

Native Vegetation Clearance

Kangaroo Island Pipeline Stage I

Data Report

Clearance under the *Native Vegetation Regulations 2017*

3 December 2022

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1. Application information

Application Details

Applicant:	SA Water		
Key contact:	<div style="background-color: black; width: 100px; height: 15px; margin-bottom: 5px;"></div> <div style="background-color: black; width: 200px; height: 15px; margin-bottom: 5px;"></div> , SA Water <div style="background-color: black; width: 100px; height: 15px; margin-bottom: 5px;"></div> <div style="background-color: black; width: 250px; height: 15px;"></div>		
Landowner:	Commissioner of Highways		
Site Address:	Hog Bay Road between Playford Highway and Pelican Lagoon.		
Local Government Area:	Kangaroo Island Council	Hundred:	Dudley, Haines, Menzies
Title ID:	Arronmore Road Reserve Hog Bay Road Road Reserve	Parcel ID	N.A.

Summary of proposed clearance

Purpose of clearance	To construct a pipeline to augment the security and distribution of water supply on Kangaroo Island
Native Vegetation Regulation	Regulation 12, Schedule 1; clause 34, Infrastructure in the Public Interest
Description of the vegetation under application	<p>0.0369 ha of <i>Eucalyptus diversifolia</i> and <i>Eucalyptus rugosa</i> mid mallee woodland (KI 0204 – TT Site 3)</p> <p>0.1289 ha of <i>Eucalyptus diversifolia</i> mallee over wetland shrubs in deeper sands and clays (KI 0206 - VV Sites 2 and 9, TT Site 2)</p> <p>0.0354 ha of <i>Eucalyptus diversifolia</i> mallee over lateritic sands and clays (KI 0210 - VV Sites 8 and 11)</p> <p>0.026 ha of <i>E. diversifolia</i> mid mallee woodland (KI 0212 – WW Sites 2 and 6, VV Site 4)</p> <p>0.0094 ha of <i>Eucalyptus diversifolia</i> and <i>E. cosmophylla</i> mid mallee woodland (KI 0215 – VV Site 7. TT Site 1)</p> <p>0.0319 ha of <i>Eucalyptus diversifolia</i> and <i>E. rugosa</i> mallee over coastal shrubs (KI 0220 –SS3 Site 2)</p> <p>0.1661 ha of <i>Eucalyptus rugosa</i> and <i>E. diversifolia</i> mallee over coastal shrubs in limestone soils (KI 0406 - TT Site 4)</p> <p>0.0004 ha of <i>Eucalyptus albopurpurea</i> mid mallee woodland over <i>Melaleuca</i> species (KI 0802 – XX1 Site 2)</p> <p>0.0261 ha of <i>Eucalyptus cneorifolia</i> mallee forest over <i>Melaleuca</i> species (KI 1103 – GG2 Site 3, XX2 Site 2)</p> <p>0.1641 ha of <i>Eucalyptus cneorifolia</i> mallee (KI 1104 – GG1 Sites 1 and 3, GG2 Site 1, XX1 Site 3, WW Sites 5, 7, 8, VV Sites 3,5,6 and 12, UU Site 2)</p> <p>0.0023 ha of <i>Eucalyptus cneorifolia</i> and <i>E. rugosa</i> mallee over woodland shrubs in laterite soils (KI 1106 - VV Site 1)</p> <p>0.0638 ha of <i>Eucalyptus cneorifolia</i> Mallee over wetland shrubs (KI 1107 - GG1 Site 5, GG2 Site 2, UU Site 1)</p>

	<p>0.0002 ha of <i>Eucalyptus cneorifolia</i> with <i>E. phenax</i> and <i>E. odorata</i> mid mallee woodland (KI 1109 - WW Site 1)</p> <p>0.2275 ha of <i>Leucopogon parviflorus</i> coastal shrubland (KI 1201 – WW Site 3, TT Site 5 and SS3 Site 1)</p> <p>0.0056 ha of <i>Melaleuca halmaturorum</i> shrubland with emergent <i>Eucalyptus cneorifolia</i> (KI 1304 - XX2 Site 1)</p> <p>0.0324 ha of <i>Leucopogon parviflorus</i> / <i>Myoporum insulare</i> coastal shrubland (KI 2001 - SS2 Site1)</p> <p>0.0183 ha of <i>Melaleuca halmaturorum</i> / <i>Melaleuca brevifolia</i> shrubland (KI 2201 - VV Site 10)</p> <p>0.0154 ha of <i>Melaleuca halmaturorum</i> / <i>M. brevifolia</i> over woodland and wetland shrubs (KI 2301 - WW Site 4)</p> <p>0.0169 ha of <i>Melaleuca halmaturorum</i> / <i>Melaleuca brevifolia</i> shrubland over samphire (KI 2302 – GJC, XX1 Site 1, XX2 Site 3)</p> <p>0.0052 ha of highly modified Mallee woodland (GG1 Site 4)</p>
Total proposed clearance - area (ha) and number of trees	0.9759 ha is proposed to be cleared.
Level of clearance	Level 4
Overlay (Planning and Design Code)	Not applicable



Mitigation hierarchy	Impacts to native vegetation have been avoided and minimised by locating the works in the road or road shoulder to avoid damage to significant vegetation in the verge.
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2. Purpose of clearance

2.1 Description

SA Water is proposing to build a new pipeline to connect the Middle River and Penneshaw water supply systems on Kangaroo Island.

2.2 Background

SA Water completed the Kangaroo Island Long Term Water Plan in 2018 to identify actions required to ensure water security on the island for the next 25 years (SA Water 2018). The plan considered trends in water demand and supply capacity in the face of changing climate, land use and population. A priority action from the plan was to integrate the Middle River and Penneshaw systems with a pipeline.

The Middle River system distributes water from the Middle River Reservoir to Kingscote, Parndana and Brownlow in the central part of Kangaroo Island. The Penneshaw system distributes water from the Penneshaw desalination plant to Penneshaw on the Dudley Peninsula in the east of the island. Connecting the two systems would increase the security of water supply as well as distributing water to houses, farms and settlements along the route.

The pipeline is planned in two stages (Figure 1). Stage 1 extends from the Middle River water main on Playford Highway near Kangaroo Island Airport along Arranmore Road and Hog Bay Road to Pelican Lagoon. Stage 2 extends from Pelican Lagoon along Hog Bay Road to reach the desalination plant water storage at Charing Cross Road, Kangaroo Head.

A vegetation clearance application for the western section was initially prepared for KI Links by Botanical Enigmerase and approved by the Native Vegetation Council on 6 March 2019 (NVR 2019/3016/520). Since this approval was given, SA Water assumed ownership of the project and made changes to the pipeline's design. A combined clearance application (with amendments dated 19/2/22) for Stage 1 and 2 was approved on 24 January 2022 (NVR 2021/3023/520).

Stage 2 works were completed in 2022 and SA Water is now proceeding with Stage 1. Planning for Stage 1 has identified places where additional clearance is required that will exceed the previously approved area. Additional clearance is required:

- where a wider construction zone will impact on roadside vegetation;
- for scours and valve sets;
- where entry and exit sites are required for hydraulic directional drilling under watercourses; and
- where there is insufficient space to safely construct the pipeline in the road shoulder.

Related, future options to further augment water supply and security are:

- relocating the Penneshaw desalination plant to the Earth Bank Storage facility at the intersection of Hog Bay Road and Charing Cross Road (Figure 1) and increasing its capacity; and
- a pipeline to supply water to American River.

2.3 General location map

Figure 1 provides an overview of the route within the regional setting.

Figure 2 shows the Stage 1 pipeline sections in the context of towns, conservation reserves and roads. Native vegetation has been mapped in sections from GG1 in the west to SS in the east with section breaks occurring at major road intersections (Figure 2).



Figure 1. Location map showing Stage 1 and Stage 2 pipeline routes



Figure 2. Stage 1 pipeline route showing roads, localities and vegetation survey sections

2.4 Details of the proposal

The Stage 1 pipeline extends from the intersection of Playford Highway at Cygnet River along Arronmore Road and Hog Bay Road to Pelican Lagoon where it will connect with the completed Stage 2 pipeline.

The pipeline will be constructed in the Commissioner of Highways roads under the care and control of the Department for Infrastructure and Transport and Kangaroo Island Council. The route follows sections of Arronmore Road and Hog Bay Road.

The pipeline will be located in the road shoulder (except at Prospect Hill see below) to ensure all SA Water assets are off the road and in the road shoulder for the safety of workers. The pipeline requires a work zone up to 10 m wide measured from the centre of the road. In general this will extend 4 m outside the road seal on the north side but is reduced where native vegetation is present to minimise clearance. Unavoidable clearance is less than 0.3 m wide and is required at numerous locations throughout the route.

More than 20 valve sets and scour points will be required along the pipeline route for maintenance purposes. The footprint of these works are approximately 3 to 6 m wide and 15 to 24 m long (Table 1).

Table 1. Dimensions for typical asset types

Asset	Typical Dimensions
Valves with 2 x Branch	19 x 3 m
Valves with 1 x Scour	17 x 3 m
Valves with 2 x Scour	21 x 3 m

Valve Set	15 x 3 m
Scours	6 x 4 m
Creek Crossing directional drilling launch pit	24 x 6 m

At Prospect Hill the pipeline route is located outside the road shoulder, but still within the road reserve. The road follows a sharp curve above a steep embankment. The site has short sightlines making construction and ongoing maintenance dangerous. The pipeline will be located within the road reserve at the foot of the existing embankment requiring a clearance corridor 12 m wide over 279 m.

2.5 Approvals required or obtained

Native Vegetation Act 1991 (SA)

An application to clear native vegetation is required under the Native Vegetation Act.

Landscape Act 2019 (SA)

The pipeline crosses watercourses and approvals will be required for water affecting activities under the Landscape Act.

Planning, Development and Infrastructure Act 2016 (SA)

Under Schedule 13 (ii) of the Planning, Development and Infrastructure Act (2016), state agency development is exempt from approval where the works involve the construction, reconstruction, alteration, repair or maintenance of any drain, pipe or underground cable.

Environment Protection and Biodiversity Conservation Act 1999 (Cwth)

The route passes through areas that support matters of National Environmental Significance under the EPBC Act. No significant impacts are expected but the project will be referred to the Federal Minister for the Environment.

Aboriginal Heritage Act 1988 (SA)

SA Water has reviewed the available information from the Department of the Premier and Cabinet – Aboriginal Affairs and Reconciliation (AAR) and Aquamap heritage layers and identified there is a low likelihood of encountering heritage in the proposed pipeline alignments.

With any ground disturbing works there is potential for encountering Aboriginal heritage. SA Water's Standard Operating Procedure (SOP) for Discovery of Aboriginal Heritage will be provided to all contractors and included as part of their Construction Environmental Management Plan. The SOP must be followed in the event that any Aboriginal heritage is discovered during the life of the project.

Local Government Act (1999) (SA)

SA Water is required to obtain a license from Kangaroo Island Council to make an alteration to a public road pursuant to Sections 221(2)(b) and 221(6)(b) of the Local Government Act.

2.6 Native Vegetation Regulation

This project is for infrastructure in the public interest as defined under Schedule 1 Regulation 12 (34) - Infrastructure (5(1)(d) of the Native Vegetation Act.

2.7 Development Application information

As a state agency project to construct a pipeline this project is exempt from approval under the Planning, Development and Infrastructure Act.

3. Method

3.1 Flora assessment

Existing records of rare and threatened plants were reviewed for a 5 km search buffer along the pipeline route using NatureMaps (12 May 2019 and 25 October 2022) and the EPBC Protected Matters Search Tool (12 May 2019 and 25 October 2022). The Roadside Vegetation Database was also reviewed (Ecological Associates 2019).

A roadside vegetation survey with Bushland Assessments was conducted on 19 November 2018 and 22, 24, 27 and 28 January 2020 (Haby and Rowley 2020a) and 3, 4 and 5 November 2020 (this report). The survey included the entire road reserve on both sides, focusing on the first 10 m from the white marker post.

The route was divided into sections based on landmarks (road intersections (SS, TT, VV etc.)) and then into plant associations (sites 1, 2, 3 etc.).

Road segments were further subdivided according to the distance between the road seal and the vegetation and the condition of the vegetation.

A complete species list was prepared for each plant association. Plant associations were classified according to Kangaroo Island Floristic Mapping (Willoughby *et al.* 2001).

3.2 Fauna assessment

A database search of each vegetation clearance site with a 5 km buffer was made on 25 October 2022 using:

- NatureMaps;
- Atlas of Living Australia and
- the Environment Protection and Biodiversity Conservation Protected Matters Search Tool.

The likelihood of an impact was assessed in relation to the nature and quality of habitat at the site and the habitat requirements of fauna species. Records of marine and aquatic species were excluded. National Conservation Ratings are in accordance with the most recent *EPBC Act* Listing Status available in the Species Profile and Threats Database. State Conservation Ratings are in accordance with the *National Parks and Wildlife Act 1972*.

A detailed fauna survey was undertaken of representative sites on the 23rd and 24th of September 2019 (Ecological Associates 2019). The roadside was walked. Standard Biological Survey of South Australia methodology (Owens 2000) for birds was undertaken at seven locations, with at least two person-hours spent in the morning and late afternoon in each site. In addition, any bird species opportunistically observed outside these areas were noted.

Observations were made in the field of other vertebrate taxa (mammals, reptiles, amphibians) based on sightings, tracks, scats or traces. Several specific habitat attributes for fauna were also targeted during field survey. All active termite mounds observed within 5 metres of the road edge were noted, along with any other observations outside this area. A GPS location was recorded for each termite mound, as well as distance from the existing verge.

The findings of this survey were extrapolated to similar habitats and landscapes in the remainder of the route.

Records were also accessed from a fauna survey undertaken for Department of Transport and Infrastructure in June 2022 at 20 individual sites along the route (JS Ayre & Associates 2022).

4. Assessment Outcomes

4.1 Vegetation Assessment

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

The pipeline will be constructed in public road reserves.

Route Description

Stage 1 commences at the connection to the Middle River Water Main 12 km south-west of Kingscote at the intersection of Arronmore Road and the Playford Highway. The route follows Arronmore Road along the northern boundary of Kangaroo Island Airport then turns south-east to the intersection of Hog Bay Road. The route continues south-east on Hog Bay Road past the township of Nepean Bay to the southern edge of Pelican Lagoon at 3222 Hog Bay Road.

Landforms and Vegetation

The western end of the route crosses the alluvial plain of the Cygnet River near Kangaroo Island Airport. The soils are alkaline duplex soils derived from Quaternary alluvium with possibly some contribution from Tertiary marine sediments. The vegetation is predominantly *Eucalyptus cneorifolia*, *E. diversifolia* and *E. alboburpurea* mallee woodland in elevated areas, *E. camaldulensis* and *E. leucoxyton* woodland along drainage lines and *Tecticornia arbuscula* low shrublands in saline coastal areas.

The route crosses the Cygnet-Snelling Fault south of the township of Nepean Bay to rise to the Gosse-Seddon Plateau. The laterised plateau is an elevated tectonic block of Cambrian rock overlain by weathered laterine, kaolinite and, in places, aeolian dunes. The vegetation is variable and includes *E. cneorifolia* / *E. diversifolia* / *E. rugosa* mallee, *Melaleuca* spp. shrublands in poorly drained areas, and heathland vegetation with *Allocasuarina meulleriana* in sandstone outcrops.

The areas to the southwest of Pelican Lagoon comprise a jumbled sandy dunes and remnant calcreted dune cores overlain by shallow sandy Pleistocene soil. There are tidal flats associated with Pelican Lagoon and isolated salt lakes, with Salt Lagoon located to the east of Hog Bay Road. The dunes are vegetated by pasture with scattered remnants of *Eucalyptus diversifolia* and *E. rugosa* mallee and shrubby vegetation dominated by *Leucopogon parviflorus* and *Myoporum insulare*. *Melaleuca* sp. and samphire communities are present in tidal and waterlogged areas.

Nomenclature

Plant association nomenclature is adopted from Willoughby et al. (2001) (Table 1).

Table 1. Plant associations encountered along the route with conservation ratings at the national (AU - EPBC) and state (SA -DEH 2009) levels: CR - Critically Endangered, E- Endangered, R - Rare (from Willoughby et al. 2001)

Code	Description	AU	SA
0204	<i>Eucalyptus diversifolia</i> ssp. <i>diversifolia</i> , +/- <i>Eucalyptus rugosa</i> , +/- <i>Eucalyptus oleosa</i> ssp. <i>ampliata</i> mid mallee woodland over <i>Melaleuca lanceolata</i> , <i>Acacia uncifolia</i> , <i>Lasiopetalum schulzenii</i> shrubs over <i>Orthrosanthus multiflorus</i> , <i>Correa</i> sp, <i>Pomaderris paniculosa</i> ssp. <i>paniculosa</i> , <i>Senecio odoratus</i> , <i>Myoporum insulare</i> shrubs		
0206	<i>Eucalyptus diversifolia</i> ssp. <i>diversifolia</i> , <i>Melaleuca lanceolata</i> , <i>Eucalyptus rugosa</i> mid open mallee woodland over <i>Acacia uncifolia</i> , +/- <i>Leucopogon parviflorus</i> , +/- <i>Myoporum insulare</i> , +/- <i>Melaleuca gibbosa</i> , +/- <i>Acacia longifolia</i> ssp. <i>sophorae</i> shrubs over +/- <i>Correa eburnea</i> , +/- <i>Pomaderris paniculosa</i> ssp. <i>paniculosa</i>		
0210	<i>Eucalyptus diversifolia</i> ssp. <i>diversifolia</i> , <i>Eucalyptus cosmophylla</i> , <i>Eucalyptus albopurpurea</i> , +/- <i>Eucalyptus cneorifolia</i> , +/- <i>Eucalyptus fasciculosa</i> mid open mallee woodland over <i>Allocasuarina muelleriana</i> ssp. <i>notocolpica</i> , +/- <i>Allocasuarina striata</i> , +/- <i>Banksia marginata</i> , +/- <i>Hakea rostrata</i> shrubs		
0212	<i>Eucalyptus diversifolia</i> ssp. <i>diversifolia</i> , <i>Eucalyptus albopurpurea</i> , +/- <i>Eucalyptus cneorifolia</i> , +/- <i>Eucalyptus cosmophylla</i> , +/- <i>Eucalyptus fasciculosa</i> mid mallee woodland over <i>Melaleuca uncinata</i> (NC), <i>Allocasuarina muelleriana</i> ssp. <i>notocolpica</i> , <i>Allocasuarina striata</i> , +/- <i>Xanthorrhoea semiplana</i> ssp. <i>tateana</i> , +/- <i>Thryptomene ericaea</i> shrubs over <i>Correa</i> sp, <i>Grevillea ilicifolia</i> var. <i>ilicifolia</i> (NC)		
0215	<i>Eucalyptus diversifolia</i> ssp. <i>diversifolia</i> , <i>Eucalyptus albopurpurea</i> , <i>Eucalyptus leptophylla</i> , +/- <i>Eucalyptus cneorifolia</i> , +/- <i>Eucalyptus cosmophylla</i> mid mallee woodland over <i>Leptospermum myrsinoides</i> , +/- <i>Banksia marginata</i> , +/- <i>Acacia myrtifolia</i> var. <i>myrtifolia</i> , +/- <i>Melaleuca uncinata</i> (NC), +/- <i>Thryptomene ericaea</i> shrubs over <i>Bertya rotundifolia</i> , <i>Adenanthos macropodanus</i> , +/- <i>Xanthorrhoea semiplana</i> ssp. <i>tateana</i> , +/- <i>Lasiopetalum schulzenii</i> , +/- <i>Grevillea ilicifolia</i> var. <i>ilicifolia</i> (NC)		
0220	<i>Eucalyptus diversifolia</i> ssp. <i>diversifolia</i> , +/- <i>Eucalyptus cneorifolia</i> , <i>Eucalyptus albopurpurea</i> , <i>Eucalyptus rugosa</i> , +/- <i>Callitris gracilis</i> mid mallee woodland over <i>Melaleuca lanceolata</i> , <i>Dodonaea viscosa</i> ssp. <i>angustissima</i> , <i>Leucopogon parviflorus</i> , <i>Acacia leiophylla</i> shrubs over <i>Correa eburnea</i> , <i>Pomaderris paniculosa</i> ssp. <i>paniculosa</i> , <i>Acrotriche patula</i> , <i>Lasiopetalum schulzenii</i> , <i>Beyeria lechenaultii</i> shrubs		
0406	<i>Eucalyptus rugosa</i> , <i>Eucalyptus oleosa</i> ssp. <i>ampliata</i> , <i>Eucalyptus diversifolia</i> ssp. <i>diversifolia</i> , +/- <i>Eucalyptus cneorifolia</i> , +/- <i>Eucalyptus gracilis</i> mid mallee woodland over <i>Melaleuca lanceolata</i> , +/- <i>Acacia uncifolia</i> shrubs over <i>Acrotriche patula</i> , <i>Dodonaea humilis</i> , <i>Lasiopetalum schulzenii</i> , +/- <i>Leucopogon parviflorus</i> shrubs		
0802	<i>Eucalyptus albopurpurea</i> , <i>Eucalyptus diversifolia</i> ssp. <i>diversifolia</i> , <i>Eucalyptus leptophylla</i> , +/- <i>Eucalyptus fasciculosa</i> , +/- <i>Eucalyptus cosmophylla</i> mid mallee woodland over <i>Melaleuca uncinata</i> (NC), <i>Grevillea ilicifolia</i> var. <i>ilicifolia</i> (NC), <i>Choretrum glomeratum</i> var. <i>glomeratum</i> , <i>Banksia marginata</i> , <i>Xanthorrhoea semiplana</i> ssp. <i>tateana</i> shrubs over <i>Correa</i> sp, <i>Bertya rotundifolia</i> shrubs		
1103	<i>Eucalyptus cneorifolia</i> , <i>Eucalyptus diversifolia</i> ssp. <i>diversifolia</i> , <i>Eucalyptus rugosa</i> , +/- <i>Eucalyptus oleosa</i> ssp. <i>ampliata</i> mid open mallee forest over <i>Melaleuca lanceolata</i> over <i>Acrotriche patula</i> , <i>Choretrum glomeratum</i> var. <i>glomeratum</i> , +/- <i>Acacia paradoxa</i> , +/- <i>Correa eburnea</i> , +/- <i>Grevillea ilicifolia</i> ssp. <i>ilicifolia</i> , +/- <i>Prostanthera aspalathoides</i> mid open shrubland over <i>Orthrosanthus multiflorus</i> low open forbland	CR	E
1104	<i>Eucalyptus cneorifolia</i> , <i>Eucalyptus albopurpurea</i> , +/- <i>Eucalyptus diversifolia</i> ssp. <i>diversifolia</i> , +/- <i>Eucalyptus cosmophylla</i> mid mallee woodland over <i>Melaleuca uncinata</i> (NC), <i>Grevillea ilicifolia</i> var. <i>ilicifolia</i> (NC), <i>Allocasuarina striata</i> , <i>Xanthorrhoea semiplana</i> ssp. <i>tateana</i> , <i>Allocasuarina muelleriana</i> ssp. <i>notocolpica</i> shrubs over <i>Thryptomene ericaea</i> , <i>Correa</i> sp, <i>Grevillea lavandulacea</i> ssp. <i>rogersii</i> , <i>Adenanthos terminalis</i> shrubs	CR	E
1106	<i>Eucalyptus cneorifolia</i> , <i>Eucalyptus albopurpurea</i> , <i>Eucalyptus phenax</i> ssp. <i>compressa</i> , +/- <i>Eucalyptus cosmophylla</i> , +/- <i>Eucalyptus diversifolia</i> ssp. <i>diversifolia</i> mid mallee woodland over <i>Melaleuca uncinata</i> (NC), <i>Thryptomene ericaea</i> , <i>Grevillea ilicifolia</i> var. <i>ilicifolia</i> (NC), <i>Xanthorrhoea semiplana</i> ssp. <i>tateana</i> , +/- <i>Callistemon rugulosus</i> var. <i>rugulosus</i> (NC) shrubs over <i>Correa</i> sp shrubs	CR	E

1107	<i>Eucalyptus cneorifolia</i> , <i>Eucalyptus diversifolia</i> ssp. <i>diversifolia</i> , <i>Eucalyptus cosmophylla</i> , <i>Eucalyptus albopurpurea</i> , <i>Eucalyptus fasciculosa</i> mid mallee woodland over <i>Melaleuca brevifolia</i> , <i>Melaleuca gibbosa</i> , <i>Acacia calamifolia</i> (NC), <i>Callistemon rugulosus</i> var. <i>rugulosus</i> (NC), <i>Hakea rugosa</i> shrubs	CR	E
1109	<i>Eucalyptus cneorifolia</i> , <i>Eucalyptus albopurpurea</i> , <i>Eucalyptus phenax</i> ssp. <i>compressa</i> , +/- <i>Eucalyptus diversifolia</i> ssp. <i>diversifolia</i> mid mallee woodland over <i>Melaleuca uncinata</i> (NC), <i>Thryptomene ericaea</i> , <i>Grevillea ilicifolia</i> var. <i>ilicifolia</i> (NC), <i>Xanthorrhoea semiplana</i> ssp. <i>tateana</i> , <i>Callistemon rugulosus</i> var. <i>rugulosus</i> (NC) shrubs over <i>Correa</i> sp shrubs	CR	E
1201	<i>Myoporum insulare</i> , <i>Leucopogon parviflorus</i> , <i>Olearia axillaris</i> , <i>Acacia leiophylla</i> tall open shrubland over <i>Pimelea flava</i> ssp. <i>flava</i> , <i>Orthrosanthus multiflorus</i> , +/- <i>Acacia longifolia</i> ssp. <i>longifolia</i> , +/- <i>Pomaderris paniculosa</i> ssp. <i>paniculosa</i> shrubs		
1304	<i>Melaleuca halmaturorum</i> , <i>Melaleuca brevifolia</i> , <i>Melaleuca lanceolata</i> low open woodland over <i>Melaleuca acuminata</i> ssp. <i>acuminata</i> , <i>Melaleuca gibbosa</i> , <i>Acacia paradoxa</i> , <i>Leucopogon parviflorus</i> shrubs over <i>Eutaxia microphylla</i> var. <i>microphylla</i> shrubs		
2001	<i>Leucopogon parviflorus</i> , <i>Olearia axillaris</i> , <i>Myoporum insulare</i> , +/- <i>Melaleuca lanceolata</i> , +/- <i>Acacia uncifolia</i> mid open shrubland over <i>Kunzea pomifera</i> , <i>Pomaderris paniculosa</i> ssp. <i>paniculosa</i> , <i>Pimelea flava</i> ssp. <i>flava</i> , <i>Dodonaea viscosa</i> ssp. <i>angustissima</i> shrubs		
2201	<i>Melaleuca brevifolia</i> , <i>Melaleuca gibbosa</i> , +/- <i>Melaleuca halmaturorum</i> mid shrubland		
2301	<i>Melaleuca halmaturorum</i> , <i>Melaleuca brevifolia</i> tall open shrubland		
2302	<i>Melaleuca halmaturorum</i> , +/- <i>Melaleuca brevifolia</i> tall open shrubland over <i>Sclerostegia arbuscula</i> , <i>Suaeda australis</i> , <i>Sarcocornia blackiana</i> , <i>Sarcocornia quinqueflora</i> shrubs	VU	

Site maps showing locations of works



Figure 3. Hydraulic direct drilling (HDD) launch pits

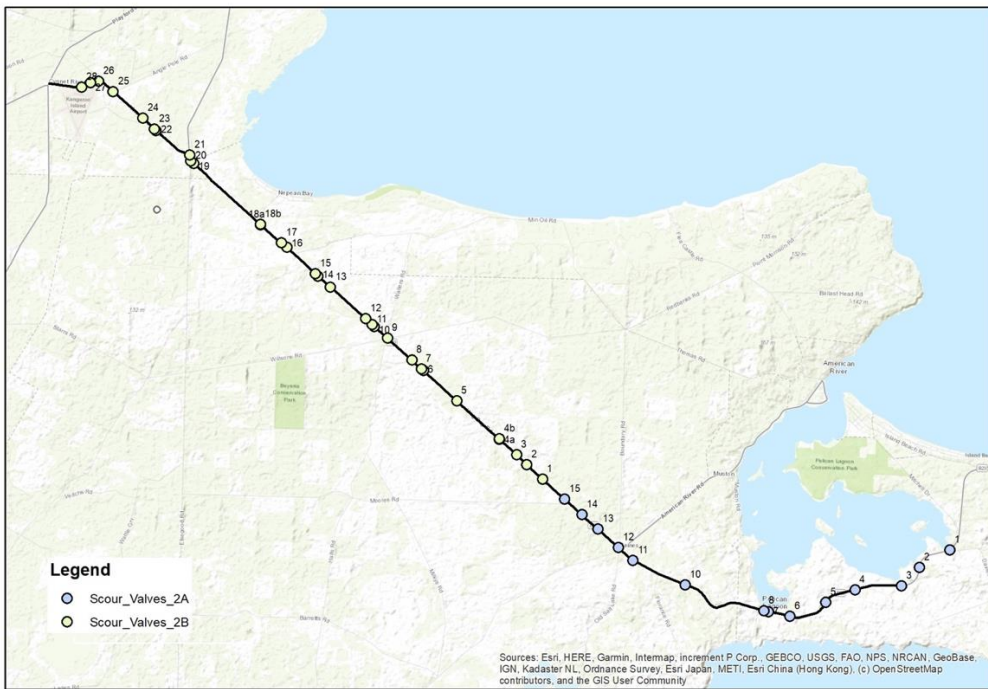


Figure 4. Scour valve locations

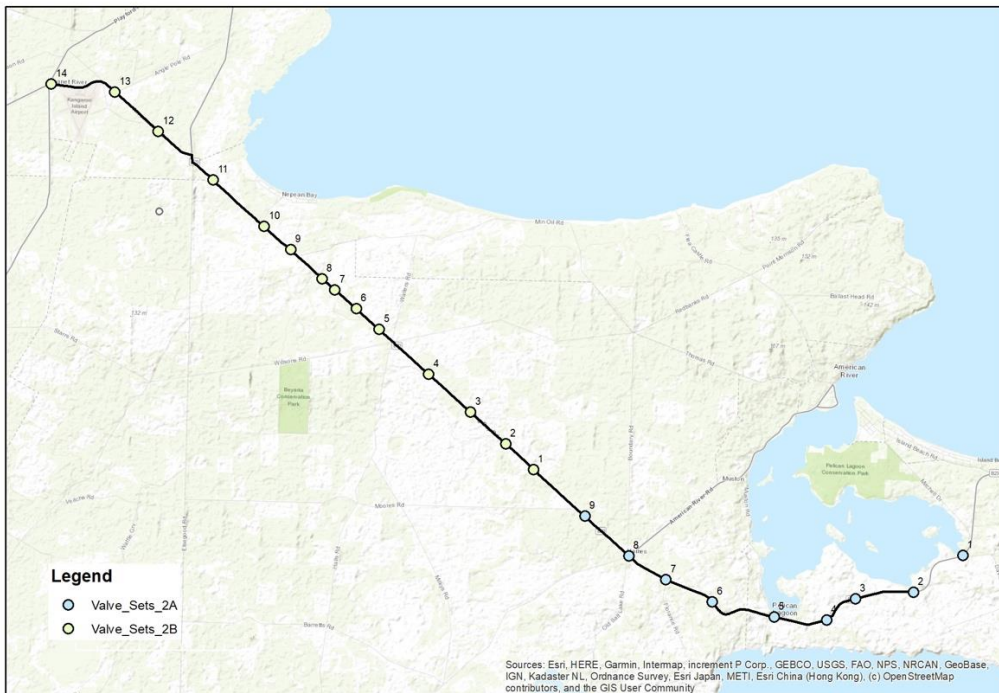


Figure 5. Valve set locations



Figure 6A. Vegetation segments along route (north verge)



Figure 6B. Vegetation segments along route (north verge)



Figure 6C. Vegetation segments along route (north verge)



Figure 6D. Vegetation segments along route (north verge)



Figure 6E. Vegetation segments along route (south verge)

Details of the vegetation associates/scattered trees proposed to be impacted

It is proposed to clear vegetation from 44 sites representing 20 plant communities. No scattered trees will be impacted.

Vegetation Association	Section GG1 Site 1 - KI 1104 (Willoughby et al. 2001) <i>Eucalyptus cneorifolia</i> mid mallee woodland
	

Photo 2583 facing East.					
General description	<p>This plant association is located north of Kangaroo Island airport on the low relief outwash sediments of the Cygnet River. Kangaroo Island Narrow-leaf Mallee (<i>Eucalyptus cneorifolia</i>) provides the dominant overstorey. The community contains a very high diversity of native understorey species including <i>Acacia</i> spp., <i>Melaleuca</i> spp., <i>Hibbertia</i> spp., Round-leaf Bertya (<i>Bertya rotundifolia</i>), sedges, vines, and grasses. Exotic species include Freesia, Cape Weed (<i>Arcotheca calendula</i>) and several introduced grasses.</p> <p>Clearance is required for scours and valve sets, as well as minor trimming of roadside vegetation. Loss Factor (LF) = 1.</p>				
Threatened species or community	<p>The association belongs to the ecological community "Kangaroo Island Narrow-leaved Mallee Woodland" which is Critically Endangered under the EPBC Act and is Endangered in South Australia under the Provisional List of Threatened Ecosystems (DEH in progress).</p> <p>Threatened flora at this site are:</p> <ul style="list-style-type: none"> • Prickly Grevillea (SA Rare) • Tate's Grass-tree (SA Rare) <p>Threatened fauna that may be associated with this site include 3 mammal species, 16 bird species and 1 species of reptile (section 4.2). Eleven species are EPBC-listed: KI White-eared Honeyeater (EN), KI Brown-headed Honeyeater (EN), Western Whipbird (EN), Beautiful Firetail (EN), Bassian Thrush (EN), Southern Brown Bandicoot (EN), Short-beaked Echidna (EN), KI Shy Heathwren (VU), KI Striated Thornbill (VU), KI Little Wattlebird (VU), and KI Crimson Rosella (VU). An additional nine species are listed at the state level (Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R).</p>				
Landscape context score	1.12	Vegetation Condition Score	53.44	Conservation significance score	1.58
Unit biodiversity Score	94.56	Area (ha)	0.0179	Total biodiversity Score	1.69

Vegetation Association	<p>Section GG1 Site 3 - KI 1104 (Willoughby et al. 2001)</p> <p><i>Eucalyptus cneorifolia</i> mid mallee woodland with <i>E. cosmophylla</i> and <i>E. fasciculosa</i></p>				
					
Photo 2587 facing East.					
General description	<p>This plant association is located north of Kangaroo Island airport on the low relief outwash sediments of the Cygnet River. The canopy comprises Kangaroo Island Narrow-leaf Mallee</p>				


	with Cup Gum (<i>E. cosmophylla</i>) and Pink Gum (<i>E. fasciculosa</i>), over a highly diverse native understory that includes Tea-trees (e.g. <i>M. brevicaulis</i> , <i>M. uncinata</i> , <i>M. gibbosa</i> , <i>M. lanceolata</i>), <i>Callistemon rugulosus</i> , wattles, heaths (e.g. <i>Astroloma humifusum</i> , <i>Leucopogon rufus</i> , <i>Styphelia exarrhena</i>), and a variety of vines, sedges, rushes and native grasses. Exotic species include Western Coastal Wattle (<i>Acacia cyclops</i>), Sallow Wattle (<i>A. longifolia</i> var. <i>longifolia</i>), Bracelet Honey-myrtle (<i>Melaleuca armillaris</i>) and introduced grasses, bulbs and forbs. Clearance is required for a scour as well as minor trimming of roadside vegetation. LF = 1.				
Threatened species or community	<p>The association belongs to the ecological community "Kangaroo Island Narrow-leaved Mallee Woodland" which is Critically Endangered under the EPBC Act and is Endangered in South Australia under the Provisional List of Threatened Ecosystems (DEH in progress).</p> <p>Threatened flora at this site are:</p> <ul style="list-style-type: none"> • Small-flower Daisy-bush (EPBC Endangered, SA Endangered) • Prickly Grevillea (SA Rare) • Tate's Grass-tree (SA Rare) • Green Mintbush (SA Rare) • Pink Gum (SA Rare) <p>Threatened fauna that may be associated with this site include 3 mammal species, 16 bird species and 1 species of reptile (section 4.2). Eleven species are EPBC-listed: KI White-eared Honeyeater (EN), KI Brown-headed Honeyeater (EN), Western Whipbird (EN), Beautiful Firetail (EN), Bassian Thrush (EN), Southern Brown Bandicoot (EN), Short-beaked Echidna (EN), KI Shy Heathwren (VU), KI Striated Thornbill (VU), KI Little Wattlebird (VU), and KI Crimson Rosella (VU). An additional nine species are listed at the state level (Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R).</p>				
Landscape context score	1.12	Vegetation Condition Score	52.62	Conservation significance score	1.7
Unit biodiversity Score	100.18	Area (ha)	0.0028	Total biodiversity Score	0.28


Vegetation Association	Section GG1 Site 4 Highly modified Mallee woodland
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Photo 2589 facing south-east

General description	<p>This plant association is located north-east of Kangaroo Island airport on the low relief outwash sediments of the Cygnet River. The vegetation is highly degraded and comprises scattered Pink Gums and KI Narrow-leaf mallee trees with a variety of native shrubs, grasses, sedges and rushes. The groundlayer is dominated by exotic greases and forbs. Clearance is required for scours as well as minor trimming of roadside vegetation. Loss Factor = 1.</p>				
Threatened species or community	<p>Threatened flora at this site are:</p> <ul style="list-style-type: none"> • Pink Gum (SA Rare) • Tate's Grass-tree (SA Rare) <p>The site is highly degraded and unlikely to provide critical habitat for fauna that favour dense shrubby understorey, with thick leaf litter. However, trees and shrubs may provide seasonal food resources and perching and/or nesting sites for some species.</p> <p>Threatened fauna that may be associated with this site include KI Brown-headed Honeyeater (EPBC-EN), Short-beaked Echidna (EPBC-EN), KI Striated Thornbill (EPBC-VU), KI Little Wattlebird (EPBC-VU) and KI Crimson Rosella (EPBC-VU), Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Cape Barren Goose (R) and Bush Stonecurlew (R).</p>				
Landscape context score	1.12	Vegetation Condition Score	24.22	Conservation significance score	1.18
Unit biodiversity Score	32.0	Area (ha)	0.0052	Total biodiversity Score	0.17

Vegetation Association	Section GG1 Site 5 – KI1107 <i>Eucalyptus cneorifolia</i> mid mallee woodland				
					
Photo 2598 facing south-east					
General description	<p>This plant association is north-east of Kangaroo Island airport on the low-relief outwash sediments of the Cygnet River catchment. The vegetation is a KI Narrow-leaf Mallee woodland with an understorey of mallee shrubs and exotic grasses. Clearance is required for a valve set and scour as well as minor trimming of roadside vegetation. Loss Factor = 1.</p>				
Threatened species or community	<p>The association belongs to the ecological community “Kangaroo Island Narrow-leaved Mallee Woodland” which is Critically Endangered under the EPBC Act and is Endangered in South Australia under the Provisional List of Threatened Ecosystems (DEH in progress).</p> <p>One species of threatened flora is present at the site:</p> <ul style="list-style-type: none"> • Tate’s Grass-tree (SA Rare) <p>Threatened fauna that may be associated with this site include 3 mammal species, 16 bird species and 1 species of reptile (see section 4.2). Eleven species are EPBC-listed (KI White-eared Honeyeater (EN), KI Brown-headed Honeyeater (EN), Western Whipbird (EN), Beautiful Firetail (EN), Bassian Thrush (EN), Southern Brown Bandicoot (EN), Short-beaked Echidna (EN), KI Striated Thornbill (VU), KI Little Wattlebird (VU), KI Shy Heathwren (VU) and KI Crimson Rosella (VU)). An additional nine species are listed at the state level (Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R).</p>				
Landscape context score	1.12	Vegetation Condition Score	41.65	Conservation significance score	1.54
Unit biodiversity Score	71.84	Area (ha)	0.0055	Total biodiversity Score	0.40

Vegetation Association	Section GG2 Site 1 - KI 1104 (Willoughby et al. 2001) <i>Eucalyptus cneorifolia</i> mid mallee woodland				
					
Photo 2601 facing south-east					
General description	This plant association is located on a drainage line north-east of Kangaroo Island airport on the low-relief outwash sediments of the Cygnet River catchment. The vegetation is a KI Narrow-leaf Mallee woodland with an understorey of mallee shrubs and exotic grasses. Minor trimming of roadside vegetation is required. Loss Factor 0.6.				
Threatened species or community	<p>The association belongs to the ecological community "Kangaroo Island Narrow-leaved Mallee Woodland" which is Critically Endangered under the EPBC Act and is Endangered in South Australia under the Provisional List of Threatened Ecosystems (DEH in progress).</p> <p>One species of threatened flora is present at the site:</p> <ul style="list-style-type: none"> • Tate's Grass-tree (SA Rare) <p>Threatened fauna that may be associated with this site include 3 mammal species, 16 bird species and 1 species of reptile (see section 4.2). Eleven species are EPBC-listed (KI White-eared Honeyeater (EN), KI Brown-headed Honeyeater (EN), Western Whipbird (EN), Beautiful Firetail (EN), Bassian Thrush (EN), Southern Brown Bandicoot (EN), Short-beaked Echidna (EN), KI Striated Thornbill (VU), KI Little Wattlebird (VU), KI Shy Heathwren (VU) and KI Crimson Rosella (VU)). An additional nine species are listed at the state level (Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R)).</p>				
Landscape context score	1.12	Vegetation Condition Score	48.93	Conservation significance score	1.54
Unit biodiversity Score	84.39	Area (ha)	0.0004	Total biodiversity Score	0.03

Vegetation Association	Section GG2 Site 2 - KI 1107 (Willoughby et al. 2001) <i>Eucalyptus cneorifolia</i> Mallee over wetland shrubs				
					
Photo 2603 facing south-east					
General description	<p>This plant association is located on a drainage line north-east of Kangaroo Island airport on the low-relief outwash sediments of the Cygnet River catchment. The vegetation is a mallee woodland with an understorey of mallee shrubs and salt-tolerant riparian species including <i>Myoporum insulare</i> and <i>Gahnia trifida</i>.</p> <p>Clearance is required for scours, direct drilling under watercourses, and minor trimming of roadside vegetation. Loss Factor = 1.</p>				
Threatened species or community	<p>The association belongs to the ecological community "Kangaroo Island Narrow-leaved Mallee Woodland" which is Critically Endangered under the EPBC Act and is Endangered in South Australia under the Provisional List of Threatened Ecosystems (DEH in progress).</p> <p>Threatened fauna that may be associated with this site include 3 mammal species, 16 bird species and 1 species of reptile (see section 4.2). Eleven species are EPBC-listed (KI White-eared Honeyeater (EN), KI Brown-headed Honeyeater (EN), Western Whipbird (EN), Beautiful Firetail (EN), Bassian Thrush (EN), Southern Brown Bandicoot (EN), Short-beaked Echidna (EN), KI Striated Thornbill (VU), KI Little Wattlebird (VU), KI Shy Heathwren (VU) and KI Crimson Rosella (VU)). An additional nine species are listed at the state level (Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R).</p>				
Landscape context score	1.15	Vegetation Condition Score	56.58	Conservation significance score	1.5
Unit biodiversity Score	97.59	Area (ha)	0.0482	Total biodiversity Score	4.7

Vegetation Association	Section GG2 Site 3 KI 1103 (Willoughby et al. 2001) <i>Eucalyptus cneorifolia</i> , <i>E. diversifolia</i> , <i>E. rugosa</i> mid open mallee forest				
					
Photo 2708 facing south-east at Waypoint 90 (Lat: -35.722487/ Long: 137.554211)					
General description	<p>This plant association is located east of Kangaroo Island airport on the low-relief outwash sediments of the Cygnet River catchment. The vegetation is a mallee woodland comprising KI Narrow-leaf Mallee, with Coastal White Mallee (<i>E. diversifolia</i> and <i>E. rugosa</i>) and Purple-flowered Mallee Box (<i>E. albopurpurea</i>) over mallee shrubs including <i>Melaleuca lanceolata</i> and <i>Acacia paradoxa</i> mid open shrubland.</p> <p>Clearance is required for scours, direct drilling under watercourses, and minor trimming of roadside vegetation. Loss Factor = 1.</p>				
Threatened species or community	<p>The association belongs to the ecological community “Kangaroo Island Narrow-leaved Mallee Woodland” which is Critically Endangered under the EPBC Act and is Endangered in South Australia under the Provisional List of Threatened Ecosystems (DEH in progress).</p> <p>Threatened fauna that may be associated with this site include 3 mammal species, 16 bird species and 1 species of reptile (see section 4.2). Eleven species are EPBC-listed (KI White-eared Honeyeater (EN), KI Brown-headed Honeyeater (EN), Western Whipbird (EN), Beautiful Firetail (EN), Bassian Thrush (EN), Southern Brown Bandicoot (EN), Short-beaked Echidna (EN), KI Striated Thornbill (VU), KI Little Wattlebird (VU), KI Shy Heathwren (VU) and KI Crimson Rosella (VU)). An additional nine species are listed at the state level (Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R).</p>				
Landscape context score	1.12	Vegetation Condition Score	50.07	Conservation significance score	1.5
Unit biodiversity Score	84.12	Area (ha)	0.0207	Total biodiversity Score	1.74

Vegetation Association	Section GJC - KI 2302 (Willoughby et al. 2001) <i>Melaleuca brevifolia</i> tall open shrubland over samphire shrubs
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Photo 2611 facing south


General description	<p>This plant association occurs east of Kangaroo Island airport on the low-relief outwash sediments of the Cygnet River catchment. It comprises a tall shrubland dominated by Short-leaf Honey-myrtle (<i>Melaleuca brevifolia</i>) over salt-tolerant shrubs such as Beaded Samphire (<i>Salicornia quinqueflora</i>), Salt Lawrenca (<i>Lawrenca spicata</i>), Sea-berry Saltbush (<i>Rhagodia candolleana</i>) and Common Boobialla (<i>Myoporum insulare</i>). In drier areas, the groundlayer is dominated by exotic grasses.</p> <p>Clearance is required for a scour as well as minor trimming of roadside vegetation. LF = 1.</p>				
Threatened species or community	<p>The association belongs to the ecological community "Subtropical and Temperate Coastal Saltmarsh" which is Vulnerable under the EPBC Act.</p> <p>The site is unlikely to provide critical habitat for fauna that favour eucalypt woodlands with thick leaf litter. However tall, dense shrubs may provide food resources as well as perching and/or nesting sites for some species.</p> <p>Threatened fauna that may be associated with this site include KI Striated Thornbill (EPBC-VU), KI Little Wattlebird (EPBC-VU), KI Shy Heathwren (EPBC-VU), KI Western Whipbird (EPBC-EN), Beautiful Firetail (EPBC-EN), Cape Barren Goose (SA-R) Elegant Parrot (SA-R), KI Southern Emuwren (EPBC-EN) and Rock Parrot (SA-R) (see section 4.2).</p>				
Landscape context score	1.14	Vegetation Condition Score	34.88	Conservation significance score	1.45
Unit biodiversity Score	57.65	Area (ha)	0.0032	Total biodiversity Score	0.18


Vegetation Association	Section XX2 Site 1 - KI 1304 (Willoughby et al. 2001) <i>Melaleuca halmaturorum</i> Shrubland with emergent <i>Eucalyptus cneorifolia</i>
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Photo 2621 facing south-west. Lat/Long: 35.7315 / 137.5672

General description	This plant association occurs in an area of higher elevation between the swampy ground at the Arronmore Road intersection and the broader salt marsh at Nepean Bay. The vegetation is an ecotone community where <i>Melaleuca halmaturorum</i> and <i>Myoporum insulare</i> shrubland continues in the mid-storey and intergrades with sparse <i>Eucalyptus cneorifolia</i> mallee woodland. Clearance is required for scours as well as minor trimming of roadside vegetation. LF = 1.				
Threatened species or community	Threatened fauna that may be associated with this site include 3 mammal species, 16 bird species and 1 species of reptile (see section 4.2). Eleven species are EPBC-listed (KI White-eared Honeyeater (EN), KI Brown-headed Honeyeater (EN), Western Whipbird (EN), Beautiful Firetail (EN), Bassian Thrush (EN), Southern Brown Bandicoot (EN), Short-beaked Echidna (EN), KI Striated Thornbill (VU), KI Little Wattlebird (VU), KI Shy Heathwren (VU) and KI Crimson Rosella (VU)). An additional nine species are listed at the state level (Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R).				
Landscape context score	1.17	Vegetation Condition Score	43.11	Conservation significance score	1.10
Unit biodiversity Score	55.48	Area (ha)	0.0056	Total biodiversity Score	0.31

Vegetation Association	Section XX2 Site 2 - KI 1103 (Willoughby et al. 2001) <i>Eucalyptus cneorifolia</i> , mallee forest over <i>Melaleuca</i> species				
					
Photo 2710 facing north at Waypoint 192 (Lat/Long: -35.72839888 / 137.5626418)					
General description	<p>The vegetation is a mallee woodland comprising KI Narrow-leaf Mallee, with scattered Purple-flowered Mallee Box over <i>Melaleucas</i> and a high diversity of mallee shrubs, lilies, vines, rushes and grasses (e.g. <i>Acacia paradoxa</i>, <i>Grevillea ilicifolia</i>, <i>Choretrum glomeratum</i>, <i>Orthrosanthus multiflorus</i>, <i>Billardiera versicolor</i>). Exotic grasses and herbs are present as a minor component of the plant community. The community is in good condition.</p> <p>Clearance is required for a valve set as well as minor trimming of roadside vegetation. LF = 1.</p>				
Threatened species or community	<p>The association belongs to the ecological community "Kangaroo Island Narrow-leaved Mallee Woodland" which is Critically Endangered under the EPBC Act and is Endangered in South Australia under the Provisional List of Threatened Ecosystems (DEH in progress).</p> <p>Three species of threatened flora are present at the site:</p> <ul style="list-style-type: none"> • Small-flower Daisy-bush (EPBC Endangered, SA Endangered) • Macgillivray Spyridium (EPBC Vulnerable, SA Endangered) • Green Mintbush (SA Rare) <p>Threatened fauna that may be associated with this site include 3 mammal species, 16 bird species and 1 species of reptile (section 4.2). Eleven species are EPBC-listed: KI White-eared Honeyeater (EN), KI Brown-headed Honeyeater (EN), Western Whipbird (EN), Beautiful Firetail (EN), Bassian Thrush (EN), Southern Brown Bandicoot (EN), Short-beaked Echidna (EN), KI Shy Heathwren (VU), KI Striated Thornbill (VU), KI Little Wattlebird (VU), and KI Crimson Rosella (VU). An additional nine species are listed at the state level (Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R).</p>				
Landscape context score	1.14	Vegetation Condition Score	62.08	Conservation significance score	1.70
Unit biodiversity Score	120.31	Area (ha)	0.0054	Total biodiversity Score	0.65


Vegetation Association	Section XX2 Site 3 - KI 2302 (Willoughby et al. 2001) <i>Melaleuca halmaturorum</i> / <i>Melaleuca brevifolia</i> shrubland over samphire				
					
Photo 2711 facing North-east at Waypoint 193 (Lat/Long: -35.7347309 / 137.571678)					
General description	<p>This plant association is located in a broad salt flat adjacent to Eastern Cove. The shrubland is dominated by <i>Melaleuca halmaturorum</i> and <i>M. brevifolia</i> and has an understorey of samphire and other salt marsh species. The roadside verge is narrow and the understorey is degraded with a high proportion of exotic plant species. However, the overall diversity of native plant species is high.</p> <p>Minor trimming of roadside vegetation is required. Loss Factor 0.6.</p>				
Threatened species or community	<p>The association belongs to the ecological community "Subtropical and Temperate Coastal Saltmarsh" which is Vulnerable under the EPBC Act.</p> <p>The site is unlikely to provide critical habitat for fauna that favour eucalypt woodlands with thick leaf litter. However tall, dense shrubs may provide food resources as well as perching and/or nesting sites for some species.</p> <p>Threatened fauna that may be associated with this site include KI Striated Thornbill (EPBC-VU), KI Little Wattlebird (EPBC-VU), KI Shy Heathwren (EPBC-VU), KI Western Whipbird (EPBC-EN), Beautiful Firetail (EPBC-EN), Cape Barren Goose (SA-R) Elegant Parrot (SA-R), KI Southern Emuwren (EPBC-EN) and Rock Parrot (SA-R) (see section 4.2). Glossy Black Cockatoo (EPBC Endangered, SA Endangered).</p>				
Landscape context score	1.17	Vegetation Condition Score	49.17	Conservation significance score	1.45
Unit biodiversity Score	83.42	Area (ha)	0.0007	Total biodiversity Score	0.06


Vegetation Association	Section XX1 Site 1 - KI 2302 (Willoughby et al. 2001) <i>Melaleuca halmaturorum</i> / <i>Melaleuca brevifolia</i> over samphire
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Direction bearing North at UTM: 53H 734004 6041144

General description	<p>This plant association is located in a broad salt flat adjacent to Eastern Cove. The shrubland is dominated by <i>Melaleuca halmaturorum</i> and <i>M. brevifolia</i> and has an understorey of samphire and other salt marsh species. The roadside verge is narrow and the understorey is degraded with a high proportion of exotic plant species.</p> <p>Clearance is required for a valve set and scours as well as minor trimming of roadside vegetation. Loss Factor = 1.</p>				
Threatened species or community	<p>The association belongs to the ecological community "Subtropical and Temperate Coastal Saltmarsh" which is Vulnerable under the EPBC Act.</p> <p>The site is unlikely to provide critical habitat for fauna that favour eucalypt woodlands with thick leaf litter. However tall, dense shrubs may provide food resources as well as perching and/or nesting sites for some species.</p> <p>Threatened fauna that may be associated with this site include KI Striated Thornbill (EPBC-VU), KI Little Wattlebird (EPBC-VU), KI Shy Heathwren (EPBC-VU), KI Western Whipbird (EPBC-EN), Beautiful Firetail (EPBC-EN), Cape Barren Goose (SA-R) Elegant Parrot (SA-R), KI Southern Emuwren (EPBC-EN) and Rock Parrot (SA-R) (see section 4.2). Glossy Black Cockatoo (EPBC Endangered, SA Endangered).</p>				
Landscape context score	1.17	Vegetation Condition Score	39.60	Conservation significance score	1.45
Unit biodiversity Score	67.19	Area (ha)	0.013	Total biodiversity Score	0.87

Vegetation Association	Section XX1 Site 2 - KI 0802 (Willoughby et al. 2001) <i>Eucalyptus albopurpurea</i> mid mallee woodland over <i>Melaleuca</i> species				
					
Photo 2713 facing north-west at Waypoint 195 (Lat/Long: -35.74597724 / 137.5877731)					
General description	<p>The vegetation is a mallee woodland with an overstorey of Purple-flowered Mallee Box over Melaleucas and a high diversity of mallee shrubs, lilies, vines, rushes and grasses (e.g. <i>Melaleuca uncinata</i>, <i>Choretrum glomeratum</i>, <i>Banksia marginata</i>, <i>Xanthorrhoea semiplana</i> ssp. <i>tateana</i>, <i>Bertya rotundifolia</i>, <i>Hypolaena fastigiata</i>, <i>Muehlenbeckia adpressa</i>). Exotic grasses and herbs are present as a minor component of the plant community.</p> <p>The community is in good condition.</p> <p>Minor trimming of roadside vegetation is required. Loss Factor 0.6.</p>				
Threatened species or community	<p>One threatened plant species is present at the site:</p> <ul style="list-style-type: none"> Tate's Grass-tree (SA Rare) <p>Threatened fauna that may be associated with this site include 3 mammal species, 16 bird species and 1 species of reptile (section 4.2). Eleven species are EPBC-listed: KI White-eared Honeyeater (EN), KI Brown-headed Honeyeater (EN), Western Whipbird (EN), Beautiful Firetail (EN), Bassian Thrush (EN), Southern Brown Bandicoot (EN), Short-beaked Echidna (EN), KI Shy Heathwren (VU), KI Striated Thornbill (VU), KI Little Wattlebird (VU), and KI Crimson Rosella (VU). An additional nine species are listed at the state level (Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R).</p>				
Landscape context score	1.14	Vegetation Condition Score	56.72	Conservation significance score	1.14
Unit biodiversity Score	73.71	Area (ha)	0.0004	Total biodiversity Score	0.03

Vegetation Association	Section XX1 Site 3 - KI 1104 (Willoughby et al. 2001) <i>Eucalyptus cneorifolia</i> Mallee				
					
Photo 2714 facing North-east at Waypoint 196 (Lat/Long: -35.749772 / 137.593652)					
General description	<p>This plant association is located on the southern edge of the Western Cove salt flats where, the landscape starts to rise to the Gosse-Seddon Plateau. The understorey includes coastal shrubland components including <i>Rhagodia candolleana</i> and <i>Salicornia quinqueflora</i> as well and dryland shrubby species such as <i>Acacia paradoxa</i> and <i>Xanthorrhoea semiplana</i> ssp. <i>tateana</i>. The vegetation is in good condition with little disturbance and is part of a mostly continuous corridor that continues to the south.</p> <p>Clearance is required for scours, direct drilling under watercourses, and minor trimming of roadside vegetation. Loss Factor = 1.</p>				
Threatened species or community	<p>The association belongs to the ecological community "Kangaroo Island Narrow-leaved Mallee Woodland" which is Critically Endangered under the EPBC Act and is Endangered in South Australia under the Provisional List of Threatened Ecosystems (DEH in progress).</p> <p>One threatened plant species is present at the site:</p> <ul style="list-style-type: none"> • Tate's Grass-tree (SA Rare) <p>Threatened fauna that may be associated with this site include 3 mammal species, 16 bird species and 1 species of reptile (section 4.2). Eleven species are EPBC-listed: KI White-eared Honeyeater (EN), KI Brown-headed Honeyeater (EN), Western Whipbird (EN), Beautiful Firetail (EN), Bassian Thrush (EN), Southern Brown Bandicoot (EN), Short-beaked Echidna (EN), KI Shy Heathwren (VU), KI Striated Thornbill (VU), KI Little Wattlebird (VU), and KI Crimson Rosella (VU). An additional nine species are listed at the state level (Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R).</p>				
Landscape context score	1.13	Vegetation Condition Score	60.12	Conservation significance score	1.54
Unit biodiversity Score	104.62	Area (ha)	0.0388	Total biodiversity Score	104.62

Vegetation Association	Section WW Site 1 - KI 1109 (Willoughby et al. 2001) <i>Eucalyptus cneorifolia</i> with <i>E. phenax</i> and <i>E. odorata</i> mid mallee woodland				
					
Photo 2715 facing North-west at Waypoint 197 (Lat/Long: -35.75216426 / 137.5970817)					
General description	<p>The vegetation is a mallee woodland and has an overstorey dominated by KI Narrow-leaf Mallee with KI Mallee (<i>E. phenax</i> ssp. <i>compressa</i>) and Peppermint Box (<i>E. odorata</i>) over a diverse understorey including shrubs (e.g. <i>Melaleuca uncinata</i>, <i>Thryptomene ericaea</i>, <i>Grevillea ilicifolia</i>, <i>Callistemon rugulosus</i>, <i>Correa reflexa</i>), lilies, vines, sedges and grasses. Exotic grasses and herbs are present as a minor component of the plant community. The community is in moderate to good condition. Minor trimming of roadside vegetation is required. Loss Factor = 0.6.</p>				
Threatened species or community	<p>The association belongs to the ecological community "Kangaroo Island Narrow-leaved Mallee Woodland" which is Critically Endangered under the EPBC Act and is Endangered in South Australia under the Provisional List of Threatened Ecosystems (DEH in progress).</p> <p>Three threatened plant species were observed at the site:</p> <ul style="list-style-type: none"> • Kangaroo Island Turpentine Bush (EPBC Vulnerable, SA Endangered) • Green Mintbush (SA Rare) • Kangaroo Island Mallee (SA Rare) <p>Threatened fauna that may be associated with this site include 3 mammal species, 16 bird species and 1 species of reptile (section 4.2). Eleven species are EPBC-listed: KI White-eared Honeyeater (EN), KI Brown-headed Honeyeater (EN), Western Whipbird (EN), Beautiful Firetail (EN), Bassian Thrush (EN), Southern Brown Bandicoot (EN), Short-beaked Echidna (EN), KI Shy Heathwren (VU), KI Striated Thornbill (VU), KI Little Wattlebird (VU), and KI Crimson Rosella (VU). An additional nine species are listed at the state level (Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R).</p>				
Landscape context score	1.13	Vegetation Condition Score	52.73	Conservation significance score	1.66
Unit biodiversity Score	98.90	Area (ha)	0.0002	Total biodiversity Score	0.02

Vegetation Association	Section WW Site 2 – KI0212 (Willoughby et al. 2001) <i>Eucalyptus albopurpurea</i> and <i>E. diversifolia</i> mid mallee woodland
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Photo 2717 facing north at Waypoint 198 (Lat/Long: -35.75541602 / 137.6015545)

General description	<p>The vegetation is a Purple-flowered Mallee Box and Coastal White Mallee with a diverse understorey including shrubs (e.g. <i>Melaleuca uncinata</i>, <i>Allocasuarina striata</i>, <i>Thryptomene ericaea</i>, <i>Correa reflexa</i>, <i>Grevillea ilicifolia</i> var. <i>ilicifolia</i>) lilies, vines, sedges and grasses. Exotic grasses and herbs are present as a minor component of the plant community. The community is in moderate to good condition.</p> <p>Minor trimming of roadside vegetation is required. Loss Factor = 0.6.</p>				
Threatened species or community	<p>Three threatened plant species were observed at the site:</p> <ul style="list-style-type: none"> • Small-flower Daisy-bush (EPBC Endangered, SA Endangered) • Rough Spider-flower (SA Rare) • Prickly Grevillea (SA Rare) <p>Threatened fauna that may be associated with this site include 3 mammal species, 16 bird species and 1 species of reptile (section 4.2). Eleven species are EPBC-listed: KI White-eared Honeyeater (EN), KI Brown-headed Honeyeater (EN), Western Whipbird (EN), Beautiful Firetail (EN), Bassian Thrush (EN), Southern Brown Bandicoot (EN), Short-beaked Echidna (EN), KI Shy Heathwren (VU), KI Striated Thornbill (VU), KI Little Wattlebird (VU), and KI Crimson Rosella (VU). An additional nine species are listed at the state level (Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R).</p>				
Landscape context score	1.13	Vegetation Condition Score	53.07	Conservation significance score	1.30
Unit biodiversity Score	77.96	Area (ha)	0.0004	Total biodiversity Score	0.03

Vegetation Association	Section WW Site 3 – K11201 (Willoughby et al. 2001) <i>Melaleuca brevifolia</i> and <i>Leucopogon parviflorus</i> tall shrubland with emergent Mallee
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Photo 2718 facing north at Waypoint 199 (Lat/Long: -35.756707 / 137.6032388)


General description	The vegetation association comprises a tall shrubland of Short-leaf Honey-myrtle and Coast Beard-heath (<i>Leucopogon parviflorus</i>) with emergent Coastal White Mallee, KI Narrow-leaf Mallee, Drooping Sheoak (<i>Allocasuarina verticillata</i>) and Southern Cypress Pine (<i>Callitris gracilis</i>). The understory contains a diversity of mallee and salt tolerant shrubs, lilies, vines, sedges, rushes and grasses (e.g. <i>Grevillea ilicifolia</i> , <i>Rhagodia candolleana</i> , <i>Correa reflexa</i> , <i>Stenantha conostephioides</i> , <i>Salicornia quinqueflora</i> , <i>Gahnia trifida</i>). Clearance is required for scours, direct drilling under watercourses, and minor trimming of roadside vegetation. Loss Factor = 1.
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Threatened species or community	One threatened plant species was observed at the site: <ul style="list-style-type: none"> Prickly Grevillea (SA Rare) Threatened fauna that may be associated with this site include 3 mammal species, 16 bird species and 1 species of reptile (section 4.2). Eleven species are EPBC-listed: KI White-eared Honeyeater (EN), KI Brown-headed Honeyeater (EN), Western Whipbird (EN), Beautiful Firetail (EN), Bassian Thrush (EN), Southern Brown Bandicoot (EN), Short-beaked Echidna (EN), KI Shy Heathwren (VU), KI Striated Thornbill (VU), KI Little Wattlebird (VU), and KI Crimson Rosella (VU). An additional nine species are listed at the state level (Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R). Exotic species include Sweet Pittosporum (<i>Pittosporum undulatum</i>), Bridal Creeper, grasses and forbs, but are a small component of the community.
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Landscape context score	1.13	Vegetation Condition Score	52.03	Conservation significance score	1.14
Unit biodiversity Score	67.03	Area (ha)	0.0394	Total biodiversity Score	2.64


Vegetation Association	Section WW Site 4 - KI 2301 (Willoughby et al. 2001) <i>Melaleuca halmaturum</i> / <i>Melaleuca brevifolia</i> over woodland and wetland shrubs				
					
Photo 2719 facing North-west at Waypoint 200 (Lat/Long: -35.75850366 / 137.6058858)					
General description	<p>This plant association is located in a swampy watercourse that drains the northern slopes of the Gosse-Seddon Plateau. The soils are poorly drained lateritic clays and gravel and vegetated by a salt-tolerant wetland shrubland dominated by <i>Melaleuca halmaturorum</i> and <i>M. brevifolia</i> with <i>Gahnia trifida</i> and emergent <i>Eucalyptus cosmophylla</i> and <i>E. diversifolia</i>. The vegetation includes woodland heath species typical of nutrient poor soils including <i>Grevillea halmaturina</i>, <i>Acrotriche depressa</i> and <i>Stenanthera conostephioides</i>. The orchid species <i>Corybas despectans</i> and <i>Acianthus pusillus</i> were detected in a late winter survey (August 2022). Clearance is required for direct drilling under watercourses, and minor trimming of roadside vegetation. Loss Factor = 1.</p>				
Threatened species or community	<p>Two threatened plant species were observed at the site:</p> <ul style="list-style-type: none"> • Kangaroo Island Turpentine Bush (EPBC Vulnerable, SA Endangered) • Prickly Grevillea (SA Rare) <p>Threatened fauna that may be associated with this site include 3 mammal species, 16 bird species and 1 species of reptile (section 4.2). Eleven species are EPBC-listed: KI White-eared Honeyeater (EN), KI Brown-headed Honeyeater (EN), Western Whipbird (EN), Beautiful Firetail (EN), Bassian Thrush (EN), Southern Brown Bandicoot (EN), Short-beaked Echidna (EN), KI Shy Heathwren (VU), KI Striated Thornbill (VU), KI Little Wattlebird (VU), and KI Crimson Rosella (VU). An additional nine species are listed at the state level (Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R).</p>				
Landscape context score	1.16	Vegetation Condition Score	46.99	Conservation significance score	1.26
Unit biodiversity Score	68.69	Area (ha)	0.0154	Total biodiversity Score	1.06


Vegetation Association	Section WW Site 5 - KI 1104 (Willoughby et al. 2001) <i>Eucalyptus cneorifolia</i> mid mallee woodland				
					
Photo 2653 facing east.					
General description	<p>This plant association has an overstorey of Kangaroo Island Narrow-leaf with Coastal White Mallee, over a highly diverse native understory that includes Tea-trees (e.g. <i>Melaleuca uncinata</i>, <i>M. gibbosa</i>), wattles (<i>Acacia etthycarpa</i>, <i>A. myrtifolia</i>, <i>A. spinescens</i>, <i>A. pycnantha</i>), heaths (e.g. <i>Astroloma humifusum</i>, <i>Stenanthera conostephioides</i>, <i>Leucopogon parviflorus</i>) and a variety of other species typical of this association (e.g. <i>Grevillea ilicifolia</i>, <i>Xanthorrhoea semiplana</i>, <i>Thryptomene ericaea</i>, <i>Correa reflexa</i>). Introduced species, mostly grasses, are a minor component of the association. The vegetation community is in good condition. Clearance is required for a valve set scours, direct drilling under watercourses, and minor trimming of roadside vegetation. Loss Factor = 1.</p>				
Threatened species or community	<p>The association belongs to the ecological community "Kangaroo Island Narrow-leaved Mallee Woodland" which is Critically Endangered under the EPBC Act and is Endangered in South Australia under the Provisional List of Threatened Ecosystems (DEH in progress).</p> <p>Four species of threatened flora were observed at this site:</p> <ul style="list-style-type: none"> • Small-flower Daisy-bush (EPBC Endangered, SA Endangered) • Kangaroo Island Turpentine Bush (EPBC Vulnerable, SA Endangered) • Prickly Grevillea (SA Rare) • Tate's Grass-tree (SA Rare) <p>Threatened fauna that may be associated with this site include 3 mammal species, 16 bird species and 1 species of reptile (section 4.2). Eleven species are EPBC-listed: KI White-eared Honeyeater (EN), KI Brown-headed Honeyeater (EN), Western Whipbird (EN), Beautiful Firetail (EN), Bassian Thrush (EN), Southern Brown Bandicoot (EN), Short-beaked Echidna (EN), KI Shy Heathwren (VU), KI Striated Thornbill (VU), KI Little Wattlebird (VU), and KI Crimson Rosella (VU). An additional nine species are listed at the state level (Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R).</p>				
Landscape context score	1.13	Vegetation Condition Score	62.89	Conservation significance score	1.70
Unit biodiversity Score	120.81	Area (ha)	0.0203	Total biodiversity Score	2.45


Vegetation Association	Section WW Site 6 - KI 0212 (Willoughby et al. 2001) <i>Eucalyptus diversifolia</i> with <i>E. albens</i> and <i>E. cneorifolia</i> mid mallee woodland				
					
Photo 2720 facing east at Wpt 201 (Lat/Long: -35.76084522 / 137.6094325)					
General description	<p>This plant association has an overstorey of Coastal White Mallee with White Box (<i>Eucalyptus albens</i>) and Kangaroo Island Narrow-leaf Mallee. The understorey comprises a diversity of shrubs (e.g. <i>Melaleuca uncinata</i>, <i>Allocasuarina muelleriana</i>, <i>Xanthorrhoea semiplana</i>, <i>Thryptomene ericaea</i>, <i>Correa reflexa</i>, <i>Grevillea ilicifolia</i>), vines, sedges, rushes, forbs and grasses. Exotic grasses and herbs are present as a minor component of the plant community. The vegetation community is in good condition.</p> <p>Clearance is required for a valve set, scours and minor trimming of roadside vegetation.</p> <p>Loss Factor = 1.</p>				
Threatened species or community	<p>The association belongs to the ecological community "Kangaroo Island Narrow-leaved Mallee Woodland" which is Critically Endangered under the EPBC Act and is Endangered in South Australia under the Provisional List of Threatened Ecosystems (DEH in progress).</p> <p>Five species of threatened flora were observed at this site:</p> <ul style="list-style-type: none"> • Small-flower Daisy-bush (EPBC Endangered, SA Endangered) • Kangaroo Island Turpentine Bush (EPBC Vulnerable, SA Endangered) • Prickly Grevillea (SA Rare) • Tate's Grass-tree (SA Rare) • White Box (SA Rare) <p>Threatened fauna that may be associated with this site include 3 mammal species, 16 bird species and 1 species of reptile (section 4.2). Eleven species are EPBC-listed: KI White-eared Honeyeater (EN), KI Brown-headed Honeyeater (EN), Western Whipbird (EN), Beautiful Firetail (EN), Bassian Thrush (EN), Southern Brown Bandicoot (EN), Short-beaked Echidna (EN), KI Shy Heathwren (VU), KI Striated Thornbill (VU), KI Little Wattlebird (VU), and KI Crimson Rosella (VU). An additional nine species are listed at the state level (Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R).</p>				
Landscape context score	1.13	Vegetation Condition Score	59.38	Conservation significance score	1.30
Unit biodiversity Score	87.22	Area (ha)	0.0061	Total biodiversity Score	0.53

Vegetation Association	Section WW Site 7 - KI 1104 (Willoughby et al. 2001) <i>Eucalyptus cneorifolia</i> with <i>E. diversifolia</i> and <i>E. cosmophylla</i> mid mallee woodland				
					
Photo 2721 facing north-west at Wpt 202 (Lat/Long: -35.76426965 / 137.6145138)					
General description	Kangaroo Island Narrow-leaf Mallee (<i>Eucalyptus cneorifolia</i>) provides the dominant overstory of this association. The community contains a very high diversity of native understorey species including <i>Acacia</i> spp., <i>Melaleuca</i> spp., <i>Hibbertia</i> spp., Heath Thryptomene (<i>Thryptomene ericaea</i>), Round-leaf Bertya, sedges, vines, grasses, lilies and orchids (e.g. <i>Pterostylis nana</i> , <i>Corybas despectans</i> , <i>Glossodia major</i> , <i>Diuris orientis</i> , <i>Caladenia</i> sp.). Introduced grasses and forbs are a minor component. The community is in good condition. Clearance is required for a valve set and minor trimming of roadside vegetation. LF = 1.				
Threatened species or community	<p>The association belongs to the ecological community "Kangaroo Island Narrow-leaved Mallee Woodland" which is Critically Endangered under the EPBC Act and is Endangered in South Australia under the Provisional List of Threatened Ecosystems (DEH in progress).</p> <p>Six species of threatened flora were observed at this site:</p> <ul style="list-style-type: none"> • Kangaroo Island Turpentine Bush (EPBC Vulnerable, SA Endangered) • Prickly Grevillea (SA Rare) • Rough Spider-flower (SA Rare) • Green Mintbush (SA Rare) • Oblong-leaf Guinea-flower (SA Rare) • Tate's Grass-tree (SA Rare) <p>Threatened fauna that may be associated with this site include 3 mammal species, 16 bird species and 1 species of reptile (section 4.2). Eleven species are EPBC-listed: KI White-eared Honeyeater (EN), KI Brown-headed Honeyeater (EN), Western Whipbird (EN), Beautiful Firetail (EN), Bassian Thrush (EN), Southern Brown Bandicoot (EN), Short-beaked Echidna (EN), KI Shy Heathwren (VU), KI Striated Thornbill (VU), KI Little Wattlebird (VU), and KI Crimson Rosella (VU). An additional nine species are listed at the state level (Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R).</p>				
Landscape context score	1.13	Vegetation Condition Score	59.77	Conservation significance score	1.66
Unit biodiversity Score	112.11	Area (ha)	0.0054	Total biodiversity Score	0.61

Vegetation Association	Section WW Site 8 - KI 1104 (Willoughby et al. 2001) <i>Eucalyptus cneorifolia</i> with <i>E. diversifolia</i> , <i>E. fasciculosa</i> and <i>E. cosmophylla</i> mallee woodland				
					
Photo 2722 facing north-west at Wpt 203 (Lat/Long: -35.7687673 / 137.6207299)					
General description	<p>The overstory of this association is dominated by Kangaroo Island Narrow-leaf Mallee with several other eucalypts also present (Coastal White Mallee, Pink Gum, Cup Gum, Purple-flowered Mallee Box). The understory is highly diverse and includes <i>Acacia</i> spp., <i>Allocasuarina</i> spp., <i>Melaleuca</i> spp., <i>Grevillea</i> spp., Heath Thryptomene, Round-leaf Bertya, rushes, climbers, grasses and orchids (e.g. <i>Pterostylis nana</i>, <i>P. sanguinia</i>, <i>Corybas despectans</i>, <i>Glossodia major</i>). Introduced grasses and forbs are a minor component. The community is in good condition. Clearance is required for scours, valve sets, direct drilling under watercourses, and minor trimming of roadside vegetation. Loss Factor = 1.</p>				
Threatened species or community	<p>The association belongs to the ecological community "Kangaroo Island Narrow-leaved Mallee Woodland" which is Critically Endangered under the EPBC Act and is Endangered in South Australia under the Provisional List of Threatened Ecosystems (DEH in progress).</p> <p>Five species of threatened flora were observed at this site:</p> <ul style="list-style-type: none"> • Kangaroo Island Turpentine Bush (EPBC Vulnerable, SA Endangered) • Rough Spider-flower (SA Rare) • Tate's Grass-tree (SA Rare) • Pink Gum (SA Rare) • Green Mintbush (SA Rare) <p>Threatened fauna that may be associated with this site include 3 mammal species, 16 bird species and 1 species of reptile (section 4.2). Eleven species are EPBC-listed: KI White-eared Honeyeater (EN), KI Brown-headed Honeyeater (EN), Western Whipbird (EN), Beautiful Firetail (EN), Bassian Thrush (EN), Southern Brown Bandicoot (EN), Short-beaked Echidna (EN), KI Shy Heathwren (VU), KI Striated Thornbill (VU), KI Little Wattlebird (VU), and KI Crimson Rosella (VU). An additional nine species are listed at the state level (Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R).</p>				
Landscape context score	1.13	Vegetation Condition Score	56.90	Conservation significance score	1.66
Unit biodiversity Score	106.73	Area (ha)	0.0431	Total biodiversity Score	4.6

Vegetation Association	Section VV Site 1 - KI 1106 (Willoughby et al. 2001) <i>Eucalyptus cneorifolia</i> and <i>E. rugosa</i> Mallee over woodland shrubs in laterite soils				
					
Photo 2723 facing west at Waypoint 204 (Lat/Long: -35.77451561 / 137.6290926)					
General description	This plant association is located in a drainage line in the undulating surface of the Gosse-Seddon Plateau. The vegetation has a closed overstorey of KI Narrow-leaf Mallee with Cup Gum and Coastal White Mallees (<i>E. diversifolia</i> and <i>E. rugosa</i>). The vegetation is part of a broad continuous roadside corridor and has a high species diversity. Introduced species are a minor component of the community. The vegetation association is in good condition. Minor trimming of roadside vegetation is required. Loss Factor = 0.6.				
Threatened species or community	<p>The association belongs to the ecological community "Kangaroo Island Narrow-leaved Mallee Woodland" which is Critically Endangered under the EPBC Act and is Endangered in South Australia under the Provisional List of Threatened Ecosystems (DEH in progress).</p> <p>Four species of threatened flora were observed at this site:</p> <ul style="list-style-type: none"> • Kangaroo Island Turpentine Bush (EPBC Vulnerable, SA Endangered) • Rough Spider-flower (SA Rare) • Tate's Grass-tree (SA Rare) • Prickly Grevillea (SA Rare) <p>Threatened fauna that may be associated with this site include 3 mammal species, 16 bird species and 1 species of reptile (section 4.2). Eleven species are EPBC-listed: KI White-eared Honeyeater (EN), KI Brown-headed Honeyeater (EN), Western Whipbird (EN), Beautiful Firetail (EN), Bassian Thrush (EN), Southern Brown Bandicoot (EN), Short-beaked Echidna (EN), KI Shy Heathwren (VU), KI Striated Thornbill (VU), KI Little Wattlebird (VU), and KI Crimson Rosella (VU). An additional nine species are listed at the state level (Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R).</p>				
Landscape context score	1.13	Vegetation Condition Score	60.47	Conservation significance score	1.66
Unit biodiversity Score	113.43	Area (ha)	0.0023	Total biodiversity Score	0.26

Vegetation Association	Section VV Site 2 - KI 0206 (Willoughby et al. 2001) <i>Eucalyptus diversifolia</i> mid mallee woodland				
					
Photo 2724 facing west at Waypoint 205 (Lat/Long: -35.7790643 / 137.6356038)					
General description	<p>This plant association is located in a drainage line in the undulating surface of the Gosse-Seddon Plateau. The vegetation has an overstorey of <i>E. diversifolia</i> with Purple-flowered Mallee Box and Cup Gum. Understorey species include Broombush (<i>Melaleuca uncinata</i>), Short-leaf Honey-myrtle (<i>M. brevifolia</i>), <i>Acacia</i> spp. and Coast Beard-heath. Bridal Creeper, introduced grasses and forbs are present in the understorey. The vegetation association is in moderate condition.</p> <p>Clearance is required for a scour and minor trimming of roadside vegetation.</p> <p>Loss Factor = 1.</p>				
Threatened species or community	<p>One threatened flora species was observed at the site:</p> <ul style="list-style-type: none"> • Kangaroo Island Turpentine Bush (EPBC Vulnerable, SA Endangered) <p>Threatened fauna that may be associated with this site include 3 mammal species, 16 bird species and 1 species of reptile (section 4.2). Eleven species are EPBC-listed: KI White-eared Honeyeater (EN), KI Brown-headed Honeyeater (EN), Western Whipbird (EN), Beautiful Firetail (EN), Bassian Thrush (EN), Southern Brown Bandicoot (EN), Short-beaked Echidna (EN), KI Shy Heathwren (VU), KI Striated Thornbill (VU), KI Little Wattlebird (VU), and KI Crimson Rosella (VU). An additional nine species are listed at the state level (Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R).</p>				
Landscape context score	1.11	Vegetation Condition Score	40.51	Conservation significance score	1.26
Unit biodiversity Score	56.66	Area (ha)	0.0041	Total biodiversity Score	0.23


Vegetation Association	Section VV Site 3 - KI 1104 (Willoughby et al. 2001) <i>Eucalyptus cneorifolia</i> mid mallee woodland				
					
Photo 2725 facing west at Waypoint 206 (Lat/Long: -35.77931416 / 137.6360574)					
General description	This plant association is located in the undulating surface of the Gosse-Seddon Plateau. The vegetation has an overstorey dominated by KI Narrow-leaf Mallee with Purple-flowered Mallee Box and Cup Gum. The understorey supports a high diversity of native shrubs and includes vines, sedges and grasses. Exotic species comprise mostly introduced grasses. Minor trimming of roadside vegetation is required. Loss Factor = 0.6.				
Threatened species or community	<p>The association belongs to the ecological community "Kangaroo Island Narrow-leaved Mallee Woodland" which is Critically Endangered under the EPBC Act and is Endangered in South Australia under the Provisional List of Threatened Ecosystems (DEH in progress).</p> <p>Five species of threatened flora were observed at this site:</p> <ul style="list-style-type: none"> • Kangaroo Island Turpentine Bush (EPBC Vulnerable, SA Endangered) • Rough Spider-flower (SA Rare) • Tate's Grass-tree (SA Rare) • Prickly Grevillea (SA Rare) • Spoon-leaf Spyridium (SA Rare) <p>Threatened fauna that may be associated with this site include 3 mammal species, 16 bird species and 1 species of reptile (section 4.2). Eleven species are EPBC-listed: KI White-eared Honeyeater (EN), KI Brown-headed Honeyeater (EN), Western Whipbird (EN), Beautiful Firetail (EN), Bassian Thrush (EN), Southern Brown Bandicoot (EN), Short-beaked Echidna (EN), KI Shy Heathwren (VU), KI Striated Thornbill (VU), KI Little Wattlebird (VU), and KI Crimson Rosella (VU). An additional nine species are listed at the state level (Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R).</p>				
Landscape context score	1.11	Vegetation Condition Score	47.98	Conservation significance score	1.66
Unit biodiversity Score	88.40	Area (ha)	0.0015	Total biodiversity Score	0.13

Vegetation Association	Section VV Site 4 - KI 0212 (Willoughby et al. 2001) <i>E. diversifolia</i> mid mallee woodland
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Photo 2726 facing west at Waypoint 207 (Lat/Long: -35.78137292 / 137.638982)

General description	<p>This plant association is located in the undulating surface of the Gosse-Seddon Plateau. The vegetation comprises Purple-flowered Mallee Box, Coastal White Mallee and Cup Gum over native shrub, sedges and invasive grasses. Bridal Creeper is also present in the understory. The plant community is in moderate condition.</p> <p>Clearance is required for a scour, direct drilling under a watercourse, and minor trimming of roadside vegetation. Loss Factor = 1.</p>				
Threatened species or community	<p>Four species of threatened flora were observed at this site:</p> <ul style="list-style-type: none"> • Kangaroo Island Turpentine Bush (EPBC Vulnerable, SA Endangered) • Rough Spider-flower (SA Rare) • Tate's Grass-tree (SA Rare) • Prickly Grevillea (SA Rare) <p>Threatened fauna that may be associated with this site include 3 mammal species, 16 bird species and 1 species of reptile (section 4.2). Eleven species are EPBC-listed: KI White-eared Honeyeater (EN), KI Brown-headed Honeyeater (EN), Western Whipbird (EN), Beautiful Firetail (EN), Bassian Thrush (EN), Southern Brown Bandicoot (EN), Short-beaked Echidna (EN), KI Shy Heathwren (VU), KI Striated Thornbill (VU), KI Little Wattlebird (VU), and KI Crimson Rosella (VU). An additional nine species are listed at the state level (Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R).</p>				
Landscape context score	1.11	Vegetation Condition Score	46.35	Conservation significance score	1.26
Unit biodiversity Score	64.83	Area (ha)	0.0195	Total biodiversity Score	1.26

Vegetation Association	Section VV Site 5 - KI 1104 (Willoughby et al. 2001) <i>E. cneorifolia</i> mid mallee woodland				
					
Photo 2727 facing west at Waypoint 208 (Lat/Long: -35.78194021 / 137.6398265)					
General description	Kangaroo Island Narrow-leaf Mallee provides the dominant overstory in this plant association with Coastal White Mallee (<i>E. diversifolia</i>) and Purple-flowered Mallee Box also present. The diverse native understorey includes <i>Melaleuca uncinata</i> , <i>Grevillea ilicifolia</i> , <i>Allocasuarina muelleriana</i> and <i>Xanthorrhoea semiplana</i> . Exotic species include Bridal Creeper, Bridal Veil (<i>Asparagus declinatus</i>), Lavatory Creeper (<i>Dipogon lignosus</i>) and introduced grasses. Clearance is required for a valve set, scour, direct drilling under a watercourse, and minor trimming of roadside vegetation. Loss Factor = 1.				
Threatened species or community	<p>Three species of threatened flora were observed at this site:</p> <ul style="list-style-type: none"> • Kangaroo Island Turpentine Bush (EPBC Vulnerable, SA Endangered) • Rough Spider-flower (SA Rare) • Tate's Grass-tree (SA Rare) <p>Threatened fauna that may be associated with this site include 3 mammal species, 16 bird species and 1 species of reptile (section 4.2). Eleven species are EPBC-listed: KI White-eared Honeyeater (EN), KI Brown-headed Honeyeater (EN), Western Whipbird (EN), Beautiful Firetail (EN), Bassian Thrush (EN), Southern Brown Bandicoot (EN), Short-beaked Echidna (EN), KI Shy Heathwren (VU), KI Striated Thornbill (VU), KI Little Wattlebird (VU), and KI Crimson Rosella (VU). An additional nine species are listed at the state level (Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R).</p>				
Landscape context score	1.11	Vegetation Condition Score	56.25	Conservation significance score	1.66
Unit biodiversity Score	103.65	Area (ha)	0.0215	Total biodiversity Score	2.23

Vegetation Association	Section VV Site 6 - KI 1104 (Willoughby et al. 2001) <i>Eucalyptus cneorifolia</i> mid mallee woodland
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Photo 2728 facing west at Waypoint 209 (Lat/Long: -35.78386294 / 137.6425403)

General description	This plant association is located in the undulating surface of the Gosse-Seddon Plateau. The vegetation has an overstorey dominated by KI Narrow-leaf Mallee with Purple-flowered Mallee Box and Coastal White Mallee (<i>E. diversifolia</i>). The understorey supports a high diversity of native shrubs and includes vines, sedges and grasses. Exotic species comprise introduced grasses and Bridal Creeper. The plant community is in moderate to good condition. Minor trimming of roadside vegetation is required. Loss Factor = 0.6.
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Threatened species or community	Three species of threatened flora were observed at this site: <ul style="list-style-type: none"> • Kangaroo Island Turpentine Bush (EPBC Vulnerable, SA Endangered) • Rough Spider-flower (SA Rare) • Tate's Grass-tree (SA Rare) Threatened fauna that may be associated with this site include 3 mammal species, 16 bird species and 1 species of reptile (section 4.2). Eleven species are EPBC-listed: KI White-eared Honeyeater (EN), KI Brown-headed Honeyeater (EN), Western Whipbird (EN), Beautiful Firetail (EN), Bassian Thrush (EN), Southern Brown Bandicoot (EN), Short-beaked Echidna (EN), KI Shy Heathwren (VU), KI Striated Thornbill (VU), KI Little Wattlebird (VU), and KI Crimson Rosella (VU). An additional nine species are listed at the state level (Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R).
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Landscape context score	1.11	Vegetation Condition Score	52.50	Conservation significance score	1.66
Unit biodiversity Score	96.74	Area (ha)	0.002	Total biodiversity Score	0.19


Vegetation Association	Section VV Site 7 - KI 0215 (Willoughby et al. 2001) <i>Eucalyptus diversifolia</i> mid mallee woodland				
					
Photo 2729 facing north-west at Waypoint 210 (Lat/Long: -35.78776765 / 137.6480823)					
General description	<p>This plant association is located in the undulating surface of the Gosse-Seddon Plateau. The canopy layer comprises Coastal White Mallee (<i>Eucalyptus diversifolia</i>) with Cup Gum, Purple-flowered Mallee Box and Narrow-leaf Red Mallee (<i>E. leptophylla</i>). The shrubby understory is highly diverse and includes several species characteristic of this vegetation community, such as <i>Leptospermum myrsinoides</i>, <i>Acacia myrtifolia</i>, <i>Melaleuca uncinata</i>, <i>Thryptomene ericaea</i>, <i>Bertya rotundifolia</i>, <i>Adenanthos macropodianus</i>, <i>Xanthorrhoea semiplana ssp. tateana</i>, and <i>Lasiopetalum schulzenii</i>. Exotic grasses and forbs, including Bridal Creeper, are present in the groundlayer. The vegetation is in moderate to good condition.</p> <p>Clearance is required for a valve set and scour, as well as minor trimming of roadside vegetation. Loss Factor = 1.</p>				
Threatened species or community	<p>Five species of threatened flora were observed at this site:</p> <ul style="list-style-type: none"> • Kangaroo Island Phebalium (EPBC Endangered, SA Endangered) • Pink Zieria (SA Rare) • Prickly Grevillea (SA Rare) • Rough Spider-flower (SA Rare) • Tate's Grass-tree (SA Rare) <p>Threatened fauna that may be associated with this site include 3 mammal species, 16 bird species and 1 species of reptile (section 4.2). Eleven species are EPBC-listed: KI White-eared Honeyeater (EN), KI Brown-headed Honeyeater (EN), Western Whipbird (EN), Beautiful Firetail (EN), Bassian Thrush (EN), Southern Brown Bandicoot (EN), Short-beaked Echidna (EN), KI Shy Heathwren (VU), KI Striated Thornbill (VU), KI Little Wattlebird (VU), and KI Crimson Rosella (VU). An additional nine species are listed at the state level (Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R).</p>				
Landscape context score	1.11	Vegetation Condition Score	55.96	Conservation significance score	1.30
Unit biodiversity Score	80.75	Area (ha)	0.0084	Total biodiversity Score	0.68


Vegetation Association	Section VV Site 8 - KI 0210 (Willoughby et al. 2001) <i>Eucalyptus cosmophylla</i> Mallee over riparian shrubs
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Photo 2730 facing west at Waypoint 211 (Lat/Long: -35.79829599 / 137.6632281)


General description	This plant association is located on lower slopes approaching a drainage line in the Gosse-Seddon Plateau where <i>Eucalyptus cosmophylla</i> , <i>E. diversifolia</i> and <i>E. albopurpurea</i> become the dominant overstorey, replacing the <i>E. cneorifolia</i> which is more common on the ridges. The vegetation has a diverse understorey with intact shrub and ground layers. Clearance is required for direct drilling under a watercourse, and minor trimming of roadside vegetation. Loss Factor = 1.				
Threatened species or community	One threatened flora species was observed at the site: <ul style="list-style-type: none"> Rough Spider-flower (SA Rare) Threatened fauna that may be associated with this site include 3 mammal species, 16 bird species and 1 species of reptile (section 4.2). Eleven species are EPBC-listed: KI White-eared Honeyeater (EN), KI Brown-headed Honeyeater (EN), Western Whipbird (EN), Beautiful Firetail (EN), Bassian Thrush (EN), Southern Brown Bandicoot (EN), Short-beaked Echidna (EN), KI Shy Heathwren (VU), KI Striated Thornbill (VU), KI Little Wattlebird (VU), and KI Crimson Rosella (VU). An additional nine species are listed at the state level (Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R).				
Landscape context score	1.13	Vegetation Condition Score	53.19	Conservation significance score	1.14
Unit biodiversity Score	68.52	Area (ha)	0.0159	Total biodiversity Score	1.09


Vegetation Association	Section VV Site 9 - KI 0206 (Willoughby et al. 2001) <i>Eucalyptus diversifolia</i> Mallee over woodland shrubs in deeper sands and clays				
					
<p>Photo 2677 facing east at Waypoint 213 (Lat/Long: -35.806874 / 137.675279)</p>					
General description	<p>This plant association is located in a swale in the Gosse-Seddon Plateau with an overstorey of <i>E. diversifolia</i> with Purple-flowered Mallee Box and Cup Gum. Understorey species include Broombush (<i>Melaleuca uncinata</i>), Short-leaf Honey-myrtle <i>Acacia</i> spp. and Coast Beard-heath. Bridal Creeper, introduced grasses and forbs are present in the understorey. The vegetation association is in moderate condition.</p> <p>Clearance is required for valve sets, scours, direct drilling under watercourses, and minor trimming of roadside vegetation. Loss Factor = 1.</p>				
Threatened species or community	<p>Two species of threatened flora were observed at this site:</p> <ul style="list-style-type: none"> • Kangaroo Island Turpentine Bush (EPBC Vulnerable, SA Endangered) • Prickly Grevillea (SA Rare) <p>Threatened fauna that may be associated with this site include 3 mammal species, 16 bird species and 1 species of reptile (section 4.2). Eleven species are EPBC-listed: KI White-eared Honeyeater (EN), KI Brown-headed Honeyeater (EN), Western Whipbird (EN), Beautiful Firetail (EN), Bassian Thrush (EN), Southern Brown Bandicoot (EN), Short-beaked Echidna (EN), KI Shy Heathwren (VU), KI Striated Thornbill (VU), KI Little Wattlebird (VU), and KI Crimson Rosella (VU). An additional nine species are listed at the state level (Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R).</p>				
Landscape context score	1.11	Vegetation Condition Score	43.59	Conservation significance score	1.26
Unit biodiversity Score	60.97	Area (ha)	0.0583	Total biodiversity Score	3.55


Vegetation Association	Section VV Site 10 - KI 2201 (Willoughby et al. 2001) <i>Melaleuca halmaturorum</i> / <i>Melaleuca brevifolia</i> shrubland over swampy laterite				
					
Photo 2731 facing west at Waypoint 212 (Lat/Long: -35.80497251 / 137.6727512)					
General description	This plant association is located in a swampy swale in the Gosse-Seddon Plateau. The soils are poorly drained saline lateritic gravels and clays and support a shrubland of <i>Melaleuca halmaturorum</i> and <i>M. brevifolia</i> with <i>Gahnia trifida</i> and <i>Salicornia quinqueflora</i> . Better-drained soils support swampy mallee heath species including <i>Eucalyptus albopurpurea</i> , <i>Hibbertia riparia</i> , <i>Acrotriche depressa</i> and <i>Thryptomene ericacea</i> .				
Threatened species or community	<p>Two species of threatened flora were observed at this site:</p> <ul style="list-style-type: none"> • Prickly Grevillea (SA Rare) • Rough Spider-flower (SA Rare) <p>Threatened fauna that may be associated with this site include 3 mammal species, 16 bird species and 1 species of reptile (section 4.2). Eleven species are EPBC-listed: KI White-eared Honeyeater (EN), KI Brown-headed Honeyeater (EN), Western Whipbird (EN), Beautiful Firetail (EN), Bassian Thrush (EN), Southern Brown Bandicoot (EN), Short-beaked Echidna (EN), KI Shy Heathwren (VU), KI Striated Thornbill (VU), KI Little Wattlebird (VU), and KI Crimson Rosella (VU). An additional nine species are listed at the state level (Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R).</p>				
Landscape context score	1.14	Vegetation Condition Score	53.19	Conservation significance score	1.18
Unit biodiversity Score	71.55	Area (ha)	0.0183	Total biodiversity Score	1.31

Vegetation Association	Section VV Site 11 - KI 0210 (Willoughby et al. 2001) <i>E. diversifolia</i> mallee over lateritic sand and clay				
					
Photo 2732 facing North at Waypoint 213 (Lat/Long: -35.80687403 / 137.6752793)					
General description	<p>This plant association comprises an overstorey of <i>E. diversifolia</i> with <i>E. albopurpurea</i>, <i>E. phenax</i> ssp. <i>compressa</i> and <i>E. rugosa</i>. The vegetation has a diverse understorey with intact shrub and ground layers.</p> <p>Clearance is required for a valve set, scours and direct drilling under a watercourse.</p> <p>Loss Factor = 1.</p>				
Threatened species or community	<p>Three species of threatened flora were observed at this site:</p> <ul style="list-style-type: none"> • Kangaroo Island Turpentine Bush (EPBC Vulnerable, SA Endangered) • KI Mallee (SA Rare) • Prickly Grevillea (SA Rare) <p>Threatened fauna that may be associated with this site include 3 mammal species, 16 bird species and 1 species of reptile (section 4.2). Eleven species are EPBC-listed: KI White-eared Honeyeater (EN), KI Brown-headed Honeyeater (EN), Western Whipbird (EN), Beautiful Firetail (EN), Bassian Thrush (EN), Southern Brown Bandicoot (EN), Short-beaked Echidna (EN), KI Shy Heathwren (VU), KI Striated Thornbill (VU), KI Little Wattlebird (VU), and KI Crimson Rosella (VU). An additional nine species are listed at the state level (Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R).</p>				
Landscape context score	1.11	Vegetation Condition Score	59.96	Conservation significance score	1.26
Unit biodiversity Score	83.86	Area (ha)	0.0195	Total biodiversity Score	1.64

Vegetation Association	Section VV Site 12 - KI 1104 (Willoughby et al. 2001) <i>Eucalyptus cneorifolia</i> with <i>E. albopurpurea</i> mid mallee woodland				
					
Photo 2734 facing west at Waypoint 215 (Lat/Long: -35.8145205 137.6862226)					
General description	<p>This plant association comprises an overstorey of KI Narrow-leaf Mallee with Purple-flowered Mallee Box. The understory includes a high diversity of native shrubs, vines, sedges and grasses (e.g. <i>Melaleuca uncinata</i>, <i>Grevillea ilicifolia</i>, <i>Xanthorrhoea semiplana</i>, <i>Allocasuarina muelleriana</i>, <i>Bertya rotundifolia</i>, <i>Thryptomene ericaea</i>, <i>Adenanthos terminalis</i> and <i>Lepidosperma spp.</i>). Bridal Creeper, exotic grasses and herbs are present as a minor component of the plant community. The community is in good condition. Clearance is required for a scour and minor trimming of roadside vegetation. LF = 1.</p>				
Threatened species or community	<p>Four species of threatened flora were observed at this site:</p> <ul style="list-style-type: none"> • Kangaroo Island Turpentine Bush (EPBC Vulnerable, SA Endangered) • Prickly Grevillea (SA Rare) • Rough Spider-flower (SA Rare) • Tate's Grass-tree (SA Rare) <p>Threatened fauna that may be associated with this site include 3 mammal species, 16 bird species and 1 species of reptile (section 4.2). Eleven species are EPBC-listed: KI White-eared Honeyeater (EN), KI Brown-headed Honeyeater (EN), Western Whipbird (EN), Beautiful Firetail (EN), Bassian Thrush (EN), Southern Brown Bandicoot (EN), Short-beaked Echidna (EN), KI Shy Heathwren (VU), KI Striated Thornbill (VU), KI Little Wattlebird (VU), and KI Crimson Rosella (VU). An additional nine species are listed at the state level (Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R).</p>				
Landscape context score	1.11	Vegetation Condition Score	55.78	Conservation significance score	1.66
Unit biodiversity Score	102.78	Area (ha)	0.003	Total biodiversity Score	0.31

Vegetation Association	Section UU Site 1 – KI1107 (Willoughby et al. 2001) <i>Eucalyptus cneorifolia</i> mid mallee woodland				
					
Photo 2736 facing west at Waypoint 217 (Lat/Long: -35.82398392 / 137.7001056)					
General description	<p>The mallee woodland has a canopy dominated by KI Narrow-leaf Mallee with Coastal White Mallee (<i>E. diversifolia</i>), Cup Gum and Purple-flowered Mallee Box over a highly diverse understory including several species of <i>Melaleuca</i> and <i>Acacia</i>, Southern Cypress Pine, a variety of mallee heath shrubs, as well as sedges, vines, lilies and grasses. Introduced species are a minor component of the association. The plant community is in good condition. Clearance is required for a valve set, scours and minor trimming of roadside vegetation. Loss Factor = 1.</p>				
Threatened species or community	<p>The association belongs to the ecological community “Kangaroo Island Narrow-leaved Mallee Woodland” which is Critically Endangered under the EPBC Act and is Endangered in South Australia under the Provisional List of Threatened Ecosystems (DEH in progress).</p> <p>Four species of threatened flora were observed at this site:</p> <ul style="list-style-type: none"> • Kangaroo Island Turpentine Bush (EPBC Vulnerable, SA Endangered) • Rough Spider-flower (SA Rare) • Tate’s Grass-tree (SA Rare) • Prickly Grevillea (SA Rare) <p>Threatened fauna that may be associated with this site include 3 mammal species, 16 bird species and 1 species of reptile (see section 4.2). Eleven species are EPBC-listed (KI White-eared Honeyeater (EN), KI Brown-headed Honeyeater (EN), Western Whipbird (EN), Beautiful Firetail (EN), Bassian Thrush (EN), Southern Brown Bandicoot (EN), Short-beaked Echidna (EN), KI Striated Thornbill (VU), KI Little Wattlebird (VU), KI Shy Heathwren (VU) and KI Crimson Rosella (VU)). An additional nine species are listed at the state level (Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R)).</p>				
Landscape context score	1.11	Vegetation Condition Score	56.25	Conservation significance score	1.66
Unit biodiversity Score	103.65	Area (ha)	0.0101	Total biodiversity Score	1.05

Vegetation Association	Section UU Site 2 – KI1104 (Willoughby et al. 2001) <i>Eucalyptus cneorifolia</i> mid mallee woodland				
					
Photo 2737 facing west at Waypoint 218 (Lat/Long: -35.82873747 / 137.7066425)					
General description	<p>The mallee woodland canopy is dominated by KI Narrow-leaf Mallee with Coastal White Mallees (<i>E. diversifolia</i> and <i>E. rugosa</i>), Cup Gum and Purple-flowered Mallee Box over a highly diverse understory including <i>Melaleuca</i> spp., and <i>Acacia</i> spp., Round-leaf Bertya, Holly-leaf Grevillea (<i>Grevillea ilicifolia</i>), Hibbertia spp., a variety of heath species, as well as sedges, rushes, vines and lilies. Introduced species are a minor component of the association. The plant community is in good condition. Clearance is required for a valve set, scour and minor trimming of roadside vegetation. Loss Factor = 1.</p>				
Threatened species or community	<p>The association belongs to the ecological community “Kangaroo Island Narrow-leaved Mallee Woodland” which is Critically Endangered under the EPBC Act and is Endangered in South Australia under the Provisional List of Threatened Ecosystems (DEH in progress).</p> <p>Three species of threatened flora were observed at this site:</p> <ul style="list-style-type: none"> • Kangaroo Island Turpentine Bush (EPBC Vulnerable, SA Endangered) • Tate’s Grass-tree (SA Rare) • Prickly Grevillea (SA Rare) <p>Threatened fauna that may be associated with this site include 3 mammal species, 16 bird species and 1 species of reptile (see section 4.2). Eleven species are EPBC-listed (KI White-eared Honeyeater (EN), KI Brown-headed Honeyeater (EN), Western Whipbird (EN), Beautiful Firetail (EN), Bassian Thrush (EN), Southern Brown Bandicoot (EN), Short-beaked Echidna (EN), KI Striated Thornbill (VU), KI Little Wattlebird (VU), KI Shy Heathwren (VU) and KI Crimson Rosella (VU)). An additional nine species are listed at the state level (Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R)).</p>				
Landscape context score	1.13	Vegetation Condition Score	56.72	Conservation significance score	1.66
Unit biodiversity Score	106.39	Area (ha)	0.0074	Total biodiversity Score	0.79

Vegetation Association	Section TT Site 1 – KI0215 (Willoughby et al. 2001) <i>Eucalyptus diversifolia</i> and <i>E. cosmophylla</i> mid mallee woodland				
					
Photo 2738 facing west at Waypoint 219 (Lat/Long: -35.83107292 / 137.7106051)					
General description	<p>This plant association is located in the limestone soils of steep relict dune cores between Pelican Lagoon and D'Estrees Bay. The canopy layer comprises Cup Gum and Coastal White Mallee (<i>Eucalyptus diversifolia</i>) over a shrubby understory that includes <i>Acacia myrtifolia</i>, <i>Melaleuca uncinata</i>, <i>Bertya rotundifolia</i> and <i>Adenanthos macropodianus</i> as well as native lilies, vines, grasses and forbs. Introduced species include large shrubs (Sallow Wattle and Western Coastal Wattle), grasses and forbs. The vegetation is in moderate to good condition. Minor trimming of roadside vegetation is required. Loss Factor = 0.6.</p>				
Threatened species or community	<p>Two species of threatened flora were observed at this site:</p> <ul style="list-style-type: none"> • Kangaroo Island Platysace (SA Rare) • Tate's Grass-tree (SA Rare) <p>Threatened fauna that may be associated with this site include 3 mammal species, 16 bird species and 1 species of reptile (see section 4.2). Eleven species are EPBC-listed (KI White-eared Honeyeater (EN), KI Brown-headed Honeyeater (EN), Western Whipbird (EN), Beautiful Firetail (EN), Bassian Thrush (EN), Southern Brown Bandicoot (EN), Short-beaked Echidna (EN), KI Striated Thornbill (VU), KI Little Wattlebird (VU), KI Shy Heathwren (VU) and KI Crimson Rosella (VU)). An additional nine species are listed at the state level (Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R).</p>				
Landscape context score	1.13	Vegetation Condition Score	47.15	Conservation significance score	1.18
Unit biodiversity Score	62.87	Area (ha)	0.001	Total biodiversity Score	0.06

Vegetation Association	Section TT Site 2 - KI 0206 (Willoughby et al. 2001) <i>Eucalyptus diversifolia</i> Mallee over <i>Melaleuca lanceolata</i> over coastal shrubs in limestone soils
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Photo 2739 facing west at Waypoint 220 (Lat/Long: -35.8377605 / 137.7301306)


General description	<p>This plant association is located in the limestone soils of steep relict dune cores between Pelican Lagoon and D'Estrees Bay. The vegetation is comprises a sparse canopy of <i>Eucalyptus diversifolia</i> with a mid-storey of <i>Melaleuca lanceolata</i>. The heathy understorey has coastal components including <i>Adriana quadripartita</i> and <i>Leucopogon parviflorus</i> as well as dryland woodland species including <i>Hibbertia riparia</i>, <i>Xanthorrhoea semplana</i> and <i>Acrotriche patula</i>. Open areas are dominated by exotic grasses and forbs. The vegetation is in moderate condition. Clearance is required for a valve set, scour and minor trimming of roadside vegetation. Loss Factor = 1.</p>				
Threatened species or community	<p>Two species of threatened flora were observed at this site:</p> <ul style="list-style-type: none"> • Kangaroo Island Turpentine Bush (EPBC Vulnerable, SA Endangered) • Tate's Grass-tree (SA Rare) <p>Threatened fauna that may be associated with this site include 3 mammal species, 16 bird species and 1 species of reptile (see section 4.2). Eleven species are EPBC-listed (KI White-eared Honeyeater (EN), KI Brown-headed Honeyeater (EN), Western Whipbird (EN), Beautiful Firetail (EN), Bassian Thrush (EN), Southern Brown Bandicoot (EN), Short-beaked Echidna (EN), KI Striated Thornbill (VU), KI Little Wattlebird (VU), KI Shy Heathwren (VU) and KI Crimson Rosella (VU)). An additional nine species are listed at the state level (Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R).</p>				
Landscape context score	1.13	Vegetation Condition Score	31.64	Conservation significance score	1.26
Unit biodiversity Score	45.05	Area (ha)	0.0296	Total biodiversity Score	1.33

Vegetation Association	Section TT Site 3 - KI 0204 (Willoughby et al. 2001) <i>Eucalyptus diversifolia</i> and <i>Eucalyptus rugosa</i> mid mallee woodland
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Photo 2740 facing west at Waypoint 221 (Lat/Long: -35.84004088 / 137.7338566)

General description	This plant association is located in the limestone soils of steep relict dune cores between Pelican Lagoon and D'Estrees Bay. It is characterised by an overstorey of Coastal White Mallees (<i>E. diversifolia</i> and <i>E. rugosa</i>) and has a highly diverse understory that includes <i>Melaleuca lanceolata</i> , <i>Lasiopetalum schulzenii</i> , <i>Correa reflexa</i> , <i>Pomaderris paniculosa ssp. paniculosa</i> , <i>Senecio odoratus</i> and <i>Myoporum insulare</i> shrubs as well as a variety of vines, forbs, grasses and rushes. The vegetation is in good condition providing structural and species diversity. Clearance is required for a valve set, scour and minor trimming of roadside vegetation. Loss Factor = 1.				
Threatened species or community	One threatened plant species was observed at the site: <ul style="list-style-type: none"> Tate's Grass-tree (SA Rare) Threatened fauna that may be associated with this site include 3 mammal species, 16 bird species and 1 species of reptile (see section 4.2). Eleven species are EPBC-listed (KI White-eared Honeyeater (EN), KI Brown-headed Honeyeater (EN), Western Whipbird (EN), Beautiful Firetail (EN), Bassian Thrush (EN), Southern Brown Bandicoot (EN), Short-beaked Echidna (EN), KI Striated Thornbill (VU), KI Little Wattlebird (VU), KI Shy Heathwren (VU) and KI Crimson Rosella (VU)). An additional nine species are listed at the state level (Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R).				
Landscape context score	1.08	Vegetation Condition Score	57.85	Conservation significance score	1.14
Unit biodiversity Score	71.23	Area (ha)	0.0369	Total biodiversity Score	2.63


Vegetation Association	Section TT Site 4 - KI 0406 (Willoughby et al. 2001) <i>Eucalyptus rugosa</i> and <i>Eucalyptus diversifolia</i> Mallee over coastal shrubs in limestone soils				
					
Photo 2741 facing west at Waypoint 222 (Lat/Long: -35.83839174 / 137.7322436)					
General description	<p>The steep limestone dune-core landscape south of Pelican Lagoon is vegetated by a dense closed <i>Eucalyptus rugosa</i> and <i>E. diversifolia</i> mallee over coastal shrubs. The understorey is diverse. The shrub layer includes <i>Acacia leiophylla</i>, <i>Myoporum insulare</i> and <i>Leucopogon parviflorus</i> and the ground layer includes <i>Rhagodia candolleana</i>, <i>Orthrosanthus multiflorus</i> and <i>Hibbertia pallidiflora</i>.</p> <p>At Prospect Hill, a 12m wide corridor will be cleared outside the road shoulder to accommodate the pipeline around a sharp bend. Clearance includes a valve set and scours. Loss Factor = 1.</p>				
Threatened species or community	<p>One threatened plant species was observed at the site:</p> <ul style="list-style-type: none"> • Round-leaf Correa (SA Rare) <p>Threatened fauna that may be associated with this site include KI White-eared Honeyeater (EPBC-EN), KI Brown-headed Honeyeater (EPBC-EN), Western Whipbird (EPBC-EN), Beautiful Firetail (EPBC-EN), Southern Brown Bandicoot (EPBC-EN), Short-beaked Echidna (EPBC-EN), KI Striated Thornbill (EPBC-VU), KI Little Wattlebird (EPBC-VU), KI Shy Heathwren (EPBC-VU) and KI Crimson Rosella (EPBC-VU), Heath Goanna (SA-V), Yellow-tailed Black Cockatoo (SA-V), Scarlet Robin (SA-R) and Common Brushtail Possum (SA-R).</p>				
Landscape context score	1.08	Vegetation Condition Score	65.03	Conservation significance score	1.14
Unit biodiversity Score	80.06	Area (ha)	0.1661	Total biodiversity Score	13.30


Vegetation Association	Section TT Site 5 - KI 1201 (Willoughby et al. 2001) <i>Myoporum insulare</i> and <i>Leucopogon parviflorus</i> coastal shrubland
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Photo 4938 facing east at Waypoint 893 (Lat/Long: -35.843007 / 137.739043)

General description	<p>South of Pelican Lagoon, the more exposed sites in the limestone dune topography support a closed shrubland dominated by <i>Leucopogon parviflorus</i> and <i>Myoporum insulare</i> with <i>Dodonaea viscosa</i>, <i>Callitris gracilis</i> and <i>Allocasuarina verticillata</i>. The vegetation has a diverse low-shrub component that includes <i>Acrotriche patula</i>, <i>Hibbertia pallidiflora</i>, <i>Pimelea serpyllifolia</i> and <i>Adriana quadripartita</i>.</p> <p>At Prospect Hill, a 12m wide corridor will be cleared outside the road shoulder to accommodate the pipeline around a sharp bend. Clearance also includes a valve set, scours and vegetation trimming. Loss Factor = 1.</p>				
Threatened species or community	<p>No threatened flora species were recorded at the site.</p> <p>Threatened fauna that may be associated with this site include KI White-eared Honeyeater (EPBC-EN), KI Brown-headed Honeyeater (EPBC-EN), Western Whipbird (EPBC-EN), Beautiful Firetail (EPBC-EN), Southern Brown Bandicoot (EPBC-EN), Short-beaked Echidna (EPBC-EN), KI Striated Thornbill (EPBC-VU), KI Little Wattlebird (EPBC-VU), KI Shy Heathwren (EPBC-VU) and KI Crimson Rosella (EPBC-VU), Heath Goanna (SA-V), Yellow-tailed Black Cockatoo (SA-V), Scarlet Robin (SA-R) and Common Brushtail Possum (SA-R).</p>				
Landscape context score	1.08	Vegetation Condition Score	56.96	Conservation significance score	1.1
Unit biodiversity Score	67.67	Area (ha)	0.1656	Total biodiversity Score	11.21

Vegetation Association	Section SS3 Site 1 - KI 1201 (Willoughby et al. 2001) <i>Myoporum insulare</i> and <i>Leucopogon parviflorus</i> coastal shrubland				
					
Photo 2751 facing north at Waypoint 225 (Lat/Long: -35.84351317 / 137.7551112)					
General description	<p>This plant association is present on the Linois Plain south and east of Pelican Lagoon. The vegetation is dominated by <i>Leucopogon parviflorus</i> and <i>Myoporum insulare</i> with <i>Olearia axillaris</i>, <i>Acacia leiophylla</i>, <i>A. longifolia</i> var. <i>sophorae</i> and <i>A. cupularis</i>. The vegetation has a diverse low-shrub component that includes <i>Acrotriche patula</i>, <i>Hibbertia pallidiflora</i>, <i>Pimelea serpyllifolia</i> and <i>Adriana quadripartita</i>. Groundlayer contains a diversity of lilies, sedges, native grasses and orchids.</p> <p>Clearance is required for a valve set, scours and minor trimming of roadside vegetation.</p> <p>Loss Factor = 1.</p>				
Threatened species or community	<p>One threatened plant species was observed at the site:</p> <ul style="list-style-type: none"> • Round-leaf Correa (SA Rare) <p>Threatened fauna that may be associated with this site include KI White-eared Honeyeater (EPBC-EN), KI Brown-headed Honeyeater (EPBC-EN), Western Whipbird (EPBC-EN), Beautiful Firetail (EPBC-EN), Southern Brown Bandicoot (EPBC-EN), Short-beaked Echidna (EPBC-EN), KI Striated Thornbill (EPBC-VU), KI Little Wattlebird (EPBC-VU), KI Shy Heathwren (EPBC-VU) and KI Crimson Rosella (EPBC-VU), Heath Goanna (SA-V), Yellow-tailed Black Cockatoo (SA-V), Scarlet Robin (SA-R) and Common Brushtail Possum (SA-R).</p>				
Landscape context score	1.08	Vegetation Condition Score	56.20	Conservation significance score	1.10
Unit biodiversity Score	66.77	Area (ha)	0.0225	Total biodiversity Score	1.5

Vegetation Association	Section SS3 Site 2 - KI 0220 (Willoughby et al. 2001) <i>Eucalyptus diversifolia</i> and <i>E. rugosa</i> Mallee over coastal shrubs				
					
Photo 2752 facing north at Waypoint 226 (Lat/Long: -35.83792579 / 137.7799109)					
General description	<p>This plant association is present on the limestone dune crests of the Linois Plain south and east of Pelican Lagoon. The vegetation is very dense with a low mallee overstorey dominated by <i>Eucalyptus diversifolia</i> and <i>E. rugosa</i> and thick shrubs including <i>Leucopogon parviflorus</i>, <i>Myoporum insulare</i>, <i>Acacia leiophylla</i>, <i>Alyxia buxifolia</i> and <i>Olearia axillaris</i>. Clearance is required for a valve set, scour and minor trimming of roadside vegetation. Loss Factor = 1.</p>				
Threatened species or community	<p>One threatened plant species was observed at the site:</p> <ul style="list-style-type: none"> • Round-leaf Correa (SA Rare) <p>Threatened fauna that may be associated with this site include 3 mammal species, 16 bird species and 1 species of reptile (see section 4.2). Eleven species are EPBC-listed (KI White-eared Honeyeater (EN), KI Brown-headed Honeyeater (EN), Western Whipbird (EN), Beautiful Firetail (EN), Bassian Thrush (EN), Southern Brown Bandicoot (EN), Short-beaked Echidna (EN), KI Striated Thornbill (VU), KI Little Wattlebird (VU), KI Shy Heathwren (VU) and KI Crimson Rosella (VU)). An additional nine species are listed at the state level (Yellow-tailed Black Cockatoo (V), Heath Goanna (V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R)).</p>				
Landscape context score	1.08	Vegetation Condition Score	52.73	Conservation significance score	1.14
Unit biodiversity Score	64.92	Area (ha)	0.0319	Total biodiversity Score	2.07


Vegetation Association	Section SS2 Site 1 - KI 2001 (Willoughby et al. 2001) <i>Leucopogon parviflorus</i> , <i>Olearia axillaris</i> , <i>Myoporum insulare</i> low open shrubland				
					
Photo 2753 facing west at Waypoint 227 (Lat/Long: -35.83568959 / 137.7940241)					
General description	This plant association is located on the southern and eastern sides of Pelican Lagoon. The route passes through calcrete cores of dunes and sand and low-lying areas that have been cleared and are recovering. Vegetation cover is patchy. Clearance is required for a valve sets, scours, direct drilling under watercourses, and minor trimming of roadside vegetation. Loss Factor = 1.				
Threatened species or community	No threatened flora species were recorded at the site. Threatened fauna that may be associated with this site include KI White-eared Honeyeater (EPBC-EN), KI Brown-headed Honeyeater (EPBC-EN), Western Whipbird (EPBC-EN), Beautiful Firetail (EPBC-EN), Short-beaked Echidna (EPBC-EN), KI Striated Thornbill (EPBC-VU), KI Little Wattlebird (EPBC-VU), KI Shy Heathwren (EPBC-VU) and KI Crimson Rosella (EPBC-VU), Yellow-tailed Black Cockatoo (SA-V), Heath Goanna (SA-V), Restless Flycatcher (R), Elegant Parrot (R), Olive-backed Oriole (R), Scarlet Robin (R), Common Brushtail Possum (R), Painted Buttonquail (R) and Bush Stonecurlew (R).				
Landscape context score	1.05	Vegetation Condition Score	39.06	Conservation significance score	1.1
Unit biodiversity Score	45.11	Area (ha)	0.0324	Total biodiversity Score	1.46

Table of proposed impacts

Plant Association and Section	Total Clearance Required (ha)	Summary of Clearance					Comments	
		Small Patch Trimming (1x1m)	Small Patch Trimming (1x2m)	Small Patch Trimming (1x3m)	Small Patch Trimming (1x4m)	Tree Trimming (5x4m)		
End of pipeline	0.0077	2	4			1	1	Includes 1 valve set with 2 scours
GG1-Site 1-KI 1104	0.0102							Includes 1 valve set and valve with 2 branches
KI 3501 - GG1 Site 2	0.0000							
GG-Site 3-KI 1104	0.0028	2	1					Includes 1 scour
GG1-Site 4 - Not Cat	0.0052	2	1					Includes 2 scours
GG-KI-Site 5-1107	0.0055	2	1					Includes 1 valve set with scour
GG2-KI-Site 1-1104	0.0004	2	1					
KI 1107 - GG1 Site 2	0.0482	2						Includes 2 scours and 3 HDD Launch Pits
GG2-KI-Site 3-1103	0.0207	8	2					Includes 1 valve set with scour and 1 HDD Launch Pit
GJC-KI 2302	0.0032	6	1					Includes 1 scour
KI 1304 - XX2 Site 1	0.0056	6	1					Includes 2 scours
XX2-Site 2-KI 1103	0.0054	7	1					Includes 1 valve set
KI 2302 - XX2 Site 3	0.0007	5	1					
KI 2302 - XX2 Site 1	0.0130	4						Includes 1 valve set with 2 scours
XX1-Site 2 -KI 0802	0.0004	4						
KI 1104 - XX1 Site 3	0.0388	4						Includes 1 valve set with scours and 1 valve set and 2 HDD Launch Pit
WW-Site 1-KI 1109	0.0002	2						
WW-Site 2-KI 0212	0.0004	4						
WW-Site 3-KI 1201	0.0394	10						Includes 1 valve set with scours and 1 valve set and 2 HDD Launch Pit
KI 2301 - WW Site 4	0.0154	10						Includes 1 HDD Launch Pit
WW-Site 5-KI 1104	0.0203	8						Includes 1 valve set with scour and 1 HDD Launch Pit
WW-Site 6-KI 0212	0.0061	10						Includes 1 valve set with scour
WW-Site 7-KI 1104	0.0054	9						Includes 1 valve set
WW-Site 8-KI 1104	0.0431	15	1	1				Includes 1 valve set with scours and 3 Scours and 2 HDD Launch Pits
KI 1106 - VV Site 1	0.0023	18	1	1				
VV-Site 2-KI 0206	0.0041	12	1	1				Includes 1 scour
VV-Site 3-KI 1104	0.0015	10	1	1				
VV-Site 4-KI 0212	0.0195	22	1	1				Includes 1 scour and 1 HDD Launch Pit
VV-Site 5-KI 1104	0.0215	15	1	1				Includes 1 valve set with scour and 1 HDD Launch Pit
VV-Site 6-KI 1104	0.0020	20						
VV-Site 7-KI 0215	0.0084	15						Includes 1 valve set and 1 Scour
KI 0210 - VV Site 8	0.0159	15						Includes 1 HDD Launch Pit
KI 0206 - VV Site 9	0.0583	4	3	1				Includes 1 valve set with scours and Includes 1 valve set with 2 scours and 1 scour and 3 HDD Launch Pits
KI 2201 - VV Site 10	0.0183	2	2	3				Includes 1 scour and 1 HDD Launch Pit
KI 0210 - VV Site 10	0.0195							Includes 1 valve set with scours and 1 HDD Launch Pit
VV-Site 12-KI 1104	0.0030	6						Includes 1 scour
UU-Site 1-KI 1107	0.0101	8						Includes 1 valve set and 2 Scours
UU-Site 2-KI 1104	0.0074	5						Includes 1 valve set and 1 Scour
TT-Site 1-KI 0215	0.0010	10						
KI 0206 - TT Site 2	0.0296	100	20	25		3		Includes 1 valve set and 1 Scour
TT-Site 3-KI 0204	0.0369	50	25	20		30	1	Includes 1 valve set and 1 Scour
KI 0406 - TT Site 4	0.0004	4						
KI 1201 - TT Site 5	0.3313	140	25	5		2		Includes behind guard rail section
SS3-Site 1-KI 1201	0.0225	50	8	6		6		Includes 1 valve set and 3 Scours
KI 0220 - SS3 Site 2	0.0319	200	7	4		6		Includes 1 valve set and 1 Scour
KI 2001 - SS2 Site1	0.0324	120	3	4		3		Includes 2 valve sets with 2 scours and 2 HDD Launch Pits
	0.9759	950	113	74	51	2		

Photo log

Photo ID	Description	Photo direction	Location (Coordinates)
2583	Section GG1 Site 1 - KI 1104	East	N/A
2587	Section GG1 Site 3 - KI 1104	East	N/A
2589	Section GG1 Site 4	South-east	N/A
2598	Section GG1 Site 5 – KI1107	South-east	N/A
2601	Section GG2 Site 1 - KI 1104	South-east	N/A
2603	Section GG2 Site 2 - KI 1107	South-east	N/A
2708	Section GG2 Site 3 KI 1103	South-west	Wpt 90 (Lat: -35.722487/ Long: 137.554211)
2611	Section GJC - KI 2302	South	N/A
2621	Section XX2 Site 1 - KI 1304	South-west	Lat/Long: 35.7315 / 137.5672
2710	Section XX2 Site 2 - KI 1103	North	Wpt 192 (Lat/Long: -35.72839888 / 137.5626418)
2711	Section XX2 Site 3 - KI 2302	North-east	Wpt 193 (Lat/Long: -35.7347309 / 137.571678)
2629	Section XX1 Site 1 - KI 2302	North	N/A
2713	Section XX1 Site 2 - KI 0802	North-west	Wpt 195 (Lat/Long: -35.74597724 / 137.5877731)
2714	Section XX1 Site 3 - KI 1104	North-east	Wpt 196 (Lat/Long: -35.749772 / 137.593652)
2715	Section WW Site 1 - KI 1109	North-west	Wpt 197 (Lat/Long: -35.75216426 / 137.5970817)
2717	Section WW Site 2 – KI0212	North	Wpt 198 (Lat/Long: -35.75541602 / 137.6015545)
2718	Section WW Site 3 – KI1201	North	Wpt 199 (Lat/Long: -35.756707 / 137.6032388)
2719	Section WW Site 4 - KI 2301	North-west	Wpt 200 (Lat/Long: -35.75850366 / 137.6058858)
2653	Section WW Site 5 - KI 1104	East	N/A
2720	Section WW Site 6 - KI 0212	East	Wpt 201 (Lat/Long: -35.76084522 / 137.6094325)
2721	Section WW Site 7 - KI 1104	North-west	Wpt 202 (Lat/Long: -35.76426965 / 137.6145138)
2722	Section WW Site 8 - KI 1104	North-west	Wpt 203 (Lat/Long: -35.7687673 / 137.6207299)
2723	Section VV Site 1 - KI 1106	West	Wpt 204 (Lat/Long: -35.77451561 / 137.6290926)
2724	Section VV Site 2 - KI 0206	West	Wpt 205 (Lat/Long: -35.7790643 / 137.6356038)
2725	Section VV Site 3 - KI 1104	West	Wpt 206 (Lat/Long: -35.77931416 / 137.6360574)
2726	Section VV Site 4 - KI 0212	West	Wpt 207 (Lat/Long: -35.78137292 / 137.638982)
2727	Section VV Site 5 - KI 1104	West	Wpt 208 (Lat/Long: -35.78194021 / 137.6398265)
2728	Section VV Site 6 - KI 1104	West	Wpt 209 (Lat/Long: -35.78386294 / 137.6425403)
2729	Section VV Site 7 - KI 0215	North-west	Wpt 210 (Lat/Long: -35.78776765 / 137.6480823)
2730	Section VV Site 8 - KI 0210	West	Wpt 211 (Lat/Long: -35.79829599 / 137.6632281)
2677	Section VV Site 9 - KI 0206	East	Wpt 213 (Lat/Long: -35.806874 / 137.675279)
2731	Section VV Site 10 - KI 2201	West	Wpt 212 (Lat/Long: -35.80497251 / 137.6727512)
2732	Section VV Site 11 - KI 0210	North	Wpt 213 (Lat/Long: -35.80687403 / 137.6752793)
2734	Section VV Site 12 - KI 1104	West	Wpt 215 (Lat/Long: -35.8145205 137.6862226)
2736	Section UU Site 1 – KI1107	West	Wpt 217 (Lat/Long: -35.82398392 / 137.7001056)
2737	Section UU Site 2 – KI1104	West	Wpt 218 (Lat/Long: -35.82873747 / 137.7066425)
2738	Section TT Site 1 – KI0215	West	Wpt 219 (Lat/Long: -35.83107292 / 137.7106051)
2739	Section TT Site 2 - KI 0206	West	Wpt 220 (Lat/Long: -35.8377605 / 137.7301306)
2740	Section TT Site 3 - KI 0204	West	Wpt 221 (Lat/Long: -35.84004088 / 137.7338566)
2741	Section TT Site 4 - KI 0406	West	Wpt 222 (Lat/Long: -35.83839174 / 137.7322436)
4938	Section TT Site 5 - KI 1201	East	Wpt 893 (Lat/Long: -35.843007 / 137.739043)
2751	Section SS3 Site 1 - KI 1201	North	Wpt 225 (Lat/Long: -35.84351317 / 137.7551112)
2752	Section SS3 Site 2 - KI 0220	North	Wpt 226 (Lat/Long: -35.83792579 / 137.7799109)
2753	Section SS2 Site 1 - KI 2001	West	Wpt 227 (Lat/Long: -35.83568959 / 137.7940241)

4.2 Threatened Species Assessment

Vegetation communities of conservation significance

Two nationally threatened ecological communities occur along roadsides affected by the project:

- Kangaroo Island Narrow-leaved Mallee Woodland (KINLMW) – CRITICALLY ENDANGERED, and
- Subtropical and Temperate Coastal Saltmarsh (STCS) – VULNERABLE

Kangaroo Island Narrow-leaved Mallee Woodland is only found on Kangaroo Island. The dominant overstorey species, *Eucalyptus cneorifolia*, grows in a mallee or tree form up to 10 m high. The community can occur in a number of vegetation states that differ in appearance, with transitions between vegetation states facilitated by disturbance events and/or capacity to recover. Co-dominant canopy species can include *E. albopurpurea*, *E. diversifolia* and *E. phenax*. *Melaleuca lanceolata* can occur as a dense midstorey species. The understorey can be dense or sparse vegetation with a deep layer of leaf litter (Department of the Environment 2014a, b). The community has been extensively cleared and only remains in isolated patches and roadsides in eastern Kangaroo Island.

The EPBC-listed KINLMW community is also recognised under the provisional list of threatened ecosystems of South Australia (DEH 2009), as two ecosystems:

- *E. cneorifolia*, *E. phenax* ssp. 'Kangaroo Island' Mallee on gilgai soils on plains – Endangered

The community occurs in the lower Cygnet River catchment and MacGillivray plateau. It is only conserved in Beyeria CP and an adjacent Heritage Agreement. Otherwise it is confined to roadsides where it is threatened by weed invasion and bulldozing.

- *E. cneorifolia*, *E. rugosa* Mallee over *Rhagodia candolleana* on glacial sediments on plains – Endangered

The community is locally common on roadsides between Kingscote and Emu Bay. It is not conserved and is largely confined to roadsides, where it is threatened by weed invasion and bulldozing.

The **Subtropical and Temperate Coastal Saltmarsh (Coastal Saltmarsh)** ecological community occurs in coastal areas under regular or intermittent tidal influence (Department of Sustainability, Environment, Water, Population and Communities 2013). It is mainly associated with the soft substrate shores of estuaries and embayments and some open, low wave energy coasts. It can experience hypersaline conditions in summer that are moderated by rainfall in winter and spring. The ecological community consists mainly of salt-tolerant grasses, herbs, sedges, rushes and shrubs. Non-vascular plants that may be present include epiphytic algae, diatoms and cyanobacterial mats. On Kangaroo Island, Coastal Saltmarsh is present within a low-lying tidal embayment that extends south-west of the township of Nepean Bay and includes tidal channels that extend as far as Hog Bay Road. The community grades into *Melaleuca halmaturorum* shrubland on higher ground within the embayment and into mallee woodland or pasture at the perimeter of the embayment.

Flora of conservation significance

Sixteen flora species of conservation significance at the national and state levels were detected during field survey work.

Table 2. Flora species of state and national significance recorded during field surveys

Scientific Name	Common Name	Conservation Status		Location Section (Site)
		EPBC	SA	
<i>Olearia microdisca</i>	Small-flower Daisy-bush	EN	E	GG1(3); XX2(2); WW(2,5,6)
<i>Leionema equestre</i>	Kangaroo Island Phebalium	EN	E	VV(7)
<i>Beyeria subsecta</i>	Kangaroo Island Turpentine Bush	VU	E	WW(1,4,5,6,7,8); VV(1,2,3,4,5,6,9,11,12); UU(1,2); TT(2)
<i>Spyridium eriocephalum</i> var. <i>glabrisepalum</i>	Macgillivray Spyridium	VU	E	XX2(2)
<i>Correa backhouseana</i> var. <i>orbicularis</i>	Round-leaf Correa		R	TT(4); SS3(1,2)
<i>Eucalyptus albens</i>	White Box		R	WW(6)
<i>Eucalyptus phenax</i> ssp. <i>compressa</i>	Kangaroo Island Mallee		R	WW(1); VV(11)
<i>Eucalyptus fasciculosa</i>	Pink Gum		R	GG1(3,4); WW(8)
<i>Grevillea muricata</i>	Rough Spider-flower		R	WW(2,7,8); VV(1,3,4,5,6,7,8,10,12); UU(1)
<i>Grevillea halmaturina</i> ssp. <i>halmaturina</i>	Prickly Grevillea		R	GG1(1,3); WW(2,3,4,5,6,7); VV(1,3,4,7,9,10,11,12); UU(1,2)
<i>Hibbertia glebosa</i> ssp. <i>oblonga</i>	Oblong-leaf Guinea-flower		R	WW(7)
<i>Platysace heterophylla</i> var. <i>tepperi</i>	Kangaroo Island Platysace		R	TT(1)
<i>Prostanthera chlorantha</i>	Green Mintbush		R	GG1(3); XX2(2); WW(1,7,8)
<i>Spyridium daphnoides</i> (syn. <i>spathulatum</i>)	Spoon-leaf Spyridium		R	VV(3)
<i>Xanthorrhoea semiplana</i> ssp. <i>tateana</i>	Tate's Grass-tree		R	GG1(1,3,4,5); GG2(1); XX1(3); WW(5,6,7,8); VV(1,3,4,5,6,7,12); UU(1,2); TT(1,2,3)
<i>Zieria veronicea</i> ssp. <i>insularis</i>	Pink Zieria		R	VV(7)

Flora species of state and national significance recorded within 5km of works alignment, but not recorded during filed surveys.

Scientific Name	Common Name	Conservation Status	
		EPBC	SA
<i>Acacia simmonsiana</i>	Hall's Wattle		R
<i>Asterolasia muricata</i>	Lemon Star-bush		R
* <i>Austrostipa densiflora</i>	Fox-tail Spear-grass		R
* <i>Caladenia ovata</i>	Kangaroo Island Spider-orchid	VU	E
* <i>Caladenia reticulata</i>	Veined Spider-orchid		R
* <i>Caladenia sanguinea</i>	Crimson Daddy-long-legs		R
* <i>Caladenia valida</i>	Robust Spider-orchid		E
* <i>Corybas expansus</i>	Dune Helmet-orchid		V
* <i>Crassula exserta</i>	Large-fruit Crassula		R
<i>Desmodcladus diacolpicus</i>	Bundled Cord-rush		V
<i>Hibbertia obtusibracteata</i>	Prickly Guinea-flower		V
<i>Myoporum parvifolium</i>	Creeping Boobialla		R
<i>Olearia pannosa</i> ssp. <i>pannosa</i>	Silver Daisy-bush	VU	V
<i>Pomaderris halmaturina</i> ssp. <i>halmaturina</i>	Kangaroo Island Pomaderris	VU	V

<i>*Pterostylis melagramma</i>	Tall Greenhood		E
<i>Pultenaea insularis</i>	Beyeria Bush-pea		E
<i>Pultenaea villifera var. glabrescens</i>	Splendid Bush-pea	VU	V
<i>*Thelymitra flexuosa</i>	Twisted Sun-orchid		R

*Species that may have been present but not observed due to dormancy or non-flowering lifestage.

Fauna of conservation significance

Existing fauna records were reviewed to identify species of conservation significance known to occur in the region and that are potentially impacted by the works. Species were considered at risk from the project if their distribution or sightings places them in proximity to the route and if impacted vegetation provides suitable habitat.

The risk assessment I (Table 3) identified:

- 23 bird species that are potentially impacted
- 3 mammal species that are potentially impacted
- 1 reptile species that is potentially impacted

The field assessment was planned to search for traces of these species and to evaluate the quality of available habitat.

Table 3. Likelihood of presence of bird species of state and national conservation significance from database review and field investigations

Species (common name)	NP&W Act	EPBC Act	Data source	Date of last record	Species known habitat preferences	Likelihood of use for habitat – Comments
<i>Acanthiza lineata whitei</i> (Striated Thornbill (KI))		VU	3, 4, 5, 6	2022	Most wooded habitats including tall forests, mallee woodlands and Melaleuca stands, including roadside corridors and remnant farm paddocks.	Highly Likely / Certain. Usually found in eucalypt forest and woodland including mallee, particularly taller mallees.
<i>Anthochaera chrysoptera halmaturina</i> (KI Little Wattlebird)		VU	3, 5	2017	Woodlands, forest, <i>Banksia</i> heathlands & gardens	Highly Likely. Several records within 5 km of route. Suitable habitat present.
<i>Hylacola cauta halmaturina</i> (Kangaroo Island Shy Heathwren)	R	VU	3, 4, 5, 6	2022	Coastal & subcoastal mallee with dense shrubby or heath understorey, including narrow strips of roadside vegetation. Forage on the ground, on insects and occasionally seeds.	Highly Likely / Certain. Sedentary bird. Often associated with mallee over shrub habitat. Frequently observed where dense shrubs occurred.
<i>Isoodon obesulus obesulus</i> (SA Southern Brown Bandicoot)	V	EN	5	2017	Heath, shrubland, sedgeland and heathy forest and woodland with dense undergrowth.	Highly likely. Multiple recent records along route.
<i>Melithreptus brevirostris magnirostris</i> (Kangaroo Island Brown-headed Honeyeater)		EN	3, 5, 6	2022	Occurs in most eucalypt associations as well as urban parks and gardens. Feeds on insects and nectar.	Highly Likely. Recorded nearby. Habitat meets the critical habitat criteria for the species (EPBC Conservation Advice).
<i>Myiagra inquieta</i> (Restless Flycatcher)	R		2, 3	2017	Open forests, mallee, woodlands and farmland.	Highly Likely. Recorded along entire route.
<i>Neophema elegans elegans</i> (Elegant Parrot)	R		2, 3	2017	Found in mallee and woodlands (mainly for breeding), and a wide variety of open habitats, including grasslands, shrublands, bluebush plains, heathlands, saltmarsh and farmland post-breeding. Forages on the ground, feeding on seeds of grasses or low-growing shrubs. Nests in tree hollows.	Highly Likely. Suitable habitat present along the proposed route.
<i>Nesoptilotis leucotis thomasi</i> (Kangaroo Island White-eared Honeyeater)		EN	2, 4, 5, 6	2022	Forests & woodlands (mostly eucalypt). The species is almost solely arboreal, feeding primarily on	Highly Likely / Certain Recorded in mallee with dense understorey, and in mature Callitris woodland with open understorey.

					insects gleaned beneath bark, but also eats nectar, honeydew and fruit.	
<i>Petroica boodang</i> (Scarlet Robin)	R		2, 3, 4 6	2022	Dry eucalypt forest, mallee and woodlands with open understorey of shrubs and/or grasses. The species lives in both mature and regrowth vegetation with abundant logs and fallen timber.	Highly Likely / Certain Recorded along entire route. Observed during field survey in mallee community.
<i>Platycercus elegans melanoptera</i> (KI Crimson Rosella)		VU	2	2021	Forests and woodlands with dense, open or grassy understoreys, remnant vegetation alongside fences, creeks & roadsides. Feeds on nectar, fruit and seeds.	Highly likely. Suitable habitat available. Recorded along entire route.
<i>Psophodes leucogaster (syn. nigrogularis) lashmari</i> (KI Western Whipbird)	R	EN	2, 3	2016	Dense, shrubby habitats in coastal and subcoastal mallee, and heath on limestone and dunes. A secretive and sedentary bird, it forages for insects on the ground or in low vegetation.	Highly Likely. Recorded near Prospect Hill, where habitat meets the critical habitat criteria for the species (EPBC Conservation Advice).
<i>Stagonopleura bella samueli</i> (Western Beautiful Firetail (Mt Lofty Range and Kangaroo Island))	R	EN	2, 3, 5	2019	Eucalypt woodlands & forests with a shrubby/heathy understorey, particularly Drooping Sheoak and Teatree shrublands. Seen foraging in coastal mallee along roadsides. Feeds mainly on seeds of grasses, shrubs and small trees.	Highly likely. Habitat meets the critical habitat criteria for the species (EPBC Conservation Advice).
<i>Tachyglossus aculeatus multiaculeatus</i> (Kangaroo Island Echidna)	E	EN	3, 5, 6	2020	Forest, woodland, mallee.	Highly likely. Recorded close by. Suitable habitat present. Signs observed in better condition mallee communities.
<i>Trichosurus vulpecula</i> (Common Brushtail Possum)	R		2, 3, 6	2022	A wide range of habitats from forest to urban areas, including paddock trees. Feed on leaves, flowers and fruit. Make dens in large tree hollows.	Highly likely. Recorded nearby along roadside. Suitable foraging habitat present. Signs (scats) observed in better condition mallee communities. No large hollows suitable for nesting were observed in any impact areas.
<i>Varanus rosenbergi</i> (Heath Goanna)	V		2, 3	2021	Forest, woodland, mallee and heathland. Shelters in burrows, hollow logs and rock crevices. Nests in termite mounds.	Highly likely. Suitable habitat, including termite mounds, present along route. One burrow observed during field inspection was attributed to this species.

<i>Zanda funerea whiteae</i> (Yellow-tailed Black Cockatoo)	V		3, 4, 6, 7	2022	Forests, woodlands, urban areas, particularly eucalypts and pines. Nest in tree hollows. Feed on seeds and wood-boring grubs.	Highly likely. Small to large flocks were observed flying overhead, perching in dead nearby eucalypts, or feeding in nearby introduced pine trees.
<i>Falco peregrinus macropus</i> (Peregrine Falcon)	R		2, 3	2019	Woodland, grassland.	Likely. Recorded near Pelican Lagoon. May forage along proposed route, but considered unlikely to nest in areas that will be impacted along proposed route.
<i>Burhinus grallarius</i> (Bush Stone-curlew)	R		3, 6	2022	Ground-nesting nocturnal bird favouring open grassy plains and woodlands with fallen dead timber, leaf litter and an open ground layer.	Likely. Woodland edge habitats may provide suitable daytime rest spots. Recorded calling in 2022 fauna surveys along route.
<i>Turnix varius varius</i> (Painted Buttonquail)	R		3	2016	Woodland and forest usually with a closed canopy, shrubby understory and deep ground leaf litter. Feed in litter on seeds, fruit, leaves and insects, creating distinctive circular depressions.	Likely. Suitable habitat present, although there are few nearby records and no telltale scratchings were observed along the proposed route.
<i>Zoothera lunulata halmaturina</i> (South Australian Bassian Thrush)	R	EN	2, 3, 5	2020	Secretive, sedentary bird, usually found in damp, densely forested areas and gullies with dense leaf-litter, but also uses mature mallee woodland. The birds forage for invertebrates among damp leaf litter. Can be difficult to detect.	Likely. Suitable habitat present in associations with dense understory, although scattered records only near the proposed route.
<i>Calyptorhynchus lathami halmaturinus</i> (Glossy Black-Cockatoo (Kangaroo Island subspecies))	E	EN	2, 3, 5	2021	Woodlands & forests. Large mobile bird. Nest in hollows of tall trees, particularly Sugar Gum (<i>Eucalyptus cladocalyx</i>) and feed almost exclusively on seeds of the Drooping Sheoak (<i>Allocasuarina verticillata</i>),	Possible. Could pass through roadside woodlands, but critical habitat attributes (large nesting hollows and <i>Allocasuarina</i> food trees) are not present along route.
<i>Cereopsis novaehollandiae novaehollandiae</i> (Cape Barren Goose)	R		2, 3	2018	Large ground-dwelling bird found near coastal shorelines and lakes, as well as nearby grasslands and shrublands, including pastureland.	Possible. May use open, degraded grassy areas at times.
<i>Neophema petrophila zietzi</i> (Rock Parrot)	R		2	2017	Rocky islands and coastal dune areas.	Possible. Suitable habitat present in associations with coastal shrublands, although few nearby records.

<i>Oriolus sagittatus sagittatus</i> (Olive-backed Oriole)	R		2, 3	1999	Open woodland environments. Feeds on insects, nectar and fruit.	Possible. Suitable habitat present but only two nearby records, both at western end of route.
<i>Spatula rhynchotis</i> (Australasian Shoveler)	R		3	2012	Wetlands.	Possible. Suitable habitat present in salt marsh near Nepean Bay and Pelican Lagoon.
<i>Stictonetta naevosa</i> (Freckled Duck)	V		3	2006	Wetland	Possible. Suitable habitat present in salt marsh near Nepean Bay and Pelican Lagoon.
<i>Stipiturus malachurus halmaturinus</i> (Southern Emuwren (Kangaroo Island))	R	EN	3	1998	Mallee, dense scrublands, heathlands.	Possible. Suitable habitats present in shrubland/heath associations but there is only one record on Hog Bay Rd near Pelican Lagoon.
<i>Bubulcus ibis coromandus</i> (Eastern Cattle Egret)	R		2	2015	Seasonally inundated grasslands, pastures, farmlands and wetlands	Unlikely. Suitable habitat not present.
<i>Egretta garzetta nigripes</i> (Australasian Little Egret)	R		3	2012	Small migratory heron found in aquatic habitats including lakes, rivers, mangroves, beaches and reefs.	Unlikely. Suitable habitat not present.
<i>Haliaeetus leucogaster</i> (White-bellied Sea Eagle)	E		2, 3	2021	Wetlands, estuarine and coastal habitats.	Unlikely. Recorded near Pelican Lagoon. May fly over proposed route, but does not provide key habitat for the species.
<i>Pandion haliaetus cristatus</i> (Eastern Osprey)	E		2, 3	2017	Wetlands, estuarine and coastal habitats.	Unlikely. May fly over proposed route, but does not provide key habitat for the species
<i>Actitis hypoleucos</i> (Common Sandpiper)	R		3	2005	Shoreline	Unlikely. No suitable habitats present along proposed route.
<i>Biziura lobata menziesi</i> (Musk Duck)	R		3	2012	Wetland	Unlikely. No suitable habitats present along proposed route.
<i>Calidris canutus rogersi</i> (Red Knot)	E	EN	3	2011	Migratory shorebird	Unlikely. No suitable habitats present along proposed route.
<i>Calidris tenuirostris</i> (Great Knot)	E	CR	3	2011	Migratory shorebird	Unlikely. No suitable habitats present along proposed route.
<i>Charadrius leschenaultii leschenaultia</i> (Greater Sand Plover)	R	VU	3, 5	2012	Shoreline	Unlikely. No suitable habitats present along proposed route.
<i>Cladorhynchus leucocephalus</i> (Banded Stilt)	V		3	2005	Shoreline	Unlikely. No suitable habitats present along proposed route.

<i>Egretta sacra sacra</i> (Pacific Reef Heron)	R		3	2022	Shoreline, wetland	Unlikely. No suitable habitats present along proposed route.
<i>Haematopus fuliginosus fuliginosus</i> (Sooty Oystercatcher)	R		3	2016	Shoreline	Unlikely. No suitable habitats present along proposed route.
<i>Haematopus longirostris</i> (Australian) Pied Oystercatcher)	R		3	2014	Shoreline	Unlikely. No suitable habitats present along proposed route.
<i>Lewin pectoralis pectoralis</i> (Lewin's Rail)	V		3	2005	Wetland	Unlikely. No suitable habitats present along proposed route.
<i>Limosa lapponica baueri</i> (Western Alaskan Bar-tailed Godwit)	R	VU	5	2010	Migratory shorebird	Unlikely. No suitable habitats present along proposed route.
<i>Limosa limosa melanuroides</i> (Black-tailed Godwit)	R		3	2010	Migratory shorebird	Unlikely. No suitable habitats present along proposed route.
<i>Numenius madagascariensis</i> (Far Eastern Curlew)	E	CR	3, 5	2012	Migratory shorebird.	Unlikely. No suitable habitats present along proposed route.
<i>Numenius phaeopus variegatus</i> (Whimbrel)	R		3	2012	Migratory shorebird.	Unlikely. No suitable habitats present along proposed route.
<i>Sternula nereis nereis</i> (Fairy Tern)	E	VU	3, 5	2011	Shoreline.	Unlikely. No suitable habitats present along proposed route.
<i>Thinornis cucullatus cucullatus</i> (Hooded Plover)	V	VU	3, 5	2014	Shoreline.	Unlikely. No suitable habitats present along proposed route.
<i>Tringa brevipes</i> (Grey-tailed Tattler)	R		3	1996	Shoreline.	Unlikely. No suitable habitats present along proposed route.
<i>Tringa glareola</i> (Wood Sandpiper)	R		3	2010	Shoreline.	Unlikely. No suitable habitats present along proposed route.
Source; 1- BDBSA, 2 - AoLA, 3 – NatureMaps 4 – Observed/recorded in the field, 5 - Protected matters search tool, 6 – other (JS Ayre & Associates (2022)) NP&W Act; E= Endangered, V = Vulnerable, R= Rare EPBC Act; Ex = Extinct, CR = Critically endangered, EN = Endangered; VU = Vulnerable						

Fauna Surveys

Habitat Classification

Fauna habitat along the route was considered in five classes

Habitat Class 1. Exotic Grassland with Sparse Shrubs

This habitat class occurs in disturbed areas from which native vegetation has largely been cleared. This is an exotic grassland with scattered trees or remnant or recovering *Myoporum insulare*, *Leucopogon parviflorus*, *Acacia longifolia* and *Orthrosanthus multiflorus*. This habitat class was sampled near American Beach (Section QQ) and in cleared patches on the south-east side of Pelican Lagoon (Section SS). It is representative of cleared patches of Hog Bay Road south east of American River Road and cleared sections of Arronmore Road.

Habitat Class 2. Kangaroo Island Narrow-leaved Mallee (*Eucalyptus cneorifolia*) Woodland

Kangaroo Island Narrow-leaved Mallee Woodland occurs at sites throughout the route.

This association tends to occur on higher ground and is the most frequently occurring plant community along the route on the Dudley Plateau and Gosse-Seddon Plateau. It also occurs on more elevated ground in the Cygnet River outwash plain. The understorey can be very sparse with scattered coastal shrubs (particularly *Rhagodia candolleana*), deep leaf litter and large woody debris.

Kangaroo Island occurred with *Melaleuca lanceolata* and *Callitris gracilis* as co-dominant species. This habitat type was assessed at Sections RR1 and RR2 and is representative of vegetation on Hog Bay Road between Min Oil Road and American River Road, mostly on the upper slopes and crests of lateritic hills. The vegetation had a highly diverse shrubby midstorey with an open groundlayer.

Habitat Class 3. *Eucalyptus diversifolia* and *E. rugosa* Mallee

Eucalyptus diversifolia and *E. rugosa* mallee with a predominantly heathy understorey was assessed between Island Beach and Baudin Beach in Sections SS, RR2 and RR1. It also occurs on the lower slopes of the Gosse-Seddon Plateau near watercourses and wetlands in Sections WW, VV and UU. It supports a mixture of dense coastal shrubs such as *Myoporum insulare* and *Leucopogon parviflorus* or an open woodland shrubby and heathy species. *Eucalyptus cosmophylla* is frequently present in wetter areas and swampy clayey soils can support *Gahnia trifida* and *Melaleuca brevifolia*.

Habitat Class 4. Closed coastal shrubland with emergent *Eucalyptus rugosa* and *E. diversifolia*

A dense, closed shrubland of *Leucopogon parviflorus*, *Myoporum insulare* and *Olearia axillaris* dominates the relict limestone dune crests which occur intermittently east of Pelican Lagoon (Section SS) and continuously south-west of Pelican Lagoon (Section SS3, SS2 and TT). *Eucalyptus rugosa*, *E. diversifolia* and *Melaleuca lanceolata* form a scattered and occasionally continuous overstorey. The mid-storey is dense but the groundlayer is typically sparse. The soils are nutrient-poor, freely draining sands over limestone.

Habitat Class 5. Open coastal shrubland

Disturbed coastal shrubland feature patches of *Leucopogon parviflorus*, *Myoporum insulare*, *Olearia axillaris* and the introduced *Acacia cyclops*. The understorey is open with herbaceous and grassy weeds dominant. This habitat type was sampled east of Pelican Lagoon at Section QQ Site 3 and Section SS2 Site 1 and is representative of degraded coastal shrubland on Hog Bay Road south-east of American River Road.

Fauna Assessment Results

Birds

Forty-one native and two introduced bird species were observed within habitats along the proposed pipeline route. Table 4 lists the species observed, along with notes on abundance and habitat preference. Three species of national state conservation significance were observed: the nationally endangered White-eared Honeyeater (*Nesoptilotis leucotis*) and the nationally vulnerable Shy Heathwren (*Calamanthus cautus halmaturinus*) and KI Striated Thornbill (*Acanthiza lineata whitei*). Two species of state significance were observed: the state Vulnerable Yellow-tailed Black

Cockatoo (*Zanda funerea whiteae*), and the state Rare Scarlet Robin (*Petroica boodang boodang*). The number of species at sites ranged from 17 to 22.

Mammals

Signs, traces or live sightings were made of five mammal species (Table 5), including the nationally Endangered Kangaroo Island Echidna (*Tachyglossus aculeatus multiaculeatus*), for which there were numerous traces in areas where larger patches of *Eucalyptus cneorifolia* Woodland were present (Habitat Class 2). There were also scats observed that were attributed to the state Rare Common Brushtail Possum (*Trichosurus vulpecula*) in Habitat Class 3. There were no signs of the nationally Endangered Southern Brown Bandicoot (*Isodon obesulus obesulus*), and although it is considered that the species may be present in areas where large patches of vegetation are adjacent, it is considered that there is only likely to be a negligible or transient population in areas to be impacted by the pipeline.

Reptiles

There was little reptile activity at the time of inspection. One dead snake was found on the roadside, considered likely to be a Pygmy Copperhead (*Austrelaps labialis*). Burrows were observed in good condition sections of mallee (Habitat Class 3), which were attributed to one of the two species of Liopholis skink (*Liopholis multiscutata*, *Liopholis whitii*), and the Heath Goanna (*Varanus rosenbergi*), which is considered Vulnerable at state level (Table 6). No other reptile species of state or national conservation significance are considered likely to be present in the site.

Other habitat attributes present along the route

Figure 4 shows the location of all termite mounds observed during field inspection. Termite mounds are an important habitat attribute, as they may be used as nest sites by the state Vulnerable Heath Goanna (*Varanus rosenbergi*), as well as a potential food source for the nationally Endangered Kangaroo Island Echidna (*Tachyglossus aculeatus multiaculeatus*). Most termite mounds were found in association with mallee vegetation to the west of the Island Beach turnoff (Figure 4). Most termite mounds were more than 2 metres from the road verge.

Whilst there were small cracks and crevices in many trees, there were few hollows present. There were no large hollows observed, and only two trees with moderate sized hollows (4-10cm in size) within 2-5 metres of the road verge, in sections of Narrow-leaved mallee in the northern sections of the proposed route. There were three burrow systems attributed to Bush Rats (*Rattus fuscipes*), and one burrow attributed to a Heath Monitor (*Varanus rosenbergi*) in the section of good condition mallee between Island Beach and Baudin Beach. These were all between 2-5 metres from the road verge, and were on the dirt track north of the main Hog Bay Road rather than the road itself.

Table 4. Bird species observed during field survey

COMMON NAME	SPECIES	AUS ¹	SA ²	REG ³	1	2	3	4	5	COMMENTS
Australian Magpie	<i>Gymnorhina tibicen</i>			LC		1	1		1	Sedentary bird. Here it was widespread, especially where more open grassy areas and adjacent farmland nearby. Much less prevalent or absent where dense mallee and native shrubland. In the dense mallee of Area 6, only associated near the Brown Beach campsite. Young bird being fed by adults in Area 3, implying breeding occurring in vicinity.
Black-faced Cuckooshrike	<i>Coracina novaehollandiae</i>			LC		1	1			Mobile bird in non-breeding period. Recorded only in areas of taller, dense mallee.
Black-shouldered Kite	<i>Elanus axillaris</i>			LC					1	Mobile bird. Usually found in more open habitats including grassy areas and farmland. One bird observed perched in dead tree during a rain squall.
Black-winged Currawong (KI)	<i>Strepera versicolor halmaturina</i>			LC		1	1	1	1	Largely sedentary bird, with a separate subspecies recognised as only occurring on Kangaroo Island. Widely recorded in all areas, except near the coast, in tree canopy or on the ground.
Brown Goshawk	<i>Accipiter fasciatus</i>			RA				1		Mobile bird of most timbered areas of Australia. One bird observed. Present in low numbers.
Brown Songlark	<i>Megalurus cruralis</i>			Vag		1				Mobile bird of open grassy habitat including farmland. One bird heard from adjacent cleared land.
Brown Thornbill (KI)	<i>Acanthiza pusilla zietzi</i>			LC		1	1	1	1	Sedentary small bird. Widely observed mainly feeding on insects in taller shrubs. Recorded in all areas where more shrubs occurred.
Brush Bronzewing	<i>Phaps elegans</i>			NT					1	Sedentary bird. Prefer areas with dense shrubs, especially such areas as coastal shrubland of Area 1.
Crescent Honeyeater (KI and MLR)	<i>Phylidonyris pyrrhopterus halmaturinus</i>			LC		1	1	1	1	Mobile bird. The bird was widely observed and vocal, especially where flowering mallee, such as the <i>Eucalyptus diversifolia</i> of Area 2.
Eastern Spinebill	<i>Acanthorhynchus tenuirostris</i>			LC		1	1	1		Mobile bird. Usually found in eucalypt forests with a shrubby understory, especially shrubs with tubular flowers. Here, widely

¹ Australian rating under the *Environment Protection and Biodiversity Conservation Act 1999*

² Under the *National Parks and Wildlife Act 1972*

³ Conservation rating for Kangaroo Island region as per Gillam, S. and Urban, R. (2014) *Regional Species Conservation Assessment Project, Phase 1 Report: Regional Species Status Assessments, Kangaroo Island NRM Region*. Department of Environment, Water and Natural Resources, South Australia.

COMMON NAME	SPECIES	AUS ¹	SA ²	REG ³	1	2	3	4	5	COMMENTS
										recorded in most areas where denser shrubs, including where <i>Correa</i> species in flower.
Fan-tailed Cuckoo	<i>Cacomantis flabelliformis</i>			LC			1			Mobile bird. One bird heard in area of tall mallee. At this time of year would be laying its eggs in small bird nests, such as Fairy-wren and Brown Thornbill nests.
Galah	<i>Eolophus roseicapilla</i>			LC		1				Mobile bird. Recorded perched in tall, often dead canopy, of mallee.
Golden Whistler	<i>Pachycephala pectoralis</i>			LC		1	1	1	1	Mobile bird. Prefers wooded areas, but here observed in the coastal shrubland with emergent mallee, or areas of mallee.
Grey Fantail	<i>Rhipidura albiscapa</i>			LC		1	1		1	Sedentary bird. Mostly found in treed habitats, but here observed in the coastal shrubland with emergent mallee, or areas of mallee.
Grey Shrikethrush	<i>Colluricincla harmonica</i>			LC		1	1	1	1	Sedentary bird. Recorded in areas of better native vegetation, including dense shrubland.
Horsfield's Bronze Cuckoo	<i>Chalcites basalis</i>			LC		1	1		1	Mobile bird. At this time of year would be laying its eggs in small bird nests, such as Fairy-wren and Thornbill nests.
Little Corella	<i>Cacatua sanguinea sanguinea</i>			LC		1				Highly mobile bird. Flock of 20+ birds observed flying overhead. May perch and roost in dead canopy of mallee at times.
Little Raven	<i>Corvus mellori</i>			LC		1	1	1	1	Mobile bird. Widespread singly or in flocks throughout. This included road kill birds, and feeding on side of road on dead kangaroos. Also observed in tree canopy and flying overhead.
Magpielark	<i>Grallina cyanoleuca</i>			LC		1				Sedentary bird. Pair observed on edge of Area 2 in cleared land, but would need trees to build its mud nest.
Maned (Australian Wood Duck)	<i>Chenonetta jubata</i>			LC		1				Mobile bird, often associated with farm dams and other wetlands in the area. Pair observed perched in tree canopy.
Masked Lapwing	<i>Vanellus miles</i>			LC					1	Sedentary bird. Only associated with open grassy areas of Area 1 and 8, where it nests and feeds.
Nankeen Kestrel	<i>Falco cenchroides</i>			LC				1		Mobile bird. As with Black-shouldered Kite, associated with open shrubby and grassy areas including farmland where it can hover and hunt for insects and small vertebrates, such as mice.

COMMON NAME	SPECIES	AUS ¹	SA ²	REG ³	1	2	3	4	5	COMMENTS
New Holland Honeyeater (KI)	<i>Phylidonyris novaehollandiae campbelli</i>			LC		1	1	1	1	Mobile bird. Widespread in nearly all areas, reflecting its wide range of habitats, including mallee, shrubland and urban gardens.
Purple-gaped Honeyeater	<i>Lichenostomus cratitius</i>			LC				1		Sedentary bird of primarily mallee over a heath (shrubby) understory and heath. One bird observed in a small area of heath surrounded by mallee. On Kangaroo Island will also use low open eucalypt forest (e.g. the thick KI Narrow-leaf Mallee and Coastal White Mallee).
Rainbow Lorikeet	<i>Trichoglossus haematodus</i>			LC		1				Highly mobile bird. Found in most treed habitats. Primarily feeds on flowering trees such as mallee. Few birds observed, mostly flying overhead areas where Coastal White Mallee was in flower at the time.
Red Wattlebird (KI)	<i>Anthochaera carunculata clelandi</i>			LC		1	1	1	1	Mobile bird. Widespread in most areas, but especially where the Coastal White Mallee was in flower, as it would feed on its flowers.
Scarlet Robin (SE, MLR, FR, EP)	<i>Petroica boodang boodang</i>		RA	NT		1	1			Mobile bird, but here likely sedentary. Prefers eucalypt forest and woodland. Observed on low branches in areas where taller mallee was observed.
Shining Bronze-cuckoo	<i>Chalcites lucidus</i>			NT			1		1	Mobile bird. At this time of year would be laying its eggs in small bird nests, such as Fairy-wren and Thornbill nests.
Shy Heathwren	<i>Hylacola cauta halmaturina</i>	VU	RA	RA				1	1	Sedentary bird. Often associated with mallee over shrub habitat. Frequently observed where dense shrubs occurred.
Silvereye	<i>Zosterops lateralis</i>			LC		1	1	1	1	Mobile bird. Widespread and common throughout, observed both in tree canopy and dense shrubs.
Spotted Pardalote	<i>Pardalotus punctatus</i>			LC		1	1	1	1	Mobile bird. Usually found in stringybark forest such as the western end of the island. Here it was associated with mallee vegetation.
Striated Pardalote	<i>Pardalotus striatus</i>			LC		1	1	1		Mobile bird. Found in a range of treed habitats. It was associated mostly with the taller mallees.
Striated Thornbill (KI)	<i>Acanthiza lineata whitei</i>	VU		LC		1	1			Mobile bird. Usually found in eucalypt forest and woodland including mallee. It was associated mostly with the taller mallees.

COMMON NAME	SPECIES	AUS ¹	SA ²	REG ³	1	2	3	4	5	COMMENTS
Superb Fairywren (KI)	<i>Malurus cyaneus ashbyi</i>			LC		1	1	1	1	Sedentary bird. Found where some dense shrubs interspersed with open grassy feeding areas. Widely distributed in all areas, where small family groups were frequently observed.
Tawny-crowned Honeyeater	<i>Gliciphila melanops</i>			NT				1		Mobile bird primarily associated with coastal shrublands on KI and elsewhere, and heath. One bird observed on a tall shrub.
White-browed Scrubwren	<i>Sericornis frontalis</i>			LC		1	1	1	1	Sedentary bird. Frequently observed where dense shrubs occurred.
White-eared Honeyeater	<i>Nesoptilotis leucotis</i>	EN		NT				1		Sedentary bird. Found in eucalypt forest and woodland usually with a shrub understory. Feeds mostly on insects. Observed once in Area 6.
White-fronted Chat	<i>Epthianura albifrons</i>			LC					1	Mobile bird at times. One bird observed flying from coastal shrubland into adjacent cleared agricultural land. Commonly feed in coastal Samphire, such as a small area beside Pelican Lagoon.
Willie Wagtail	<i>Rhipidura leucophrys</i>			LC					1	Sedentary bird. Recorded in various areas from shrubland, to the planted Drooping Sheoak area near the coast.
Yellow-tailed Black Cockatoo	<i>Zanda (Calyptorhynchus) funerea whiteae</i>		V	RA		1		1		Large mobile bird, whose Kangaroo Island population mixes with mainland population. Mostly breeds in the western end of the island, where more suitable nesting hollows occur. Here small to large flocks observed flying overhead, perching in dead nearby eucalypts, or feeding in adjacent and nearby introduced pine tree, on their cones.
*Common Starling	<i>Sturnus vulgaris</i>					1			1	Introduced, highly mobile bird. Observed mostly in more disturbed or cleared areas, or perching on dead trees.

Key to conservation codes: CE = Critically Endangered, E = Endangered, V = Vulnerable, NT = Near Threatened, LC = Least Concern

Table 5: Mammal species observed or for which signs were observed during field survey

COMMON NAME	SPECIES	AUS ⁴	SA ⁵	REG ⁶	1	2	3	4	5	COMMENTS
Bush Rat	<i>Rattus fuscipes</i>			LC			1			Two burrow systems noted which were attributed to this species.
Common Brushtail Possum	<i>Trichosurus vulpecula</i>		R	LC			1			Scats observed in good condition mallee areas. However, there were no tree hollows present within 5 metres of the proposed route that were of sufficient size for this species.
Kangaroo Island Echidna	<i>Tachyglossus aculeatus multiaculeatus</i>	E		NT	1	1	1			Scratchings were common in areas where broader areas of remnant vegetation were present adjacent to the roadside.
Tammar Wallaby	<i>Macropus (Notamacropus) eugenii eugenii</i>			LC					1	Dead animal observed along roadside.
Western Grey Kangaroo (KI)	<i>Macropus fuliginosus fuliginosus</i>			LC	1	1	1	1		Scats and live animals observed. Numerous dead animals along roadside in all habitats.

Key to conservation codes: CE = Critically Endangered, E = Endangered, V = Vulnerable, NT = Near Threatened, LC = Least Concern

Table 6: Reptile and amphibian species observed or for which signs were observed during field survey

COMMON NAME	SPECIES	AUS ⁷	SA ⁸	REG ⁹	1	2	3	4	5	COMMENTS
Bull Skink	<i>Liopholis multiscutata</i>			R			1			Burrow observed that was attributed to this species.
Common Froglet	<i>Crinia signifera</i>			LC		1				Heard calling from adjacent to drainage line.
Heath Goanna	<i>Varanus rosenbergi</i>		V	NT			1			One burrow observed which was attributed to this species.

Key to conservation codes: CE = Critically Endangered, E = Endangered, V = Vulnerable, NT = Near Threatened, LC = Least Concern

⁴ Australian rating under the *Environment Protection and Biodiversity Conservation Act 1999*

⁵ Under the *National Parks and Wildlife Act 1972*

⁶ Conservation rating for Kangaroo Island region as per Gillam, S. and Urban, R. (2014) Regional Species Conservation Assessment Project, Phase 1 Report: Regional Species Status Assessments, Kangaroo Island NRM Region. Department of Environment, Water and Natural Resources, South Australia.

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Figure 4. Locations of termite mounds along the potential route.

Fauna Assessment Conclusions

Habitat Class 1. Exotic Grassland with Sparse Shrubs

No specific sensitivities were noted in this association.

Habitat Class 2. Kangaroo Island Narrow-leaved Mallee (*Eucalyptus cneorifolia*) Woodland

The Nationally Vulnerable Kangaroo Island Striated Thornbill (*Acanthiza lineata whitei*) was present in this area, mostly associated with taller mallees. The State Rare Scarlet Robin (*Petroica boodang boodang*) and State Vulnerable Yellow-tailed Black Cockatoo (*Zanda (Calyptorhynchus) funerea whiteae*) were also observed in this area. These species are unlikely to be impacted by proposed activities. Scratchings from the Nationally Endangered Kangaroo Island Echidna (*Tachyglossus aculeatus multiaculeatus*) were observed in some areas. This species may fall into pits and trenches associated with this project.

Habitat Class 3. *Eucalyptus diversifolia* and *E. rugosa* Mallee

This diverse community supported a number of species of conservation significance, including the Nationally Vulnerable Kangaroo Island Striated Thornbill (*Acanthiza lineata whitei*), the State Vulnerable Heath Goanna (*Varanus rosenbergi*), state Rare Scarlet Robin (*Petroica boodang boodang*), State Rare Common Brushtail Possum (*Trichosurus vulpecula*), and the Nationally Endangered Kangaroo Island Echidna (*Tachyglossus aculeatus multiaculeatus*). This community is also likely to provide habitat for the Nationally Vulnerable Shy Heathwren (*Calamanthus (Hylacola) cautus halmaturinus*).

Specific sensitivities would be the presence of termite mounds on the south side of the main road within 2 metres of the road verge, which may be important for nesting for the Heath Goanna. The Kangaroo Island Echidna may potentially fall into pits and trenches associated with this project.

Habitat Class 4. Closed coastal shrubland with emergent *Eucalyptus rugosa* and *E. diversifolia*

The Nationally Endangered White-eared Honeyeater (*Sericornis frontalis*), Nationally Vulnerable Shy Heathwren (*Calamanthus (Hylacola) cautus halmaturinus*), State Vulnerable Yellow-tailed Black Cockatoo (*Zanda (Calyptorhynchus) funerea whiteae*) and State Rare Scarlet Robin (*Petroica boodang boodang*) were observed in this area. These species are unlikely to be impacted by works associated with the project.

Habitat Class 5. Open coastal shrubland

The Nationally Vulnerable Shy Heathwren (*Calamanthus (Hylacola) cautus halmaturinus*) was observed in denser patches of shrubland. It is unlikely to be significantly impacted by works associated with this project.

4.3 Cumulative impact

All of the required vegetation clearance for the construction of the pipeline has been accounted for in the proposed clearance area.

Future works to enhance water supply and security that are facilitated by this project are:

- works to increase the capacity of the Penneshaw desalination plant including a second desalination plant, upgrades to the pipeline between the EBS at Charing Cross Road and the sea water intake at Desal Drive
- a pipeline to supply water to the township of American River.

The pipeline proposal is independently viable and does not depend on the future implementation of these projects.

4.4 Address the Mitigation Hierarchy

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

The pipeline route has been planned to avoid impacts on native vegetation as far as possible within the constraints of cost and practicality.

Vegetation impacts will be avoided by locating storage and laydown sites in areas of non-native vegetation (Haby and Rowley 2020b).

The excavation of the pipeline trench is a risk to native fauna. Kangaroo Island Echidna, Tiger Snake and Heath Goanna may fall into trenches and have difficulty exiting. This hazard will be avoided by :

- refilling trenches soon after excavation;
- fencing and/or providing exit ramps in unattended trenches; and
- conducting an early morning search and removing fauna in any trenches left open overnight.

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).

Each location where the works potentially affect vegetation has been assessed by SA Water staff and a clearance area defined that minimises impacts.

While the location of clearance has changed since the original application, the area in this application is similar. In both the original application and the revised application the clearance area for Stage 2 (GG1 to SS2) is 0.98 ha. The Total Biodiversity score has increased from 51.21 to 75.39. This mostly due to clearance in higher value vegetation.

Vegetation along the route includes high threat weeds including Bulbil Watsonia, Bridal Creeper, Bridal Veil, Aleppo Pine and Freesia. The risk of spreading these weeds can be minimised by avoiding vegetation disturbance where these weeds are prevalent and disposing of cut plant material safely off-site.

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.

Vegetation will be impacts rehabilitated by:

- Stockpiling and replacing topsoil on the excavated trench when working in the road verge.
- Stockpiling and replacing cut native vegetation in areas disturbed by pipeline construction at Prospect Hill.

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

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

Impact will be offset by a payment to the Native Vegetation Fund.

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

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

Principle of clearance	Considerations					
Principle 1a - it comprises a high level of diversity of plant species	Number of plant species recorded (native & introduced) for each vegetation association.					
	Association	Native	Exotic	Association	Native	Exotic
	GG1 Site 1	30	16	VV Site 1	61	14
	GG1 Site 3	51	17	VV Site 2	22	11
	GG1 Site 4	29	22	VV Site 3	43	6
	GG1 Site 5	27	14	VV Site 4	34	15
	GG2 Site 1	37	19	VV Site 5	41	7
	GG2 Site 2	34	12	VV Site 6	41	7
	GG2 Site 3	36	20	VV Site 7	77	19
	GJC	17	24	VV Site 8	41	16
	XX2 Site 1	25	12	VV Site 9	23	11
	XX2 Site 2	44	19	VV Site 10	53	22
	XX2 Site 3	36	26	VV Site 11	49	15
	XX1 Site 1	16	22	VV Site 12	52	9
	XX1 Site 2	41	12	UU Site 1	69	16
	XX1 Site 3	45	13	UU Site 2	68	20
	WW Site 1	56	15	TT Site 1	30	20
	WW Site 2	34	13	TT Site 2	34	23
	WW Site 3	39	18	TT Site 3	54	21
	WW Site 4	55	21	TT Site 4	45	8
	WW Site 5	45	9	TT Site 5	42	17
	WW Site 6	53	8	SS3 Site 1	42	28
	WW Site 7	68	12	SS3 Site 2	31	19
	WW Site 8	74	14	SS2 Site 1	36	27
	Bushland Plant Diversity Score					
	Association	Score	Association	Score	Association	Score
	GG1 Site 1	30	WW Site 2	30	VV Site 9	21
	GG1 Site 3	30	WW Site 3	30	VV Site 10	30
	GG1 Site 4	18	WW Site 4	30	VV Site 11	30
GG1 Site 5	27	WW Site 5	30	VV Site 12	30	
GG2 Site 1	30	WW Site 6	30	UU Site 1	30	
GG2 Site 2	30	WW Site 7	30	UU Site 2	30	
GG2 Site 3	30	WW Site 8	30	TT Site 1	27	
GJC	15	VV Site 1	30	TT Site 2	27	
XX2 Site 1	21	VV Site 2	21	TT Site 3	30	
XX2 Site 2	30	VV Site 3	30	TT Site 4	30	
XX2 Site 3	30	VV Site 4	30	TT Site 5	30	
XX1 Site 1	24	VV Site 5	30	SS3 Site 1	30	
XX1 Site 2	30	VV Site 6	30	SS3 Site 2	27	
XX1 Site 3	30	VV Site 7	30	SS2 Site 1	24	
WW Site 1	30	VV Site 8	30			

	<p>Seriously at Variance (Bushland Plant Diversity Score >20) – In bold above GG1 Sites 1, 3, 5 GG2 Sites 1, 2, 3 XX2 Sites 1, 2, 3 XX1 Sites 1, 2, 3 WW Sites 1, 2, 3, 4, 5, 6, 7, 8 VV Sites 1, 2, 3, 4, 5, 6, 7, 8, 9, 1, 11, 12 UU Sites 1, 2 TT Sites 1, 2, 3, 4, 5 SS3 Sites 1 & 2 SS2 Site 1</p> <p>At Variance (Bushland Plant Diversity Score 10-20) GJC GG1 Site 4</p>																																																																																				
	<p><u>Moderating factors that may be considered by the NVC</u> The area of vegetation to be cleared from each plant association is small (0.0002 - 0.06 ha), with the exception of TT Sites 4 and 5, where it is proposed to clear 0.17 ha of Coastal Mallee woodland and 0.17 ha of coastal shrubland. Much of proposed clearance area (aside from TT Sites 4 and 5) comprises a narrow strip of disturbed roadside vegetation adjacent to uncleared native vegetation. The vegetation to be impacted represents a very small area relative to the native vegetation within the local vicinity.</p>																																																																																				
<p>Principle 1b - significance as a habitat for wildlife</p>	<p>Threatened fauna that were recorded or may use the vegetation are:</p> <table border="1"> <thead> <tr> <th>Common Name</th> <th>EPBC</th> <th>SA</th> </tr> </thead> <tbody> <tr><td>Glossy Black-Cockatoo (Kangaroo Island)</td><td>EN</td><td>E</td></tr> <tr><td>Short-beaked Echidna (Kangaroo Island)</td><td>EN</td><td>E</td></tr> <tr><td>Southern Emuwren (Mount Lofty Ranges)</td><td>EN</td><td>E</td></tr> <tr><td>Bassian Thrush</td><td>EN</td><td>R</td></tr> <tr><td>White-bellied Whipbird (Kangaroo Island subspecies)</td><td>EN</td><td>R</td></tr> <tr><td>Southern Brown Bandicoot (SA mainland and KI)</td><td>EN</td><td>V</td></tr> <tr><td>Beautiful Firetail (MLR and KI)</td><td>EN</td><td></td></tr> <tr><td>Brown-headed Honeyeater (KI)</td><td>EN</td><td></td></tr> <tr><td>White-eared Honeyeater (KI)</td><td>EN</td><td></td></tr> <tr><td>Crimson Rosella (KI)</td><td>VU</td><td></td></tr> <tr><td>Little Wattlebird (KI)</td><td>VU</td><td></td></tr> <tr><td>Shy Heathwren (Kangaroo Island)</td><td>VU</td><td></td></tr> <tr><td>Striated Thornbill (KI)</td><td>VU</td><td></td></tr> <tr><td>Freckled Duck</td><td></td><td>V</td></tr> <tr><td>Heath Goanna</td><td></td><td>V</td></tr> <tr><td>Yellow-tailed Black Cockatoo</td><td></td><td>V</td></tr> <tr><td>Australasian Shoveler</td><td></td><td>R</td></tr> <tr><td>Bush Stonecurlew</td><td></td><td>R</td></tr> <tr><td>Cape Barren Goose</td><td></td><td>R</td></tr> <tr><td>Common Brushtail Possum</td><td></td><td>R</td></tr> <tr><td>Elegant Parrot</td><td></td><td>R</td></tr> <tr><td>Olive-backed Oriole</td><td></td><td>R</td></tr> <tr><td>Painted Buttonquail</td><td></td><td>R</td></tr> <tr><td>Peregrine Falcon</td><td></td><td>R</td></tr> <tr><td>Restless Flycatcher</td><td></td><td>R</td></tr> <tr><td>Rock Parrot</td><td></td><td>R</td></tr> <tr><td>Scarlet Robin</td><td></td><td>R</td></tr> </tbody> </table>	Common Name	EPBC	SA	Glossy Black-Cockatoo (Kangaroo Island)	EN	E	Short-beaked Echidna (Kangaroo Island)	EN	E	Southern Emuwren (Mount Lofty Ranges)	EN	E	Bassian Thrush	EN	R	White-bellied Whipbird (Kangaroo Island subspecies)	EN	R	Southern Brown Bandicoot (SA mainland and KI)	EN	V	Beautiful Firetail (MLR and KI)	EN		Brown-headed Honeyeater (KI)	EN		White-eared Honeyeater (KI)	EN		Crimson Rosella (KI)	VU		Little Wattlebird (KI)	VU		Shy Heathwren (Kangaroo Island)	VU		Striated Thornbill (KI)	VU		Freckled Duck		V	Heath Goanna		V	Yellow-tailed Black Cockatoo		V	Australasian Shoveler		R	Bush Stonecurlew		R	Cape Barren Goose		R	Common Brushtail Possum		R	Elegant Parrot		R	Olive-backed Oriole		R	Painted Buttonquail		R	Peregrine Falcon		R	Restless Flycatcher		R	Rock Parrot		R	Scarlet Robin		R
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Brown-headed Honeyeater (KI)	EN																																																																																				
White-eared Honeyeater (KI)	EN																																																																																				
Crimson Rosella (KI)	VU																																																																																				
Little Wattlebird (KI)	VU																																																																																				
Shy Heathwren (Kangaroo Island)	VU																																																																																				
Striated Thornbill (KI)	VU																																																																																				
Freckled Duck		V																																																																																			
Heath Goanna		V																																																																																			
Yellow-tailed Black Cockatoo		V																																																																																			
Australasian Shoveler		R																																																																																			
Bush Stonecurlew		R																																																																																			
Cape Barren Goose		R																																																																																			
Common Brushtail Possum		R																																																																																			
Elegant Parrot		R																																																																																			
Olive-backed Oriole		R																																																																																			
Painted Buttonquail		R																																																																																			
Peregrine Falcon		R																																																																																			
Restless Flycatcher		R																																																																																			
Rock Parrot		R																																																																																			
Scarlet Robin		R																																																																																			

Association	Threatened Fauna Score	Unit Biodiversity Score	Association	Threatened Fauna Score	Unit Biodiversity Score
GG1 Site 1	0.1	94.56	VV Site 1	0.1	113.43
GG1 Site 3	0.1	100.18	VV Site 2	0.1	56.66
GG1 Site 4	0.1	32	VV Site 3	0.1	88.4
GG1 Site 5	0.1	71.84	VV Site 4	0.1	64.83
GG2 Site 1	0.1	84.39	VV Site 5	0.1	103.65
GG2 Site 2	0.1	97.59	VV Site 6	0.1	96.74
GG2 Site 3	0.1	84.12	VV Site 7	0.1	80.75
GJC	0.1	57.65	VV Site 8	0.1	68.52
XX2 Site 1	0.1	55.48	VV Site 9	0.1	60.97
XX2 Site 2	0.1	120.31	VV Site 10	0.1	71.55
XX2 Site 3	0.1	83.42	VV Site 11	0.1	83.86
XX1 Site 1	0.1	67.19	VV Site 12	0.1	102.78
XX1 Site 2	0.1	73.71	UU Site 1	0.1	103.65
XX1 Site 3	0.1	104.62	UU Site 2	0.1	106.39
WW Site 1	0.1	98.9	TT Site 1	0.1	62.87
WW Site 2	0.1	77.96	TT Site 2	0.1	45.05
WW Site 3	0.1	67.03	TT Site 3	0.1	71.23
WW Site 4	0.1	68.69	TT Site 4	0.1	80.06
WW Site 5	0.1	120.81	TT Site 5	0.1	67.67
WW Site 6	0.1	87.22	SS3 Site 1	0.1	66.77
WW Site 7	0.1	112.11	SS3 Site 2	0.1	64.92
WW Site 8	0.1	106.73	SS2 Site 1	0.1	45.11

Vegetation within Segments GG1 and GG2 is mostly within a narrow roadside corridor isolated from larger remnants, but connected to vegetated watercourses that drain adjacent cleared farmland. It potentially provides habitat for threatened fauna associated with wetland habitats.

Within Segments XX2 and XX1, the vegetation is close to the Nepean Bay salt marshes and potentially provides habitat for threatened woodland and wetland fauna.

Vegetation in the north-western part of Segment WW (Sites 1 – 3) is part of a narrow roadside corridor, but further east (Sites 4 -8) this vegetation is connected to Heritage Agreements to the north and south of Hog Bay Road. Here, the vegetation is largely intact and potentially provides habitat for a range of threatened woodland and wetland fauna.

Within Segment VV, the vegetation is part of a broad continuous roadside remnant, linked to nearby watercourses. The vegetation potentially provide habitat to threatened fauna.

Vegetation within TT Site 2 is fragmented and degraded and is unlikely to support a high diversity of fauna species or to provide a corridor for movement.

Vegetation at TT Sites 3 to 5 and SS3 Site 1 is part of a large continuous remnant that extends through the limestone dunefields south-west of Pelican Lagoon. The vegetation is diverse and intact and potentially provides habitat for a diversity of threatened fauna.

In SS3 Site 2 and SS2 Site 1, the vegetation becomes fragmented and degraded and is unlikely to support a high diversity of fauna species or to provide a corridor for movement.

Assessment against the principles
Seriously at Variance (Threatened Fauna Score of ≥ 0.05 OR Unit Biodiversity Score > 50)

- All vegetation associations.

At Variance (Threatened Fauna Score of < 0.05) - none
Not at Variance: (Threatened Fauna Score = 0) - none

Moderating factors that may be considered by the NVC
The vegetation to be cleared is at the edge facing the carriageway and is already subject to disturbance from vehicle movement and noise.

At the majority of sites, the clearance footprint is narrow: up to 4 m wide for scours and less than 3.0 m for all other roadside works.

The significant exception is TT Sites 4 and 5 where it is proposed to clear a total area of 0.33 ha in a corridor that is up to 20 m wide.

Principle 1c - plants of a rare, vulnerable or endangered species

Threatened plant species recorded in field investigations were:

Scientific Name	Conservation Status		Location Section (Site)
	EPBC	SA	
<i>Olearia microdisca</i>	EN	E	GG1(3); XX2(2); WW(2,5,6)
<i>Leionema equestre</i>	EN	E	VV(7)
<i>Beyeria subtecta</i>	VU	E	WW(1,4,5,6,7,8); V(1,2,3,4,5,6,9,11,12); UU(1,2); TT(2)
<i>Spyridium eriocephalum</i> var. <i>glabrisepalum</i>	VU	E	XX2(2)
<i>Correa backhouseana</i> var. <i>orbicularis</i>		R	TT(4); SS3(1,2)
<i>Eucalyptus albens</i>		R	WW(6)
<i>Eucalyptus phenax</i> ssp. <i>compressa</i>		R	WW(1); VV(11)
<i>Eucalyptus fasciculosa</i>		R	GG1(3,4); WW(8)
<i>Grevillea muricata</i>		R	WW(2,7,8); VV(1,3,4,5,6,7,8,10,12); UU(1)
<i>Grevillea halmaturina</i> ssp. <i>halmaturina</i>		R	GG1(1,3); WW(2,3,4,5,6,7); VV(1,3,4,7,9,10,11,12); UU(1,2)
<i>Hibbertia glebosa</i> ssp. <i>oblonga</i>		R	WW(7)
<i>Platysace heterophylla</i> var. <i>tepperi</i>		R	TT(1)
<i>Prostanthera chlorantha</i>		R	GG1(3); XX2(2); WW(1,7,8)
<i>Spyridium daphnoides</i>		R	VV(3)
<i>Xanthorrhoea semiplana</i> ssp. <i>tateana</i>		R	GG1(1,3,4,5); GG2(1); XX1(3); WW(5,6,7,8); VV(1,3,4,5,6,7,12); UU(1,2); TT(1,2,3)
<i>Zieria veronicea</i> ssp. <i>insularis</i>		R	VV(7)

Other plant species that are known from the region and may have been present but not observed due to dormancy are:

- Austrostipa densiflora* (SA Rare)
- Caladenia ovata* (EPBC Vulnerable, SA Endangered)
- Caladenia reticulata* (SA Rare)
- Caladenia sanguinea* (SA Rare)
- Caladenia valida* (SA Endangered)
- Corybas expansus* (SA Vulnerable)
- Crassula exserta* (SA Rare)
- Pterostylis melagramma* (SA Endangered)
- Thelymitra flexuosa* (SA Rare)

Association	Threatened Flora Score	Association	Threatened Flora Score	Association	Threatened Flora Score
GG1 Site 1	0.08	WW Site 2	0.2	VV Site 9	0.16
GG1 Site 3	0.2	WW Site 3	0.04	VV Site 10	0.08
GG1 Site 4	0.08	WW Site 4	0.16	VV Site 11	0.16
GG1 Site 5	0.04	WW Site 5	0.2	VV Site 12	0.16
GG2 Site 1	0.04	WW Site 6	0.2	UU Site 1	0.16
GG2 Site 2	0	WW Site 7	0.16	UU Site 2	0.16
GG2 Site 3	0	WW Site 8	0.16	TT Site 1	0.08
GJC	0	VV Site 1	0.16	TT Site 2	0.16
XX2 Site 1	0	VV Site 2	0.16	TT Site 3	0.04
XX2 Site 2	0.2	VV Site 3	0.16	TT Site 4	0.04
XX2 Site 3	0	VV Site 4	0.16	TT Site 5	0
XX1 Site 1	0	VV Site 5	0.16	SS3 Site 1	0
XX1 Site 2	0.04	VV Site 6	0.16	SS3 Site 2	0.04
XX1 Site 3	0.04	VV Site 7	0.2	SS2 Site 1	0
WW Site 1	0.16	VV Site 8	0.04		

Assessment against the principles

Seriously at Variance (Threatened Flora Score of ≥ 0.1) – In bold above

Vegetation Associations:

GG1 Site 3

XX2 Site 2

WW Site 1, Site 2, Site 4, Site 5, Site 6, Site 7, Site 8

VV Site 1, Site 2, Site 3, Site 4, Site 5, Site 6, Site 7, Site 9, Site 11, Site 12

UU Site 1, Site 2

TT Site 2

At Variance (Threatened Flora Score of < 0.1)

Vegetation Associations:

GG1 Site 1, Site 4, Site 5

GG2 Site 1

XX1 Site 2, Site 3

WW Site 3

VV Site 8, Site 10

TT Site 1, Site 3, Site 4

SS3 Site 2

Not at Variance (Threatened Flora Score =0)

Vegetation Associations:

GG2 Site 2, Site 3

GJC

XX2 Site 1, Site 3

XX1 Site 1

TT Site 5

SS3 Site 1

SS2 Site 1

Moderating factors that may be considered by the NVC

The level of impact is low. The impact on threatened species has been reduced by locating the pipeline at the outer edge of roadside vegetation where the vegetation is often more disturbed. The clearance is not expected to have a significant impact on the species.

The clearance is generally less than 2.5 m wide and has a maximum of 3 m on the edge of the roadside vegetation facing the carriageway (except TT Sites 4 and 5). In general, the roadside

vegetation supporting the threatened species is more than 20 m. Clearance is not expected to significantly reduce the extent or quality of habitat or to lead to a decline in the species.

Clearance at TT Site 4 is more extensive and impacts 0.167 ha. However, the affected species is listed as 'Rare' in South Australia and the clearance is not extensive enough to have a significant impact on the population.

Principle 1d - the vegetation comprises the whole or part of a plant community that is Rare, Vulnerable or endangered:

Relevant information

Two nationally threatened ecological communities occur along roadsides affected by the project:

- Kangaroo Island Narrow-leaved Mallee Woodland (KINLMW) – CRITICALLY ENDANGERED;
- Subtropical and Temperate Coastal Saltmarsh (STCS) – VULNERABLE

Two vegetation communities are provisionally listed as Endangered in South Australia (DEH 2009):

- *E. cneorifolia*, *E. phenax* ssp. 'Kangaroo Island' Mallee on gilgai soils on plains
- *E. cneorifolia*, *E. rugosa* Mallee over *Rhagodia candolleana* on glacial sediments on plains

Association	Threatened Community Score	Association	Threatened Community Score	Association	Threatened Flora Score
GG1 Site 1	1.4	WW Site 2	1	VV Site 9	1
GG1 Site 3	1.4	WW Site 3	1	VV Site 10	1
GG1 Site 4	1	WW Site 4	1	VV Site 11	1
GG1 Site 5	1.4	WW Site 5	1.4	VV Site 12	1.4
GG2 Site 1	1.4	WW Site 6	1	UU Site 1	1.4
GG2 Site 2	1.4	WW Site 7	1.4	UU Site 2	1.4
GG2 Site 3	1.4	WW Site 8	1.4	TT Site 1	1
GJC	1.35	VV Site 1	1.4	TT Site 2	1
XX2 Site 1	1	VV Site 2	1	TT Site 3	1
XX2 Site 2	1.4	VV Site 3	1.4	TT Site 4	1
XX2 Site 3	1.35	VV Site 4	1	TT Site 5	1
XX1 Site 1	1.35	VV Site 5	1.4	SS3 Site 1	1
XX1 Site 2	1	VV Site 6	1.4	SS3 Site 2	1
XX1 Site 3	1.4	VV Site 7	1	SS2 Site 1	1
WW Site 1	1.4	VV Site 8	1		

Plant Community KI 1103

EPBC - Critically Endangered - Kangaroo Island Narrow-leaved Mallee Woodland

Vegetation Associations:

- GG2 Site 3
- XX2 Site 2

Plant Community KI 1104

EPBC - Critically Endangered - Kangaroo Island Narrow-leaved Mallee Woodland

Vegetation Associations:

- GG1 Site 1 and Site 3
- GG2 Site 1
- XX1 Site 3
- WW Site 5, Site 7, Site 8
- VV Site 3, Site 5, Site 6, Site 12
- UU Site 2

Plant Community KI 1106

EPBC - Critically Endangered - Kangaroo Island Narrow-leaved Mallee Woodland

Vegetation Association:

VV Site 1

Plant Community KI 1107

EPBC - Critically Endangered - Kangaroo Island Narrow-leaved Mallee Woodland

Vegetation Associations:

GG1 Site 5

GG2 Site 2

UU Site 1

Plant Community KI 1109

EPBC - Critically Endangered - Kangaroo Island Narrow-leaved Mallee Woodland

Vegetation Association:

WW Site 1

Plant Community KI 2302

EPBC – Vulnerable - Subtropical and Temperate Coastal Saltmarsh

Vegetation Associations:

GJC

XX1 Site 1

XX2 Site 3

Assessment against the principles

Seriously at Variance (Threatened Community Score of >0.1) – In bold above

EPBC - Critically Endangered - Kangaroo Island Narrow-leaved Mallee Woodland

GG1 Site 1 (0.0179 ha), Site 3 (0.0028 ha), Site 5 (0.0055 ha)

GG2 Site 1 (0.0004 ha), Site 2 (0.0482 ha), Site 3 (0.0207 ha)

XX2 Site 2 (0.0054 ha)

XX1 Site 3 (0.0388 ha)

WW Site 1 (0.0002 ha), Site 5 (0.0203 ha), Site 7 (0.0054 ha), Site 8 (0.0431 ha)

VV Site 1 (0.0023 ha), Site 3 (0.0015 ha), Site 5 (0.0215 ha), Site 6 (0.002 ha), and

Site 12 (0.003 ha)

UU Site 1 (0.0101 ha), Site 2 (0.0074 ha)

TOTAL AREA = 0.2565 ha (includes 0.0209 ha of minor pruning)

EPBC – Vulnerable - Subtropical and Temperate Coastal Saltmarsh

GJC (0.0032 ha)

XX1 Site 1 (0.013 ha)

XX2 Site 3 (0.0007 ha)

TOTAL AREA = 0.0169 ha (includes 0.0019 ha of minor pruning)

Moderating factors that may be considered by the NVC

Impact Significance

The proposed clearance of 0.2565 ha of KINLM is spread across 40 segments within a 28 km stretch of roadside vegetation. The proposed clearance of 0.0169 ha of Saltmarsh community is spread across three sites within a 3 km stretch of roadside vegetation.

Clearance at each site is of a small extent and is not likely to have a significant impact on the threatened plant community in terms of its condition, extent, continuity or capacity to recover.

Area of Impact

	<p>The clearance in each community is less than 1% of the area of the that community within the immediate vicinity.</p> <p><i>Condition and Integrity of Affected Vegetation</i></p> <p>The affected vegetation is in good condition with an intact overstorey and diverse understorey that is also structurally intact.</p> <p>Detailed field surveys are required to confirm that the vegetation community at each site meets the diagnostic criteria and condition thresholds specified in the EPBC Conservation Advice for the KINLMW community (Department of the Environment 2014a) and the Subtropical and Temperate Coastal Saltmarsh community (Department of Sustainability, Environment, Water, Population and Communities 2013).</p>
<p>Principle 1e - it is significant as a remnant of vegetation in an area which has been extensively cleared.</p>	<p><u>Relevant information</u></p> <p><u>Segments GG1 Site 1 to XX1 Site 2</u> Cygnet IBRA Association remnancy - 27% Total Biodiversity Score 11.2</p> <p><u>Segments XX1 Site 3 to TT Site 2</u> Amberley IBRA Association remnancy - 21% Total Biodiversity Score 32.11</p> <p><u>Segments TT Site 3 to SS2 Site 1</u> Gantheaume IBRA Association remnancy - 88% Total Biodiversity Score 32.17</p> <p>Kangaroo Island IBRA Subregion remnancy - 52% Total Biodiversity Score – 75.39</p> <p>Vegetation remnancy is relatively high in the eastern part of the route in the steep limestone dunefields of the Gantheaume IBRA Association. Vegetation has been cleared most extensively in the western (Cygnet, Amberley) parts of the route. Roadside vegetation is an important component of the remaining vegetation.</p> <p>The affected Kangaroo-Island Narrow-leaved Mallee Woodland is located in the Cygnet and Amberley IBRA Associations.</p> <p>The section of the route along Hog Bay Road between Arronmore Road and American River Road is particularly significant as a remnant because the roadside vegetation supports several endangered and threatened plant species. The roadside vegetation is an important habitat for these plants (Taylor, 2008).</p> <p>Vegetation is in good health with good prospects for remaining intact where the roadside vegetation is intact and continuous with broader remnants across the landscape. This is the case:</p> <ul style="list-style-type: none"> • between Arronmore Road and Red Banks Road • between American River Road and Muston Road. <p>Despite its isolation from larger remnants, the roadside vegetation has good spatial integrity. Roadside vegetation on Hog Bay Road is largely continuous and intact in a broad corridor approximately 20 m for most of the route between:</p> <ul style="list-style-type: none"> • between Min Oil Road and American River Road and • in the limestone dunes south of Pelican Lagoon <p>Roadside vegetation is relatively fragmented and vulnerable to invasion by weeds:</p> <ul style="list-style-type: none"> • east of the airport

	<ul style="list-style-type: none"> • in the salt marsh near Nepean Bay • immediately south-east of the American River intersection and • at the western end of the route at Pelican Lagoon.
	<p><u>Assessment against the principles</u> At Variance – All sites</p> <p>Collectively, clearance of the whole route at both the IBRA Association and IBRA sub-regional level is At Variance with the principle.</p> <p><u>Moderating factors that may be considered by the NVC</u></p> <p>The clearance includes Kangaroo Island Narrow-leaved Mallee which is Critically Endangered under the EPBC Act and Endangered in South Australia and is under-represented in the region.</p>
<p>Principle 1f - it is growing in, or in association with, a wetland environment.</p>	<p><u>Relevant information</u></p> <p>The vegetation is growing in or associated with a wetland environment at:</p> <ul style="list-style-type: none"> • A watercourse and wetland habitat on Arronmore Road (GG2 Site 2) • The salt marsh wetland at Nepean Bay on Hog Bay Road between Arronmore Road and Min Oil Road (XX1 Site 1, XX2 Site 1, XX2 Site 3) • Watercourse and wetland habitats on Hog Bay Road between Min Oil Road and American River Road (VV Site 8 and Site 10, WW Site 4)
	<p><u>Assessment against the principles</u> Not at Variance</p> <p>Clearance will not have a significant impact on the wetland environments. A small area of vegetation will be cleared from the roadside where vegetation is already relatively disturbed. Clearance will not significantly impact on hydrology or water quality and will have a minor effect on vegetation condition and extent. The areas of clearance are:</p> <p>GG2 Site 2 - 0.0482 ha XX1 Site 1 – 0.013 ha XX2 Site 1 - 0.0056 ha XX2 Site 3 - 0.0007 ha VV Site 8 – 0.0159 ha VV Site 10 – 0.0183 ha WW Site 4 – 0.0154 ha</p>
	<p><u>Moderating factors that may be considered by the NVC</u></p> <p>None</p>
<p>Principle 1g - it contributes significantly to the amenity of the area in which it is growing or is situated.</p>	<p><u>Relevant information</u></p> <p>The proposed clearance is in roadside vegetation on Hog Bay Road and is visible to the public. The road is the principle route for residents and tourists to access the island from the Penneshaw ferry.</p> <p>In most cases the clearance will be indistinguishable to the public from existing roadside vegetation maintenance.</p>
	<p>N/A</p>
	<p><u>Moderating factors that may be considered by the NVC</u></p> <p>None</p>

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

4.6 Risk Assessment

Determine the level of risk associated with the application

Total clearance	No. of trees	0
	Area (ha)	0.9759
	Total biodiversity Score	75.39
Seriously at variance with principle 1(b), 1(c) or 1 (d)	1(b), 1(c) and 1(d).	
Risk assessment outcome	Level 4	

4.7 NVC Guidelines

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

Not applicable

5. Clearance summary

Block	Site	Native 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
GG1	1	30	1.4	0.08	0.1	94.56	0.0179	1.69	1			1.78	\$1,113.53	\$61.24
GG1	3	30	1.4	0.2	0.1	100.18	0.0028	0.28	1			0.29	\$184.53	\$10.15
GG1	4	18	1	0.08	0.1	32	0.0052	0.17	1			0.17	\$109.48	\$6.02
GG1	5	27	1.4	0.04	0.1	71.84	0.0055	0.40	1			0.41	\$259.92	\$14.30
GG2	1	30	1.4	0.04	0.1	84.39	0.0004	0.03	0.6			0.02	\$13.32	\$0.73
GG2	2	30	1.4	0	0.1	97.59	0.0482	4.70	1			4.94	\$3,094.49	\$170.20
GG2	3	30	1.4	0	0.1	84.12	0.0207	1.74	1			1.83	\$1,145.52	\$63.00
GJC	1	15	1.35	0	0.1	57.65	0.0032	0.18	1			0.19	\$120.85	\$6.65
XX2	1	21	1	0	0.1	55.48	0.0056	0.31	1			0.33	\$204.39	\$11.24
XX2	2	30	1.4	0.2	0.1	120.31	0.0054	0.65	1			0.68	\$427.40	\$23.51
XX2	3	30	1.35	0	0.1	83.42	0.0007	0.06	0.6			0.04	\$23.05	\$1.27
XX1	1	24	1.35	0	0.1	67.19	0.013	0.87	1			0.92	\$579.41	\$31.87
XX1	2	30	1	0.04	0.1	73.71	0.0004	0.03	0.6			0.02	\$11.74	\$0.65
XX1	3	30	1.4	0.04	0.1	104.62	0.0388	4.06	1			4.26	\$2,692.98	\$148.11
WW	1	30	1.4	0.16	0.1	98.9	0.0002	0.02	0.6			0.01	\$12.72	\$0.70
WW	2	30	1	0.2	0.1	77.96	0.0004	0.03	0.6			0.02	\$12.13	\$0.67
WW	3	30	1	0.04	0.1	67.03	0.0394	2.64	1			2.77	\$1,795.81	\$98.77
WW	4	30	1	0.16	0.1	68.69	0.0154	1.06	1			1.11	\$719.29	\$39.56
WW	5	30	1.4	0.2	0.1	120.81	0.0203	2.45	1			2.58	\$1,667.64	\$91.72
WW	6	30	1	0.2	0.1	87.22	0.0061	0.53	1			0.56	\$361.80	\$19.90
WW	7	30	1.4	0.16	0.1	112.11	0.0054	0.61	1			0.64	\$411.67	\$22.64
WW	8	30	1.4	0.16	0.1	106.73	0.0431	4.60	1			4.83	\$3,128.01	\$172.04
VV	1	30	1.4	0.16	0.1	113.43	0.0023	0.26	0.6			0.16	\$108.61	\$5.97
VV	2	21	1	0.16	0.1	56.66	0.0041	0.23	1			0.24	\$162.82	\$8.90

Block	Site	Native 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
VV	3	30	1.4	0.16	0.1	88.4	0.0015	0.13	0.6			0.08	\$55.42	\$3.05
VV	4	30	1	0.16	0.1	64.83	0.0195	1.26	1			1.33	\$880.60	\$48.43
VV	5	30	1.4	0.16	0.1	103.65	0.0215	2.23	1			2.34	\$1,564.71	\$86.06
VV	6	30	1.4	0.16	0.1	96.74	0.002	0.19	0.6			0.12	\$81.67	\$4.49
VV	7	30	1	0.2	0.1	80.75	0.0084	0.68	1			0.71	\$481.94	\$26.51
VV	8	30	1	0.04	0.1	68.52	0.0159	1.09	1			1.14	\$752.88	\$41.41
VV	9	21	1	0.16	0.1	60.97	0.0583	3.55	1			3.73	\$2,481.14	\$136.46
VV	10	30	1	0.08	0.1	71.55	0.0183	1.31	1			1.37	\$913.13	\$50.27
VV	11	30	1	0.16	0.1	83.86	0.0195	1.64	1			1.72	\$1,139.23	\$62.66
VV	12	30	1.4	0.16	0.1	102.78	0.003	0.31	1			0.32	\$220.78	\$12.14
UU	1	30	1.4	0.16	0.1	103.65	0.0101	1.05	1			1.10	\$753.90	\$41.46
UU	2	30	1.4	0.16	0.1	106.39	0.0074	0.79	1			0.83	\$567.00	\$31.18
TT	1	27	1	0.08	0.1	62.87	0.001	0.06	0.6			0.04	\$27.11	\$1.49
TT	2	27	1	0.16	0.1	45.05	0.0296	1.33	1			1.40	\$962.18	\$52.92
TT	3	30	1	0.04	0.1	71.23	0.0369	2.63	1			2.76	\$1,972.95	\$108.51
TT	4	30	1	0.04	0.1	80.06	0.1661	13.30	1			13.96	\$10,073.96	\$554.07
TT	5	30	1	0	0.1	67.67	0.1656	11.21	1			11.77	\$8,815.53	\$484.85
SS3	1	30	1	0	0.1	66.77	0.0225	1.50	1			1.58	\$1,052.79	\$57.90
SS3	2	27	1	0.04	0.1	64.92	0.0319	2.07	1			2.17	\$1,525.74	\$83.82
SS2	1	24	1	0	0.1	45.11	0.0324	1.46	1			1.53	\$1,068.88	\$58.79
								0.00				0.00	\$0.00	\$0.00
						Total	0.9759	75.39				78.8	\$53,752.65	\$2,956.28

Totals summary table

	Total Biodiversity score	Total SEB points required	SEB Payment	Admin Fee	Total Payment
Application	75.39	78.8	\$53,752.65	\$2,956.28	\$56,708.93

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. Provide information below.
- Use SEB Credit that the proponent has established. Provide the SEB Credit Ref. No. _____
- Apply to have SEB Credit assigned from another person or body. The application form needs to be submitted with this Data Report.
- Apply to have an SEB to be delivered by a Third Party. The application form needs to be submitted with this Data Report.
- Pay into the Native Vegetation Fund. Provide details below

PAYMENT SEB

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

- Payment amount required (including admin. fee)
- 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.

7. References

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8. Appendices

Appendix 1. Flora Species List

Appendix 2. Bushland Assessment Scoresheets associated with the proposed clearance and SEB Area

Appendix A. Flora Species List
Native Species recorded at Sites GG Site 1 to WW Site 8

Species	Common Name	EPBC	SA	GG1 Site 1	GG1 Site 3	GG1 Site 4	GG1 Site 5	GG2 Site 1	GG2 Site 2	GG2 Site 3	GJC	XX2 Site 1	XX2 Site 2	XX2 Site 3	XX1 Site 1	XX1 Site 2	XX1 Site 3	WW Site 1	WW Site 2	WW Site 3	WW Site 4	WW Site 5	WW Site 6	WW Site 7	WW Site 8
<i>Acacia cupularis</i>	Cup Wattle			+			+				+	+					+	+		+					
<i>Acacia euythycarpa</i>	Wallowa				+	+		+	+			+					+			+	+				+
<i>Acacia leiophylla</i>	Coast Golden Wattle																				+				
<i>Acacia longifolia ssp. sophorae</i>	Coastal Wattle																								
<i>Acacia myrtifolia</i>	Myrtle Wattle																	+	+	+	+	+	+	+	+
<i>Acacia paradoxa</i>	Kangaroo Thorn			+	+	+	+	+	+	+			+		+	+	+	+	+	+	+	+	+	+	+
<i>Acacia pycnantha</i>	Golden Wattle			+	+	+			+	+			+	+				+	+			+	+	+	+
<i>Acacia spinescens</i>	Spiny Wattle			+	+													+	+			+	+	+	+
<i>Acacia triquetra</i>	Mallee Wreath Wattle																								+
<i>Acacia uncifolia</i>	Coast Silver Wattle																								
<i>Acaena novae-zelandiae</i>	Biddy-biddy							+																	
<i>Acaena sp.</i>	Sheep's Burr																								
<i>Acianthus pusillus</i>	Mosquito Orchid																				+				
<i>Acrotriche affinis</i>	Ridged Ground-berry															+									
<i>Acrotriche depressa</i>	Native Currant													+	+		+	+	+	+	+	+	+	+	+
<i>Acrotriche patula</i>	Prickly Ground-berry																								
<i>Adenanthos macropodianus</i>	Kangaroo Island Gland-flower						+	+								+			+				+	+	+
<i>Adenanthos terminalis</i>	Yellow Gland-flower																								+
<i>Adriana quadripartita</i>	Coast Bitter-bush																								
<i>Allocauarina muelleriana ssp.</i>	Common Oak-bush																								+
<i>Allocauarina muelleriana ssp. notocolpica</i>	Kangaroo Island Oak-bush					+												+		+			+		+
<i>Allocauarina striata</i>	Stalked Oak-bush												+						+					+	+
<i>Allocauarina verticillata</i>	Drooping Sheoak				+				+									+		+	+		+	+	+
<i>Alyxia buxifolia</i>	Sea Box																								
<i>Angianthus preissianus</i>	Salt Angianthus																					+			
<i>Astroloma humifusum</i>	Cranberry Heath			+	+	+	+	+	+				+			+	+	+	+				+	+	+
<i>Austrostipa sp.</i>	Spear-grass			+	+	+	+	+	+	+			+			+	+	+	+	+			+	+	+
<i>Banksia marginata</i>	Silver Banksia																								+
<i>Baumea juncea</i>	Bare Twig-rush																								+
<i>Bertya rotundifolia</i>	Round-leaf Bertya			+	+	+	+	+	+	+				+		+	+	+	+			+	+	+	+
<i>Beyeria lechenaultii</i>	Pale Turpentine Bush									+											+				
<i>Beyeria subtecta</i>	Kangaroo Island Turpentine Bush	VU	E															+			+	+	+	+	+
<i>Billardiera cymosa ssp. cymosa</i>	Sweet Apple-berry												+												
<i>Billardiera uniflora</i>	One-flower Apple-berry																	+							
<i>Billardiera versicolor</i>	Yellow-flower Apple-berry			+	+		+						+		+	+	+	+	+	+	+	+	+	+	+
<i>Boronia coerulescens ssp. coerulescens</i>	Blue Boronia																								
<i>Boronia filifolia</i>	Slender Boronia																								
<i>Brachyloma ericoides ssp. bicolor</i>	Kangaroo Island Brush Heath																								
<i>Bulbine semibarbata</i>	Small Leek-lily										+	+		+											
<i>Burchardia umbellata</i>	Milkmaids																								+

Species	Common Name	EPBC	SA	GG1 Site 1	GG1 Site 3	GG1 Site 4	GG1 Site 5	GG2 Site 1	GG2 Site 2	GG2 Site 3	GJC	XX2 Site 1	XX2 Site 2	XX2 Site 3	XX1 Site 1	XX1 Site 2	XX1 Site 3	WW Site 1	WW Site 2	WW Site 3	WW Site 4	WW Site 5	WW Site 6	WW Site 7	WW Site 8	
<i>Caladenia sp.</i>	Spider-orchid																								+	
<i>Callistemon rugulosus</i>	Scarlet Bottlebrush				+	+		+	+																+	+
<i>Callitris gracilis</i>	Southern Cypress Pine															+	+			+					+	
<i>Callitris rhomboidea</i>	Oyster Bay Pine															+	+									
<i>Callitris sp.</i>	Native Pine						+																			
<i>Calytrix glaberrima</i>	Smooth Heath-myrtle																									
<i>Calytrix tetragona</i>	Common Fringe-myrtle					+		+															+		+	
<i>Carpobrotus rossii</i>	Native Pigface																									
<i>Cassinia complanata</i>	Sticky Cassinia																									
<i>Cassytha glabella f. dispar</i>	Slender Dodder-laurel				+	+			+		+					+		+	+	+	+	+		+	+	
<i>Cassytha melantha</i>	Coarse Dodder-laurel				+		+		+		+	+						+		+	+		+	+	+	
<i>Cassytha pubescens</i>	Downy Dodder-laurel															+					+		+		+	
<i>Choretrum glomeratum</i>	White Sour-bush				+		+									+					+	+	+	+	+	
<i>Chorizandra enodis</i>	Black Bristle-rush					+				+	+	+									+	+	+	+	+	
<i>Clematis microphylla</i>	Old Man's Beard			+	+		+	+	+	+					+	+	+	+	+	+	+	+	+	+	+	
<i>Comesperma volubile</i>	Love Creeper											+	+	+							+		+			
<i>Correa backhouseana var. orbicularis</i>	Round-leaf Correa		R																							
<i>Correa reflexa var. insularis</i>	Round-leaf Correa			+	+		+			+						+	+	+	+	+		+	+	+	+	
<i>Correa reflexa var. reflexa</i>	Common Correa										+															
<i>Corybas despectans</i>	Coast Helmet-orchid																				+			+	+	
<i>Cotula vulgaris var. australasica</i>	Slender Cotula													+	+											
<i>Cyphanthera myosotidea</i>	Small-leaf Ray-flower																									
<i>Dampiera lanceolata var. insularis</i>	Kangaroo Island Dampiera															+										
<i>Daviesia asperula ssp. asperula</i>	Kangaroo Island Bitter-pea												+			+	+	+	+		+	+	+	+	+	
<i>Daviesia brevifolia</i>	Leafless Bitter-pea			+														+	+					+	+	
<i>Dianella brevicaulis</i>	Short-stem Flax-lily			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
<i>Dianella revoluta var. revoluta</i>	Black-anther Flax-lily								+	+						+	+									
<i>Dichondra repens</i>	Kidney Weed																									
<i>Dillwynia hispida</i>	Red Parrot-pea																								+	
<i>Dillwynia sericea</i>	Showy Parrot-pea			+	+												+								+	
<i>Disphyma crassifolium ssp. clavellatum</i>	Round-leaf Pigface													+												
<i>Diuris orientis</i>	Wallflower Donkey-orchid																								+	
<i>Dodonaea baueri</i>	Crinkled Hop-bush												+	+												
<i>Dodonaea hexandra</i>	Horned Hop-bush				+													+			+	+	+	+	+	
<i>Dodonaea humilis</i>	Dwarf Hop-bush																									
<i>Dodonaea viscosa ssp. angustissima</i>	Narrow-leaf Hop-bush								+	+						+	+	+		+				+		
<i>Drosera macrantha ssp. planchonii</i>	Climbing Sundew									+																
<i>Einadia nutans ssp. nutans</i>	Climbing Saltbush				+																					
<i>Enchylaena tomentosa var. tomentosa</i>	Ruby Saltbush						+	+	+	+		+	+	+		+	+				+					

Species	Common Name	EPBC	SA	GG1 Site 1	GG1 Site 3	GG1 Site 4	GG1 Site 5	GG2 Site 1	GG2 Site 2	GG2 Site 3	GJC	XX2 Site 1	XX2 Site 2	XX2 Site 3	XX1 Site 1	XX1 Site 2	XX1 Site 3	WW Site 1	WW Site 2	WW Site 3	WW Site 4	WW Site 5	WW Site 6	WW Site 7	WW Site 8
<i>Epilobium billardierianum</i> ssp. <i>billardierianum</i>	Robust Willow-herb										+														
<i>Eremophila behriana</i>	Rough Emubush																								+
<i>Eremophila glabra</i> ssp. <i>glabra</i>	Tar Bush												+												
<i>Eucalyptus albens</i>	White Box		R																						+
<i>Eucalyptus albopurpurea</i>	Purple-flowered Mallee Box				+					+			+			+	+		+		+				+
<i>Eucalyptus camaldulensis</i> ssp.	River Red Gum																								+
<i>Eucalyptus cneorifolia</i>	Kangaroo Island Narrow-leaf Mallee			+	+	+	+	+	+	+	+	+	+	+				+	+		+	+	+	+	+
<i>Eucalyptus cosmophylla</i>	Cup Gum				+			+	+										+		+			+	+
<i>Eucalyptus diversifolia</i> ssp. <i>diversifolia</i>	Coastal White Mallee			+						+									+	+	+	+	+	+	+
<i>Eucalyptus fasciculosa</i>	Pink Gum		R		+	+																			+
<i>Eucalyptus leptophylla</i>	Narrow-leaf Red Mallee																								
<i>Eucalyptus leucoxylon</i> ssp. <i>leucoxylon</i>	South Australian Blue Gum																								
<i>Eucalyptus odorata</i>	Peppermint Box																		+						
<i>Eucalyptus phenax</i> ssp. <i>compressa</i>	Kangaroo Island Mallee		R																+						
<i>Eucalyptus rugosa</i>	Coastal White Mallee								+	+															
<i>Euphrasia collina</i> ssp. <i>tetragona</i>	Coast Eyebright																								
<i>Eutaxia diffusa</i>	Large-leaf Eutaxia						+						+									+			
<i>Eutaxia microphylla</i>	Common Eutaxia											+	+												
<i>Ficinia nodosa</i>	Knobby Club-rush																		+						+
<i>Frankenia pauciflora</i> var. <i>gunnii</i>	Southern Sea-heath													+											
<i>Gahnia trifida</i>	Cutting Grass								+										+		+	+			
<i>Geranium potentilloides</i> var. <i>potentilloides</i>	Downy Geranium																								
<i>Geranium</i> sp.	Geranium																								
<i>Glischrocaryon behrii</i>	Golden Pennants			+	+																		+		+
<i>Glossodia major</i>	Purple Cockatoo																							+	+
<i>Gonocarpus mezeianus</i>	Broad-leaf Raspwort							+										+	+				+	+	+
<i>Goodenia blackiana</i>	Native Primrose																								
<i>Goodenia varia</i>	Sticky Goodenia										+	+	+												+
<i>Goodia medicaginea</i>	Western Golden-tip																								
<i>Grevillea halmaturina</i> ssp. <i>halmaturina</i>	Prickly Grevillea		R	+	+														+	+	+	+			
<i>Grevillea ilicifolia</i> complex	Holly-leaf Grevillea				+																			+	
<i>Grevillea ilicifolia</i> ssp. <i>ilicifolia</i>	Holly-leaf Grevillea					+		+					+					+	+	+	+	+	+	+	+
<i>Grevillea muricata</i>	Rough Spider-flower		R																+				+	+	+
<i>Hakea mitchellii</i>	Heath Needlebush																							+	
<i>Hakea rostrata</i>	Beaked Hakea																								
<i>Hakea rugosa</i>	Dwarf Hakea					+																			
<i>Hardenbergia violacea</i>	Native Lilac																					+	+	+	+
<i>Hibbertia devitata</i>	Smooth Guinea-flower				+														+						

Species	Common Name	EPBC	SA	GG1 Site 1	GG1 Site 3	GG1 Site 4	GG1 Site 5	GG2 Site 1	GG2 Site 2	GG2 Site 3	GJC	XX2 Site 1	XX2 Site 2	XX2 Site 3	XX1 Site 1	XX1 Site 2	XX1 Site 3	WW Site 1	WW Site 2	WW Site 3	WW Site 4	WW Site 5	WW Site 6	WW Site 7	WW Site 8	
<i>Hibbertia empetrifolia</i> ssp. <i>radians</i>	Scrambling Guinea-flower																									
<i>Hibbertia glebosa</i> ssp. <i>oblonga</i>	Oblong-leaf Guinea-flower		R																						+	
<i>Hibbertia paeninsularis</i>	Peninsula Guinea-flower			+	+																					
<i>Hibbertia pallidiflora</i>	Round-leaf Guinea-flower																									
<i>Hibbertia platyphylla</i> ssp. <i>halmaturina</i>	Large Guinea-flower																									
<i>Hibbertia riparia</i>	Bristly Guinea-flower			+	+	+	+	+	+	+		+	+	+		+	+	+		+	+	+	+	+	+	+
<i>Hibbertia virgata</i>	Twiggy Guinea-flower																									
<i>Hypolaena fastigiata</i>	Tassel Rope-rush																			+	+					
<i>Isopogon ceratophyllus</i>	Horny Cone-bush																									
<i>Juncus bufonius</i>	Toad Rush										+			+								+				
<i>Juncus pallidus</i>	Pale Rush				+	+																			+	
<i>Juncus subsecundus</i>	Finger Rush													+												
<i>Kunzea pomifera</i>	Muntries																									
<i>Lachnagrostis billardierei</i> ssp. <i>billardierei</i>	Coast Blown-grass																									
<i>Lachnagrostis filiformis</i>	Common Blown-grass																									
<i>Lasiopetalum baueri</i>	Slender Velvet-bush			+	+	+	+	+					+		+	+										
<i>Lasiopetalum behrii</i>	Pink Velvet-bush								+																	
<i>Lasiopetalum discolor</i>	Coast Velvet-bush																									
<i>Lasiopetalum schulzenii</i>	Drooping Velvet-bush													+	+	+				+	+	+		+	+	+
<i>Lawrenca spicata</i>	Salt Lawrenca										+	+														
<i>Leionema equestre</i>	Kangaroo Island Phebalium	EN	E																							
<i>Lepidosperma canescens</i>	Hoary Rapier-sedge			+	+		+	+	+							+	+			+						
<i>Lepidosperma gladiatum</i>	Coast Sword-sedge																									
<i>Lepidosperma viscidum</i>	Sticky Sword-sedge				+	+		+	+											+		+	+	+		+
<i>Leptospermum continentale</i>	Prickly Tea-tree																									
<i>Leptospermum myrsinoides</i>	Heath Tea-tree																								+	+
<i>Leucopogon concurvus</i>	Scrambling Beard-heath																									
<i>Leucopogon parviflorus</i>	Coast Beard-heath							+		+				+	+	+		+	+	+	+	+		+	+	
<i>Leucopogon rufus</i>	Ruddy Beard-heath				+											+										+
<i>Leucopogon woodsii</i>	Nodding Beard-heath																				+			+	+	+
<i>Logania linifolia</i>	Flax-leaf Logania																			+		+				+
<i>Logania ovata</i>	Oval-leaf Logania																								+	+
<i>Lomandra micrantha</i> ssp. <i>micrantha</i>	Small-flower Mat-rush							+	+	+									+	+				+	+	
<i>Lythrum hyssopifolia</i>	Lesser Loosestrife										+	+														
<i>Maireana oppositifolia</i>	Salt Bluebush													+												
<i>Melaleuca acuminata</i> ssp. <i>acuminata</i>	Mallee Honey-myrtle					+																				
<i>Melaleuca brevifolia</i>	Short-leaf Honey-myrtle				+	+	+	+	+	+	+	+	+	+	+	+							+	+		
<i>Melaleuca gibbosa</i>	Slender Honey-myrtle				+	+		+	+	+						+	+						+	+		+
<i>Melaleuca halmaturorum</i>	Swamp Paper-bark												+		+	+										
<i>Melaleuca lanceolata</i>	Dryland Tea-tree			+	+			+		+		+	+												+	

Species	Common Name	EPBC	SA	GG1 Site 1	GG1 Site 3	GG1 Site 4	GG1 Site 5	GG2 Site 1	GG2 Site 2	GG2 Site 3	GJC	XX2 Site 1	XX2 Site 2	XX2 Site 3	XX1 Site 1	XX1 Site 2	XX1 Site 3	WW Site 1	WW Site 2	WW Site 3	WW Site 4	WW Site 5	WW Site 6	WW Site 7	WW Site 8	
<i>Melaleuca uncinata</i>	Broombush			+	+	+	+	+	+			+	+	+		+	+	+	+	+	+	+	+	+	+	
<i>Micranthemum demissum</i>	Dwarf Micranthemum							+									+	+	+		+		+	+	+	
<i>Microtis arenaria</i>	Notched Onion-orchid																									
<i>Muehlenbeckia adpressa</i>	Climbing Lignum			+				+	+	+						+		+				+	+			
<i>Muehlenbeckia gunnii</i>	Coastal Climbing Lignum																									
<i>Myoporum insulare</i>	Common Boobialla								+	+	+	+	+	+	+	+	+	+	+			+	+	+	+	
<i>Olearia axillaris</i>	Coast Daisy-bush																								+	
<i>Olearia microdisca</i>	Small-flower Daisy-bush	EN	E		+								+						+				+	+		
<i>Olearia ramulosa</i>	Twiggy Daisy-bush															+	+						+	+	+	
<i>Olearia teretifolia</i>	Cypress Daisy-bush																								+	
<i>Orthosanthus multiflorus</i>	Morning Flag							+					+	+			+		+				+	+	+	
<i>Pelargonium sp.</i>	Storks-bill																									
<i>Petrophile multisepta</i>	Kangaroo Island Conesticks				+		+	+										+			+					
<i>Phyllanthus striaticaulis</i>	Southern Spurge																									
<i>Phyllota pleurandroides</i>	Heathy Phyllota																									
<i>Pimelea flava ssp. flava</i>	Yellow Riceflower																								+	
<i>Pimelea glauca</i>	Smooth Riceflower																							+	+	+
<i>Pimelea octophylla</i>	Woolly Riceflower			+	+																					
<i>Pimelea serpyllifolia ssp. serpyllifolia</i>	Thyme Riceflower						+	+		+				+												
<i>Pimelea stricta</i>	Erect Riceflower				+	+	+						+													
<i>Platysace heterophylla var. tepperi</i>	Kangaroo Island Platysace																									
<i>Poa halmaturina</i>	Kangaroo Island Poa																									
<i>Poa sp.</i>	Meadow-grass/Tussock-grass													+								+				
<i>Pomaderris obcordata</i>	Wedge-leaf Pomaderris																						+	+		+
<i>Pomaderris paniculosa ssp. paniculosa</i>	Mallee Pomaderris																									
<i>Pomaderris paniculosa ssp. paralia</i>	Coast Pomaderris																									
<i>Prostanthera aspalathoides</i>	Scarlet Mintbush																									
<i>Prostanthera chlorantha</i>	Green Mintbush		R		+								+					+						+	+	
<i>Pterostylis nana</i>	Dwarf Greenhood																							+	+	
<i>Pterostylis sanguinea</i>	Blood Greenhood																								+	
<i>Pterostylis sp.</i>	Greenhood																							+		
<i>Puccinellia perlaxa</i>																						+				
<i>Pultenaea acerosa</i>	Bristly Bush-pea				+													+	+		+			+	+	
<i>Pultenaea canaliculata</i>	Soft Bush-pea																									
<i>Pultenaea penna</i>	Feather Bush-pea			+	+	+				+							+	+		+	+	+	+	+	+	
<i>Pultenaea tenuifolia</i>	Narrow-leaf Bush-pea																									
<i>Pultenaea teretifolia var. brachyphylla</i>	Short-leaf Bush-pea			+														+							+	
<i>Pultenaea teretifolia var. teretifolia</i>	Terete-leaf Bush-pea																								+	

Species	Common Name	EPBC	SA	GG1 Site 1	GG1 Site 3	GG1 Site 4	GG1 Site 5	GG2 Site 1	GG2 Site 2	GG2 Site 3	GJC	XX2 Site 1	XX2 Site 2	XX2 Site 3	XX1 Site 1	XX1 Site 2	XX1 Site 3	WW Site 1	WW Site 2	WW Site 3	WW Site 4	WW Site 5	WW Site 6	WW Site 7	WW Site 8
<i>Rhagodia candolleana ssp. candolleana</i>	Sea-berry Saltbush				+		+	+	+	+			+	+	+	+	+	+		+	+	+		+	
<i>Rinzia ericea ssp. ericea</i>	Mat Heath-myrtle																								+
<i>Rinzia ericea ssp. insularis</i>	Island Heath-myrtle																	+							
<i>Rytidosperma sp.</i>	Wallaby-grass			+	+			+	+	+								+		+				+	+
<i>Salicornia quinqueflora ssp. quinqueflora</i>	Beaded Samphire								+	+		+		+			+			+	+				
<i>Samolus repens</i>	Creeping Brookweed										+			+						+	+				
<i>Scaevola linearis ssp. confertifolia</i>	Bundled Fanflower																		+				+	+	+
<i>Schoenus sp.</i>	Bog-rush																								+
<i>Senecio odoratus</i>	Scented Groundsel																								
<i>Senecio quadridentatus</i>	Cotton Groundsel																								+
<i>Senecio sp.</i>	Groundsel													+											
<i>Spergularia marina</i>	Salt Sand-spurrey													+											
<i>Sporobolus virginicus</i>	Salt Couch							+				+		+						+	+				
<i>Spyridium eriocephalum var. glabrisepalum</i>	Macgillivray Spyridium	VU	E									+													
<i>Spyridium halmaturinum</i>	Kangaroo Island Spyridium																	+					+		
<i>Spyridium nitidum</i>	Shining Spyridium					+												+							
<i>Spyridium spathulatum</i>	Spoon-leaf Spyridium		R																						+
<i>Stackhousia aspericocca ssp. Cylindrical inflorescence</i>	Bushy Candles																								
<i>Stackhousia sp.</i>	Candles																								
<i>Stenanthera conostephioides</i>	Flame Heath				+			+	+	+			+			+	+	+	+	+	+	+	+	+	+
<i>Styphelia exarrhena</i>	Desert Heath				+																				
<i>Suaeda australis</i>	Austral Seablite													+						+					
<i>Tecticornia sp.</i>	Samphire													+	+		+								
<i>Templetonia retusa</i>	Cockies Tongue																								
<i>Tetragonia implexicoma</i>	Bower Spinach																								
<i>Thelymitra pauciflora</i>	Slender Sun-orchid															+									
<i>Thomasia petalocalyx</i>	Paper-flower								+	+				+		+	+						+	+	
<i>Threlkeldia diffusa</i>	Coast Bonefruit									+		+	+												
<i>Thryptomene ericaea</i>	Heath Thryptomene			+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Thysanotus racemoides</i>	Rush Fringe-lily																								
<i>Triglochin striata</i>	Streaked Arrowgrass																								
<i>Vittadinia australasica var. australasica</i>	Sticky New Holland Daisy																	+						+	+
<i>Vittadinia gracilis</i>	Woolly New Holland Daisy																								
<i>Westringia eremicola</i>	Slender Westringia																								
<i>Wilsonia rotundifolia</i>	Round-leaf Wilsonia									+	+														
<i>Xanthorrhoea semiplana ssp. tateana</i>	Tate's Grass-tree		R	+	+	+	+	+								+	+						+	+	+
<i>Zieria veronicea ssp. insularis</i>	Pink Zieria		R																						
	TOTAL			30	51	29	27	37	34	36	17	25	44	36	16	41	45	56	34	39	55	45	53	68	74

Native Species recorded at Sites VV Site 1 to SS2 Site 1

Species	Common Name	EPBC	SA	VV Site 1	VV Site 2	VV Site 3	VV Site 4	VV Site 5	VV Site 6	VV Site 7	VV Site 8	VV Site 9	VV Site 10	VV Site 11	VV Site 12	UU Site 1	UU Site 2	TT Site 1	TT Site 2	TT Site 3	TT Site 4	TT Site 5	SS3 Site 1	SS3 Site 2	SS2 Site 1
<i>Acacia cupularis</i>	Cup Wattle				+						+	+	+									+	+	+	
<i>Acacia euthycarpa</i>	Wallowa															+									
<i>Acacia leiophylla</i>	Coast Golden Wattle										+										+	+	+	+	+
<i>Acacia longifolia ssp. sophorae</i>	Coastal Wattle																					+	+		
<i>Acacia myrtifolia</i>	Myrtle Wattle			+	+		+			+	+	+		+	+	+	+	+	+	+					
<i>Acacia paradoxa</i>	Kangaroo Thorn												+	+	+	+	+	+				+			
<i>Acacia pycnantha</i>	Golden Wattle			+				+	+	+	+		+	+	+	+	+								
<i>Acacia spinescens</i>	Spiny Wattle			+		+		+	+		+		+	+	+	+	+								
<i>Acacia triquetra</i>	Mallee Wreath Wattle			+	+	+						+	+				+				+	+		+	+
<i>Acacia uncifolia</i>	Coast Silver Wattle																					+	+		
<i>Acaena novae-zelandiae</i>	Biddy-biddy												+						+	+			+	+	
<i>Acaena sp.</i>	Sheep's Burr																					+			
<i>Acianthus pusillus</i>	Mosquito Orchid																								
<i>Acrotriche affinis</i>	Ridged Ground-berry																								
<i>Acrotriche depressa</i>	Native Currant			+		+	+	+	+	+			+	+	+	+	+								
<i>Acrotriche patula</i>	Prickly Ground-berry															+			+	+	+	+	+	+	+
<i>Adenanthos macropodianus</i>	Kangaroo Island Gland-flower						+			+	+		+			+	+	+	+	+					
<i>Adenanthos terminalis</i>	Yellow Gland-flower									+	+		+		+	+									
<i>Adriana quadripartita</i>	Coast Bitter-bush						+												+	+	+	+	+	+	+
<i>Allocasuarina muelleriana ssp.</i>	Common Oak-bush																								
<i>Allocasuarina muelleriana ssp. notocolpica</i>	Kangaroo Island Oak-bush							+	+				+		+	+									
<i>Allocasuarina striata</i>	Stalked Oak-bush			+		+	+			+	+														
<i>Allocasuarina verticillata</i>	Drooping Sheoak							+	+				+						+			+	+		+
<i>Alyxia buxifolia</i>	Sea Box																								+
<i>Angianthus preissianus</i>	Salt Angianthus																								
<i>Astroloma humifusum</i>	Cranberry Heath			+		+	+	+	+	+	+		+	+	+	+	+			+					
<i>Austrostipa sp.</i>	Spear-grass			+		+				+	+		+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Banksia marginata</i>	Silver Banksia									+	+		+												
<i>Baumea juncea</i>	Bare Twig-rush						+			+	+		+												
<i>Bertya rotundifolia</i>	Round-leaf Bertya				+					+	+	+	+		+		+	+							
<i>Beyeria lechenaultii</i>	Pale Turpentine Bush							+	+				+	+								+	+	+	+
<i>Beyeria subsecta</i>	Kangaroo Island Turpentine Bush	VU	E	+	+	+	+	+	+			+		+	+	+	+		+						
<i>Billardiera cymosa ssp. cymosa</i>	Sweet Apple-berry									+												+			
<i>Billardiera uniflora</i>	One-flower Apple-berry																								
<i>Billardiera versicolor</i>	Yellow-flower Apple-berry					+		+	+	+	+		+	+	+	+									
<i>Boronia coerulescens ssp. coerulescens</i>	Blue Boronia																		+						
<i>Boronia filifolia</i>	Slender Boronia									+															

Species	Common Name	EPBC	SA	VV Site 1	VV Site 2	VV Site 3	VV Site 4	VV Site 5	VV Site 6	VV Site 7	VV Site 8	VV Site 9	VV Site 10	VV Site 11	VV Site 12	UU Site 1	UU Site 2	TT Site 1	TT Site 2	TT Site 3	TT Site 4	TT Site 5	SS3 Site 1	SS3 Site 2	SS2 Site 1
<i>Brachyloma ericoides ssp. bicolor</i>	Kangaroo Island Brush Heath			+						+					+		+								
<i>Bulbine semibarbata</i>	Small Leek-lily																								
<i>Burchardia umbellata</i>	Milkmaids																								
<i>Caladenia sp.</i>	Spider-orchid																								
<i>Callistemon rugulosus</i>	Scarlet Bottlebrush			+						+					+		+								
<i>Callitris gracilis</i>	Southern Cypress Pine			+						+			+		+	+							+	+	
<i>Callitris rhomboidea</i>	Oyster Bay Pine																								
<i>Callitris sp.</i>	Native Pine																								
<i>Calytrix glaberrima</i>	Smooth Heath-myrtle									+									+						
<i>Calytrix tetragona</i>	Common Fringe-myrtle			+		+	+			+						+		+						+	
<i>Carpobrotus rossii</i>	Native Pigface																								+
<i>Cassinia complanata</i>	Sticky Cassinia													+	+		+								
<i>Cassytha glabella f. dispar</i>	Slender Dodder-laurel					+		+	+	+	+				+	+	+			+					
<i>Cassytha melantha</i>	Coarse Dodder-laurel			+													+			+	+	+		+	
<i>Cassytha pubescens</i>	Downy Dodder-laurel			+						+															
<i>Choretrum glomeratum</i>	White Sour-bush			+										+	+	+	+						+		
<i>Chorizandra enodis</i>	Black Bristle-rush			+																					
<i>Clematis microphylla</i>	Old Man's Beard			+	+			+	+	+		+		+	+	+	+	+	+	+	+	+	+	+	+
<i>Comesperma volubile</i>	Love Creeper															+		+				+			
<i>Correa backhouseana var. orbicularis</i>	Round-leaf Correa		R																		+			+	
<i>Correa reflexa var. insularis</i>	Round-leaf Correa			+	+	+		+	+	+		+		+	+	+	+	+							
<i>Correa reflexa var. reflexa</i>	Common Correa										+								+	+	+	+			
<i>Corybas despectans</i>	Coast Helmet-orchid																								
<i>Cotula vulgaris var. australasica</i>	Slender Cotula																								
<i>Cyphanthera myosotidea</i>	Small-leaf Ray-flower									+															
<i>Dampiera lanceolata var. insularis</i>	Kangaroo Island Dampiera																								
<i>Daviesia asperula ssp. asperula</i>	Kangaroo Island Bitter-pea			+		+		+	+	+	+			+	+	+	+								
<i>Daviesia brevifolia</i>	Leafless Bitter-pea			+		+	+			+	+			+		+	+								
<i>Dianella brevicaulis</i>	Short-stem Flax-lily			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Dianella revoluta var. revoluta</i>	Black-anther Flax-lily													+		+									
<i>Dichondra repens</i>	Kidney Weed																				+		+		
<i>Dillwynia hispida</i>	Red Parrot-pea																								
<i>Dillwynia sericea</i>	Showy Parrot-pea												+												
<i>Disphyma crassifolium ssp. clavellatum</i>	Round-leaf Pigface																								
<i>Diuris orientis</i>	Wallflower Donkey-orchid																								
<i>Dodonaea baueri</i>	Crinkled Hop-bush			+													+								
<i>Dodonaea hexandra</i>	Horned Hop-bush			+		+	+	+	+					+	+	+									
<i>Dodonaea humilis</i>	Dwarf Hop-bush									+							+			+					

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<i>Dodonaea viscosa ssp. angustissima</i>	Narrow-leaf Hop-bush												+			+				+	+	+			
<i>Drosera macrantha ssp. planchonii</i>	Climbing Sundew																								
<i>Einadia nutans ssp. nutans</i>	Climbing Saltbush																								
<i>Enchylaena tomentosa var. tomentosa</i>	Ruby Saltbush												+										+		+
<i>Epilobium billardierianum ssp. billardierianum</i>	Robust Willow-herb																								
<i>Eremophila behriana</i>	Rough Emubush			+																					
<i>Eremophila glabra ssp. glabra</i>	Tar Bush																								
<i>Eucalyptus albens</i>	White Box		R																						
<i>Eucalyptus albobpurpurea</i>	Purple-flowered Mallee Box				+	+	+	+	+	+	+	+	+	+	+	+									+
<i>Eucalyptus camaldulensis ssp.</i>	River Red Gum																								
<i>Eucalyptus cneorifolia</i>	Kangaroo Island Narrow-leaf Mallee			+		+		+	+				+	+	+	+	+								+
<i>Eucalyptus cosmophylla</i>	Cup Gum			+	+		+			+	+	+	+			+	+	+	+						
<i>Eucalyptus diversifolia ssp. diversifolia</i>	Coastal White Mallee			+	+		+	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+	+
<i>Eucalyptus fasciculosa</i>	Pink Gum		R																						
<i>Eucalyptus leptophylla</i>	Narrow-leaf Red Mallee										+														
<i>Eucalyptus leucoxylon ssp. leucoxylon</i>	South Australian Blue Gum																								
<i>Eucalyptus odorata</i>	Peppermint Box																								
<i>Eucalyptus phenax ssp. compressa</i>	Kangaroo Island Mallee		R												+										
<i>Eucalyptus rugosa</i>	Coastal White Mallee			+											+			+		+	+			+	+
<i>Euphrasia collina ssp. tetragona</i>	Coast Eyebright																						+		+
<i>Eutaxia diffusa</i>	Large-leaf Eutaxia			+												+	+								
<i>Eutaxia microphylla</i>	Common Eutaxia																					+			+
<i>Ficinia nodosa</i>	Knobby Club-rush																			+	+		+		
<i>Frankenia pauciflora var. gunnii</i>	Southern Sea-heath																								
<i>Gahnia trifida</i>	Cutting Grass										+		+												
<i>Geranium potentilloides var. potentilloides</i>	Downy Geranium																						+	+	
<i>Geranium sp.</i>	Geranium																								+
<i>Glischrocaryon behrii</i>	Golden Pennants						+		+	+	+					+	+	+							
<i>Glossodia major</i>	Purple Cockatoo																								
<i>Gonocarpus mezianus</i>	Broad-leaf Raspwort																								
<i>Goodenia blackiana</i>	Native Primrose																								
<i>Goodenia varia</i>	Sticky Goodenia			+																					
<i>Goodia medicaginea</i>	Western Golden-tip																						+	+	+

Species	Common Name	EPBC	SA	VV Site 1	VV Site 2	VV Site 3	VV Site 4	VV Site 5	VV Site 6	VV Site 7	VV Site 8	VV Site 9	VV Site 10	VV Site 11	VV Site 12	UU Site 1	UU Site 2	TT Site 1	TT Site 2	TT Site 3	TT Site 4	TT Site 5	SS3 Site 1	SS3 Site 2	SS2 Site 1
<i>Grevillea halmaturina</i> ssp. <i>halmaturina</i>	Prickly Grevillea		R	+		+	+			+		+	+	+	+	+	+								
<i>Grevillea ilicifolia</i> complex	Holly-leaf Grevillea																								
<i>Grevillea ilicifolia</i> ssp. <i>ilicifolia</i>	Holly-leaf Grevillea			+	+	+	+	+	+			+		+	+	+	+			+					
<i>Grevillea muricata</i>	Rough Spider-flower		R	+		+	+	+	+	+	+		+		+	+									
<i>Hakea mitchellii</i>	Heath Needlebush			+		+				+			+												
<i>Hakea rostrata</i>	Beaked Hakea									+	+						+		+						
<i>Hakea rugosa</i>	Dwarf Hakea			+																					
<i>Hardenbergia violacea</i>	Native Lilac			+		+		+	+	+										+		+		+	
<i>Hibbertia devitata</i>	Smooth Guinea-flower					+	+			+	+		+		+										
<i>Hibbertia empetrifolia</i> ssp. <i>radians</i>	Scrambling Guinea-flower														+	+									
<i>Hibbertia glebosa</i> ssp. <i>oblonga</i>	Oblong-leaf Guinea-flower		R																						
<i>Hibbertia paeninsularis</i>	Peninsula Guinea-flower																								
<i>Hibbertia pallidiflora</i>	Round-leaf Guinea-flower					+											+			+	+	+	+	+	
<i>Hibbertia platyphylla</i> ssp. <i>halmaturina</i>	Large Guinea-flower									+							+	+	+	+					
<i>Hibbertia riparia</i>	Bristly Guinea-flower			+	+	+	+	+	+	+		+	+	+	+	+	+		+	+	+	+			
<i>Hibbertia virgata</i>	Twiggy Guinea-flower									+															
<i>Hypolaena fastigiata</i>	Tassel Rope-rush									+							+	+	+						
<i>Isopogon ceratophyllus</i>	Horny Cone-bush						+								+										
<i>Juncus bufonius</i>	Toad Rush																								
<i>Juncus pallidus</i>	Pale Rush									+															
<i>Juncus subsecundus</i>	Finger Rush																								
<i>Kunzea pomifera</i>	Muntries																				+	+	+	+	
<i>Lachnagrostis billardierei</i> ssp. <i>billardierei</i>	Coast Blown-grass																					+			+
<i>Lachnagrostis filiformis</i>	Common Blown-grass																								
<i>Lasiopetalum baueri</i>	Slender Velvet-bush			+							+		+	+	+	+	+								
<i>Lasiopetalum behrii</i>	Pink Velvet-bush																								
<i>Lasiopetalum discolor</i>	Coast Velvet-bush																				+	+	+	+	
<i>Lasiopetalum schulzenii</i>	Drooping Velvet-bush			+	+	+	+	+	+	+		+			+	+	+				+	+	+	+	
<i>Lawrenca spicata</i>	Salt Lawrenca																								
<i>Leionema equestre</i>	Kangaroo Island Phebalium	EN	E							+															
<i>Lepidosperma canescens</i>	Hoary Rapier-sedge							+	+	+					+	+	+		+	+					
<i>Lepidosperma gladiatum</i>	Coast Sword-sedge																					+			+
<i>Lepidosperma viscidum</i>	Sticky Sword-sedge			+	+			+	+	+	+	+	+	+	+	+	+		+						
<i>Leptospermum continentale</i>	Prickly Tea-tree									+			+												
<i>Leptospermum myrsinoides</i>	Heath Tea-tree									+															
<i>Leucopogon concurrens</i>	Scrambling Beard-heath									+															
<i>Leucopogon parviflorus</i>	Coast Beard-heath				+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Leucopogon rufus</i>	Ruddy Beard-heath																+								

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<i>Leucopogon woodsii</i>	Nodding Beard-heath			+											+	+	+	+							
<i>Logania linifolia</i>	Flax-leaf Logania														+										
<i>Logania ovata</i>	Oval-leaf Logania			+												+					+				
<i>Lomandra micrantha ssp. micrantha</i>	Small-flower Mat-rush			+			+			+						+	+								
<i>Lythrum hyssopifolia</i>	Lesser Loosestrife																	+							
<i>Maireana oppositifolia</i>	Salt Bluebush																								
<i>Melaleuca acuminata ssp. acuminata</i>	Mallee Honey-myrtle																								
<i>Melaleuca brevifolia</i>	Short-leaf Honey-myrtle			+	+						+	+	+	+		+	+			+					
<i>Melaleuca gibbosa</i>	Slender Honey-myrtle			+		+	+			+	+		+		+	+	+	+	+	+					
<i>Melaleuca halmaturorum</i>	Swamp Paper-bark										+		+	+									+		+
<i>Melaleuca lanceolata</i>	Dryland Tea-tree			+			+	+	+					+		+	+			+	+	+	+	+	+
<i>Melaleuca uncinata</i>	Broombush			+	+		+	+	+	+	+	+	+	+	+	+	+	+		+					
<i>Micranthemum demissum</i>	Dwarf Micranthemum			+	+	+	+	+	+	+	+	+	+		+	+	+	+	+						
<i>Microtis arenaria</i>	Notched Onion-orchid																						+		+
<i>Muehlenbeckia adpressa</i>	Climbing Lignum										+	+					+		+	+		+	+	+	+
<i>Muehlenbeckia gunnii</i>	Coastal Climbing Lignum																+						+		
<i>Myoporum insulare</i>	Common Boobialla			+		+				+	+		+	+		+	+	+	+	+	+	+	+	+	+
<i>Olearia axillaris</i>	Coast Daisy-bush					+				+	+		+		+	+	+	+		+	+	+	+	+	+
<i>Olearia microdisca</i>	Small-flower Daisy-bush	EN	E																						
<i>Olearia ramulosa</i>	Twiggy Daisy-bush																			+					
<i>Olearia teretifolia</i>	Cypress Daisy-bush																								
<i>Orthrosanthus multiflorus</i>	Morning Flag			+						+	+					+	+				+	+	+	+	+
<i>Pelargonium sp.</i>	Storks-bill																					+			
<i>Petrophile multisepta</i>	Kangaroo Island Conesticks							+	+	+	+					+		+	+	+					
<i>Phyllanthus striaticaulis</i>	Southern Spurge							+	+																
<i>Phyllota pleurandroides</i>	Heathy Phyllota									+			+							+					
<i>Pimelea flava ssp. flava</i>	Yellow Riceflower							+	+				+			+	+								
<i>Pimelea glauca</i>	Smooth Riceflower													+		+	+			+	+				+
<i>Pimelea octophylla</i>	Woolly Riceflower															+									
<i>Pimelea serpyllifolia ssp. serpyllifolia</i>	Thyme Riceflower					+								+						+	+	+	+	+	+
<i>Pimelea stricta</i>	Erect Riceflower																					+		+	+
<i>Platysace heterophylla var. tepperi</i>	Kangaroo Island Platysace																	+							
<i>Poa halmaturina</i>	Kangaroo Island Poa																						+		
<i>Poa sp.</i>	Meadow-grass/Tussock-grass																			+			+		
<i>Pomaderris obcordata</i>	Wedge-leaf Pomaderris			+	+			+	+	+		+			+										
<i>Pomaderris paniculosa ssp. paniculosa</i>	Mallee Pomaderris																								+

Species	Common Name	EPBC	SA	VV Site 1	VV Site 2	VV Site 3	VV Site 4	VV Site 5	VV Site 6	VV Site 7	VV Site 8	VV Site 9	VV Site 10	VV Site 11	VV Site 12	UU Site 1	UU Site 2	TT Site 1	TT Site 2	TT Site 3	TT Site 4	TT Site 5	SS3 Site 1	SS3 Site 2	SS2 Site 1	
<i>Pomaderris paniculosa ssp. paralia</i>	Coast Pomaderris																									
<i>Prostanthera aspalathoides</i>	Scarlet Mintbush													+												
<i>Prostanthera chlorantha</i>	Green Mintbush		R																							
<i>Pterostylis nana</i>	Dwarf Greenhood																									
<i>Pterostylis sanguinea</i>	Blood Greenhood																									
<i>Pterostylis sp.</i>	Greenhood																									
<i>Puccinellia perlaxa</i>													+	+												
<i>Pultenaea acerosa</i>	Bristly Bush-pea			+		+	+	+	+	+	+		+	+	+	+	+									
<i>Pultenaea canaliculata</i>	Soft Bush-pea																				+	+				
<i>Pultenaea penna</i>	Feather Bush-pea																+									
<i>Pultenaea tenuifolia</i>	Narrow-leaf Bush-pea															+	+				+	+	+	+		
<i>Pultenaea teretifolia var. brachyphylla</i>	Short-leaf Bush-pea					+		+	+																	
<i>Pultenaea teretifolia var. teretifolia</i>	Terete-leaf Bush-pea																									
<i>Rhagodia candolleana ssp. candolleana</i>	Sea-berry Saltbush			+				+	+				+	+		+	+				+	+	+	+	+	+
<i>Rinzia ericea ssp. ericea</i>	Mat Heath-myrtle												+													
<i>Rinzia ericea ssp. insularis</i>	Island Heath-myrtle						+			+						+										
<i>Rytidosperma sp.</i>	Wallaby-grass			+	+	+		+	+	+	+			+	+	+				+			+			
<i>Salicornia quinqueflora ssp. quinqueflora</i>	Beaded Samphire						+							+												+
<i>Samolus repens</i>	Creeping Brookweed													+												
<i>Scaevola linearis ssp. confertifolia</i>	Bundled Fanflower			+		+		+	+	+					+	+	+									
<i>Schoenus sp.</i>	Bog-rush																									
<i>Senecio odoratus</i>	Scented Groundsel			+							+										+	+	+	+	+	
<i>Senecio quadridentatus</i>	Cotton Groundsel																									
<i>Senecio sp.</i>	Groundsel																									
<i>Spergularia marina</i>	Salt Sand-spurrey																									
<i>Sporobolus virginicus</i>	Salt Couch																									
<i>Spyridium eriocephalum var. glabrisepalum</i>	Macgillivray Spyridium	VU	E																							
<i>Spyridium halmaturinum</i>	Kangaroo Island Spyridium													+		+	+									
<i>Spyridium nitidum</i>	Shining Spyridium									+						+										
<i>Spyridium spathulatum</i>	Spoon-leaf Spyridium		R				+																			
<i>Stackhousia aspericocca ssp. cylindrical inflorescence</i>	Bushy Candles																							+		
<i>Stackhousia sp.</i>	Candles																									
<i>Stenanthera conostephioides</i>	Flame Heath			+		+	+	+	+	+					+											
<i>Styphelia exarrhena</i>	Desert Heath			+		+																				
<i>Suaeda australis</i>	Austral Seablite																									+

Species	Common Name	EPBC	SA	VV Site 1	VV Site 2	VV Site 3	VV Site 4	VV Site 5	VV Site 6	VV Site 7	VV Site 8	VV Site 9	VV Site 10	VV Site 11	VV Site 12	UU Site 1	UU Site 2	TT Site 1	TT Site 2	TT Site 3	TT Site 4	TT Site 5	SS3 Site 1	SS3 Site 2	SS2 Site 1	
<i>Tecticornia sp.</i>	Samphire																									+
<i>Templetonia retusa</i>	Cockies Tongue																+			+	+					
<i>Tetragonia implexicoma</i>	Bower Spinach																							+		+
<i>Thelymitra pauciflora</i>	Slender Sun-orchid																									
<i>Thomasia petalocalyx</i>	Paper-flower									+				+	+	+		+								
<i>Threlkeldia diffusa</i>	Coast Bonefruit																									+
<i>Thryptomene ericaea</i>	Heath Thryptomene			+	+	+	+			+		+	+	+	+	+	+									
<i>Thysanotus racemoides</i>	Rush Fringe-lily																	+								
<i>Triglochin striata</i>	Streaked Arrowgrass													+												
<i>Vittadinia australasica var. australasica</i>	Sticky New Holland Daisy						+																			
<i>Vittadinia gracilis</i>	Woolly New Holland Daisy														+								+	+		
<i>Westringia eremicola</i>	Slender Westringia																			+						
<i>Wilsonia rotundifolia</i>	Round-leaf Wilsonia																									
<i>Xanthorrhoea semiplana ssp. tateana</i>	Tate's Grass-tree		R	+		+	+	+	+	+						+	+	+	+	+	+					
<i>Zieria veronicea ssp. insularis</i>	Pink Zieria		R							+																
	TOTAL			61	22	43	34	41	41	77	41	23	53	49	52	69	68	30	34	54	45	42	42	31	36	

Exotic Species recorded at Sites GG Site 1 to WW Site 8

Species Name	Common Name	SA Declared	GG1 Site 1	GG1 Site 3	GG1 Site 4	GG1 Site 5	GG2 Site 1	GG2 Site 2	GG2 Site 3	GJC	XX2 Site 1	XX2 Site 2	XX2 Site 3	XX1 Site 1	XX1 Site 2	XX1 Site 3	WW Site 1	WW Site 2	WW Site 3	WW Site 4	WW Site 5	WW Site 6	WW Site 7	WW Site 8
<i>Acacia cyclops</i>	Western Coastal Wattle			+			+																	
<i>Acacia longifolia</i> ssp. <i>longifolia</i>	Sallow Wattle			+	+	+	+	+	+			+		+	+	+								
<i>Aira</i> sp.	Hair-grass		+	+	+				+		+		+			+		+						
<i>Arctotheca calendula</i>	Cape Weed		+		+	+	+			+	+			+						+		+		
<i>Argyranthemum frutescens</i> ssp. <i>frutescens</i>	Marguerite Daisy																							
<i>Asparagus asparagoides</i> f. <i>asparagoides</i>	Bridal Creeper	Yes	+	+	+	+	+	+	+	+			+	+	+	+	+	+	+	+		+	+	+
<i>Asparagus declinatus</i>	Bridal veil	Yes										+	+											
<i>Asphodelus fistulosus</i>	Onion Weed						+						+				+					+		
<i>Atriplex prostrata</i>	Creeping Saltbush									+			+									+		
<i>Avena barbata</i>	Bearded Oat		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Briza maxima</i>	Large Quaking-grass			+								+			+							+		
<i>Briza minor</i>	Lesser Quaking-grass		+							+	+	+	+	+								+		+
<i>Bromus diandrus</i>	Great Brome		+		+	+	+	+	+	+		+	+	+	+		+	+	+	+		+	+	+
<i>Bromus hordeaceus</i> ssp. <i>hordeaceus</i>	Soft Brome				+		+			+	+		+	+	+					+	+	+	+	+
<i>Carduus tenuiflorus</i>	Slender Thistle												+											
<i>Catapodium rigidum</i>	Rigid Fescue							+									+					+	+	
<i>Cenchrus clandestinus</i>	Kikuyu					+			+	+			+						+	+				+
<i>Cerastium</i> sp.	Chickweed												+											
<i>Cotula coronopifolia</i>	Water Buttons													+										
<i>Cynodon dactylon</i> var. <i>dactylon</i>	Couch				+									+										+
<i>Cynosurus echinatus</i>	Rough Dog's-tail Grass							+	+															
<i>Dactylis glomerata</i>	Cocksfoot						+	+																
<i>Diplotaxis tenuifolia</i>	Lincoln Weed																							
<i>Dipogon lignosus</i>	Lavatory Creeper																							
<i>Echium plantagineum</i>	Salvation Jane	Yes															+							
<i>Ehrharta calycina</i>	Perennial Veldt Grass		+	+	+	+	+	+	+			+		+	+	+	+	+	+				+	+
<i>Ehrharta longiflora</i>	Annual Veldt Grass								+			+												
<i>Erodium moschatum</i>	Musky Herons-bill						+	+																
<i>Eucalyptus</i> sp.																								
<i>Euphorbia peplus</i>	Petty Spurge																							
<i>Foeniculum vulgare</i>	Fennel																							
<i>Freesia cultivar</i>	Freesia		+	+	+					+	+	+	+									+		
<i>Geranium molle</i> var. <i>molle</i>	Soft Geranium												+											
<i>Holcus</i> sp.	Fog				+																			
<i>Hordeum vulgare</i>	Barley							+		+		+					+		+	+				

Species Name	Common Name	SA Declared	GG1 Site 1	GG1 Site 3	GG1 Site 4	GG1 Site 5	GG2 Site 1	GG2 Site 2	GG2 Site 3	GJC	XX2 Site 1	XX2 Site 2	XX2 Site 3	XX1 Site 1	XX1 Site 2	XX1 Site 3	WW Site 1	WW Site 2	WW Site 3	WW Site 4	WW Site 5	WW Site 6	WW Site 7	WW Site 8
<i>Hypochaeris radicata</i>	Rough Cat's Ear		+	+	+							+				+	+	+						
<i>Kickxia elatine ssp. elatine</i>	Woolly Toadflax									+														
<i>Lactuca sp.</i>	Lettuce										+	+		+		+				+				
<i>Lagurus ovatus</i>	Hare's Tail Grass			+	+	+	+	+	+	+		+	+	+	+	+	+	+	+		+		+	+
<i>Leontodon rhaodioides</i>	Cretan Weed																							
<i>Limonium companyonis</i>	Sea-lavender																					+		
<i>Lolium sp.</i>	Ryegrass		+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		+	+	+	+
<i>Lycium ferocissimum</i>	African Boxthorn	Yes																						
<i>Lysimachia arvensis</i>	Pimpernel			+	+		+			+	+		+	+		+								
<i>Malva parviflora</i>	Small-flower Marshmallow										+													
<i>Malva sp.</i>	Mallow														+									
<i>Marrubium vulgare</i>	Horehound	Yes																						
<i>Medicago sp.</i>	Medic		+	+	+	+			+	+			+	+		+	+	+		+	+		+	+
<i>Melaleuca armillaris ssp. armillaris</i>	Bracelet Honey-myrtle			+																				
<i>Oenothera stricta ssp. stricta</i>	Common Evening Primrose				+																			
<i>Oxalis pes-caprae</i>	Soursob		+	+		+	+		+															
<i>Parapholis incurva</i>	Curly Ryegrass							+		+	+		+			+				+			+	
<i>Phalaris aquatica</i>	Phalaris								+					+	+		+	+						
<i>Phalaris sp.</i>	Canary Grass						+					+	+							+				
<i>Picnomon acarna</i>	Soldier Thistle																							
<i>Pinus sp.</i>	Pine																							
<i>Piptatherum miliaceum</i>	Rice Millet								+											+	+			
<i>Pittosporum undulatum</i>	Sweet Pittosporum	Yes																		+				
<i>Plantago albicans</i>																				+				
<i>Plantago coronopus ssp. commutata</i>	Bucks-horn Plantain																					+		
<i>Plantago coronopus ssp. coronopus</i>	Bucks-horn Plantain									+												+		
<i>Plantago lanceolata var. lanceolata</i>	Ribwort															+								
<i>Plantago lanceolata var. lanceolata</i>	Ribwort			+	+	+	+		+	+			+	+			+	+	+				+	+
<i>Polygala myrtifolia</i>	Myrtle-leaf Milkwort					+						+								+				
<i>Polygonum sp.</i>	Knotweed																							
<i>Polypogon sp.</i>	Beard-grass									+			+							+				
<i>Romulea rosea var. australis</i>	Common Onion-grass		+									+												
<i>Rostraria cristata</i>	Annual Cat's-tail																					+		+
<i>Rostraria sp.</i>	(blank)																							

Species Name	Common Name	SA Declared	GG1 Site 1	GG1 Site 3	GG1 Site 4	GG1 Site 5	GG2 Site 1	GG2 Site 2	GG2 Site 3	GJC	XX2 Site 1	XX2 Site 2	XX2 Site 3	XX1 Site 1	XX1 Site 2	XX1 Site 3	WW Site 1	WW Site 2	WW Site 3	WW Site 4	WW Site 5	WW Site 6	WW Site 7	WW Site 8
<i>Rumex sp.</i>	Dock								+	+														
<i>Scabiosa atropurpurea</i>	Pincushion		+		+	+				+	+									+		+		+
<i>Schinus molle</i>	Pepper-tree								+															
<i>Senecio pterophorus</i>	African Daisy				+				+									+		+				
<i>Solanum nigrum</i>	Black Nightshade																							
<i>Sonchus asper ssp.</i>	Rough Sow-thistle													+										
<i>Sonchus oleraceus</i>	Common Sow-thistle		+		+		+			+		+	+	+	+		+			+				
<i>Sparaxis sp.</i>	Sparaxis			+																				
<i>Sporobolus africanus</i>	Rat-tail Grass				+				+				+	+								+		
<i>Stachys arvensis</i>	Stagger Weed																							
<i>Thinopyrum elongatum</i>	Tall Wheat-grass												+											
<i>Trifolium arvense var. arvense</i>	Hare's-foot Clover												+							+				
<i>Trifolium glomeratum</i>	Cluster Clover									+				+										
<i>Urospermum picroides</i>	False Hawkbit																							
<i>Vulpia sp.</i>	Fescue		+	+			+		+	+	+	+		+			+	+		+	+		+	

Exotic Species recorded at Sites VV Site 1 to SS2 Site 1

Species Name	Common Name	SA Declared	VV Site 1	VV Site 2	VV Site 3	VV Site 4	VV Site 5	VV Site 6	VV Site 7	VV Site 8	VV Site 9	VV Site 10	VV Site 11	VV Site 12	UU Site 1	UU Site 2	TT Site 1	TT Site 2	TT Site 3	TT Site 4	TT Site 5	SS3 Site 1	SS3 Site 2	SS2 Site 1
<i>Acacia cyclops</i>	Western Coastal Wattle											+	+			+	+		+			+	+	+
<i>Acacia longifolia ssp. longifolia</i>	Sallow Wattle		+									+			+		+	+	+		+			
<i>Aira sp.</i>	Hair-grass								+				+						+	+		+	+	
<i>Arctotheca calendula</i>	Cape Weed																							
<i>Argyranthemum frutescens ssp. frutescens</i>	Marguerite Daisy																					+		+
<i>Asparagus asparagoides f. asparagoides</i>	Bridal Creeper	Yes	+	+		+	+	+	+	+	+	+		+	+	+	+	+		+	+	+	+	+
<i>Asparagus declinatus</i>	Bridal veil	Yes	+				+	+											+					
<i>Asphodelus fistulosus</i>	Onion Weed																+	+	+	+	+	+	+	+
<i>Atriplex prostrata</i>	Creeping Saltbush					+							+											
<i>Avena barbata</i>	Bearded Oat		+	+	+	+			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Briza maxima</i>	Large Quaking-grass		+																				+	
<i>Briza minor</i>	Lesser Quaking-grass			+		+					+	+												
<i>Bromus diandrus</i>	Great Brome					+	+	+	+	+		+	+		+		+	+	+		+	+		+
<i>Bromus hordeaceus ssp. hordeaceus</i>	Soft Brome			+					+	+	+				+	+	+	+	+		+	+	+	+
<i>Carduus tenuiflorus</i>	Slender Thistle																							
<i>Catapodium rigidum</i>	Rigid Fescue		+	+	+						+	+			+	+					+	+	+	
<i>Cenchrus clandestinus</i>	Kikuyu								+			+			+	+		+						
<i>Cerastium sp.</i>	Chickweed																							
<i>Cotula coronopifolia</i>	Water Buttons																							
<i>Cynodon dactylon var. dactylon</i>	Couch																	+						
<i>Cynosurus echinatus</i>	Rough Dog's-tail Grass																				+			
<i>Dactylis glomerata</i>	Cocksfoot																							
<i>Diplotaxis tenuifolia</i>	Lincoln Weed																		+		+	+		+
<i>Dipogon lignosus</i>	Lavatory Creeper						+	+																
<i>Echium plantagineum</i>	Salvation Jane	Yes																						
<i>Ehrharta calycina</i>	Perennial Veldt Grass		+						+	+			+		+	+	+	+	+					
<i>Ehrharta longiflora</i>	Annual Veldt Grass																		+		+	+		+
<i>Erodium moschatum</i>	Musky Herons-bill																							
<i>Eucalyptus sp.</i>										+														+
<i>Euphorbia peplus</i>	Petty Spurge																				+	+		+
<i>Foeniculum vulgare</i>	Fennel																				+	+	+	+
<i>Freesia cultivar</i>	Freesia												+				+							
<i>Geranium molle var. molle</i>	Soft Geranium																							
<i>Holcus sp.</i>	Fog																							
<i>Hordeum vulgare</i>	Barley																							
<i>Hypochaeris radicata</i>	Rough Cat's Ear								+								+	+	+				+	
<i>Kickxia elatine ssp. elatine</i>	Woolly Toadflax																+				+		+	

Species Name	Common Name	SA Declared	VV Site 1	VV Site 2	VV Site 3	VV Site 4	VV Site 5	VV Site 6	VV Site 7	VV Site 8	VV Site 9	VV Site 10	VV Site 11	VV Site 12	UU Site 1	UU Site 2	TT Site 1	TT Site 2	TT Site 3	TT Site 4	TT Site 5	SS3 Site 1	SS3 Site 2	SS2 Site 1
<i>Lactuca sp.</i>	Lettuce					+			+			+		+				+				+		+
<i>Lagurus ovatus</i>	Hare's Tail Grass		+		+				+	+			+	+	+	+	+	+	+	+	+	+	+	+
<i>Leontodon rhagadioloides</i>	Cretan Weed																					+		
<i>Limonium companyonis</i>	Sea-lavender											+					+	+				+		+
<i>Lolium sp.</i>	Ryegrass		+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+			+	+	+
<i>Lycium ferocissimum</i>	African Boxthorn	Yes																						+
<i>Lysimachia arvensis</i>	Pimpernel															+	+	+	+	+		+	+	+
<i>Malva parviflora</i>	Small-flower Marshmallow								+			+				+						+		+
<i>Malva sp.</i>	Mallow																							
<i>Marrubium vulgare</i>	Horehound	Yes																						+
<i>Medicago sp.</i>	Medic						+			+		+	+											
<i>Melaleuca armillaris ssp. armillaris</i>	Bracelet Honey-myrtle																							
<i>Oenothera stricta ssp. stricta</i>	Common Evening Primrose																					+		
<i>Oxalis pes-caprae</i>	Soursob																							
<i>Parapholis incurva</i>	Curly Ryegrass						+						+	+		+		+	+				+	+
<i>Phalaris aquatica</i>	Phalaris						+						+	+										
<i>Phalaris sp.</i>	Canary Grass		+		+	+	+	+	+	+		+	+	+	+	+		+						
<i>Picnemon acarna</i>	Soldier Thistle																							+
<i>Pinus sp.</i>	Pine								+												+			
<i>Piptatherum miliaceum</i>	Rice Millet			+							+							+						
<i>Pittosporum undulatum</i>	Sweet Pittosporum	Yes																						
<i>Plantago albicans</i>																								
<i>Plantago coronopus ssp. commutata</i>	Bucks-horn Plantain																							
<i>Plantago coronopus ssp. coronopus</i>	Bucks-horn Plantain																							
<i>Plantago lanceolata var. lanceolata</i>	Ribwort															+								
<i>Plantago lanceolata var. lanceolata</i>	Ribwort		+	+					+	+	+	+			+		+	+				+		
<i>Polygala myrtifolia</i>	Myrtle-leaf Milkwort																							
<i>Polygonum sp.</i>	Knotweed																							
<i>Polypogon sp.</i>	Beard-grass			+		+			+	+	+	+										+		
<i>Romulea rosea var. australis</i>	Common Onion-grass																							
<i>Rostraria cristata</i>	Annual Cat's-tail																							
<i>Rostraria sp.</i>	(blank)			+					+	+	+	+		+	+	+				+	+	+	+	+
<i>Rumex sp.</i>	Dock																							
<i>Scabiosa atropurpurea</i>	Pincushion		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+			+	+	+
<i>Schinus molle</i>	Pepper-tree																							
<i>Senecio pterophorus</i>	African Daisy																							

Species Name	Common Name	SA Declared	VV Site 1	VV Site 2	VV Site 3	VV Site 4	VV Site 5	VV Site 6	VV Site 7	VV Site 8	VV Site 9	VV Site 10	VV Site 11	VV Site 12	UU Site 1	UU Site 2	TT Site 1	TT Site 2	TT Site 3	TT Site 4	TT Site 5	SS3 Site 1	SS3 Site 2	SS2 Site 1
<i>Solanum nigrum</i>	Black Nightshade																					+	+	
<i>Sonchus asper ssp.</i>	Rough Sow-thistle																							
<i>Sonchus oleraceus</i>	Common Sow-thistle					+			+	+		+		+	+	+	+						+	+
<i>Sparaxis sp.</i>	Sparaxis																							
<i>Sporobolus africanus</i>	Rat-tail Grass											+				+								
<i>Stachys arvensis</i>	Stagger Weed		+																					
<i>Thinopyrum elongatum</i>	Tall Wheat-grass																							
<i>Trifolium arvense var. arvense</i>	Hare's-foot Clover					+							+			+								
<i>Trifolium glomeratum</i>	Cluster Clover																							
<i>Urospermum picroides</i>	False Hawkbit																					+		+
<i>Vulpia sp.</i>	Fescue		+		+	+				+		+	+		+	+	+	+	+	+	+	+		+