Native Vegetation Clearance

Hunter Road and Burdett Road Betterment Project – Cowirra

Data Report

Clearance under the *Native Vegetation Regulations 2017*

12/09/2025

Prepared by Ecosphere Ecological Solutions

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1 Application Information

Table 1. Application details.

Applicant:	Department of Infrastructure and Transport (DIT)		
Key contact:	Senior Environmental Advisor Planning and Technical Services Directorate Pirie Street, Adelaide SA 5001 • GPO Box 1533, Adelaide SA 5001 • DX 171		
Landowner:	Crown Reserve		
Site Address:	Hunter and Burdett Roads, Cowirra		
Local Government Area:	Mid Murray Council	**Hundred:**	Younghusband
Title ID:	Public Road or other Tenure Adjacent Title: CT6085/58	**Parcel ID:**	N/A D85985 Q4

Table 2. Summary of proposed clearance.

Purpose of clearance	Clearance required for road upgrade works including pavement maintenance and the construction of rock batters and a concrete wall.
Native Vegetation Regulation	Regulation 8(2) – Maintenance of infrastructure. Regulation 12(32) – Works on behalf of the Commissioner of Highways.
Description of the vegetation under application	*Eucalyptus camaldulensis* (River Red Gum) Woodland +/- *Eucalyptus largiflorens* (Black or River Box) over *Duma florulenta* (Lignum) *Atriplex rhagodioides* (River Saltbush) and emergent indigenous and exotic herbaceous species.
Total proposed clearance - area (ha) and number of trees	0.377 hectares of Eucalyptus open woodland, removal of one tree and root or canopy pruning of up to 24 individual scattered trees and one group four trees.
Level of clearance	Level 4
Overlay (Planning and Design Code)	Native Vegetation Overlay

Mitigation hierarchy	The project involves the establishment of infrastructure that meet national standards and guidelines. Planning has been undertaken that avoids vegetation of the highest value with other planning considerations incorporated into overall planning including limitations around water management and hydrology, cultural heritage, vegetation and threatened species. Given these values often overlap, the general recommendations are for retention of large established trees where possible with impacts to shorter lived or easily regenerated species where possible. This allows for shorter term impacts and almost complete rehabilitation of construction areas to more recent conditions. Minimization of impacts associated with the project include weed management and restoration of degraded areas through reductions to erosion and siltation. Works will be contained within maintenance zones wherever possible. A project CEMP will be initialized for all contractors and DIT construction teams to adhere to and provide for incident control management.
SEB Offset proposal	Payment of $ $41,047.71 into the Native Vegetation Fund

2 Purpose of Clearance

2.1 Description

Ecosphere Ecological Solutions (Ecosphere) were engaged by Arup to undertake a vegetation assessment for works associated with road repairs and upgrades required after the 2022/23 Murray River flood event on Hunter and Burdett Roads (i.e., the Project area) in the town of Cowirra, located approximately 67 km east of the Adelaide CBD, South Australia (Figure 1).

2.2 Background

2.2.1 Interim Biogeographic Regionalisation for Australia (IBRA)

The Interim Biogeographic Regionalisation for Australia (IBRA) identifies geographically distinct bioregions based on common climate, geology, landform, native vegetation and species information. The bioregions are further refined into subregions and environmental associations.

The Project area is located within the Murray Darling Depression bioregion and the Murray Mallee subregion, which has 21 % native vegetation cover, of which 17 % is formally protected in reserves or heritage agreements.

It is within the Lower Murray environmental association which has 8 % native vegetation cover, of which none is formally protected in reserves or heritage agreements.

2.2.2 National Vegetation Information System (NVIS)

The National Vegetation Information System (NVIS) is a comprehensive data system that provides information of the extent and distribution of native vegetation in Australian landscapes. The NVIS mapped the vegetation within the Project area as:

- *Eucalyptus camaldulensis* var. *camaldulensis* mid open forest over *Duma florulenta* tall shrubs and *Phragmites australis* tall grasses.
- *Tecticornia pergranulata* ssp. *pergranulata* +/- *Hordeum marinum* +/- *Suaeda australis* +/- *Disphyma crassifolium* ssp. *clavellatum* low open shrubland.
- *Duma florulenta* tall shrubland over *Enchylaena tomentosa* var. *tomentosa* (mixed) low shrubs.
- Emergent *Duma florulenta* tall open shrubland over *Phragmites australis* tall closed grassland and *Bolboschoenus caldwellii* low sedges.
- *Atriplex rhagodioides* mid open shrubland over *Enchylaena tomentosa* var. *tomentosa* low shrubs.

2.2.3 Roadside Significant Site Database

No roadside significant sites were identified within proximity to the Project area.

2.3 General Location

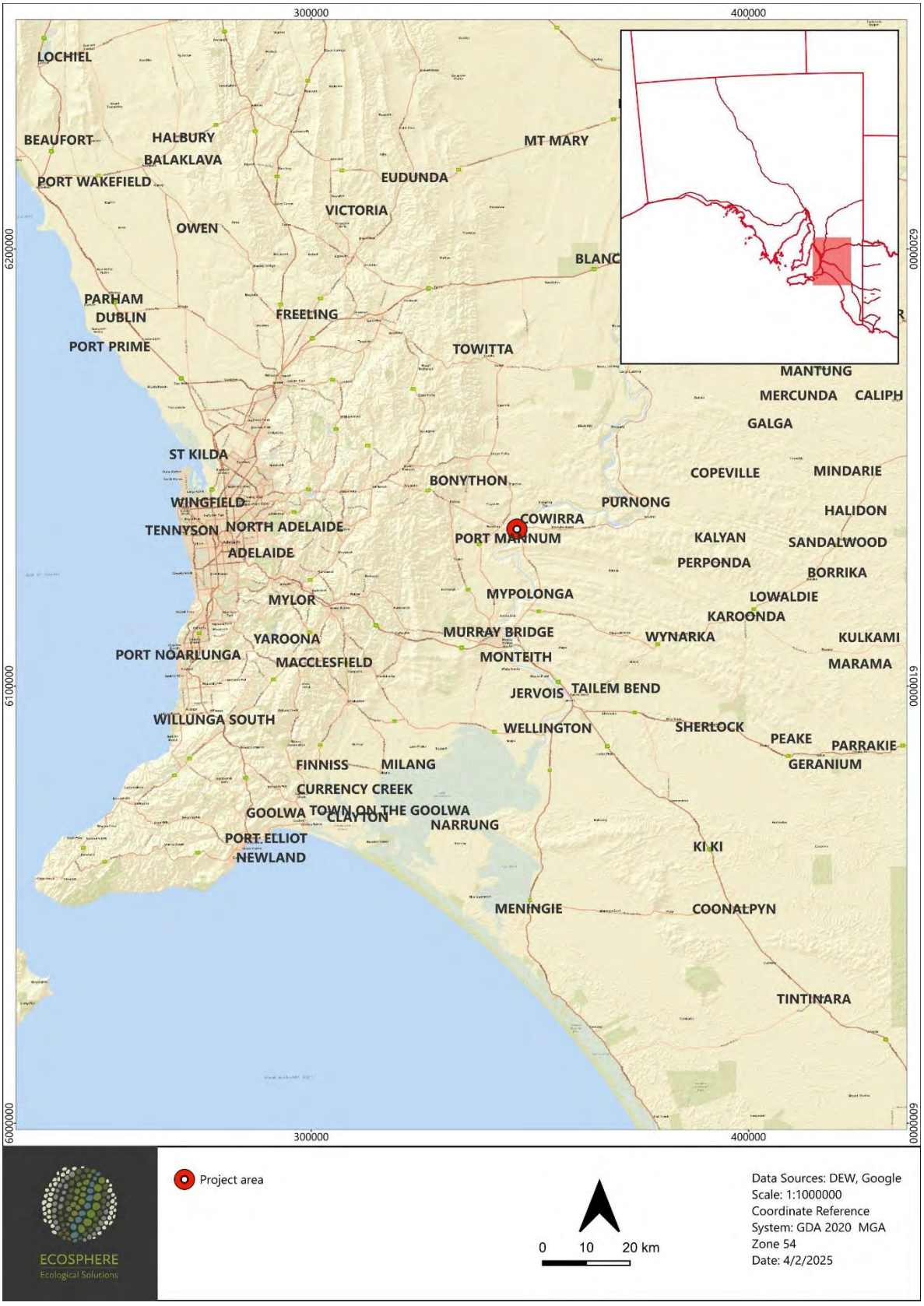

Figure 1. General location of the project on the eastern side of the River Murray at Cowirra

Figure 2. General project location near junction of Hunter and Burdett Roads, Cowirra

2.4 Details of the Proposal

During the 2022/23 summer floods of the Murray River Hunter Road sustained severe damage. To improve long-term resilience and access for road users and residents in the area, the Department for Infrastructure and Transport (DIT) will strengthen Hunter Road with construction of a rock batter and concrete wall on the eastern extent of the road. Burdett Road will also be slightly lifted with a batter constructed on both sides of the road (Figure 3).

Approximately 1.1 km of Hunter Road and 0.3 km of Burdett Road will be upgraded with a 10 m buffer each side of the existing roadway assessed as a potential impacted zone as part of baseline vegetation assessments which aim to refine the design and minimise impacts to vegetation as part of the planning process. Thus, works will occur outside of the existing road footprint and some environmental impacts are unavoidable but will be limited where possible.

Figure 3. Project extent at the junction of Hunter and Burdett Road

2.5 Approvals Required or Obtained

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

- *Native Vegetation Act 1991* (NV Act) (Clearance under the act is the subject of the current proposal)
- *Planning, Development and Infrastructure Act 2016* (PDI Act) (Development approval required for the current project however not under the significant and regulated tree overlay)
- *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (Desktop assessment and field survey undertaken to determine if Matters of National environmental Significance (MNES) occur within the Project area)
- *National Parks and Wildlife Act 1972* (NP&W Act) (Desktop assessment and field survey undertaken to determine if state level threatened flora and fauna occur within the Project area)
- *Landscape South Australia Act 2019* (LSA Act) (Desktop assessment and field survey undertaken to determine if weeds or exotic fauna of concern occur within the Project area)

2.6 Native Vegetation Regulation

The Native Vegetation Regulation under which the proposed clearance is suggested to be assessed is:

- Regulation 8, Schedule 1; Clause 2 – Maintenance of Infrastructure

  To allow clearance of vegetation incidental to the repair or maintenance of infrastructure, or the repair or maintenance work of the Crown.

- Regulation 12, Schedule 1; Clause 32 – Works on behalf of the Commissioner of Highways.

  To allow clearance of vegetation incidental to new work being undertaken by or on behalf of the Commissioner of Highways including roads and ports infrastructure.

2.7 Development Application Information

Under the PDI Act the Project area (a public road) is zoned Conservation (Con) and Rural (Ru) and falls within the Native Vegetation Overlay.

2.8 Legislative Context

This report has been prepared in accordance with the legislation outlined in Table 3 below.

Table 3. Legislation applicable to the Project.

Legislation	Relevance of Legislation
Commonwealth	
Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)	Provides for the protection of the environment and the conservation of biodiversity. Any action that has, will have, or is likely to have a significant impact on MNES requires referral under the EPBC Act. Assessments are undertaken with reference to *Significant Impact Guidelines 1.1 Matters of National Environmental Significance* (2013) (SIG 1.1) (DoE 2013).
South Australia	
Landscape South Australia Act 2019 (LSA Act)	Under the LSA Act landholders have a legal responsibility to manage declared pest plants and animals and prevent land and water degradation.
National Parks and Wildlife Act 1972 (NPW Act)	Provides for the establishment and management of reserves for public benefit and enjoyment; to provide for the conservation of wildlife in a natural environment; and for other purposes. The presence of state rated flora and fauna identified under the NPW Act is used in the vegetation assessment process under the NV Act.
Native Vegetation Act (NV Act)	Provides protection for native vegetation in SA and sets out a process for applying to clear native vegetation. The NV Act ensures that areas of high conservation value are protected, and that clearances are subject to a thorough assessment process. The Project area is located in an area covered by the NV Act. Clearance may be permitted without condition under the NV Act regulation 8(2) (maintenance of infrastructure) in some parts of the Project area (within the maintenance zone). This exemption has the following additional requirements: • Clearance can occur in the vicinity of that which was previously lawfully cleared in relation to the construction, repair or maintenance of the infrastructure. • Clearance must only be plants or parts of plants that have grown or regrown since the previous lawful clearance and/or • Clearance is undertaken in accordance with an NVC-approved Standard Operating Procedure. New works would require approval and a SEB under the NV Act regulation 12(32) (works on behalf of the Commissioner of Highways). This regulation has the following additional requirements: • Clearance of vegetation incidental to new work being undertaken by or on behalf of the Commissioner of Highways; and/or • Clearance is undertaken in accordance with an NVC-approved Standard Operating Procedure (i.e., DIT's Vegetation Impact Assessment Guideline VIAG)).

3 Methods

3.1 Desktop Assessment

A desktop assessment was used to search for records of threatened communities, flora, fauna, and 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 Protected Matters Search Tool (PMST) report was generated on the 15th of January 2025 to identify MNES under EPBC Act relevant to the Project area (DCCEEW 2025). The PMST is maintained by the Department of Climate Change, Energy the Environment and Water (DCCEEW) and was used to identify threatened flora, fauna, ecological communities or wetlands of national environmental significance that may occur or are likely to have suitable habitat within 5 km of the Project area. Results were further refined by considering only those species which the PMST considered as having habitat known to occur within the area of interest as per the Bushland Assessment Method (BAM) (NVC 2024). The results returned by the PMST are based on a modelled distribution of each community and each flora and fauna species 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 species listed under the EPBC Act and NP&W Act available in the Biological Database of South Australia (BDBSA) were assessed using the NatureMaps Supertable obtained through the general query tool on NatureMaps (2025). The dataset was obtained on the 15th of January 2025 and was used to identify threatened species that have been recorded within 5 km of the Project area as per the Bushland Assessment Method (BAM) (NVC 2024).

The BDBSA is comprised of an integrated collection of corporate databases which meet the Department for Environment and Water (DEW) standards for data quality, integrity and maintenance. In addition to DEW biological data the BDBSA also includes data from partner organisations (BirdLife 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.

3.2 Assessment of the Likelihood of Occurrence

A likelihood of occurrence assessment for each threatened flora and fauna species highlighted by the PMST and BDBSA as potentially occurring in the Project area was conducted. This assessment was used to filter the outputs of the PMST and BDBSA results to derive a subset of species with potential to occur in the Project area for consideration during the field survey. The assessment was subsequently updated with habitat suitability information obtained during the field survey.

A likelihood of occurrence rating (Known, Highly Likely, Likely, Possible, and Unlikely) was assigned to each threatened species identified in the desktop PMST and BDBSA search (Table 4).

Table 4. 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). Citeria also apply for subspecies.

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

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 via the PMST and the BDBSA 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 significant species occur within the Project area that were not reflected by database records.

3.4 Field Survey

The field survey was undertaken by Ecosphere ecologists Andrew Sinel and Nina Maurovic on the 30th of January 2025.

A reconnaissance search around the general footprint was undertaken to become familiarised with the area, noting the general topography, vegetation structures and stratums present and any other features likely to present as being of higher ecological value or importance.

The vegetation survey was performed in accordance with the BAM (NVC 2024a) and the Scattered Tree Assessment Method (STAM) (NVC 2024b).

The BAM was designed for assessing areas of native vegetation located within the agricultural region of South Australia in addition to the Port Augusta City Council and the Flinders Ranges Council. 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
- 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.

The STAM is suitable for assessing scattered trees in the following instances:

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

4 Assessment Outcomes

4.1 Vegetation Assessment

The project is located partly along the River Murray corridor and has a variety of land uses including industrial, residential, recreational and transport. The assessment was undertaken in two parts, firstly as a scattered tree assessment which included areas of scattered trees in carparks, over exotic understorey and in areas of indigenous vegetation stratums where individual trees may be impacted through root zone or canopy impacts outside of the actual disturbance footprint. Areas of woodland over indigenous understorey was assessed both as a scattered tree assessment to determine tree protection and structural root zone areas and as a bushland assessment for clearance footprints and offset calculations. Some areas had individual *Duma florulenta* (Lignum) shrubs which were surveyed as individual trees however were included within bushland assessment metrics rather than as scattered trees due to their habit being unsuitable for assessment using this method.

4.2 Vegetation Associations

Five vegetation associations were recorded within the entire project footprint and surrounding 10m buffer (Figure 4 to Figure 6). Three associations were assessed as bushland (BAM) sites and scattered tree assessments, one was recorded as scattered trees only and one was recorded as amenity trees only. A total of 0.482 hectares is covered by the extent of the project footprint area (Table 5).

0.377 hectares of indigenous vegetation falls within the project footprint, most of which was in moderate condition. A loss factor of 0.8 has been applied whereby clearance of at least one stratum of the vegetation in the application area will not be impacted. A reduction of 0.5 has been applied for rehabilitation and ecological restoration of the clearance site is initiated within 3 years of the clearance occurring.

None of the vegetation associations recorded within the Project area were associated with a Threatened Ecological Community under the EPBC Act.

Table 5. Vegetation Association Summary

Veg Assoc#	BAM site	Description	Area (ha)	Subject to NV Act
1	Not scored / amenity	Amenity panted species as scattered trees or garden beds	431.8	0
2	Not scored / amenity	*Eucalyptus camaldulensis* (River Red Gum) Woodland over exotic emergent grass and herbaceous species or maintained surfaces	616.6	0
3	1	*Eucalyptus camaldulensis* (River Red Gum) Woodland over *Phragmites australis* (Common Reed), *Duma florulenta* (Lignum).	757.2	757.2
4	2	*Eucalyptus camaldulensis* (River Red Gum) Very Open Woodland over *Duma florulenta* (Lignum) +/- *Atriplex rhagodioides* (River Saltbush)	2110.3	2110.3
5	3	*Eucalyptus camaldulensis* (River Red Gum) / *Eucalyptus largiflorens* (Black Box) Very Open emergent Woodland over *Atriplex rhagodioides* (River Saltbush)	900.3	900.3
		Total	0.482	0.377

BAM Site 1 (Assoc 3)	***Eucalyptus camaldulensis* (River Red Gum) Woodland over *Phragmites australis* (Common Reed), *Duma florulenta* (Lignum).**

General description	Fringing river vegetation consisting of large Red Gum trees with mostly intact understorey typical of Murray riparian zone dominated by *Phragmites* rushes and Lignum. Generally, falls outside of the project footprint and minor works associated with revetment are generally within existing maintenance zones. No impact anticipated for this community other than minor rush or lignum removal along road shoulder.				
Threatened species or community	No threatened species recorded within this area during the field survey. Threatened fauna species likely to be recorded within this zone based on historical records include: • Australasian Darter (*Anhinga novaehollandiae novaehollandiae*) • Brown Quail (*Coturnix ypsilophora*) • Common Brushtail Possum (*Trichosurus vulpecula*)				
Landscape Context Score	1.15	**Vegetation Condition Score**	45.48	**Conservation Significance Score**	1.04
Unit Biodiversity Score	54.39	**Area (ha)**	0.076	**Total Biodiversity Score**	4.35

BAM site 2 (Assoc 4)	***Eucalyptus camaldulensis*** **(River Red Gum) Very Open Woodland Woodland over** ***Duma florulenta*** **(Lignum) +/-** ***Atriplex rhagodioides*** **(River Saltbush)**

General description	Open woodland allows for more understorey species richness due to lower cover of Lignum and Phragmites where water levels are not consistent or modified due to changes in hydrology. Significant regeneration of Eucalyptus post 2022 flood event and rare species *Myoporum parvifolium* (Creeping Boobialla) now a dominant species along high flood level zone.
Threatened species or community	Creeping Boobialla quite common and occurring along high-water mark of flood. Consistent with other areas along river corridor, this species is not rare per se, just the conditions for its germination and growth occurring are rare. Other fauna species potentially occurring within this associations are : • Brown Quail (*Coturnix ypsilophora*) • Common Brushtail Possum (*Trichosurus vulpecula*) Impact likely to occur to understorey only and most trees that are established will be retained as part of the upgrade works. See scattered tree section for detail

Landscape Context Score	1.15	**Vegetation Condition Score**	31.38	**Conservation Significance Score**	1.08
Unit Biodiversity Score	38.97	**Area (ha)**	0.211	**Total Biodiversity Score**	19.41

BAM site 3 (Assoc 5)	***Eucalyptus camaldulensis*** **(River Red Gum) / *Eucalyptus largiflorens* (Black Box) Very Open emergent Woodland over *Atriplex rhagodioides* (River Saltbush)**

General description	More degraded areas where vegetation has been modified by changes to hydrology and salinity with saltbush and succulent forbs providing higher cover along with exotic flora species. Cover of rare species *Myoporum parvifolium* (Creeping Boobialla) along high flood level zones within this association. Lower levels of Eucalyptus regeneration than site 2 and maturation of individuals may not occur dependent on river flows and water management.				
Threatened species or community	Creeping Boobialla along some sections where flood waters reached arts of this community.				
Landscape Context Score	1.15	**Vegetation Condition Score**	29.05	**Conservation Significance Score**	1.08
Unit Biodiversity Score	36.08	**Area (ha)**	0.090	**Total Biodiversity Score**	3.54

Figure 4. Vegetation associations map 1 of 3

Figure 5. Vegetation associations map 2 of 3

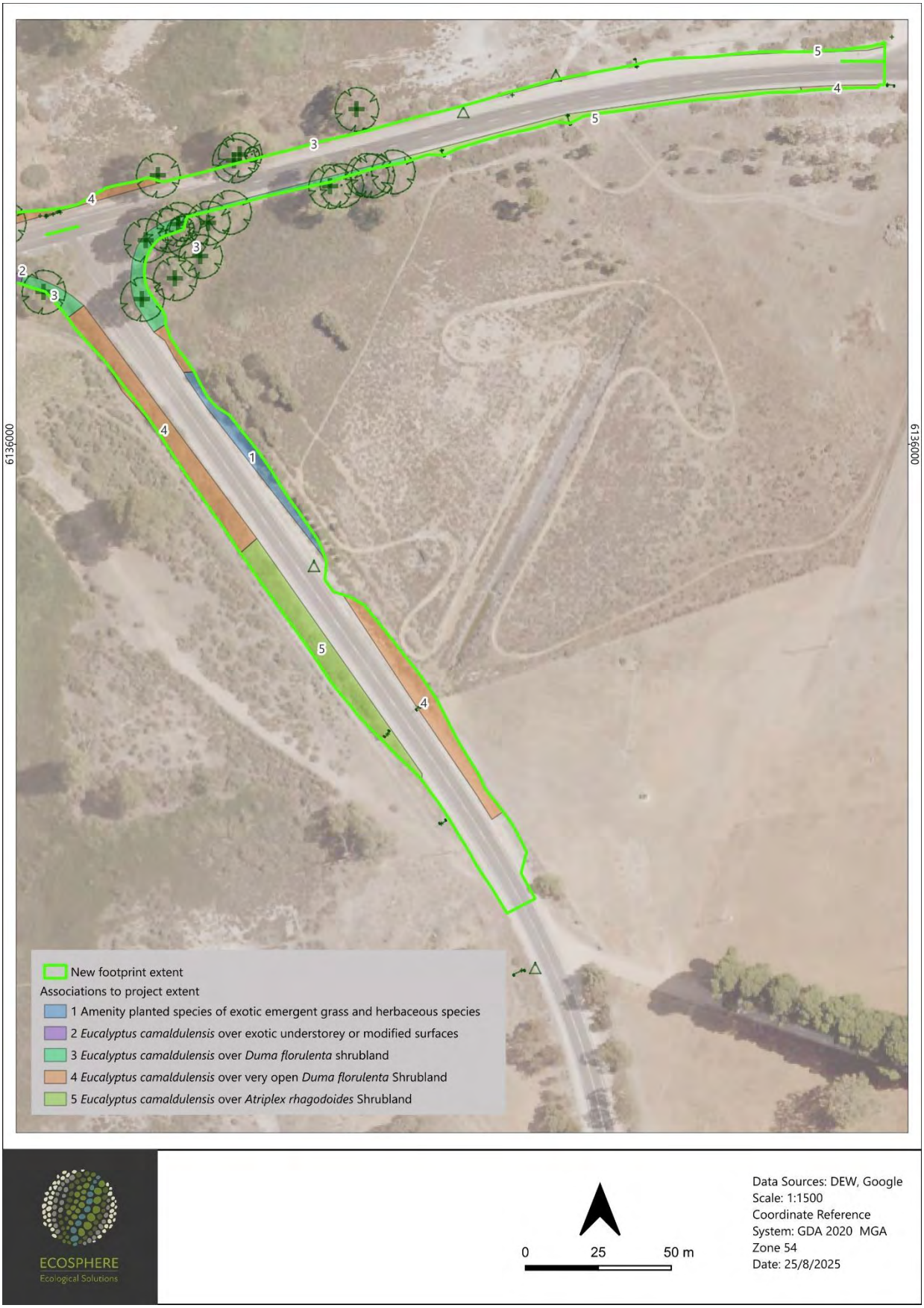

Figure 6. Vegetation associations map 3 of 3

4.3 Scattered trees

Eighty-one indigenous trees were recorded within the project site. Up to 30 individual trees may be impacted to some extent either through root or canopy pruning. Jackie Ayre undertook an arborist assessment based on cross sections for trees Tree Protection Zone (TPZ) or Structural Root Zone (SRZ) that interacted with the footprint. Loos factors have been applied consistent with her recommendations.

Trees are listed below with trees with a loss factor between 0.4-0.8 coloured amber (25 individuals and a group of 4 trees) and trees with a loss factor of 1 (1 tree for complete removal) coloured red (Table 6). Tree reference numbers are shown in figures Figure 7 to Figure 11. See appended photo reference file for individual tree images.

Table 6. Scattered indigenous trees recorded within footprint and surrounding 10m buffer.

Easting	Northing	ID	Species Name	Common Name	Group	Number of ind.	TPZ	SRZ	LF	Impact
346744	6135664	4	*Eucalyptus camaldulensis*	River Red Gum	No	1	11.52	3.39		
346879	6135807	7	*Eucalyptus camaldulensis*	River Red Gum	No	1	4.02	2.19		
346882	6135807	8	*Eucalyptus camaldulensis*	River Red Gum	No	1	15	4.08		
346885	6135814	9	*Eucalyptus camaldulensis*	River Red Gum	No	1	13.2	3.59		
346897	6135831	11	*Eucalyptus camaldulensis*	River Red Gum	No	1	6.18	2.62		
346898	6135838	12	*Eucalyptus camaldulensis*	River Red Gum	No	1	15	3.88		
346904	6135854	14	*Eucalyptus camaldulensis*	River Red Gum	No	1	15	4.22		
346915	6135865	16	*Eucalyptus camaldulensis*	River Red Gum	No	1	15	3.90		
346937	6135877	19	*Eucalyptus camaldulensis*	River Red Gum	No	1	14.47	3.73		
346950	6135895	21	*Eucalyptus camaldulensis*	River Red Gum	No	1	15	4.19		
346957	6135902	22	*Eucalyptus camaldulensis*	River Red Gum	No	1	15	3.96	0.4	Fill up to 330mm in TPZ
346960	6135907	23	*Eucalyptus camaldulensis*	River Red Gum	No	1	27.5	1.83	0.4	Fill up to 330mm in TPZ
346978	6135927	24	*Eucalyptus camaldulensis*	River Red Gum	No	1	14.04	3.68	0.4	Fill up to 230mm in TPZ
347000	6135936	25	*Eucalyptus camaldulensis*	River Red Gum	No	1	9.35	3.10		
347003	6135940	26	*Eucalyptus camaldulensis*	River Red Gum	No	1	6.24	2.62		
347006	6135945	27	*Eucalyptus camaldulensis*	River Red Gum	No	1	15	4.70		
347019	6135954	28	*Eucalyptus camaldulensis*	River Red Gum	Yes	6	9.2	3.09		
347022	6135961	29	*Eucalyptus camaldulensis*	River Red Gum	No	1	15	4.51		
347026	6135962	30	*Eucalyptus camaldulensis*	River Red Gum	No	1	3.58	2.08		
347043	6135976	31	*Eucalyptus camaldulensis*	River Red Gum	No	1	13.8	3.65		
347046	6135979	32	*Eucalyptus camaldulensis*	River Red Gum	No	1	15	3.88		
347067	6135991	33	*Eucalyptus camaldulensis*	River Red Gum	No	1	15	3.85	0.6	Tree outside footprint. Up to 150mm of soil cut from bank plus additional 520mm box section within up to 40% of TPZ. Pruning for height >25%
347073	6135994	34	*Eucalyptus camaldulensis*	River Red Gum	No	1	12.48	3.50		
347077	6135998	35	*Eucalyptus camaldulensis*	River Red Gum	No	1	3.12	1.96	0.8	Tree outside footprint. Up to 150mm of soil cut from bank plus additional 520mm box section within up to 40% of TPZ.

Easting	Northing	ID	Species Name	Common Name	Group	Number of ind.	TPZ	SRZ	LF	Impact
347081	6136001	36	*Eucalyptus camaldulensis*	River Red Gum	No	1	6.66	2.70	0.4	Tree outside footprint. Up to 120mm of soil cut from bank plus additional box cut section within up to 20% of TPZ.
347082	6136006	37	*Eucalyptus camaldulensis*	River Red Gum	No	1	15	3.85	0.6	Tree outside footprint. Up to 120mm of soil cut from bank plus additional box cut section within up to 20% of TPZ.
347086	6136007	38	*Eucalyptus camaldulensis*	River Red Gum	Yes	4	6.56	2.68	0.4	Tree outside footprint. Up to 120mm of soil cut from bank plus additional box cut section within up to 20% of TPZ.
347126	6136033	41	*Eucalyptus camaldulensis*	River Red Gum	No	1	15	3.93		
347132	6136029	42	*Myoporum insulare*	Boobialla	No	1	2	1.55		
347260	6136073	43	*Eucalyptus camaldulensis*	River Red Gum	No	1	15	3.82		
347354	6136096	44	*Eucalyptus camaldulensis*	River Red Gum	No	1	10.32	3.23	0.8	Tree within footprint. Up to 150-260 mm of fill to around trunk base to meet 3:1 batter ratio.
347299	6136080	45	*Eucalyptus camaldulensis*	River Red Gum	No	1	8.88	3.04	0.6	Tree outside footprint. Up to 390mm additional fill at road level within existing TPZ.
347375	6136099	46	*Eucalyptus camaldulensis*	River Red Gum	No	1	9.6	3.14		
347385	6136103	47	*Eucalyptus camaldulensis*	River Red Gum	No	1	15	4.82		
347418	6136114	48	*Eucalyptus largiflorens*	Black Box	No	1	10.56	3.26		
347433	6136094	49	*Eucalyptus largiflorens*	Black Box	No	1	7.97	2.89	0.4	Tree outside footprint. Up to 230mm additional fill to road level up to 40% of TPZ.
347425	6136094	50	*Eucalyptus largiflorens*	Black Box	Yes	3	6.03	2.57		
347416	6136089	51	*Eucalyptus camaldulensis*	River Red Gum	No	1	6	2.57		
347405	6136088	52	*Eucalyptus camaldulensis*	River Red Gum	No	1	14.84	3.77	0.6	Tree outside footprint. Up to 270mm additional fill to road level up to 50% of TPZ.
347380	6136081	53	*Eucalyptus camaldulensis*	River Red Gum	No	1	7.44	2.82	0.4	Tree outside footprint. Up to 220mm additional fill to road level up to 50% of TPZ.
347368	6136078	54	*Eucalyptus camaldulensis*	River Red Gum	No	1	9.36	3.10	0.4	Tree outside footprint. Up to 220mm additional fill to road level up to 50% of TPZ.
347365	6136071	55	*Eucalyptus camaldulensis*	River Red Gum	No	1	8.66	3.00		
347364	6136074	56	*Eucalyptus camaldulensis*	River Red Gum	No	1	4.38	2.27	0.6	Additional fill to meet 1:4 batter of up to 220mm around base of Eucalyptus trees within SRZ.
347360	6136076	57	*Eucalyptus camaldulensis*	River Red Gum	No	1	10.61	3.26	0.6	Additional fill to meet 1:4 batter of up to 220mm around base of Eucalyptus trees within SRZ.

Easting	Northing	ID	Species Name	Common Name	Group	Number of ind.	TPZ	SRZ	LF	Impact
347355	6136075	58	*Eucalyptus camaldulensis*	River Red Gum	No	1	6	2.57	0.6	Additional fill to meet 1:4 batter of up to 220mm around base of Eucalyptus trees within SRZ.
347352	6136067	59	*Eucalyptus camaldulensis*	River Red Gum	No	1	7.98	2.91	0.6	Additional fill to meet 1:4 batter of up to 150-300mm around base of Eucalyptus trees within SRZ. Pruning >25% for height.
347362	6136063	60	*Eucalyptus camaldulensis*	River Red Gum	No	1	11.34	3.37		
347349	6136054	61	*Eucalyptus camaldulensis*	River Red Gum	No	1	10.02	3.19	1	Significant fill to around trunk of tree to potentially >600mm.
347314	6136054	63	*Eucalyptus camaldulensis*	River Red Gum	No	1	15	4.10	0.6	Tree outside footprint. Up to 380mm fill to >50% of TPZ. Unlikely impact. Consider shaping of batter to minimise fill against trunk of tree.
347188	6136027	64	*Eucalyptus camaldulensis*	River Red Gum	No	1	8.32	2.95		
347128	6136009	65	*Eucalyptus camaldulensis*	River Red Gum	No	1	15	4.03	0.4	Tree outside footprint. height pruning required >25%
347124	6136008	66	*Eucalyptus camaldulensis*	River Red Gum	No	1	9.6	3.14	0.4	Tree outside footprint. height pruning required >25%
347117	6136005	67	*Eucalyptus camaldulensis*	River Red Gum	No	1	9.48	3.12		
347115	6136004	68	*Eucalyptus camaldulensis*	River Red Gum	No	1	7.2	2.78		
347114	6136003	69	*Eucalyptus camaldulensis*	River Red Gum	Yes	4	8.52	2.98		
347111	6136004	70	*Eucalyptus camaldulensis*	River Red Gum	No	1	11.81	3.42	0.4	Tree outside footprint. height pruning required >25%
347112	6135999	71	*Eucalyptus camaldulensis*	River Red Gum	No	1	7.2	2.78		
347108	6135999	72	*Eucalyptus camaldulensis*	River Red Gum	No	1	14.04	3.68		
347103	6135994	73	*Eucalyptus camaldulensis*	River Red Gum	No	1	12	3.44	0.4	Tree outside footprint. Up to potential 220mm additional fill change to grade to 40% of TPZ.
347100	6135995	74	*Eucalyptus camaldulensis*	River Red Gum	No	1	2	1.60	0.4	Tree outside footprint. Up to potential 220mm additional fill change to grade to 40% of TPZ.
347098	6135988	75	*Eucalyptus camaldulensis*	River Red Gum	No	1	7.5	2.84	0.4	Tree outside footprint. Up to potential 220mm additional fill change to grade to 40% of TPZ.
347092	6135985	76	*Eucalyptus camaldulensis*	River Red Gum	No	1	15	4.08	0.4	Tree outside footprint. Up to potential 220mm additional fill change to grade to 40% of TPZ.
346966	6135858	77	*Eucalyptus camaldulensis*	River Red Gum	No	1	5.79	2.53		
346817	6135702	78	*Eucalyptus camaldulensis*	River Red Gum	No	1	15	3.83		
346752	6135639	79	*Eucalyptus camaldulensis*	River Red Gum	No	1	15	3.91		

Easting	Northing	ID	Species Name	Common Name	Group	Number of ind.	TPZ	SRZ	LF	Impact
346747	6135640	80	*Eucalyptus camaldulensis*	River Red Gum	No	1	14.29	3.71		
346745	6135634	81	*Eucalyptus camaldulensis*	River Red Gum	No	1	11.52	3.39		
346737	6135631	82	*Eucalyptus camaldulensis*	River Red Gum	No	1	2	4.50		

Figure 7. Scattered trees map 1 of 5

Figure 8. Scattered trees map 2 of 5

Figure 9. Scattered trees map 3 of 5

Figure 10. Scattered trees map 4 of 5

Figure 11. Scattered trees map 5 of 5

4.4 Threatened Species Assessment

4.4.1 EPBC PMST Search Summary

A total of 31 listed threatened species and 10 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 (see Appendix 8.1 for full PMST results). The ecological MNES protected under the EPBC Act relevant to this report are discussed in detail below.

Table 7. PMST ecological MNES results summary.

Search area (5 km buffer)	Matters of National Environmental Significance	Identified within search area
	World Heritage Properties	0
	National Heritage Places	0
	Wetlands of International Importance (RAMSAR)	1
	Great Barrier Reef Marine Park	0
	Commonwealth Marine Area	0
	Listed Threatened Ecological Communities	4
	Listed Threatened Species	31
	Listed Migratory Species	10
	Other matters protected by the EPBC	
	Commonwealth Lands	0
	Commonwealth Heritage Places	0
	Listed Marine Species	17
	Whales and Other Cetaceans	0
	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	1
	Regional Forest Agreements	0
	Nationally Important Wetlands	0
	EPBC Act Referrals	7
	Key Ecological Features	0
	Biologically Important Areas	0
	Bioregional Assessments	0
	Geological and Bioregional Assessments	0

4.4.2 Threatened Ecological Communities (TEC)

Four Threatened Ecological Communities (TECs) were identified in the PMST report as potentially occurring within 5 km of the Project area:

- Plains mallee box woodlands of the Murray Darling Depression, Riverina and Naracoorte Coastal Plain Bioregions (EPBC: Critically Endangered)
- Peppermint Box (*Eucalyptus odorata*) Grassy Woodland of South Australia (EPBC: Critically Endangered)
- Mallee Bird Community of the Murray Darling Depression Bioregion (EPBC: Endangered)
- Buloke Woodlands of the Riverina and Murray Darling Depression Bioregions (EPBC: Endangered)

No communities matching these descriptions occurs within the Project survey area.

4.4.3 Nationally Threatened Flora

Seven flora species 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. However, none of these species were listed by the PMST as 'Known' to occur within the search area and none of these species had historical records of occurrence since 1995. Thus, they will not be discussed further in this report.

4.4.4 State Threatened Flora

No flora species listed as threatened under the NPW Act had historical records of occurrence from within 5 km of the Project area since 1995.

The state listed rare *Myoporum parvifolium* (Creeping Boobialla, NPW: R) were recorded growing in association with a recent major flood line resulting from extensive flooding in late 2022 and early 2023 (Figure 12).

Figure 12. *Myoporum parvifolium* at BAM site 2

4.4.5 Nationally Threatened Fauna

Twenty-four species listed as threatened under the EPBC Act were identified in the PMST report as potentially occurring or having suitable habitat potentially occurring within 5 km of the Project area. Of these, eight species were listed by the PMST as 'Known' to occur within the search area (Table 8). However, none of these species had historical records of occurrence since 1995. Thus, they will not be discussed further in this report.

In addition to the above, one species listed under the EPBC Act which was not considered as known to occur or known to have habitat within the search area by the PMST report had historical records of occurrence as returned via the BDBSA search:

- Grey-headed Flying-fox (*Pteropus poliocephalus* – EPBC: EN, NPW: R)

The main Grey-headed Flying-fox (*Pteropus Poliocephalus*) roost in SA is located within the Adelaide Botanic Park adjacent the Torrens River in the Adelaide CBD. From here, individuals of the species typically travel around 20 km from their roost to forage at night (Green Adelaide 2024), such that the Project area is outside the typically nightly foraging range of the species. Nevertheless, Grey-headed Flying-fox are capable of traveling greater distances when foraging or otherwise when making exploratory flights in search of foraging resources, sleeping away from their main roost during this period. The diet of Grey-headed Flying-Fox is broad, and the species is not specialised on any particular plant species, with a study of the foraging behaviour of Grey-headed Flying-fox from the Adelaide Botanic Park observing the use of 49 different tree species from a variety of plant families (Yabsley et al. 2022). Based on the Project area being far outside the typically nightly foraging range of Grey-headed Flying-fox roosting at Adelaide Botanic Park and the unspecialised generalist foraging behaviour of the species, the Project area is unlikely to represent critical or even regularly utilised foraging habitat for this species.

4.4.6 State Threatened Fauna

Six fauna species listed as threatened under the NPW Act had historical records from within 5 km of the Project area since 1995 (Table 8 and Figure). Of these, three were considered as likely or possibly occurring within the footprints,

- Australasian Darter (*Anhinga novaehollandiae novaehollandiae*)
- Brown Quail (*Coturnix ypsilophora*)
- Common Brushtail Possum (*Trichosurus vulpecula*)

4.4.7 Migratory Species

Four listed migratory species were identified by the PMST report as having species or species habitat known to occur within 5 km of the Project area. Most of these species are unlikely to use the Project area other than as a brief flyover considering the lack of suitable habitat and existing land use. Migratory species are largely associated with waterbodies associated with feeding and or refuge areas which are not present directly within the Project area.

4.4.8 Marine Species

Seventeen marine species listed under the EPBC Act were identified in the PMST report as potentially occurring or having suitable habitat potentially occurring within 5 km of the Project area. These were not considered as part of the desktop assessment with the Project area being entirely terrestrial in nature.

Table 8. Threatened fauna listed under the EPBC Act and NPW Act identified within 5 km of the Project area via the PMST (Source 1) or BDBSA (Source 2) database searches or observed during the field survey.

Scientific Name	Common Name	EPBC Act	NPW Act	Data Source	Date of last record	Species known habitat preferences	Likelihood of occurrence
AVES							
Actitis hypoleucos	Common Sandpiper	Mi	-	1	None	Migratory shorebird. Occurs in a variety of coastal and inland wetland habitats with varying levels of salinity.	Unlikely
Anhinga novaehollandiae novaehollandiae	Australasian Darter	-	R	2	12/09/2020	Wetlands and sheltered coastal waters with fallen trees or logs and vegetated banks.	Likely
Aphelocephala leucopsis leucopsis	Southern Whiteface	VU	-	1	None	Open woodlands and shrublands with an understorey of grasses or shrubs, or both. Prefers habitat with low tree densities and herbaceous understory litter cover which provides essential foraging habitat.	Unlikely
Bubulcus ibis coromandus	Eastern Cattle Egret	-	R	2	25/08/2004	Low lying grasslands, improved pastures and cropland.	Possible
Calidris acuminata	Sharp-tailed Sandpiper	VU, Mi	-	1	None	Migratory wetland species. Does not breed in Australia. Inhabits Intertidal mudflats, freshwater swamps, and saltwater lakes.	Unlikely
Calidris melanotos	Pectoral Sandpiper	Mi	-	1	None	Migratory wetland species. Inhabits freshwater or brackish wetlands, grassy or lightly vegetated coastal and inland swamps.	Unlikely
Coturnix ypsilophora australis	Brown Quail	-	V	2	31/03/2019	Dense grasslands, often on the edges of open forests and bracken.	Unlikely
Entomyzon cyanotis cyanotis	Blue-faced Honeyeater	-	R	2	17/10/2022	Dry sclerophyll forest, open woodland, watercourses and wetter areas of semi-arid regions.	Possible
Gallinago hardwickii	Latham's Snipe	VU, Mi	R	1	None	Migratory wetland species. Inhabits tussock grass and low dense sedges surrounding freshwater, permanent and ephemeral wetlands. It can also occur in habitats with saline or brackish water.	Unlikely
Lophochroa leadbeateri leadbeateri	Pink Cockatoo (eastern)	EN	R	1	None	Arid and semi-arid areas in open woodland, timbered grasslands and Mulga, mallee, Callitris and Casuarina woodlands.	Unlikely
Melanodryas cucullata cucullata	Hooded Robin	EN	R	1,2	17/10/2010	Lightly timbered woodland, dominated by acacia and or eucalypts with an open understorey and complex ground layer, with rocks and fallen timber for essential foraging habitat.	Unlikely
Stagonopleura guttata	Diamond Firetail	VU	V	1	None	Eucalypt, acacia or casuarina woodlands, open forests and other lightly timbered habitats including farmland and grassland. Preferably, there are areas with	Unlikely

Scientific Name	Common Name	EPBC Act	NPW Act	Data Source	Date of last record	Species known habitat preferences	Likelihood of occurrence
						relatively low tree density, little litter cover but long grass cover.	
MAMMALIA							
Pteropus poliocephalus	Grey-headed Flying-fox	VU	R	2	5/03/2020	Habitats that contain flowering and fruiting trees include closed forest, open forest, woodlands and urban parks.	Unlikely
Trichosurus vulpecula	Common Brushtail Possum	-	R	2	25/08/2004	Urban areas, forests, woodlands and heath.	Possible
AMPHIBIA							
Litoria raniformis	Southern Bell Frog	VU	V	1	None	A variety of still or slow-flowing natural or artificial wetlands, riverine floodplains and farm dams.	Unlikely
FISH							
Maccullochella peelii	Murray Cod	VU	-	1	None	No habitat within Project area.	Unlikely

EPBC Act; EN = Endangered; VU = Vulnerable; Mi = Migratory. NP&W Act; V = Vulnerable, R= Rare.

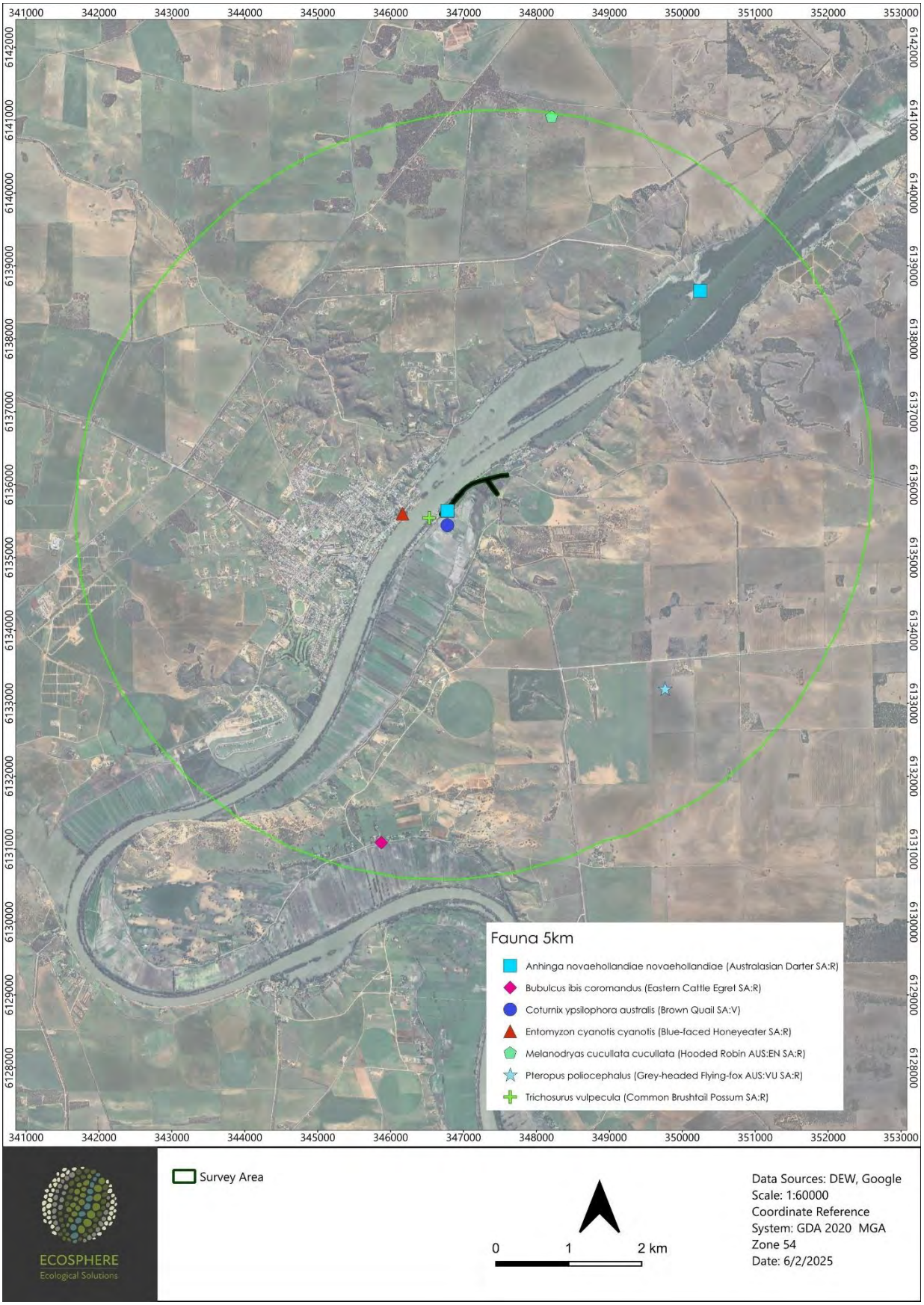

Figure 13. Records for EPBC and NPW listed fauna within 5 km of Project area

4.5 Cumulative Impact

No additional areas are anticipated to be affected by the construction of the road upgrades and repairs. The project occurs largely on areas that have been previously disturbed. While there may be some minor effects such as runoff, dust, or other temporary disturbances, these are expected to be minimal and unlikely to results in any long-term impacts on the vegetation in the surrounding area.

4.6 Address 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

All works will be largely limited to the existing maintenance zones whereby existing disturbance footprints created during the original construction / post upgrades has occurred. As much of the area is located on either the existing river bank and floodplain, the road is elevated above typical flood zones and therefore has existing batters present along with disturbance areas for ongoing maintenance and management of the road. Since the most recent flood event management of road batters has been raised and generally the existing extents will be used.

However, some sections will be slightly widened to accommodate standard batters requirements in order to meet specification. Additional excavation for boxing out of the road sub base is required for the section between chainage 180-570 and this may or may not cause significant root impacts. Given the trees are associated with the river bank and have the road in place already and covered with road base, there may or may not be significant root influence under the site and may not be determined until which time excavation occurs. An arborist will further inspect the trees to determine potential impacts associated with box cutting and filling of this zone.

Generally, topography will be raised in most areas of the road surface with an average of 100-200mm. Therefore, there is not expected to be significant impacts to root zones of indigenous or amenity trees as the road is already present and, in most cases, raised above tree base level. Root zones will remain accessible to current water sources. Some foll along batters is required however contouring of these to avoid fill immediately against the trunks of trees will occur to minimise impacts associated with potential rotting of trunks buried under soil. Even without this, *Eucalyptus camaldulensis* is particularly resilient to filling around trunks due to adaptation to shifts in soil levels associated with flood events. With most areas requiring 200mm or less, this is not expected to be a significant risk.

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).

Work areas have been minimised to the extent practicable. Surrounding vegetation should not be impacted outside of work buffers. Works will be undertaken from the existing road corridor therefore eliminating cumulative impacts such as soil compaction, root damage and pruning to limbs outside of roadside vegetation management corridors.

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.

Soils will be relevelled to maintain natural contours. Vegetation is likely to re-establish on bare soils due to the vegetation present surrounding the project footprint. Theoretically, vegetation will return to pre works conditions generally.

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. The total payment is $

4.7 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 relevant, when considering an application referred under the Planning, Development and Infrastructure Act 2016.

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 was: Site 1: 8 Indigenous 7 introduced. Site 2: 10 indigenous 12 exotic Site 3: 9 indigenous 9 exotic Bushland Plant Diversity Score – Site 1: 16 Site 2: 14 Site 3: 14
	Assessment against the principles At Variance – Bushland site 1, 2 and 3.
	Moderating factors that may be considered by the NVC Species diversity higher following flood events. Species are likely to regenerate following works.
Principle 1b - significance as a habitat for wildlife	Relevant information List of threatened species that were recorded or may use the vegetation: • Australasian Darter (*Anhinga novaehollandiae novaehollandiae*) • Brown Quail (*Coturnix ypsilophora*) • Common Brushtail Possum (*Trichosurus vulpecula*) The vegetation probably does not support a high diversity of animal species due to proximity to the road and the level of traffic flow being one of the main rivers crossing points. Subsequently elevated levels of disturbance occur within the road corridor. Threatened Fauna Score – 0.04 for all sites Unit biodiversity Score –Bushland site 1 is seriously at variance with this principle due to being associated with the main river channel.
	Assessment against the principles Seriously at Variance Bushland site 1 Scattered trees 22,23, 33. 63 and 65 At Variance – Bushland sites 2 and 3, Scattered trees, 24, 35, 36, 37, 38, 44, 45, 49, 52, 53, 54, 56, 57, 58, 59, 61, 66, 70, 73, 74, 75, 76.

Principle of clearance	Considerations
	Moderating factors that may be considered by the NVC The three trees potentially impacted along with understorey vegetation within works extent are not high value habitat trees for vegetation due to the proximity to the existing road corridor. Observations made during the survey and the general assumptions that as one of the main river ferry crossings, this road has a high traffic usage and flow and therefore limits the habitat value in immediate proximity to the road. The threatened species are likely to use these trees as short-term habitat only and the trees do not have habitat elements such as hollows which provide longer term or permanent resources. There is a more or less continuous line of trees associated with the river corridor and removal of some of the trees is not likely to have a significant impact, being a low number comparatively with the rest of the area,
Principle 1c - plants of a rare, vulnerable or endangered species	Relevant information *Myoporum parvifolium* was recorded extensively throughout Sites 2 and 3. Threatened Flora Score(s): Site 1: 0 Site 2 and 3: 0.04
	Assessment against the principles At Variance – Sites 2 and 3
	Moderating factors that may be considered by the NVC *Myoporum parvifolium* was recorded within bushland sites 2 and 3, this is typical of current river conditions, and it will be interesting to see how long this species persists in the most recent flood before which the species was uncommon. But it is now recorded along the entire river corridor along the flood peak line prolifically.
Principle 1d - the vegetation comprises the whole or part of a plant community that is Rare, Vulnerable or endangered:	Relevant information No threatened communities under the EPBC Act or threatened ecosystems under the DEW Provisional list of threatened ecosystems present: Threatened Community Score – 1 for all sites.
	Assessment against the principles Not at Variance
	Moderating factors that may be considered by the NVC No threatened plant communities however upcoming national federal listing for River Murray communities downstream from the Darling River.
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: Lower Murray IBRA Environmental Association = 8 % Mura Mallee IBRA Subregion = 21 % Discuss the health and likely longevity of remnants: Total Biodiversity Score – 132.23
	Assessment against the principles Seriously at Variance All Sites Seriously at Variance.
	Moderating factors that may be considered by the NVC Low area overall compared to regional quantity of vegetation within 5km.

Principle of clearance	Considerations
Principle 1f - it is growing in, or in association with, a wetland environment.	Relevant information Discuss if any of the vegetation is associated with a wetland: The Project area is associated with a wetland environment. • Bushland site 1 is associated with river corridors. • Bushland site 2 and 3 loosely associated with river floodplain.
	Assessment against the principles Seriously at Variance All communities and scattered trees
	Moderating factors that may be considered by the NVC N/A
Principle 1g - it contributes significantly to the amenity of the area in which it is growing or is situated.	Relevant information Trees within the works areas do significantly contribute to the amenity of the area. The proximity to the river corridor means that trees are are key part of the area and provide shade, camping, rest areas and visual amenities generally.
	At variance with this principle
	Moderating factors that may be considered by the NVC The work is largely limited to existing work zones and maintenance buffers. The works being undertaken are not likely to: • lead to areas of the wetland being destroyed or substantially modified. • Contribute to a substantial and measurable change in the hydrological regime of the wetland (e.g. a change in the volume, timing, duration and frequency of ground and surface water flows to and within the wetland) • Not affecting the habitat or lifecycle of native species dependent upon the wetland being seriously affected • Make a substantial and measurable change in the physio-chemical status of the wetland (e.g., change in the level of salinity, pollutants or nutrients in the wetland, change in water temperature which may adversely impact on biodiversity)

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.

4.8 Risk Assessment

Determine the level of risk associated with the application

Total clearance	No. of trees	30
	Area (ha)	0.377
	Total biodiversity Score	132.23
Seriously at variance with principle 1(b), 1(c) or 1 (d)		Bushland site 1 and Scattered trees 22, 23, 33. 63 and 65 is seriously at variance with principal 1(b).
Risk assessment outcome		Level 4

4.9 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
1	1	16	1	0	0.04	54.39	0.076	1	0.8		0.5	1.82	$971.09	$53.41
1	2	14	1	0.04	0.04	38.97	0.211	1	0.8		0.5	3.62	$1,931.52	$106.23
1	3	14	1	0.04	0.04	36.08	0.09	1	0.8		0.5	1.43	$763.00	$41.97
						Total	**0.377**	**15.6**				**6.87**	**$3,665.61**	**$201.61**

5.2 Scattered Trees Summary Table

Tree or Cluster ID	Number of trees	Fauna Habitat score	Threatened flora score	Biodiversity score	Loss factor	SEB Points required	SEB Payment	Admin Fee
22	1	1	0	7.7	0.4	3.39	$1,808.80	$99.48
23	1	1	0	9	0.4	3.96	$2,112.93	$116.21
24	1	1	0	6.09	0.4	2.68	$1,429.96	$78.65
33	1	1	0	7.3	0.6	4.82	$2,571.80	$141.45
35	1	1	0	0.33	0.8	0.29	$154.73	$8.51
36	1	1	0	2.48	0.4	1.09	$581.59	$31.99
37	1	1	0	5.99	0.6	3.95	$2,107.59	$115.92
38	4	1	0	2.23	0.4	3.92	$2,091.59	$115.04
44	1	1	0	3.66	0.8	3.22	$1,718.09	$94.49
45	1	1	0	2.27	0.6	1.50	$800.35	$44.02
49	1	1	0	2.38	0.4	1.05	$560.25	$30.81
52	1	1	0	4.86	0.6	3.21	$1,712.75	$94.20
53	1	1	0	2.39	0.4	1.05	$560.25	$30.81
54	1	1	0	3.52	0.4	1.55	$827.03	$45.49
56	1	1	0	1.08	0.6	0.71	$378.83	$20.84
57	1	1	0	3.94	0.6	2.60	$1,387.28	$76.30
58	1	1	0	2.05	0.6	1.35	$720.32	$39.62
59	1	1	0	3.29	0.6	2.17	$1,157.84	$63.68
61	1	1	0	2.58	1	2.84	$1,515.33	$83.34
63	1	1	0	7.14	0.6	4.71	$2,513.11	$138.22
65	1	1	0	7.87	0.4	3.46	$1,846.15	$101.54
66	1	1	0	6.16	0.4	2.71	$1,445.97	$79.53

Tree or Cluster ID	Number of trees	Fauna Habitat score	Threatened flora score	Biodiversity score	Loss factor	SEB Points required	SEB Payment	Admin Fee
70	1	1	0	6.44	0.4	2.83	$1,510.00	$83.05
73	1	1	0	6.65	0.4	2.93	$1,563.35	$85.98
74	1	1	0	0.32	0.4	0.14	$74.70	$4.11
75	1	1	0	2.5	0.4	1.10	$586.92	$32.28
76	1	1	0	6.41	0.4	2.82	$1,504.66	$82.76
Total	**30**			**116.63**		66.05	$35,242.17	$1,938.32

5.3 Totals Summary Table

	Total Biodiversity score	Total SEB points required	SEB Payment	Admin Fee	Total Payment
Application	132.23	72.92	$38, 907.78	$2,139.93	$41,047.71

Economies of Scale Factor	0.5
Rainfall (mm)	294

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 is $38,907.78 plus an admin. fee of $2,139.93 totalling $41,047.71.

7 References

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8 Appendices

8.1 PMST Results

Department of Climate Change, Energy, the Environment and Water

Protected Matters Search Tool

Report Generated - 8:52AM - 15 January 2025

Matters of National Environment Significance	Count
World Heritage Properties	0
National Heritage Places	0
Wetlands of International Importance (Ramsar Wetlands)	1
Great Barrier Reef Marine Park	0
Commonwealth Marine Area	0
Listed Threatened Ecological Communities	4
Listed Threatened Species	31
Listed Migratory Species	10

Other Matters Protected by the EPBC Act	Count
Commonwealth Lands	0
Commonwealth Heritage Places	0
Listed Marine Species	17
Whales and Other Cetaceans	0
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	1
Regional Forest Agreements	0
Nationally Important Wetlands	0
EPBC Act Referrals	7
Key Ecological Features	0
Biologically Important Areas	0
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

Wetlands of International Importance (Ramsar Wetlands) [Resource Information]

Ramsar Site	Ramsar Site Name	Proximity	Website	Buffer Status
25	THE COORONG, AND LAKES ALEXANDRINA AND ALBERT	30 - 40km upstream	Australian Wetlands	In feature area

Listed Threatened Ecological Communities

			Presence		
Community ID	Community Name	Threatened Category	Rank	Text	Buffer Status
150	Plains mallee box woodlands of the Murray Darling Depression, Riverina	Critically Endangered	Likely	Community likely to	In feature area
36	Peppermint Box (Eucalyptus odorata) Grassy Woodland of South	Critically Endangered	May	Community may occur	In buffer area only
151	Mallee Bird Community of the Murray Darling Depression Bioregion	Endangered	Likely	Community likely to	In buffer area only
3	Buloke Woodlands of the Riverina and Murray-Darling Depression	Endangered	May	Community may occur	In feature area

Listed Threatened Species [Resource Information]

Species ID	Scientific Name	Common Name	Class	Simple	Presence Text	Threatened Category
906	*Pedionomus torquatus*	Plains-wanderer	Bird	May	Species or species	Critically Endangered
856	*Calidris ferruginea*	Curlew Sandpiper	Bird	May	Species or species	Critically Endangered
1001	*Botaurus poiciloptilus*	Australasian Bittern	Bird	May	Species or species	Endangered
91648	*Amytornis striatus howei*	Murray Mallee Striated Grasswren,	Bird	May	Species or species	Endangered
67093	*Melanodryas cucullata cucullata*	South-eastern Hooded Robin, Hooded	Bird	Known	Species or species	Endangered
832	*Tringa nebularia*	Common Greenshank, Greenshank	Bird	Likely	Species or species	Endangered
82926	*Lophochroa leadbeateri*	Major Mitchell's Cockatoo (eastern),	Bird	Known	Species or species	Endangered
77037	*Rostratula australis*	Australian Painted Snipe	Bird	May	Species or species	Endangered
470	*Grantiella picta*	Painted Honeyeater	Bird	May	Species or species	Vulnerable
726	*Neophema chrysostoma*	Blue-winged Parrot	Bird	Likely	Species or species	Vulnerable
929	*Falco hypoleucos*	Grey Falcon	Bird	Likely	Species or species	Vulnerable
59398	*Stagonopleura guttata*	Diamond Firetail	Bird	Known	Species or species	Vulnerable
863	*Gallinago hardwickii*	Latham's Snipe, Japanese Snipe	Bird	Known	Species or species	Vulnerable
874	*Calidris acuminata*	Sharp-tailed Sandpiper	Bird	Known	Species or species	Vulnerable
934	*Leipoa ocellata*	Malleefowl	Bird	Likely	Species or species	Vulnerable
59612	*Polytelis anthopeplus*	Regent Parrot (eastern)	Bird	Likely	Breeding likely to	Vulnerable
529	*Aphelocephala leucopsis*	Southern Whiteface	Bird	Known	Species or species	Vulnerable
84745	*Galaxias rostratus*	Flathead Galaxias, Beaked Minnow,	Fish	May	Species or species	Critically Endangered
56791	*Craterocephalus fluviatilis*	Murray Hardyhead	Fish	Likely	Species or species	Endangered
76155	*Bidyanus bidyanus*	Silver Perch, Bidyan	Fish	Likely	Species or species	Endangered
66633	*Maccullochella peelii*	Murray Cod	Fish	Known	Species or species	Vulnerable
1828	*Litoria raniformis*	Southern Bell Frog,, Growling Grass	Frog	Known	Species or species	Vulnerable
83395	*Nyctophilus corbeni*	Corben's Long-eared Bat, South-	Mammal	May	Species or species	Vulnerable
24390	*Caladenia tensa*	Greencomb Spider-orchid, Rigid	Plant	Likely	Species or species	Endangered
11956	*Dodonaea subglandulifera*	Peep Hill Hop-bush	Plant	Likely	Species or species	Endangered
7997	*Pterostylis xerophila*	Desert Greenhood	Plant	May	Species or species	Vulnerable
56344	*Swainsona pyrophila*	Yellow Swainson-pea	Plant	Likely	Species or species	Vulnerable
12348	*Olearia pannosa subsp.*	Silver Daisy-bush, Silver-leaved	Plant	May	Species or species	Vulnerable
16333	*Senecio macrocarpus*	Large-fruit Fireweed, Large-fruit	Plant	May	Species or species	Vulnerable
9218	*Acacia menzelii*	Menzel's Wattle	Plant	Likely	Species or species	Vulnerable
1666	*Aprasia pseudopulchella*	Flinders Ranges Worm-lizard	Reptile	May	Species or species	Vulnerable

Listed Migratory Species [Resource Information]

				Presence		
Species ID	Scientific Name	Common Name	Class	Rank	Text	Threatened Category
59309	*Actitis hypoleucos*	Common Sandpiper	Bird	Known	Species or species habitat known to occur within area	
678	*Apus pacificus*	Fork-tailed Swift	Bird	Likely	Species or species habitat likely to occur within area	
874	*Calidris acuminata*	Sharp-tailed Sandpiper	Bird	Known	Species or species habitat known to occur within area	Vulnerable
856	*Calidris ferruginea*	Curlew Sandpiper	Bird	May	Species or species habitat may occur within area	Critically Endangered
858	*Calidris melanotos*	Pectoral Sandpiper	Bird	Known	Species or species habitat known to occur within area	
863	*Gallinago hardwickii*	Latham's Snipe,	Bird	Known	Species or species habitat known to occur within area	Vulnerable
642	*Motacilla cinerea*	Grey Wagtail	Bird	May	Species or species habitat may occur within area	
644	*Motacilla flava*	Yellow Wagtail	Bird	May	Species or species habitat may occur within area	
952	*Pandion haliaetus*	Osprey	Bird	Likely	Species or species habitat likely to occur within area	
832	*Tringa nebularia*	Common Greenshank,	Bird	Likely	Species or species habitat likely to occur within area	Endangered

Listed Marine Species [Resource Information]

				Presence		
Species ID	Scientific Name	Common Name	Class	Rank	Text	Threatened Category
642	*Motacilla cinerea*	Grey Wagtail	Bird	May	Species or species habitat may occur within area	
726	*Neophema*	Blue-winged Parrot	Bird	Likely	Species or species habitat likely to occur within area	Vulnerable
644	*Motacilla flava*	Yellow Wagtail	Bird	May	Species or species habitat may occur within area	
943	*Haliaeetus leucogaster*	White-bellied Sea-	Bird	Likely	Species or species habitat likely to occur within area	
863	*Gallinago hardwickii*	Latham's Snipe,	Bird	Known	Species or species habitat known to occur within area	Vulnerable
59309	*Actitis hypoleucos*	Common Sandpiper	Bird	Known	Species or species habitat known to occur within area	
856	*Calidris ferruginea*	Curlew Sandpiper	Bird	May	Species or species habitat may occur within area	Critically Endangered
832	*Tringa nebularia*	Common Greenshank,	Bird	Likely	Species or species habitat likely to occur within area	Endangered
83425	*Chalcites osculans*	Black-eared Cuckoo	Bird	Likely	Species or species habitat likely to occur within area	
952	*Pandion haliaetus*	Osprey	Bird	Likely	Species or species habitat likely to occur within area	
874	*Calidris acuminata*	Sharp-tailed Sandpiper	Bird	Known	Species or species habitat known to occur within area	Vulnerable
66521	*Bubulcus ibis*	Cattle Egret	Bird	May	Species or species habitat may occur within area	
670	*Merops ornatus*	Rainbow Bee-eater	Bird	May	Species or species habitat may occur within area	
678	*Apus pacificus*	Fork-tailed Swift	Bird	Likely	Species or species habitat likely to occur within area	
612	*Myiagra cyanoleuca*	Satin Flycatcher	Bird	May	Species or species habitat may occur within area	
77037	*Rostratula australis*	Australian Painted	Bird	May	Species or species habitat may occur within area	Endangered
858	*Calidris melanotos*	Pectoral Sandpiper	Bird	Known	Species or species habitat known to occur within area	

State and Territory Reserves [Resource Information]

Protected Area ID	Protected Area Name	Reserve Type	State	Jurisdiction	Environment	Buffer Status
SA 1492	Unnamed (No.HA1492)	Heritage Agreement	SA	State	Terrestrial	In buffer area only

EPBC Act Referrals [Resource Information]

Reference Number	Title of referral	Jurisdiction	Industry Type	Stage	Stage Description	Referral Outcome
2017/8127	INDIGO Central	NSW	Telecommunications	Completed	Referral Decision Made	Not Controlled Action
2004/1792	Fish	SA	Water Management	Completed	Referral Decision Made	Not Controlled Action
2017/7996	INDIGO Marine Cable	CM	Telecommunications	Post-Approval	Referral Decision Made	Not Controlled Action
2020/8796	Mannum Solar Farm	SA	Energy Generation and	Completed	Withdrawn	Referral Decision
2007/3484	Proposed temporary	SA	Water Management	Completed	Withdrawn	Controlled Action
2015/7522	Improving rabbit	NSW	Natural Resources	Completed	Referral Decision Made	Not Controlled Action
2020/8843	Mannum Stage 2 Solar	SA	Energy Generation and	Completed	Referral Decision Made	Not Controlled Action

8.2 BDBSA Flora Species records within 5 km

Scientific Name	Common Name	Date of Last Record
Acacia brachybotrya	Grey Mulga-bush	9/12/1998
Acacia hakeoides	Hakea Wattle	9/12/1998
Acacia ligulata	Umbrella Bush	9/12/1998
Acacia nyssophylla	Spine Bush	23/09/2010
Adriana klotzschii (NC)	Coast Bitter-bush	9/12/1998
Alectryon oleifolius ssp. canescens	Bullock Bush	9/12/1998
Asperula gemella	Twin-leaf Bedstraw	12/11/2002
Asphodelus fistulosus	Onion Weed	9/12/1998
Atriplex nummularia ssp. (NC)	Old-man Saltbush	9/12/1998
Atriplex sp.	Saltbush	18/02/2023
Atriplex stipitata		18/02/2023
Austrocylindropuntia cylindrica	Cane Cactus	15/06/2011
Austrostipa drummondii	Cottony Spear-grass	23/09/2010
Austrostipa elegantissima	Feather Spear-grass	23/09/2010
Austrostipa nitida	Balcarra Spear-grass	23/09/2010
Austrostipa sp.	Spear-grass	18/02/2023
Austrostipa trichophylla		23/09/2010

Scientific Name	Common Name	Date of Last Record
Avena barbata	Bearded Oat	12/12/2001
Avena sp.	Oat	18/02/2023
Beyeria lechenaultii	Pale Turpentine Bush	9/12/1998
Brassica rapa ssp. rapa	Turnip Rape	15/06/2011
Brassica tournefortii	Wild Turnip	9/12/1998
Bromus catharticus	Prairie Grass	12/11/2002
Calandrinia eremaea	Dryland Purslane	23/09/2010
Callitris gracilis	Southern Cypress Pine	23/09/2010
Calystegia sepium	Large Bindweed	12/11/2002
Calystegia sepium (NC)	Large Bindweed	12/11/2002
Carrichtera annua	Ward's Weed	18/02/2023
Cenchrus setaceus	Fountain Grass	15/06/2011
Chloris truncata	Windmill Grass	15/04/2015
Chondrilla juncea	Skeleton Weed	9/12/1998
Cirsium vulgare	Spear Thistle	12/11/2002
Crassula colorata var. acuminata	Dense Crassula	23/09/2010
Cynodon dactylon (NC)	Couch	12/12/2001
Cyperus gymnocaulos	Spiny Flat-sedge	12/11/2002
Danthonia sp. (NC)	Wallaby-grass	9/12/1998
Datura stramonium	Common Thorn-apple	15/06/2011
Diplotaxis muralis	Wall Rocket	23/09/2010
Dissocarpus paradoxus	Ball Bindyi	18/02/2023
Distichlis distichophylla	Emu-grass	12/11/2002
Dodonaea viscosa ssp.	Sticky Hop-bush	9/12/1998
Dodonaea viscosa ssp. angustissima	Narrow-leaf Hop-bush	9/12/1998
Duma florulenta	Lignum	12/11/2002
Echium plantagineum	Salvation Jane	23/09/2010
Einadia nutans ssp.	Climbing Saltbush	18/02/2023
Einadia nutans ssp. nutans	Climbing Saltbush	12/11/2002
Eleocharis acuta	Common Spike-rush	12/11/2002
Enchylaena tomentosa var.	Ruby Saltbush	18/02/2023
Enchylaena tomentosa var. tomentosa	Ruby Saltbush	12/11/2002
Enneapogon nigricans	Black-head Grass	11/12/2001
Eragrostis minor	Small Stink-grass	15/04/2015
Erodium brachycarpum	Short-fruit Heron's-bill	23/09/2010
Eucalyptus brachycalyx	Gilja	9/12/1998
Eucalyptus calycogona var. calycogona (NC)	Square-fruit Mallee	11/12/2001
Eucalyptus camaldulensis ssp.	River Red Gum	9/12/1998
Eucalyptus camaldulensis ssp. camaldulensis	River Red Gum	12/11/2002
Eucalyptus gracilis	Yorrell	9/12/1998
Eucalyptus incrassata	Ridge-fruited Mallee	9/12/1998
Eucalyptus odorata (NC)	Peppermint Box	11/12/2001
Eucalyptus oleosa (NC)	Red Mallee	11/12/2001
Eucalyptus oleosa ssp.		18/02/2023
Eucalyptus phenax (NC)	Sessile-fruit White Mallee	12/12/2001
Eucalyptus socialis (NC)	Beaked Red Mallee	9/12/1998
Euphorbia terracina	False Caper	9/12/1998
Exocarpos aphyllus	Leafless Cherry	23/09/2010
Gazania linearis	Gazania	18/02/2023
Geijera linearifolia	Sheep Bush	23/09/2010
Gramineae sp.	Grass Family	18/02/2023
Heliotropium curassavicum	Smooth Heliotrope	12/11/2002

Scientific Name	Common Name	Date of Last Record
Hordeum glaucum	Blue Barley-grass	23/09/2010
Hyalosperma semisterile	Orange Sunray	23/09/2010
Hydrocotyle verticillata	Shield Pennywort	12/11/2002
Hypochaeris glabra	Smooth Cat's Ear	23/09/2010
Juncus usitatus	Common Rush	12/11/2002
Lactuca serriola (NC)	Prickly Lettuce	9/12/1998
Limonium lobatum	Winged Sea-lavender	12/12/2001
Lomandra effusa	Scented Mat-rush	23/09/2010
Lycium ferocissimum	African Boxthorn	16/11/2011
Lycopus australis	Australian Gipsywort	12/11/2002
Maireana brevifolia	Short-leaf Bluebush	18/02/2023
Maireana pyramidata	Black Bluebush	9/12/1998
Marrubium vulgare	Horehound	18/02/2023
Medicago minima	Little Medic	23/09/2010
Medicago polymorpha	Burr-medic	23/09/2010
Melaleuca lanceolata ssp. lanceolata (NC)	Dryland Tea-tree	9/12/1998
Mesembryanthemum crystallinum	Common Iceplant	18/02/2023
Moraea setifolia	Thread Iris	23/09/2010
Nicotiana glauca	Tree Tobacco	9/12/1998
Nitraria billardierei	Nitre-bush	18/02/2023
Olea europaea ssp.	Olive	12/07/2011
Onopordum acaulon	Horse Thistle	15/06/2011
Opuntia elata	Riverina Pear	8/12/2008
Opuntia monacantha	Drooping Prickly Pear	11/01/2006
Opuntia robusta	Wheel Pear	6/09/2011
Opuntia spp.	Prickly Pear	6/09/2011
Panicum hillmanii	Witch-grass	15/04/2015
Panicum sp.	Panic/Millet	18/02/2023
Parietaria judaica	Wall Pellitory	1/07/2002
Paspalum vaginatum	Salt-water Couch	12/11/2002
Phragmites australis	Common Reed	12/11/2002
Pittosporum angustifolium	Native Apricot	23/09/2010
Plantago lanceolata var. lanceolata	Ribwort	9/12/1998
Polypogon monspeliensis	Annual Beard-grass	12/11/2002
Reichardia tingitana	False Sowthistle	23/09/2010
Rhagodia parabolica	Mealy Saltbush	12/12/2001
Rhagodia spinescens	Spiny Saltbush	18/02/2023
Rhodanthe stuartiana	Clay Everlasting	23/09/2010
Roepera aurantiaca ssp.	Shrubby Twinleaf	11/12/2001
Rostraria cristata	Annual Cat's-tail	23/09/2010
Salix babylonica	Weeping Willow	12/11/2002
Salix babylonica (NC)	Weeping Willow	12/11/2002
Salsola australis	Buckbush	18/02/2023
Salvia verbenaca var.	Wild Sage	9/12/1998
Santalum acuminatum	Quandong	9/12/1998
Schinus molle	Pepper-tree	9/12/1998
Sclerolaena diacantha	Grey Bindyi	18/02/2023
Senecio angulatus	Cape Ivy	15/06/2011
Senecio runcinifolius	Thistle-leaf Groundsel	12/11/2002
Senna artemisioides ssp. petiolaris (NC)	Flat-stalk Senna	9/12/1998
Senna artemisioides ssp. X coriacea	Broad-leaf Desert Senna	9/12/1998
Silene apetala	Sand Catchfly	23/09/2010

Scientific Name	Common Name	Date of Last Record
Sisymbrium erysimoides	Smooth Mustard	23/09/2010
Sisymbrium irio	London Mustard	15/06/2011
Sixalix atropurpurea	Pincushion	9/12/1998
Sonchus hydrophilus	Native Sow-thistle	12/11/2002
Sonchus oleraceus	Common Sow-thistle	23/09/2010
Sonchus sp.	Sow-thistle	18/02/2023
Spergularia marina	Salt Sand-spurrey	12/11/2002
Spergularia marina (NC)	Salt Sand-spurrey	12/11/2002
Suaeda australis	Austral Seablite	12/11/2002
Symphyotrichum subulatum	Aster-weed	12/11/2002
Tecticornia pergranulata ssp. pergranulata	Black-seed Samphire	12/11/2002
Tecticornia sp.	Samphire	18/02/2023
Thyridia repens	Creeping Monkey-flower	12/11/2002
Trifolium angustifolium	Narrow-leaf Clover	23/09/2010
Typha orientalis	Broad-leaf Bulrush	12/11/2002
Xanthium spinosum	Bathurst Burr	12/07/2011

8.3 BDBSA Fauna Species records within 5 km

Scientific Name	Common Name	Date of Last Record
Acanthagenys rufogularis	Spiny-cheeked Honeyeater	12/10/2019
Acanthiza nana	Yellow Thornbill	31/03/2019
Accipiter fasciatus fasciatus	Brown Goshawk	12/09/2020
Acrocephalus australis australis	Australian Reed Warbler	31/03/2019
Alauda arvensis arvensis	Eurasian Skylark	12/10/2019
Anas gracilis gracilis	Grey Teal	25/09/2015
Anas platyrhynchos platyrhynchos	Mallard	28/08/2004
Anas superciliosa	Pacific Black Duck	27/07/2018
Anas superciliosa superciliosa	Pacific Black Duck	12/10/2019
Anas superciliosa x platyrhynchos	Pacific Black Duck x Mallard hybrid	12/09/2020
Anhinga novaehollandiae novaehollandiae	Australasian Darter	12/09/2020
Anthochaera carunculata	Red Wattlebird	27/07/2018
Anthus australis	Australian Pipit	12/10/2010
Aquila audax audax	Wedge-tailed Eagle	12/09/2020
Artamus cinereus	Black-faced Woodswallow	12/10/2010
Artamus cyanopterus	Dusky Woodswallow	17/10/2010
Austronomus australis	White-striped Free-tailed Bat	12/03/2018
AVES sp.	birds	6/04/2016
Aythya australis	Hardhead	27/07/2018
Bos taurus	Cattle (European Cattle)	12/10/2010
Bubulcus ibis coromandus	Eastern Cattle Egret	25/08/2004
Cacatua sanguinea gymnopis	Little Corella	31/03/2019
Canis lupus familiaris	Feral Dog	26/08/2004
Carassius auratus	Goldfish	24/02/2002
Chalcites basalis	Horsfield's Bronze Cuckoo	12/09/2020
Chalcites osculans	Black-eared Cuckoo	4/02/2016

Scientific Name	Common Name	Date of Last Record
Chalinolobus gouldii	Gould's Wattled Bat	26/03/2018
Chalinolobus morio	Chocolate Wattled Bat	26/03/2018
Chenonetta jubata	Maned Duck	12/09/2020
Chroicocephalus novaehollandiae novaehollandiae	Silver Gull	12/09/2020
Cincloramphus cruralis	Brown Songlark	12/10/2019
Circus approximans	Swamp Harrier	31/03/2019
Climacteris picumnus picumnus	Brown Treecreeper	17/10/2010
Colluricincla harmonica	Grey Shrikethrush	4/10/2017
Colluricincla harmonica harmonica	Grey Shrikethrush (eastern SA)	12/10/2019
Columba livia	Feral Pigeon	27/08/2004
Coracina novaehollandiae	Black-faced Cuckooshrike	12/10/2019
Corvus coronoides	Australian Raven	27/07/2018
Corvus mellori	Little Raven	12/10/2019
Corvus sp.	Ravens, Crows	25/08/2004
Coturnix ypsilophora australis	Brown Quail	31/03/2019
Cracticus nigrogularis	Pied Butcherbird	26/05/2017
Cracticus torquatus leucopterus	Grey Butcherbird	12/10/2019
Craterocephalus fulvus	Unspecked Hardyhead	24/02/2002
Crinia signifera	Common Froglet	12/09/2004
Cygnus atratus	Black Swan	12/09/2020
Cyprinus carpio	European Carp	24/02/2002
Dacelo novaeguineae novaeguineae	Laughing Kookaburra	12/09/2020
Egretta novaehollandiae	White-faced Heron	12/09/2020
Elanus axillaris	Black-shouldered Kite	28/08/2004
Entomyzon cyanotis cyanotis	Blue-faced Honeyeater	17/10/2022
Eolophus roseicapilla	Galah	27/07/2018
Eolophus roseicapilla albiceps	Galah (most of SA)	31/03/2019
Epthianura albifrons	White-fronted Chat	12/10/2019
Eurostopodus argus	Spotted Nightjar	12/09/2020
Falco berigora berigora	Brown Falcon	25/08/2004
Falco cenchroides cenchroides	Nankeen Kestrel	12/09/2020
Fulica atra australis	Eurasian Coot	12/09/2020
Gallinula tenebrosa tenebrosa	Dusky Moorhen	12/10/2019
Gambusia holbrooki	Eastern Gambusia	24/02/2002
Gavicalis virescens	Singing Honeyeater	17/10/2010
Gavicalis virescens sonorus	Singing Honeyeater (EP, YP, FR, MN, AP, MM, coastal SE)	12/10/2019
Geopelia placida placida	Peaceful Dove	12/10/2019
Glossopsitta concinna	Musk Lorikeet	31/03/2019
Grallina cyanoleuca cyanoleuca	Magpielark	12/10/2019
Gymnorhina tibicen	Australian Magpie	31/03/2019
Haliastur sphenurus	Whistling Kite	12/09/2020
Hirundo neoxena neoxena	Welcome Swallow	12/10/2019
Hydroprogne caspia	Caspian Tern	31/03/2019

Scientific Name	Common Name	Date of Last Record
Hypseleotris spp. (complex)	n/a	24/02/2002
Lepus europaeus	European Brown Hare	17/10/2010
Limnodynastes dumerilii	Banjo Frog	12/09/2004
Limnodynastes tasmaniensis	Spotted Marsh Frog	12/09/2004
Litoria calliscelis	South Australian Tree Frog (MLR MN)	12/09/2004
Litoria peronii	Peron's Tree Frog	20/09/1998
Macropus fuliginosus	Western Grey Kangaroo	25/10/2021
Malurus cyaneus	Superb Fairywren	25/07/2017
Malurus cyaneus leggei	Superb Fairywren (Mainland SA)	12/10/2019
Malurus leucopterus leuconotus	White-winged Fairywren	12/10/2019
Manorina melanocephala	Noisy Miner	31/03/2019
Melanodryas cucullata cucullata	Hooded Robin (YP, MN, AP, MLR, MM, SE)	17/10/2010
Melanotaenia fluviatilis	Murray Rainbowfish	24/02/2002
Menetia greyii	Dwarf Skink	26/08/2004
Microcarbo melanoleucos melanoleucos	Little Pied Cormorant	27/07/2018
Milvus migrans affinis	Black Kite	12/09/2020
Mormopterus planiceps	Southern Free-tailed Bat	26/03/2018
Mus musculus	House Mouse	26/08/2004
Nematalosa erebi	Bony Bream	24/02/2002
Ninox boobook	Australian Boobook	25/08/2004
Notechis scutatus	Tiger Snake	26/08/2004
Nyctophilus geoffroyi	Lesser Long-eared Bat	10/03/2018
Nyctophilus sp.		27/02/2018
Ocyphaps lophotes lophotes	Crested Pigeon	12/09/2020
Oryctolagus cuniculus	Rabbit (European Rabbit)	12/07/2011
Ovis aries	Sheep (Feral Sheep)	16/10/2010
Pachycephala fuliginosa fuliginosa	Western Whistler	12/10/2019
Pardalotus punctatus	Spotted Pardalote	31/03/2019
Pardalotus striatus substriatus	Striated Pardalote	31/03/2019
Passer domesticus domesticus	House Sparrow	31/03/2019
Pelecanus conspicillatus	Australian Pelican	12/09/2020
Perca fluviatilis	Redfin Perch	24/02/2002
Petrochelidon nigricans neglecta	Tree Martin (all of SA)	31/03/2019
Phalacrocorax carbo	Great Cormorant	12/10/2019
Phalacrocorax sulcirostris	Little Black Cormorant	27/07/2018
Phalacrocorax varius hypoleucos	Australian Pied Cormorant	5/04/2017
Phaps chalcoptera	Common Bronzewing	12/10/2019
Philypnodon grandiceps	Big-headed Gudgeon	24/02/2002
Philypnodon macrostomus	Dwarf Flathead Gudgeon	24/02/2002
Phylidonyris novaehollandiae	New Holland Honeyeater	26/02/2016
Phylidonyris novaehollandiae novaehollandiae	New Holland Honeyeater (mainland SA)	31/03/2019
Platalea flavipes	Yellow-billed Spoonbill	31/03/2019
Platalea regia	Royal Spoonbill	31/03/2019
Platycercus elegans	Crimson Rosella	31/03/2016

Scientific Name	Common Name	Date of Last Record
Platycercus elegans flaveolus	Yellow Rosella	31/03/2019
Pomatostomus ruficeps	Chestnut-crowned Babbler	16/10/2010
Pomatostomus superciliosus	White-browed Babbler	17/10/2010
Pomatostomus superciliosus superciliosus	White-browed Babbler (southern SA)	31/03/2019
Poodytes gramineus goulburni	Little Grassbird	25/08/2004
Porphyrio melanotus melanotus	Australasian Swamphen	12/09/2020
Psephotus haematonotus	Red-rumped Parrot	26/02/2016
Psephotus haematonotus haematonotus	Red-rumped Parrot (eastern SA except NE)	31/03/2019
Pteropus poliocephalus	Grey-headed Flying-fox	5/03/2020
Ptilotula penicillata	White-plumed Honeyeater	27/07/2018
Ptilotula penicillata penicillata	White-plumed Honeyeater (northern YP, MN, AP, MLR, LNE, MM, SE)	31/03/2019
Rattus rattus	Black Rat (Ship Rat, Roof Rat)	27/08/2004
Rhipidura albiscapa alisteri	Grey Fantail (southern SA)	12/10/2019
Rhipidura leucophrys leucophrys	Willie Wagtail	12/10/2019
Sericornis frontalis rosinae	White-browed Scrubwren (MLR)	12/10/2019
Smicrornis brevirostris occidentalis	Weebill (Yellabinna, Gawler Ranges, EP, YP, southern FR, MN, MLR, MM)	31/03/2019
Spilopelia chinensis	Spotted Dove	12/09/2020
Sturnus vulgaris vulgaris	Common Starling	12/10/2019
Tadorna tadornoides	Australian Shelduck	12/09/2020
Thalasseus bergii cristatus	Greater Crested Tern	31/03/2016
Threskiornis molucca molucca	Australian White Ibis	12/09/2020
Threskiornis spinicollis	Straw-necked Ibis	12/09/2020
Tiliqua rugosa	Sleepy Lizard	26/11/2023
Tiliqua scincoides	Eastern Bluetongue	26/11/2023
Todiramphus sanctus sanctus	Sacred Kingfisher	5/04/2017
Tribonyx ventralis	Black-tailed Nativehen	25/08/2004
Trichoglossus moluccanus moluccanus	Rainbow Lorikeet	12/10/2019
Trichosurus vulpecula	Common Brushtail Possum	25/08/2004
Turdus merula merula	Common Blackbird	12/10/2019
Tyto javanica delicatula	Eastern Barn Owl	26/08/2004
Vanellus miles	Masked Lapwing	23/03/2018
Vanellus miles novaehollandiae	Spur-winged Plover	12/09/2020
Varanus gouldii	Sand Goanna	26/11/2023
Vespadelus baverstocki	Inland Forest Bat	9/03/2018
Vespadelus darlingtoni	Large Forest Bat	26/03/2018
Vespadelus regulus	Southern Forest Bat	26/03/2018
Vespadelus sp.		1/03/2018
Vespadelus vulturnus	Little Forest Bat	26/03/2018
Vulpes vulpes	Fox (Red Fox)	24/08/2004
Zosterops lateralis pinarochrous	Silvereye (EP, YP, FR, MLR, MM, SE)	31/03/2019