP&W Act.

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

The proposed residential subdivision utilises the entire allotment and thus avoidance of vegetation clearance is not possible.

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).

Ample access for future construction works is possible from the already established access point located at the western end of the property and the adjoining open, degraded, grassy area of vegetation association 3, which is currently maintained as an open area to allow access to the allotment, and which also provides an area to store vehicles and machinery such that vegetation clearance external to the allotment should not be required.

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.

No rehabilitation or restoration works are planned as the proposed residential subdivision utilises the entire allotment.

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 SEB will be met through a payment into the NV fund. Total payment is $59,164.48.

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

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

Data Report for level 3 or 4 application associated with a Development application

If a data report is in relation to a level 3 or 4 application that will be subject to a development application, then principles a – g needs to be addressed. The NVC will consider the principles in full when receiving a referral for a development application.

Principle of clearance	Considerations
Principle 1a - it comprises a high level of diversity of plant species	Relevant information The number of plant species recorded (native and introduced) for each vegetation association: • Vegetation association 1 = 13 native, 7 introduced. • Vegetation association 2 = 6 native, 6 introduced. • Vegetation association 3 = 5 native, 14 introduced. Bushland Plant Diversity Score – • Vegetation association 1 = 16 • Vegetation association 2 = 8 • Vegetation association 3 = 6
	Assessment against the principles Seriously at Variance N/A At Variance – • Vegetation association 1
	Moderating factors that may be considered by the NVC • The diversity of plant species is not high within any of the vegetation associations assessed. • The abundance of introduced flora species was high throughout the Block. • The native species diversity score is 16 out of a maximum of 30 for vegetation association 1. • A number of reserves and heritage agreements protect similar vegetation close to the Block.
Principle 1b - significance as a habitat for wildlife	Relevant information List of threatened species that were recorded or may use the vegetation: The Project area potentially provides habitat for the following threatened fauna species: • *Antechinus minimus maritimus* (Swamp Antechinus (mainland), EPBC: VU, NPW: E) • *Dasyornis broadbenti* (Rufous Bristlebird, NPW: R) • *Pachycephala olivacea hesperus* (Olive Whistler, NPW: E) • *Stagonopleura bella interposita* (Beautiful Firetail (SE), NPW: R) Detail if the vegetation support a high diversity of animal species: • The vegetation is highly unlikely to support a high diversity of animal species due to its moderately degraded nature and proximity to infrastructure and cleared areas. • The threatened animal species recorded within the 5 km buffer are more likely to use the surrounding larger areas of remnant native vegetation / alternative vegetation types or otherwise are more likely to use the surrounding areas of seasonal and ephemeral, intermittent wetland. Detail if the vegetation provide a corridor for movements between other areas of native vegetation, or a habitat refuge, especially in heavily cleared areas: • Vegetation clearance does not result in the physical separation of any remnants and is unlikely significantly reduce an area of habitat refuge. Threatened Fauna Score – • Vegetation association 1 = 0.08 • Vegetation association 2 = 0.08 • Vegetation association 3 = 0 Unit biodiversity Score – • Vegetation association 1 = 54.68 • Vegetation association 2 = 19.69

Principle of clearance	Considerations
	• Vegetation association 3 = 4.37
	Assessment against the principles Seriously at Variance • Vegetation association 1 • Vegetation association 2 At Variance – N/A
	Moderating factors that may be considered by the NVC • The Block is unlikely to represent high quality habitat for any threatened species within the area. • The threatened animal species recorded within the 5 km buffer are more likely to use the surrounding larger areas of remnant native vegetation / alternative vegetation types or otherwise are more likely to use the surrounding areas of seasonal and ephemeral, intermittent wetland. • A number of reserves and heritage agreements protect similar vegetation close to the Block.
Principle 1c - plants of a rare, vulnerable or endangered species	Relevant information List threatened species that were recorded for the site or that may be present but undetectable at the time of assessment (e.g. orchids): • No threatened flora was observed during the field survey or considered likely to occur within the Block outside of the time the field survey was conducted. Identify the distribution of species within the area of impact: N/A What level of impact on the local population of the plant species? N/A Threatened Flora Score(s) – • Vegetation association 1 = 0 • Vegetation association 2 = 0 • Vegetation association 3 = 0
	Assessment against the principles Seriously at Variance N/A At Variance – N/A
	Moderating factors that may be considered by the NVC N/A
Principle 1d - the vegetation comprises the whole or part of a plant community that is Rare,	Relevant information Identify any threatened communities under the EPBC Act or threatened ecosystems under the DEW Provisional list of threatened ecosystems present? • None of the vegetation associations recorded within the Project area were associated with a Threatened Ecological Community under the EPBC Act or considered a threatened community at the state level.

Principle of clearance	Considerations
***Vulnerable or endangered*:**	Threatened Community Score – • Vegetation association 1 = 1 • Vegetation association 2 = 1 • Vegetation association 3 = 1
	Assessment against the principles Seriously at Variance N/A
	Moderating factors that may be considered by the NVC N/A
Principle 1e - it is significant as a remnant of vegetation in an area which has been extensively cleared.	Relevant information Provide remnancy figures for IBRA Association and IBRA Subregion: • Lake George IBRA Environmental Association = 11 % • Bridgewater IBRA Subregion = 14 % Discuss the health and likely longevity of remnants: • The health of vegetation within the Block is unlikely to improve without intervention. The biodiversity of vegetation associations 1 and 2 could be improved via planting and weeding practices if desired, although weed incursion would be an ongoing issue and the small area of the Block and adjacency to residential infrastructure leaves the Block prone to negative edge effects. Total Biodiversity Score – • Vegetation association 1 = 44.67 • Vegetation association 2 = 0.93 • Vegetation association 3 = 2.24
	Assessment against the principles Seriously at Variance N/A At Variance – • Vegetation association 1 • Vegetation association 2 • Vegetation association 3
	Moderating factors that may be considered by the NVC • There is a large amount of better-quality remnant vegetation within the general area surrounding the Block that is already protected by heritage agreement or as part of NPWSA Reserves.
Principle 1f - it is growing in, or in association with, a wetland environment.	Relevant information • The Project area occurs within 50 m of an area of ephemeral, intermittent wetland. However, the Project area is not associated with a wetland environment and the adjacent area mapped as ephemeral, intermittent wetland is currently maintained as an open grassed area lacking native vegetation and used as a camping ground.
	Assessment against the principles Seriously at Variance N/A

Principle of clearance	Considerations
	At Variance – N/A
	Moderating factors that may be considered by the NVC • The Project area does not form part of the adjacent ephemeral, intermittent wetland and is not associated with a wetland environment.
Principle 1g - it contributes significantly to the amenity of the area in which it is growing or is situated.	Relevant information • The area has amenity value, but the vegetation proposed for clearance is common within the local area and from a native vegetation perspective is more or less degraded.
	N/A
	Moderating factors that may be considered by the NVC • A number of reserves and heritage agreements protect similar vegetation close to the Block.

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

4.7 Risk Assessment

Determine the level of risk associated with the application

Total clearance	No. of trees	N/A
	Area (ha)	1.377
	Total biodiversity Score	47.84
Seriously at variance with principle 1(b), 1(c) or 1 (d)		1(b)
Risk assessment outcome		Level 4

4.8 NVC Guidelines

Provide any other information that demonstrates that the clearance complies with any relevant NVC guidelines related to the activity.

N/A

5 Clearance summary

5.1 Clearance Area(s) Summary table

Block	Site	Species diversity score	Threatened Ecological community Score	Threatened plant score	Threatened fauna score	UBS	Area (ha)	Total Biodiversity score	Loss factor	Loadings	Reductions	SEB Points required	SEB payment	Admin Fee
A	1	16	1	0	0.08	54.68	0.817	44.67	1	-	-	46.91	$52,646.81	$2,895.57
A	2	8	1	0	0.08	19.69	0.047	0.93	1	-	-	0.97	$1,090.60	$59.98
A	3	6	1	0	0	4.37	0.513	2.24	1	-	-	2.35	$2,641.92	$145.31
						Total	**1.377**	**47.8408**				**50.23**	**$56,379.33**	**$3,100.86**

5.2 Totals summary table

	Total Biodiversity score	Total SEB points required	SEB Payment	Admin Fee	Total Payment
Application	47.84	50.23	$56,379.33	$3,100.86	$59,480.19

Economies of Scale Factor	0.5
Rainfall (mm)	752

6 Significant Environmental Benefit

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

ACHIEVING AN SEB

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

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

☐ Use SEB Credit that the proponent has established. 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.

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)
- If the proponent wishes to make the payment in stages, details of those stages, including clear dates or milestones in which payments will be made. Noting, for staged payments, payments must be received prior to clearance occurring, therefore staged payments are only suitable for projects where the clearance will occur in a staged manner.

The payment to satisfy the offset required for the clearance of vegetation within the Project area is $56,379.33 plus an administration fee of $3,100.86 for a total fee of $59,480.19.

7 Assessment of Significance

Assessment of Significance for EPBC Act listed entities was limited to ***Antechinus minimus maritimus*** (Swamp Antechinus (mainland), EPBC: VU, NPW: E). Swamp Antechinus was assessed against the Significant impact criteria for a Vulnerable species listed in the Significant Impact Guidelines 1.1 Matters of National Environmental Significance (2013) (SIG 1.1).

Information was taken from the "Conservation Advice *Antechinus minimus maritimus* swamp antechinus (coastal Victoria and far south-eastern South Australia)" (TSSC 2016) and "Distribution and Status of the Swamp Antechinus *Antechinus minimus maritimus* (Marsupialia : Dasyuridae) in South Australia" (Bachmann and van Weenen 2001).

An action is likely to have a significant impact on a Vulnerable species if there is a real chance or possibility that it will:

Lead to a long-term decrease in the size of an important population of a species:

Vegetation within the Project area does not constitute *Leptospermum lanigerum* dominated wetland / wet heath habitat which is considered critical to the survival of this subspecies within South Australia (Bachmann and van Weenen 2001; TSSC 2016). In particular, this habitat type typically has a dense understorey, dominated by *Gahnia* species, with wetland herbs and fallen / decomposing vegetation (Bachmann and van Weenen 2001), which is mostly absent within the Project area. However, the preferential use of *Leptospermum lanigerum* dominated wetland / wet heath habitat in South Australia appears to be somewhat of an artefact of land clearance resulting in few ecotones remaining between *Leptospermum lanigerum* dominated wetland / wet heath habitat and drier adjacent habitats such as coastal heaths (Bachmann and van Weenen 2001). Such ecotones are considered to remain within the Carpenter Rocks area, however (Bachmann and van Weenen 2001). It is also possible for Swamp Antechinus to survive and reproduce, at least in the short-term, in small, isolated areas of one to two hectares (Bachmann and van Weenen 2001). Thus, it is considered likely that Swamp Antechinus may be present at times within the Project area. However, the moderately degraded nature of the Project area, the absence of *Leptospermum lanigerum* dominated wetland / wet heath and *Gahnia* species not forming a dominant component of the understorey, and adjacency to residential infrastructure means that vegetation within the Project area is unlikely to be of high habitat value to Swamp Antechinus. There is a large amount of better-quality remnant vegetation within the general area surrounding the Project area that is protected by heritage agreement or part of NPWSA reserves and the small area of vegetation clearance is unlikely to lead to a long-term decrease in the size of an important population of this subspecies.

Reduce the area of occupancy of an important population:

The Project area vegetation was moderately degraded and lacks the critical *Leptospermum lanigerum* dominated wetland / wet heath and *Gahnia* species habitat. Coupled with existing impacts, such as proximity to residential infrastructure, vegetation within the Project area is unlikely to be of high habitat value to Swamp Antechinus. There was a large area of better-quality remnant vegetation surrounding the Project area that is protected formally by heritage agreements or NPWSA Reserves.

Considering the number of records of this subspecies within the Carpenter Rocks area however, and that records occur nearby to the Project area, a reduced area of occupancy is a potential outcome of the clearance proposed. It is possible that a prescribed burn in 2019 adjacent to the Project area within Bucks Lake Game Reserve has reduced the amount of suitable habitat available to Swamp Antechinus and, in turn, increased the habitat refuge value of vegetation within the Project area. Particularly given that Swamp Antechinus is a late post-fire succession recoloniser of habitat (Bachmann and van Weenen 2001; TSSC 2016).

Fragment an existing important population into two or more populations:

Vegetation clearance does not result in the physical separation of any remnants. The small area of vegetation clearance on the edge of a zone of established residential infrastructure is unlikely to fragment an existing important population into two or more populations.

Adversely affect habitat critical to the survival of a species:

Vegetation within the Project area does not constitute *Leptospermum lanigerum* dominated wetland / wet heath habitat which is considered critical to the survival of this subspecies within South Australia. Vegetation clearance in the Project area is unlikely to adversely affect habitat critical to the survival of the subspecies.

Disrupt the breeding cycle of an important population:

Although breeding may occur in a variety of habitats, most breeding females have been captured in *Leptospermum lanigerum* dominated wetland / wet heath habitat in South Australia (Bachmann and van Weenen 2001), which does not occur within the Project area. Nevertheless, vegetation clearance may disrupt the breeding cycle of an important population of this subspecies if breeding is currently occurring within the Project area, although it is unlikely such a disruption would result in a long-term decrease in population size given the Project area does not represent critical habitat and the area of clearance is small.

Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline:

Vegetation within the Project area does not constitute *Leptospermum lanigerum* dominated wetland / wet heath habitat which is considered critical to the survival of this subspecies within South Australia. The moderately degraded nature of the Project area and adjacency to residential infrastructure means that vegetation within the Project area is unlikely to be of high habitat value to Swamp Antechinus. Vegetation clearance in the Project area is unlikely to modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that this subspecies is likely to decline.

Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat:

The Project area occurs adjacent to residential infrastructure and already suffers from weed incursion. A number of exotic fauna species also occur, including both Foxes and Cats which are both identified as posing a predation risk to the survival of Swamp Antechinus. The moderately degraded nature of the Project area, adjacency to residential infrastructure, and small area of vegetation clearance means that vegetation clearance within the Project area is unlikely to result in any invasive species that are harmful to this subspecies becoming established in the subspecies habitat.

Introduce disease that may cause the species to decline:

Phytophthora is considered a threat to the survival of Swamp Antechinus and care should be taken to adhere to appropriate control measures.

Interfere substantially with the recovery of the species:

The total area of proposed vegetation clearance is small relative to potential and better-quality habitat remaining within the wider landscape. Vegetation clearance is highly unlikely to interfere substantially with the recovery of this subspecies.

Referral requirement

The self-assessment process results in a recommendation for a referral to the DCCEEW based on vegetation clearance within the Project area potentially reducing the area of occupancy of an important population and potentially disrupting the breeding cycle of an important population. The level of confidence in the information available at a local level and follow up ground truthing is deemed sufficient to determine the impacts as outlined above.

8 References

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9 Appendices

9.1 PMST Results

Department of Climate Change, Energy, the Environment and Water

Protected Matters Search Tool

Report Generated - 2:30PM - 16 July 2024

Matters of National Environment Significance	Count
World Heritage Properties	0
National Heritage Places	0
Wetlands of International Importance (Ramsar Wetlands)	0
Great Barrier Reef Marine Park	0
Commonwealth Marine Area	0
Listed Threatened Ecological Communities	2
Listed Threatened Species	77
Listed Migratory Species	58

Other Matters Protected by the EPBC Act	Count
Commonwealth Lands	0
Commonwealth Heritage Places	0
Listed Marine Species	97
Whales and Other Cetaceans	13
Critical Habitats	0
Commonwealth Reserves Terrestrial	0
Australian Marine Parks	0
Habitat Critical to the Survival of Marine Turtles	0

Extra Information	Count
State and Territory Reserves	6
Regional Forest Agreements	0
Nationally Important Wetlands	0
EPBC Act Referrals	8
Key Ecological Features	1
Biologically Important Areas	3
Bioregional Assessments	0
Geological and Bioregional Assessments	0

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected and is accurate at the time of generation.
Please see the caveat for interpretation of information provided here.
Consider carefully the age of information for decision making.

Report Metadata	Caveat

Listed Threatened Ecological Communities [Resource Information]

Community ID	Community Name	Threatened Category	Website	Presence Rank	Presence Text	Buffer Status
149	Karst springs and	Endangered	Species Profile and	Likely	Community likely to	In feature area
107	Giant Kelp Marine	Endangered	Species Profile and	May	Community may occur	In feature area

Listed Threatened Species [Resource Information]

Species ID	Scientific Name	Common Name	Class	Simple Presence	Presence Text	Threatened Category	Migratory Status	Migratory Category	Marine Status	Cetacean Status	Website	Buffer Status
69374	*Seriolella brama*	Blue Warehou	Fish	Known	Species or species	Conservation					Species Profile and	In feature area
69402	*Thunnus maccoyii*	Southern Bluefin Tuna	Fish	Likely	Species or species	Conservation					Species Profile and	In feature area
68453	*Galeorhinus galeus*	School Shark, Eastern	Shark	May	Species or species	Conservation					Species Profile and	In buffer area only
68011	*Thelymitra orientalis*	Hoary Sun-orchid	Plant	May	Species or species	Critically Endangered					Species Profile and	In feature area
747	*Neophema*	Orange-bellied Parrot	Bird	Known	Species or species	Critically Endangered			Listed - overfly marine		Species Profile and	In feature area
744	*Lathamus discolor*	Swift Parrot	Bird	May	Species or species	Critically Endangered			Listed - overfly marine		Species Profile and	In feature area
847	*Numenius*	Eastern Curlew, Far	Bird	Known	Species or species	Critically Endangered	Migratory	Migratory Wetlands	Listed		Species Profile and	In feature area
67645	*Miniopterus orianae*	Southern Bent-wing Bat	Mammal	Likely	Roosting likely to occur	Critically Endangered					Species Profile and	In feature area
856	*Calidris ferruginea*	Curlew Sandpiper	Bird	Known	Species or species	Critically Endangered	Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and	In feature area
67093	*Melanodryas cucullata*	South-eastern Hooded	Bird	May	Species or species	Endangered					Species Profile and	In buffer area only
832	*Tringa nebularia*	Common Greenshank,	Bird	Known	Species or species	Endangered	Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and	In feature area
768	*Callocephalon*	Gang-gang Cockatoo	Bird	May	Species or species	Endangered					Species Profile and	In feature area
1060	*Macronectes giganteus*	Southern Giant-Petrel,	Bird	May	Species or species	Endangered	Migratory	Migratory Marine Birds	Listed		Species Profile and	In feature area
1768	*Dermochelys coriacea*	Leatherback Turtle,	Reptile	Likely	Breeding likely to occur	Endangered	Migratory	Migratory Marine	Listed		Species Profile and	In feature area
22	*Neophoca cinerea*	Australian Sea-lion,	Mammal	May	Species or species	Endangered			Listed		Species Profile and	In feature area
26177	*Nannoperca obscura*	Yarra Pygmy Perch	Fish	Likely	Species or species	Endangered					Species Profile and	In feature area
59224	*Thalassarche cauta*	Shy Albatross	Bird	Likely	Foraging, feeding or	Endangered	Migratory	Migratory Marine Birds	Listed		Species Profile and	In feature area
26033	*Pterodroma leucoptera*	Gould's Petrel,	Bird	May	Species or species	Endangered					Species Profile and	In feature area
64053	*Lissolepis coventryi*	Swamp Skink, Eastern	Reptile	Known	Species or species	Endangered					Species Profile and	In feature area
58050	*Isoodon obesulus*	Southern Brown	Mammal	Likely	Species or species	Endangered					Species Profile and	In feature area
25982	*Calyptorhynchus*	South-eastern Red-	Bird	May	Species or species	Endangered					Species Profile and	In feature area
66380	*Limosa lapponica*	Nunivak Bar-tailed	Bird	Known	Species or species	Endangered					Species Profile and	In feature area
1001	*Botaurus poiciloptilus*	Australasian Bittern	Bird	Likely	Species or species	Endangered					Species Profile and	In feature area
40	*Eubalaena australis*	Southern Right Whale	Mammal	Known	Species or species	Endangered	Migratory (as Balaena	Migratory Marine		Cetacean	Species Profile and	In feature area
24390	*Caladenia tensa*	Greencomb Spider-	Plant	May	Species or species	Endangered					Species Profile and	In feature area
64456	*Diomedea sanfordi*	Northern Royal	Bird	Likely	Foraging, feeding or	Endangered	Migratory	Migratory Marine Birds	Listed		Species Profile and	In feature area
36	*Balaenoptera musculus*	Blue Whale	Mammal	Known	Foraging, feeding or	Endangered	Migratory	Migratory Marine		Cetacean	Species Profile and	In feature area
77037	*Rostratula australis*	Australian Painted Snipe	Bird	Likely	Species or species	Endangered			Listed - overfly marine		Species Profile and	In feature area
845	*Limosa limosa*	Black-tailed Godwit	Bird	Known	Roosting known to	Endangered	Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and	In feature area
1763	*Caretta caretta*	Loggerhead Turtle	Reptile	Likely	Breeding likely to occur	Endangered	Migratory	Migratory Marine	Listed		Species Profile and	In feature area
11896	*Thelymitra*	Metallic Sun-orchid	Plant	May	Species or species	Endangered					Species Profile and	In buffer area only
13910	*Glycine latrobeana*	Clover Glycine, Purple	Plant	Likely	Species or species	Vulnerable					Species Profile and	In feature area
1061	*Macronectes halli*	Northern Giant Petrel	Bird	Likely	Foraging, feeding or	Vulnerable	Migratory	Migratory Marine Birds	Listed		Species Profile and	In feature area
21474	*Ixodia achillaeoides*	Sand Ixodia, Ixodia	Plant	May	Species or species	Vulnerable					Species Profile and	In feature area
929	*Falco hypoleucos*	Grey Falcon	Bird	May	Species or species	Vulnerable					Species Profile and	In feature area
64470	*Carcharodon*	White Shark, Great	Shark	Known	Species or species	Vulnerable	Migratory	Migratory Marine			Species Profile and	In feature area
15459	*Pterostylis cucullata*	Leafy Greenhood	Plant	Likely	Species or species	Vulnerable					Species Profile and	In feature area
64976	*Senecio psilocarpus*	Swamp Fireweed,	Plant	Likely	Species or species	Vulnerable					Species Profile and	In feature area
66472	*Thalassarche*	Black-browed Albatross	Bird	Likely	Foraging, feeding or	Vulnerable	Migratory	Migratory Marine Birds	Listed		Species Profile and	In feature area
1828	*Litoria raniformis*	Southern Bell Frog,,	Frog	May	Species or species	Vulnerable					Species Profile and	In feature area
582	*Hirundapus caudacutus*	White-throated	Bird	Known	Species or species	Vulnerable	Migratory	Migratory Terrestrial	Listed - overfly marine		Species Profile and	In feature area
59398	*Stagonopleura guttata*	Diamond Firetail	Bird	Likely	Species or species	Vulnerable					Species Profile and	In feature area
1075	*Phoebetria fusca*	Sooty Albatross	Bird	Likely	Species or species	Vulnerable	Migratory	Migratory Marine Birds	Listed		Species Profile and	In feature area
726	*Neophema*	Blue-winged Parrot	Bird	Known	Species or species	Vulnerable			Listed - overfly marine		Species Profile and	In feature area
862	*Calidris tenuirostris*	Great Knot	Bird	Known	Roosting known to	Vulnerable	Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and	In feature area
59221	*Diomedea epomophora*	Southern Royal	Bird	Likely	Foraging, feeding or	Vulnerable	Migratory	Migratory Marine Birds	Listed		Species Profile and	In feature area
863	*Gallinago hardwickii*	Latham's Snipe,	Bird	Likely	Species or species	Vulnerable	Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and	In feature area
59223	*Diomedea exulans*	Wandering Albatross	Bird	Likely	Foraging, feeding or	Vulnerable	Migratory	Migratory Marine Birds	Listed		Species Profile and	In feature area
82651	*Ardenna grisea*	Sooty Shearwater	Bird	May	Species or species	Vulnerable	Migratory	Migratory Marine Birds	Listed (as Puffinus		Species Profile and	In feature area
1036	*Pterodroma mollis*	Soft-plumaged Petrel	Bird	May	Species or species	Vulnerable			Listed		Species Profile and	In buffer area only
874	*Calidris acuminata*	Sharp-tailed Sandpiper	Bird	Known	Roosting known to	Vulnerable	Migratory	Migratory Wetlands	Listed		Species Profile and	In feature area
877	*Charadrius*	Greater Sand Plover,	Bird	Likely	Species or species	Vulnerable	Migratory	Migratory Wetlands	Listed		Species Profile and	In feature area
87600	*Petaurus australis*	Yellow-bellied Glider	Mammal	May	Species or species	Vulnerable					Species Profile and	In buffer area only
21964	*Pomaderris*	Kangaroo Island	Plant	Known	Species or species	Vulnerable					Species Profile and	In feature area
872	*Arenaria interpres*	Ruddy Turnstone	Bird	Known	Roosting known to	Vulnerable	Migratory	Migratory Wetlands	Listed		Species Profile and	In feature area
83086	*Antechinus minimus*	Swamp Antechinus	Mammal	Known	Species or species	Vulnerable					Species Profile and	In feature area
855	*Calidris canutus*	Red Knot, Knot	Bird	Known	Species or species	Vulnerable	Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and	In feature area
186	*Pteropus poliocephalus*	Grey-headed Flying-fox	Mammal	May	Foraging, feeding or	Vulnerable					Species Profile and	In feature area
64460	*Thalassarche bulleri*	Buller's Albatross,	Bird	Likely	Foraging, feeding or	Vulnerable	Migratory	Migratory Marine Birds	Listed		Species Profile and	In feature area
64459	*Thalassarche impavida*	Campbell Albatross,	Bird	May	Species or species	Vulnerable	Migratory	Migratory Marine Birds	Listed		Species Profile and	In feature area
64463	*Thalassarche salvini*	Salvin's Albatross	Bird	Likely	Foraging, feeding or	Vulnerable	Migratory	Migratory Marine Birds	Listed		Species Profile and	In feature area
64458	*Diomedea antipodensis*	Antipodean Albatross	Bird	Likely	Foraging, feeding or	Vulnerable	Migratory	Migratory Marine Birds	Listed		Species Profile and	In feature area
64462	*Thalassarche steadi*	White-capped Albatross	Bird	Known	Foraging, feeding or	Vulnerable	Migratory	Migratory Marine Birds	Listed		Species Profile and	In feature area
64464	*Thalassarche carteri*	Indian Yellow-nosed	Bird	Likely	Species or species	Vulnerable	Migratory	Migratory Marine Birds	Listed		Species Profile and	In feature area
4168	*Thelymitra matthewsii*	Spiral Sun-orchid	Plant	May	Species or species	Vulnerable					Species Profile and	In feature area
82273	*Thalassarche bulleri*	Northern Buller's	Bird	Likely	Foraging, feeding or	Vulnerable			Listed (as Thalassarche		Species Profile and	In feature area
16333	*Senecio macrocarpus*	Large-fruit Fireweed,	Plant	May	Species or species	Vulnerable					Species Profile and	In feature area
82950	*Sternula nereis nereis*	Australian Fairy Tern	Bird	Known	Species or species	Vulnerable					Species Profile and	In feature area
470	*Grantiella picta*	Painted Honeyeater	Bird	May	Species or species	Vulnerable					Species Profile and	In feature area
56510	*Pterostylis*	Green-striped	Plant	May	Species or species	Vulnerable					Species Profile and	In feature area
90381	*Thinornis cucullatus*	Eastern Hooded Plover,	Bird	Known	Species or species	Vulnerable			Listed - overfly marine		Species Profile and	In feature area
37	*Balaenoptera physalus*	Fin Whale	Mammal	Known	Foraging, feeding or	Vulnerable	Migratory	Migratory Marine		Cetacean	Species Profile and	In feature area
1765	*Chelonia mydas*	Green Turtle	Reptile	May	Species or species	Vulnerable	Migratory	Migratory Marine	Listed		Species Profile and	In feature area
64445	*Pachyptila turtur*	Fairy Prion (southern)	Bird	Known	Species or species	Vulnerable					Species Profile and	In feature area
34	*Balaenoptera borealis*	Sei Whale	Mammal	Known	Foraging, feeding or	Vulnerable	Migratory	Migratory Marine		Cetacean	Species Profile and	In feature area
13139	*Pterostylis tenuissima*	Swamp Greenhood,	Plant	Likely	Species or species	Vulnerable					Species Profile and	In buffer area only
1059	*Halobaena caerulea*	Blue Petrel	Bird	May	Species or species	Vulnerable			Listed		Species Profile and	In buffer area only

Listed Migratory Species [Resource Information]

Species ID	Scientific Name	Common Name	Class	Presence Rank	Text	Threatened Category	Migratory Status	Migratory Category	Marine Status	Cetacean Status	Website	Buffer Status
592	*Rhipidura rufifrons*	Rufous Fantail	Bird	May	Species or species		Migratory	Migratory Terrestrial	Listed - overfly marine		Species Profile and	In feature area
833	*Tringa stagnatilis*	Marsh Sandpiper, Little	Bird	Known	Roosting known to		Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and	In feature area
832	*Tringa nebularia*	Common Greenshank,	Bird	Known	Species or species	Endangered	Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and	In feature area
59309	*Actitis hypoleucos*	Common Sandpiper	Bird	Known	Species or species		Migratory	Migratory Wetlands	Listed		Species Profile and	In feature area
1061	*Macronectes halli*	Northern Giant Petrel	Bird	Likely	Foraging, feeding or	Vulnerable	Migratory	Migratory Marine Birds	Listed		Species Profile and	In feature area
64470	*Carcharodon*	White Shark, Great	Shark	Known	Species or species	Vulnerable	Migratory	Migratory Marine			Species Profile and	In feature area
875	*Calidris alba*	Sanderling	Bird	Known	Roosting known to		Migratory	Migratory Wetlands	Listed		Species Profile and	In feature area
1060	*Macronectes giganteus*	Southern Giant-Petrel,	Bird	May	Species or species	Endangered	Migratory	Migratory Marine Birds	Listed		Species Profile and	In feature area
1768	*Dermochelys coriacea*	Leatherback Turtle,	Reptile	Likely	Breeding likely to occur	Endangered	Migratory	Migratory Marine	Listed		Species Profile and	In feature area
66472	*Thalassarche*	Black-browed Albatross	Bird	Likely	Foraging, feeding or	Vulnerable	Migratory	Migratory Marine Birds	Listed		Species Profile and	In feature area
25545	*Pluvialis fulva*	Pacific Golden Plover	Bird	Known	Roosting known to		Migratory	Migratory Wetlands	Listed		Species Profile and	In feature area
682	*Hirundapus caudacutus*	White-throated	Bird	Known	Species or species	Vulnerable	Migratory	Migratory Terrestrial	Listed - overfly marine		Species Profile and	In feature area
82849	*Sternula albifrons*	Little Tern	Bird	May	Species or species		Migratory	Migratory Marine Birds	Listed (as Sterna		Species Profile and	In feature area
678	*Apus pacificus*	Fork-tailed Swift	Bird	Likely	Species or species		Migratory	Migratory Marine Birds	Listed - overfly marine		Species Profile and	In feature area
1075	*Phoebetria fusca*	Sooty Albatross	Bird	Likely	Species or species	Vulnerable	Migratory	Migratory Marine Birds	Listed		Species Profile and	In feature area
864	*Gallinago megala*	Swinhoe's Snipe	Bird	Likely	Roosting likely to occur		Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and	In buffer area only
862	*Calidris tenuirostris*	Great Knot	Bird	Known	Roosting known to	Vulnerable	Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and	In feature area
59221	*Diomedea epomophora*	Southern Royal	Bird	Likely	Foraging, feeding or	Vulnerable	Migratory	Migratory Marine Birds	Listed		Species Profile and	In feature area
863	*Gallinago hardwickii*	Latham's Snipe,	Bird	Likely	Species or species	Vulnerable	Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and	In feature area
860	*Calidris ruficollis*	Red-necked Stint	Bird	Known	Roosting known to		Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and	In feature area
59223	*Diomedea exulans*	Wandering Albatross	Bird	Likely	Foraging, feeding or	Vulnerable	Migratory	Migratory Marine Birds	Listed		Species Profile and	In feature area
82651	*Ardenna grisea*	Sooty Shearwater	Bird	May	Species or species	Vulnerable	Migratory	Migratory Marine Birds	Listed (as Puffinus		Species Profile and	In feature area
59224	*Thalassarche cauta*	Shy Albatross	Bird	Likely	Foraging, feeding or	Endangered	Migratory	Migratory Marine Birds	Listed		Species Profile and	In feature area
844	*Limosa lapponica*	Bar-tailed Godwit	Bird	Known	Species or species		Migratory	Migratory Wetlands	Listed		Species Profile and	In feature area
59	*Caperea marginata*	Pygmy Right Whale	Mammal	Likely	Foraging, feeding or		Migratory	Migratory Marine		Cetacean	Species Profile and	In feature area
847	*Numenius*	Eastern Curlew, Far	Bird	Known	Species or species	Critically Endangered	Migratory	Migratory Wetlands	Listed		Species Profile and	In feature area
874	*Calidris acuminata*	Sharp-tailed Sandpiper	Bird	Known	Roosting known to	Vulnerable	Migratory	Migratory Wetlands	Listed		Species Profile and	In feature area
952	*Pandion haliaetus*	Osprey	Bird	Likely	Species or species		Migratory	Migratory Wetlands	Listed		Species Profile and	In buffer area only
46	*Orcinus orca*	Killer Whale, Orca	Mammal	Likely	Species or species		Migratory	Migratory Marine		Cetacean	Species Profile and	In feature area
877	*Charadrius*	Greater Sand Plover,	Bird	Likely	Species or species	Vulnerable	Migratory	Migratory Wetlands	Listed		Species Profile and	In feature area
849	*Numenius phaeopus*	Whimbrel	Bird	Known	Roosting known to		Migratory	Migratory Wetlands	Listed		Species Profile and	In feature area
872	*Arenaria interpres*	Ruddy Turnstone	Bird	Known	Roosting known to	Vulnerable	Migratory	Migratory Wetlands	Listed		Species Profile and	In feature area
43	*Lagenorhynchus*	Dusky Dolphin	Mammal	May	Species or species		Migratory	Migratory Marine		Cetacean	Species Profile and	In feature area
851	*Tringa brevipes*	Grey-tailed Tattler	Bird	Known	Roosting known to		Migratory	Migratory Wetlands	Listed (as Heteroscelus		Species Profile and	In feature area
855	*Calidris canutus*	Red Knot, Knot	Bird	Known	Species or species	Vulnerable	Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and	In feature area
82404	*Ardenna carneipes*	Flesh-footed	Bird	Likely	Species or species		Migratory	Migratory Marine Birds	Listed (as Puffinus		Species Profile and	In feature area
858	*Calidris melanotos*	Pectoral Sandpiper	Bird	Known	Species or species		Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and	In feature area
64460	*Thalassarche bulleri*	Buller's Albatross,	Bird	Likely	Foraging, feeding or	Vulnerable	Migratory	Migratory Marine Birds	Listed		Species Profile and	In feature area
64459	*Thalassarche impavida*	Campbell Albatross,	Bird	May	Species or species	Vulnerable	Migratory	Migratory Marine Birds	Listed		Species Profile and	In feature area
64463	*Thalassarche salvini*	Salvin's Albatross	Bird	Likely	Foraging, feeding or	Vulnerable	Migratory	Migratory Marine Birds	Listed		Species Profile and	In feature area
64458	*Diomedea antipodensis*	Antipodean Albatross	Bird	Likely	Foraging, feeding or	Vulnerable	Migratory	Migratory Marine Birds	Listed		Species Profile and	In feature area
64462	*Thalassarche steadi*	White-capped Albatross	Bird	Known	Foraging, feeding or	Vulnerable	Migratory	Migratory Marine Birds	Listed		Species Profile and	In feature area
64464	*Thalassarche carteri*	Indian Yellow-nosed	Bird	Likely	Species or species	Vulnerable	Migratory	Migratory Marine Birds	Listed		Species Profile and	In feature area
895	*Charadrius bicinctus*	Double-banded Plover	Bird	Known	Roosting known to		Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and	In feature area
83288	*Lamna nasus*	Porbeagle, Mackerel	Shark	Likely	Species or species		Migratory	Migratory Marine			Species Profile and	In feature area
40	*Eubalaena australis*	Southern Right Whale	Mammal	Known	Species or species	Endangered	Migratory	(as Balaena	Migratory Marine	Cetacean	Species Profile and	In feature area
841	*Gallinago stenura*	Pin-tailed Snipe	Bird	Likely	Roosting likely to occur		Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and	In buffer area only
644	*Motacilla flava*	Yellow Wagtail	Bird	May	Species or species		Migratory	Migratory Terrestrial	Listed - overfly marine		Species Profile and	In feature area
64456	*Diomedea sanfordi*	Northern Royal	Bird	Likely	Foraging, feeding or	Endangered	Migratory	Migratory Marine Birds	Listed		Species Profile and	In feature area
848	*Numenius minutus*	Little Curlew, Little	Bird	Likely	Roosting likely to occur		Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and	In buffer area only
37	*Balaenoptera physalus*	Fin Whale	Mammal	Known	Foraging, feeding or	Vulnerable	Migratory	Migratory Marine		Cetacean	Species Profile and	In feature area
36	*Balaenoptera musculus*	Blue Whale	Mammal	Known	Foraging, feeding or	Endangered	Migratory	Migratory Marine		Cetacean	Species Profile and	In feature area
1765	*Chelonia mydas*	Green Turtle	Reptile	May	Species or species	Vulnerable	Migratory	Migratory Marine	Listed		Species Profile and	In feature area
34	*Balaenoptera borealis*	Sei Whale	Mammal	Known	Foraging, feeding or	Vulnerable	Migratory	Migratory Marine		Cetacean	Species Profile and	In feature area
856	*Calidris ferruginea*	Curlew Sandpiper	Bird	Known	Species or species	Critically Endangered	Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and	In feature area
845	*Limosa limosa*	Black-tailed Godwit	Bird	Known	Roosting known to	Endangered	Migratory	Migratory Wetlands	Listed - overfly marine		Species Profile and	In feature area
38	*Megaptera*	Humpback Whale	Mammal	Likely	Species or species		Migratory	Migratory Marine		Cetacean	Species Profile and	In feature area
1763	*Caretta caretta*	Loggerhead Turtle	Reptile	Likely	Breeding likely to occur	Endangered	Migratory	Migratory Marine	Listed		Species Profile and	In feature area

9.2 BDBSA Flora Species records within 5 km of the Project area.

Scientific Name	Common Name	Date of Last Record
Acacia leiophylla	Coast Golden Wattle	21/04/2015
Acacia longifolia ssp. sophorae	Coastal Wattle	5/10/2022
Acacia myrtifolia	Myrtle Wattle	21/04/2015
Acacia pycnantha	Golden Wattle	13/06/2017
Acacia verticillata ssp. ovoidea	Prickly Moses	21/04/2015
Acaena novae-zelandiae	Biddy-biddy	5/10/2022
Acrotriche affinis	Ridged Ground-berry	17/01/2022
Acrotriche cordata	Blunt-leaf Ground-berry	19/11/1997
Acrotriche serrulata	Cushion Ground-berry	21/04/2015
Actites megalocarpus	Coast Sow-thistle	28/10/1996
Aira cupaniana	Small Hair-grass	19/11/1997
Aira sp.	Hair-grass	17/01/2022
Ajuga australis f. B (R.L.Taplin 972)	Lesser Bugle	19/11/1997
Allium triquetrum	Three-cornered Garlic	20/10/2009
Allocasuarina muelleriana ssp. muelleriana	Common Oak-bush	19/11/1997
Allocasuarina verticillata	Drooping Sheoak	9/07/2021
Alyxia buxifolia	Sea Box	21/04/2015
Amyema pendula ssp. pendula	Drooping Mistletoe	19/11/1997
Angianthus preissianus	Salt Angianthus	26/11/2020
Apium prostratum var. prostratum	Native Celery	28/10/1996
Apodasmia brownii	Coarse Twine-rush	26/11/2020
Arctotheca calendula	Cape Weed	4/12/1999
Arctotheca populifolia	Beach Daisy	5/02/2012

Scientific Name	Common Name	Date of Last Record
Arthropodium strictum	Common Vanilla-lily	1/10/1998
Asperula conferta	Common Woodruff	5/10/2022
Asphodelus fistulosus	Onion Weed	4/12/1999
Austrostipa flavescens	Coast Spear-grass	26/11/2020
Austrostipa mollis	Soft Spear-grass	19/11/1997
Austrostipa mundula	Neat Spear-grass	19/11/1997
Austrostipa pubinodis	Long-shaft Spear-grass	1/10/1998
Austrostipa sp.	Spear-grass	9/07/2021
Austrostipa stipoides	Coast Spear-grass	28/10/1996
Avellinia festucoides	Avellinia	19/11/1997
Avena barbata	Bearded Oat	4/12/1999
Banksia marginata	Silver Banksia	21/04/2015
Beyeria lechenaultii	Pale Turpentine Bush	9/07/2021
Billardiera cymosa ssp.	Sweet Apple-berry	13/06/2017
Billardiera cymosa ssp. cymosa	Sweet Apple-berry	26/11/2020
Billardiera heterophylla	Blue-bell Creeper	2/11/2017
Billardiera sp.	Apple-berry	9/07/2021
Boraginaceae sp.	Borage Family	28/10/1996
Bossiaea prostrata	Creeping Bossiaea	19/11/1997
Brachyscome graminea	Grass Daisy	9/01/2008
Bromus diandrus	Great Brome	19/11/1997
Bromus hordeaceus ssp. hordeaceus	Soft Brome	19/11/1997
Burchardia umbellata	Milkmaids	1/10/1998
Bursaria spinosa ssp. spinosa	Sweet Bursaria	21/04/2015
Cakile maritima ssp. maritima	Two-horned Sea Rocket	28/10/1996
Caladenia dilatata complex	Green-comb Spider-orchid	19/11/1997
Caladenia latifolia	Pink Caladenia	28/10/1996
Carpobrotus rossii	Native Pigface	13/06/2017
Carpobrotus rossii (NC)	Native Pigface	28/10/1996
Cassytha glabella f. dispar	Slender Dodder-laurel	17/01/2022
Cassytha pubescens	Downy Dodder-laurel	19/11/1997
Centaurium erythraea	Common Centaury	19/11/1997
Centaurium sp.	Centaury	9/07/2021
Centaurium tenuiflorum	Branched Centaury	17/01/2022
Centella cordifolia	Native Centella	5/10/2022
Cerastium balearicum	Chickweed	28/10/1996
Chamaescilla corymbosa var. corymbosa	Blue Squill	19/11/1997
Cirsium vulgare	Spear Thistle	5/10/2022
Clematis microphylla	Old Man's Beard	5/10/2022
Clematis microphylla var. microphylla (NC)	Old Man's Beard	4/12/1999
Comesperma calymega	Blue-spike Milkwort	1/10/1998
Comesperma volubile	Love Creeper	19/11/1997
Coprosma repens	New Zealand Mirror-bush	20/10/2009
Correa reflexa (NC)	Common Correa	28/10/1996
Correa reflexa var.		21/04/2015
Correa reflexa var. reflexa	Common Correa	13/06/2017
Correa reflexa var. reflexa (NC)	Common Correa	19/11/1997
Corybas sp.	Helmet-orchid	28/10/1996
Crepis sp.	Hawksbeard	1/10/1998
Cuscuta campestris	Golden Dodder	26/11/2020
Cynodon dactylon (NC)	Couch	4/12/1999
Cynodon dactylon var.	Couch	5/10/2022

Scientific Name	Common Name	Date of Last Record
Cynoglossum australe	Australian Hound's-tongue	13/06/2017
Cynosurus echinatus	Rough Dog's-tail Grass	21/04/2015
Cyperus gunnii ssp. gunnii	Flecked Flat-sedge	26/11/2020
Dactylis glomerata	Cocksfoot	17/01/2022
Daucus glochidiatus	Native Carrot	19/11/1997
Daviesia ulicifolia (NC)	Gorse Bitter-pea	19/11/1997
Daviesia ulicifolia ssp.	Gorse Bitter-pea	21/04/2015
Daviesia ulicifolia ssp. ulicifolia	Gorse Bitter-pea	9/07/2021
Deyeuxia quadriseta	Reed Bent-grass	1/10/1998
Dianella brevicaulis	Short-stem Flax-lily	9/07/2021
Dianella revoluta var.		4/12/1999
Dianella revoluta var. revoluta	Black-anther Flax-lily	26/11/2020
Dichelachne crinita	Long-hair Plume-grass	21/04/2015
Dichelachne sp.	Plume-grass	17/01/2022
Dichondra repens	Kidney Weed	21/04/2015
Dillwynia hispida	Red Parrot-pea	19/11/1997
Dimorphotheca fruticosa	Trailing African Daisy	17/01/2022
Distichlis distichophylla	Emu-grass	5/10/2022
Drosera macrantha ssp. planchonii	Climbing Sundew	19/11/1997
Epilobium billardierianum ssp. billardierianum	Robust Willow-herb	5/10/2022
Epilobium sp.	Willow-herb	19/11/1997
Erigeron sp.	Fleabane	19/11/1997
Eucalyptus arcana	Carpenters Rocks Manna Gum	1/09/2014
Eucalyptus obliqua	Messmate Stringybark	21/04/2015
Eucalyptus ovata (NC)	Swamp Gum	4/12/1999
Euphorbia paralias	Sea Spurge	5/10/2022
Eutaxia microphylla	Common Eutaxia	17/01/2022
Exocarpos cupressiformis	Native Cherry	21/04/2015
Exocarpos syrticola	Coast Cherry	19/11/1997
Festuca sp.	Fescue	13/06/2017
Ficinia nodosa	Knobby Club-rush	5/10/2022
Gahnia filum	Thatching Grass	5/10/2022
Gahnia trifida	Cutting Grass	5/10/2022
Galium aparine	Cleavers	5/10/2022
Galium compactum	Compact Bedstraw	19/11/1997
Galium murale	Small Bedstraw	28/10/1996
Gazania sp.	Gazania	17/01/2022
Geranium solanderi	Austral Geranium	26/11/2020
Gomphocarpus fruticosus	Narrow-leaf Cotton-bush	9/01/2008
Gonocarpus sp.	Raspwort	5/10/2022
Gonocarpus tetragynus	Small-leaf Raspwort	1/10/1998
Goodenia blackiana	Native Primrose	1/10/1998
Goodenia radicans	Shiny Swamp-mat	5/10/2022
Gramineae sp.	Grass Family	28/10/1996
Grevillea aquifolium	Prickly Grevillea	17/01/2022
Halopteris ramulosa		29/03/2012
Hibbertia sericea	Silky Guinea-flower	19/11/1997
Hibbertia sp.	Guinea-flower	1/10/1998
Hirschfeldia incana	Hoary Mustard	5/10/2022
Holcus lanatus	Yorkshire Fog	5/10/2022
Hydrocotyle laxiflora	Stinking Pennywort	19/11/1997
Hypericum gramineum	Small St John's Wort	21/04/2015

Scientific Name	Common Name	Date of Last Record
Hypochaeris glabra	Smooth Cat's Ear	13/06/2017
Hypochaeris radicata	Rough Cat's Ear	9/07/2021
Hypochaeris sp.	Cat's Ear	28/10/1996
Isolepis cernua	Nodding Club-rush	5/10/2022
Isopogon ceratophyllus	Horny Cone-bush	19/11/1997
Juncus kraussii	Sea Rush	5/10/2022
Kennedia prostrata	Scarlet Runner	9/07/2021
Kunzea pomifera	Muntries	17/01/2022
Lachnagrostis aemula	Blown-grass	19/11/1997
Lachnagrostis aemula (NC)	Blown-grass	19/11/1997
Lagurus ovatus	Hare's Tail Grass	5/10/2022
Lasiopetalum discolor	Coast Velvet-bush	28/10/1996
Lasiopetalum schulzenii	Drooping Velvet-bush	17/01/2022
Lawrencia spicata	Salt Lawrencia	5/10/2022
Laxmannia orientalis	Dwarf Wire-lily	19/11/1997
Leontodon saxatilis	Lesser Hawkbit	26/11/2020
Lepidosperma concavum (NC)	Spreading Sword-sedge	19/11/1997
Lepidosperma gladiatum	Coast Sword-sedge	5/10/2022
Lepidosperma sp.	Sword-sedge/Rapier-sedge	21/04/2015
Lepidosperma viscidum	Sticky Sword-sedge	9/07/2021
Leptocarpus tenax	Slender Twine-rush	5/10/2022
Leptospermum continentale	Prickly Tea-tree	19/11/1997
Leptospermum laevigatum	Coast Tea-tree	17/01/2022
Leptospermum lanigerum	Silky Tea-tree	5/10/2022
Leucophyta brownii	Coast Cushion Bush	28/10/1996
Leucopogon affinis	Lance Beard-heath	19/11/1997
Leucopogon parviflorus	Coast Beard-heath	5/10/2022
Linum marginale	Native Flax	1/10/1998
Lobelia anceps	Angled Lobelia	26/11/2020
Logania ovata	Oval-leaf Logania	9/07/2021
Lolium arundinaceum	Tall Meadow Ryegrass	5/10/2022
Lolium pratense	Meadow Ryegrass	19/11/1997
Lolium rigidum	Wimmera Ryegrass	19/11/1997
Lomandra collina	Sand Mat-rush	19/11/1997
Lomandra longifolia	Spiny-headed Mat-rush	21/04/2015
Lomandra micrantha ssp. micrantha	Small-flower Mat-rush	9/07/2021
Lomandra nana	Small Mat-rush	21/04/2015
Lotus australis	Austral Trefoil	28/10/1996
Lycium ferocissimum	African Boxthorn	5/10/2022
Lysimachia arvensis	Pimpernel	19/11/1997
Machaerina arthrophylla	Swamp Twig-rush	5/10/2022
Machaerina juncea	Bare Twig-rush	5/10/2022
Malus pumila	Apple	20/10/2009
Malva preissiana	Australian Hollyhock	21/04/2015
Marrubium vulgare	Horehound	13/06/2017
Medicago lupulina	Black Medic	19/11/1997
Medicago sp.	Medic	26/11/2020
Melaleuca brevifolia	Short-leaf Honey-myrtle	13/06/2017
Melaleuca gibbosa	Slender Honey-myrtle	13/06/2017
Melaleuca halmaturorum	Swamp Paper-bark	5/10/2022
Melaleuca lanceolata	Dryland Tea-tree	17/01/2022
Melaleuca lanceolata ssp. lanceolata (NC)	Dryland Tea-tree	26/09/2000

Scientific Name	Common Name	Date of Last Record
Melilotus indicus	King Island Melilot	19/11/1997
Metagoniolithon stelliferum		5/03/1995
Muehlenbeckia adpressa	Climbing Lignum	5/10/2022
Myoporum insulare	Common Boobialla	5/10/2022
Oenothera stricta ssp. stricta	Common Evening Primrose	4/12/1999
Olearia axillaris	Coast Daisy-bush	5/10/2022
Opercularia turpis	Twiggy Stinkweed	19/11/1997
Opercularia varia	Variable Stinkweed	19/11/1997
Oxalis latifolia	Fish-tail Oxalis	9/07/2021
Oxalis perennans/exilis	Native Oxalis	19/11/1997
Ozothamnus ferrugineus	Tree Everlasting	5/10/2022
Ozothamnus turbinatus	Coast Bush-everlasting	5/10/2022
Paspalum dilatatum	Paspalum	4/12/1999
Pelargonium australe	Austral Stork's-bill	19/11/1997
Pelargonium australe (NC)	Austral Stork's-bill	13/06/2017
Phalaris aquatica	Phalaris	9/07/2021
Phalaris minor	Lesser Canary-grass	19/11/1997
Picris angustifolia ssp. angustifolia	Coast Picris	1/10/1998
Pimelea glauca	Smooth Riceflower	19/11/1997
Pimelea serpyllifolia ssp. serpyllifolia	Thyme Riceflower	28/10/1996
Pinus radiata	Radiata Pine	17/01/2022
Pittosporum crassifolium		20/10/2009
Plantago coronopus ssp.	Bucks-horn Plantain	13/06/2017
Plantago coronopus ssp. coronopus	Bucks-horn Plantain	5/10/2022
Plantago lanceolata var.	Ribwort	13/06/2017
Plantago lanceolata var. lanceolata	Ribwort	5/10/2022
Poa crassicaudex	Thick-stem Tussock-grass	21/04/2015
Poa labillardieri var. labillardieri	Common Tussock-grass	5/10/2022
Poa poiformis var. poiformis	Coast Tussock-grass	19/11/1997
Poa pratensis	Kentucky Blue-grass	19/11/1997
Poa sp.	Meadow-grass/Tussock-grass	13/06/2017
Polygala myrtifolia	Myrtle-leaf Milkwort	17/01/2022
Pomaderris halmaturina ssp.	Glenelg Pomaderris	19/11/1997
Pomaderris halmaturina ssp. halmaturina	Kangaroo Island Pomaderris	21/04/2015
Pomaderris sp.	Pomaderris	26/11/2020
Pteridium esculentum ssp. esculentum	Bracken Fern	21/04/2015
Pultenaea hispidula	Rusty Bush-pea	1/10/1998
Pultenaea tenuifolia	Narrow-leaf Bush-pea	19/11/1997
Rapistrum rugosum ssp. rugosum	Turnip Weed	19/11/1997
Rhagodia candolleana ssp.	Sea-berry Saltbush	13/06/2017
Rhagodia candolleana ssp. candolleana	Sea-berry Saltbush	5/10/2022
Rumex brownii	Slender Dock	5/10/2022
Rumex crispus	Curled Dock	13/06/2017
Rytidosperma caespitosum	Common Wallaby-grass	17/01/2022
Rytidosperma caespitosum (NC)	Common Wallaby-grass	1/10/1998
Rytidosperma erianthum	Hill Wallaby-grass	19/11/1997
Rytidosperma geniculatum	Kneed Wallaby-grass	1/10/1998
Rytidosperma racemosum var. racemosum	Slender Wallaby-grass	21/04/2015
Rytidosperma setaceum	Small-flower Wallaby-grass	1/10/1998
Rytidosperma sp.	Wallaby-grass	9/07/2021
Sambucus gaudichaudiana	White Elderberry	20/10/2009
Samolus repens	Creeping Brookweed	5/10/2022

Scientific Name	Common Name	Date of Last Record
Scaevola albida	Pale Fanflower	17/01/2022
Scaevola albida var. pallida	Coast Fanflower	19/11/1997
Schoenoplectus pungens	Spiky Club-rush	20/10/2009
Schoenus apogon	Common Bog-rush	5/10/2022
Schoenus nitens	Shiny Bog-rush	5/10/2022
Sebaea ovata	Yellow Sebaea	1/10/1998
Senecio elegans	Purple Groundsel	20/10/2009
Senecio glomeratus (NC)	Swamp Groundsel	19/11/1997
Senecio glomeratus ssp. glomeratus	Swamp Groundsel	5/10/2022
Senecio minimus	Fine-tooth Groundsel	26/11/2020
Senecio pinnatifolius (NC)	Variable Groundsel	28/10/1996
Sisymbrium officinale	Hedge Mustard	4/12/1999
Sixalix atropurpurea	Pincushion	5/10/2022
Solanum laciniatum	Cut-leaf Kangaroo-apple	21/04/2015
Sonchus asper ssp. glaucescens	Rough Sow-thistle	19/11/1997
Sonchus oleraceus	Common Sow-thistle	19/11/1997
Stackhousia aspericocca ssp. One-sided inflorescence (W.R.Barker 697)	One-sided Candles	1/10/1998
Stenotaphrum secundatum	Buffalo Grass	9/07/2021
Stylidium armeria ssp. armeria	Grass Trigger-plant	1/10/1998
Stylidium graminifolium	Grass Trigger-plant	19/11/1997
Stylidium graminifolium (NC)	Grass Trigger-plant	19/11/1997
Styphelia humifusa	Cranberry Heath	9/07/2021
Swainsona lessertiifolia	Coast Swainson-pea	28/10/1996
Tetragonia implexicoma	Bower Spinach	5/10/2022
Tetragonia tetragonioides (NC)	New Zealand Spinach	4/12/1999
Tetraria capillaris	Hair Sedge	19/11/1997
Thelymitra pauciflora	Slender Sun-orchid	1/10/1998
Themeda triandra	Kangaroo Grass	17/01/2022
Thinopyrum junceiforme	Sea Wheat-grass	20/10/2009
Thomasia petalocalyx	Paper-flower	9/07/2021
Threlkeldia diffusa	Coast Bonefruit	28/10/1996
Thysanotus patersonii	Twining Fringe-lily	21/04/2015
Tricoryne tenella	Tufted Yellow Rush-lily	19/11/1997
Trifolium campestre	Hop Clover	13/06/2017
Trifolium glomeratum	Cluster Clover	19/11/1997
Trifolium sp.	Clover	5/10/2022
Triglochin striata	Streaked Arrowgrass	5/10/2022
Veronica calycina	Hairy Speedwell	21/04/2015
Veronica gracilis	Slender Speedwell	26/11/2020
Viola hederacea	Ivy-leaf Violet	1/10/1998
Viola hederacea (NC)	Ivy-leaf Violet	1/10/1998
Vulpia fasciculata	Sand Fescue	28/10/1996
Vulpia muralis	Wall Fescue	19/11/1997
Vulpia myuros f.	Fescue	4/12/1999
Wahlenbergia gracilenta	Annual Bluebell	19/11/1997
Wilsonia backhousei	Narrow-leaf Wilsonia	5/10/2022

9.3 BDBSA Fauna Species records within 5 km of the Project area.

Scientific Name	Common Name	Date of Last Record
FISH		
Atherinosoma microstoma	Smallmouth Hardyhead	24/08/2016
Galaxias maculatus	Common Galaxias	24/08/2016
Galaxiella toourtkoourt	Little Galaxias	24/08/2016
Nannoperca australis	Southern Pygmy Perch	24/08/2016
FROG		
Crinia signifera	Common Froglet	5/10/2022
Limnodynastes dumerilii	Banjo Frog	5/09/2005
Limnodynastes peronii	Striped Marsh Frog	5/09/2005
Limnodynastes tasmaniensis	Spotted Marsh Frog	5/09/2005
Litoria ewingii	Brown Tree Frog (SE)	5/09/2005
Neobatrachus sudellae	Sudell's Frog	10/09/2001
BIRD		
Acanthagenys rufogularis	Spiny-cheeked Honeyeater	8/02/1997
Acanthiza pusilla pusilla	Brown Thornbill (SE, Coorong)	8/02/1997
Acanthorhynchus tenuirostris tenuirostris	Eastern Spinebill (SE)	8/02/1997
Anthochaera carunculata	Red Wattlebird	17/01/2022
Anthochaera chrysoptera chrysoptera	Little Wattlebird (mainland SA)	8/02/1997
Anthus australis	Australian Pipit	22/07/1997
Apus pacificus pacificus	Pacific Swift	8/02/1997
Biziura lobata menziesi	Musk Duck	24/08/2003
Calamanthus fuliginosus bourneorum	Striated Fieldwren	26/04/2006
Calidris minuta	Little Stint	2/10/2001
Calidris tenuirostris	Great Knot	19/06/2002
Caligavis chrysops chrysops	Yellow-faced Honeyeater (SE)	8/02/1997
Carduelis carduelis britannica	European Goldfinch	22/07/1997
Chalcites basalis	Horsfield's Bronze Cuckoo	22/07/1997
Chalcites lucidus plagosus	Shining Bronze Cuckoo	24/08/2003
Charadrius ruficapillus	Red-capped Plover	15/11/2014
Chroicocephalus novaehollandiae novaehollandiae	Silver Gull	20/07/1997
Circus approximans	Swamp Harrier	8/02/1997
Circus assimilis	Spotted Harrier	19/06/2002
Cisticola exilis exilis	Golden-headed Cisticola	26/04/2006
Colluricincla harmonica	Grey Shrikethrush	8/02/1997
Columba livia	Feral Pigeon	5/02/1997
Corvus coronoides	Australian Raven	26/11/2020
Corvus mellori	Little Raven	5/02/1997
Corvus tasmanicus tasmanicus	Forest Raven	5/02/1997
Cygnus atratus	Black Swan	1/11/2022
Dasyornis broadbenti (NC)	Rufous Bristlebird	30/05/2004
Egretta novaehollandiae	White-faced Heron	1/11/2022
Eopsaltria australis australis	Eastern Yellow Robin	5/02/1997

Scientific Name	Common Name	Date of Last Record
Eudyptes pachyrhynchus	Fiordland Penguin	17/07/2023
Eudyptula minor novaehollandiae	Little Penguin	5/02/1997
Falco berigora berigora	Brown Falcon	5/10/2022
Falco longipennis murchisonianus	Australian Hobby	8/02/1997
Gallinago hardwickii	Latham's Snipe	1/09/2022
Gavicalis virescens	Singing Honeyeater	5/10/2022
Glossopsitta concinna	Musk Lorikeet	5/02/1997
Grallina cyanoleuca cyanoleuca	Magpielark	5/02/1997
Gymnorhina tibicen	Australian Magpie	8/02/1997
Haematopus fuliginosus fuliginosus	Sooty Oystercatcher	10/11/2012
Haematopus longirostris	Pied Oystercatcher	16/11/2014
Halobaena caerulea	Blue Petrel	6/09/2000
Hirundapus caudacutus caudacutus	White-throated Needletail	16/02/2005
Hirundo neoxena neoxena	Welcome Swallow	5/02/1997
Larus dominicanus dominicanus	Kelp Gull	4/04/2001
Larus pacificus georgii	Pacific Gull	26/04/2006
Limosa lapponica	Bar-tailed Godwit	17/01/2003
Malurus cyaneus	Superb Fairywren	5/10/2022
Malurus cyaneus leggei	Superb Fairywren (Mainland SA)	22/07/1997
Malurus sp.	fairywrens	22/07/1997
Numenius madagascariensis	Far Eastern Curlew	27/07/2002
Onychoprion anaethetus anaethetus	Bridled Tern	24/12/2001
Onychoprion fuscatus serratus	Sooty Tern	12/01/2001
Pachycephala fuliginosa (NC)	Western Whistler	5/10/2022
Pachycephala olivacea hesperus	Olive Whistler	5/10/2022
Pachycephala pectoralis youngi	Australian Golden Whistler	17/01/2022
Pachycephala rufiventris (NC)	Rufous Whistler	26/11/2020
Phalacrocorax carbo	Great Cormorant	5/02/1997
Phaps chalcoptera	Common Bronzewing	17/01/2022
Phaps elegans elegans	Brush Bronzewing	30/05/2004
Phylidonyris novaehollandiae novaehollandiae	New Holland Honeyeater (mainland SA)	5/02/1997
Rhipidura albiscapa	Grey Fantail	8/02/1997
Rhipidura leucophrys leucophrys	Willie Wagtail	20/07/1997
Sericornis frontalis	White-browed Scrubwren	5/10/2022
Sericornis frontalis (NC)	White-browed Scrubwren	8/02/1997
Stagonopleura bella interposita	Beautiful Firetail (SE)	30/05/2004
Stipiturus malachurus polionotum	Southern Emuwren (South East)	19/07/1997
Sturnus vulgaris vulgaris	Common Starling	5/02/1997
Thalassarche cauta cauta	Shy Albatross	25/03/2003
Todiramphus sanctus sanctus	Sacred Kingfisher	17/06/2002
Turdus merula merula	Common Blackbird	9/07/2021
Zosterops lateralis	Silvereye	5/10/2022
MAMMAL		
Antechinus minimus maritimus	Swamp Antechinus (mainland)	1/05/2010

Scientific Name	Common Name	Date of Last Record
Felis catus	Domestic Cat (Feral Cat)	8/02/1997
Lepus europaeus	European Brown Hare	5/02/1997
Mus musculus	House Mouse	22/07/1997
Rattus fuscipes	Bush Rat	22/07/1997
Rattus lutreolus	Swamp Rat	26/11/2020
Rattus rattus	Black Rat (Ship Rat, Roof Rat)	22/07/1997
Rattus sp.		26/03/1997
Tachyglossus aculeatus	Short-beaked Echidna	26/11/2020
Vulpes vulpes	Fox (Red Fox)	7/02/1997
REPTILE		
Acritoscincus duperreyi	Eastern Three-lined Skink	5/02/1997
Hemiergis peronii	Four-toed Earless Skink	7/02/1997
Lerista bougainvillii	Bougainville's Skink	5/02/1997
Lissolepis coventryi	Swamp Skink	5/02/1997