Native Vegetation Clearance

Ten Trees Lagoon Road, Menzies

Data Report

Clearance under the *Native Vegetation Regulations 2017*

30th August, 2022

Prepared by Michelle Haby

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1. Application information

Application Details

Applicant:	Kangaroo Island Council		
Key contact:			
Landowner:	Kangaroo Island Council		
Site Address:	Ten Trees Lagoon Road, Kingscote SA 5223		
Local Government Area:	Kangaroo Island	Hundred:	Menzies
Title ID:	Road Reserve	Parcel ID	Road Reserve

Summary of proposed clearance

Purpose of clearance	Clearance required for the upgrade and sealing of Ten Trees Lagoon Road.
Native Vegetation Regulation	Regulation 12, Schedule 1; clause 34, Infrastructure
Description of the vegetation under application	4.70 ha of Narrow-leaf Mallee (*Eucalyptus cneorifolia*) Woodland in poor degraded condition.
Total proposed clearance - area (ha) and number of trees	32 scattered trees are proposed to be cleared.
Level of clearance	Level 4
Overlay (Planning and Design Code)	Native Vegetation Overlay
Map of proposed clearance area	
Mitigation hierarchy	Avoidance is not possible as the trees are growing too close to the carriageway. Where possible, trees will be pollarded to minimise the number that are totally cleared.
SEB Offset proposal	Payment of $44,230.76 or 65.10 points on-ground

2. Purpose of clearance

2.1 Description

Ten Trees Lagoon Road has been identified as a Priority Freight Route during the recent assessment process for the 2030 Regional Roads Transport Plan of the Southern and Hills Local Government Association (LGA) Region. It is proposed to upgrade the road from an unsealed surface to a sealed surface and increase the width from the current 7m to 10.2m to ensure the safe passage of the increasing volume of traffic. To achieve this outcome 32 scattered trees will need to be cleared.

2.2 Background

Ten Trees Lagoon Road, Kingscote runs north south between North Coast Road and Playford Highway and lies within a one chain road reserve. The road was created in the early days of settlement on Kangaroo Island and until recent times was considered a minor road with low levels of traffic.

It has now become a major freight route for the movement of road construction materials from a quarry on North Coast Road to major projects such as the installation of the new desalination plant at Penneshaw and associated pipe works.

The road has not been constructed to the standard required for the safe passage of a high number of heavy vehicles. It is therefore proposed to upgrade the road to ensure that it can withstand the extra heavy vehicle traffic and the general public.

2.3 General location map

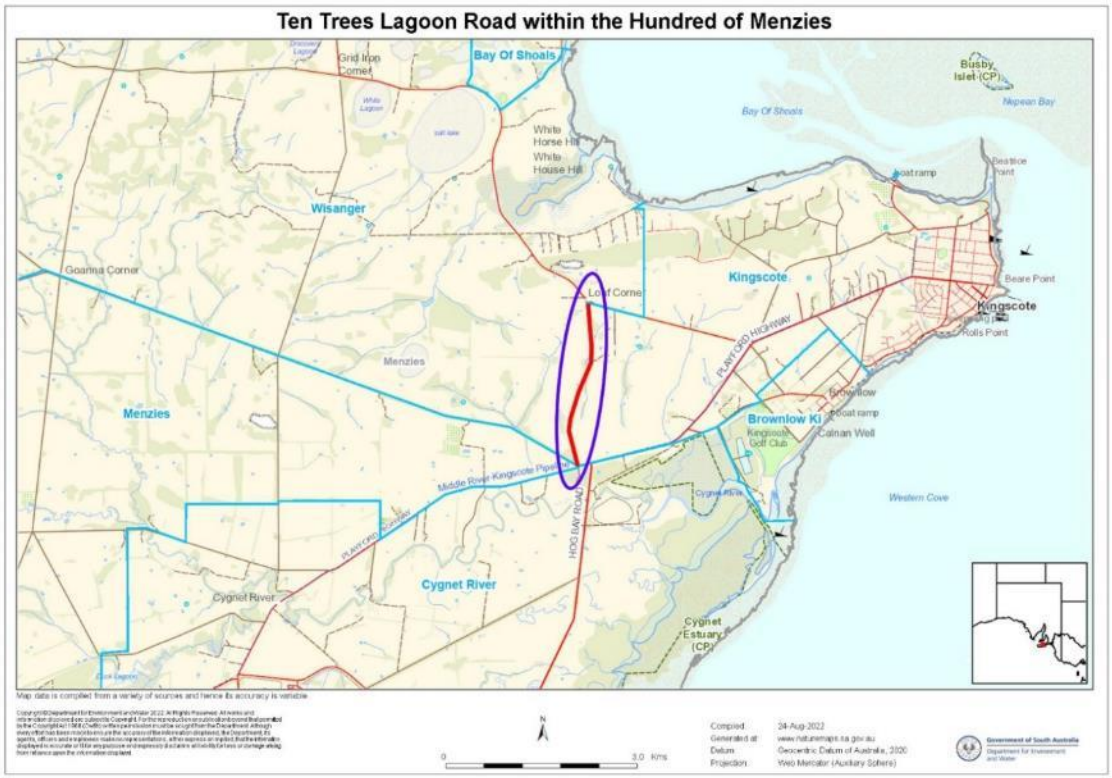

Figure 1. Location of Ten Trees Lagoon Road within the Hundred of Menzies (Scale 1:72,224)

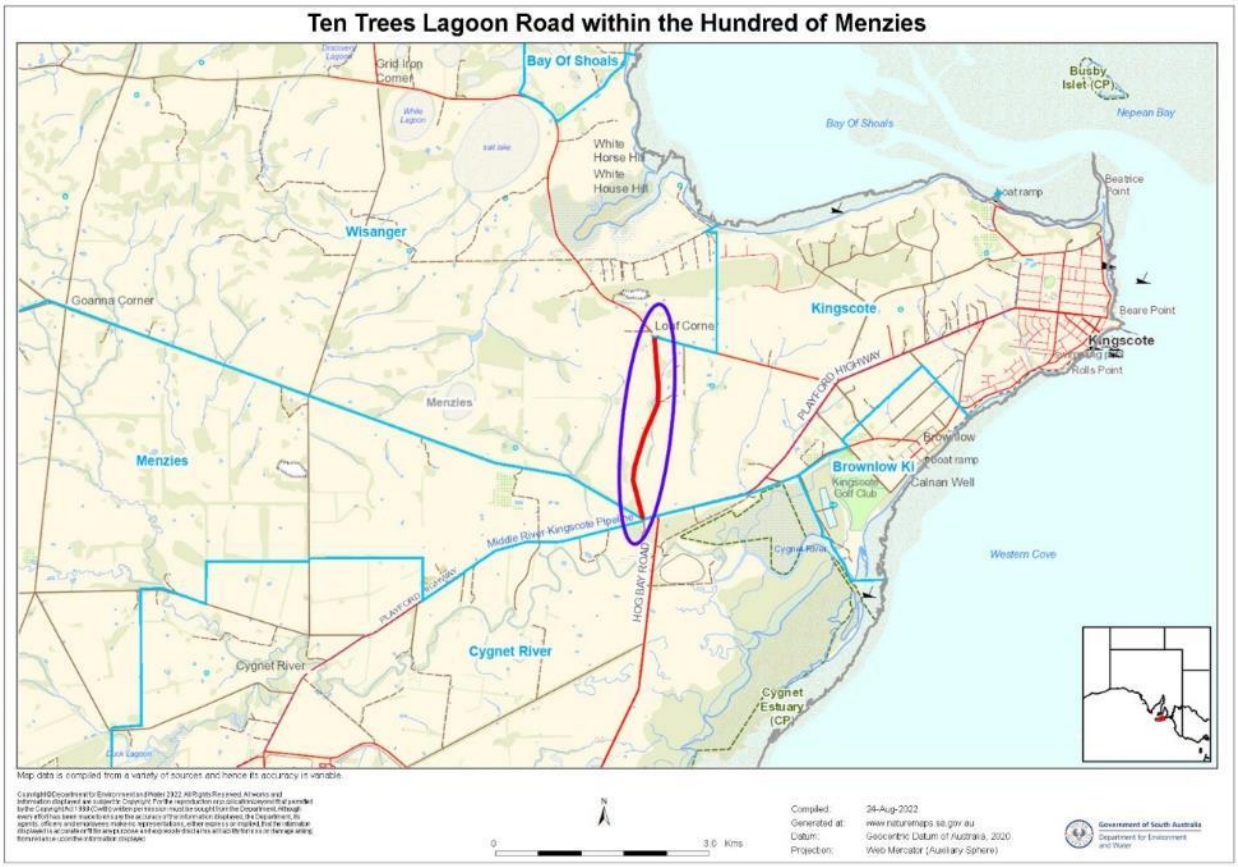

Figure 2. Ten Trees Lagoon Road within Kingscote/Wisanger. (Scale 1:36,112)

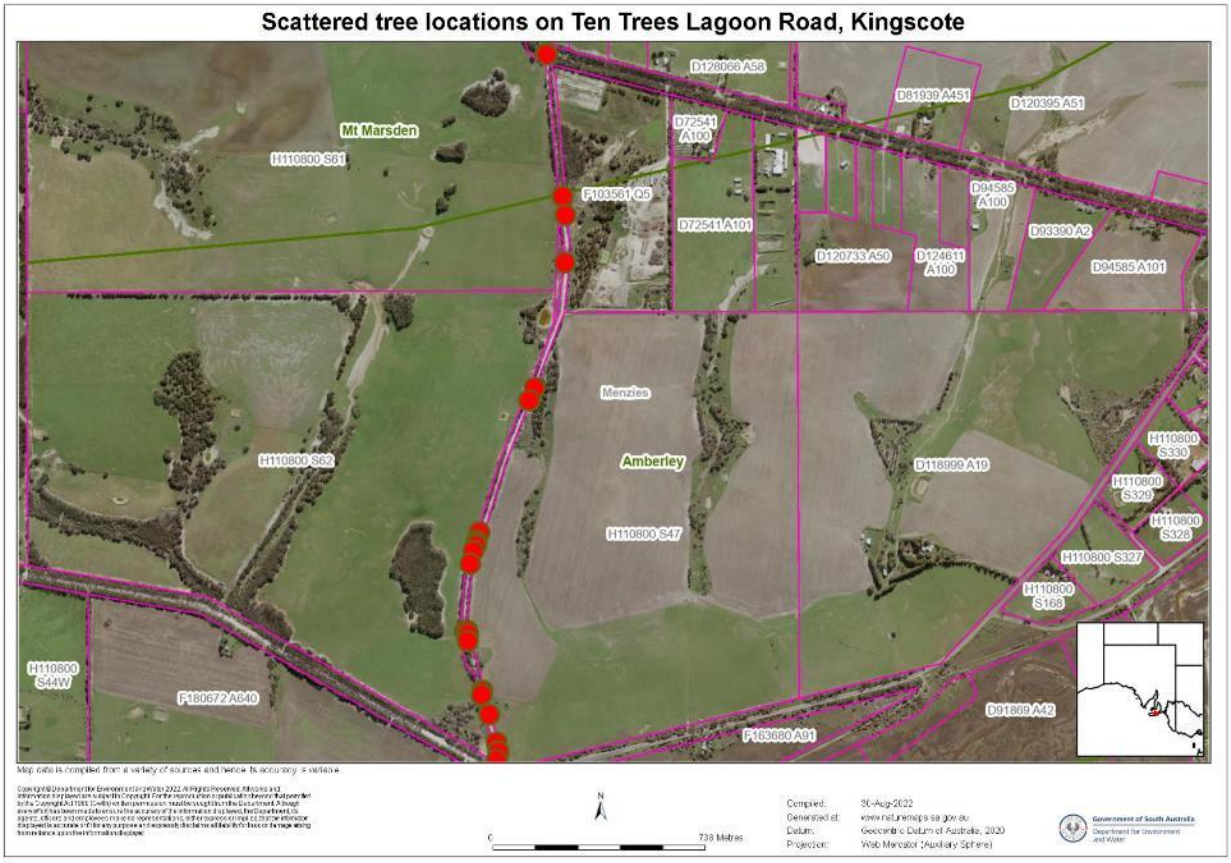

Figure 3. Location of scattered trees on Ten Trees Lagoon Road, Kingscote (Scale 1:18,056)

2.4 Details of the proposal

A multitude of major construction projects are currently underway with more planned for the near future. Most of these projects require basaltic material (metal) for road base, fill and concrete amongst other applications. Ten Trees Lagoon Road has become a major route for the transport of this metal to the eastern parts of Kangaroo Island. Currently 50,000 ton is being carted along the road and this tonnage is set to increase. Due to this, the recent review of roads by the Southern and Hills LGA Region identified this road as being a priority 2 road in need of upgrading.

Currently the road is 7m wide and constructed from compressed limestone marl. It is proposed to widen the carriageway to 10.2m and seal the road to create a safe and durable all-weather road that is capable of withstanding the increased weight and traffic. To achieve this outcome, new longer culverts will be installed to improve drainage and the road will be built up with suitable substrate in preparation for the seal. The upgraded road will be a 7m sealed road with 1m shoulders on either side (Figure 4). As the road needs to be built up the edges will be battered down to the natural ground level. Vegetation 2m beyond the edge of the shoulder will be trimmed as per Standard Operating Procedures for roadside vegetation management.

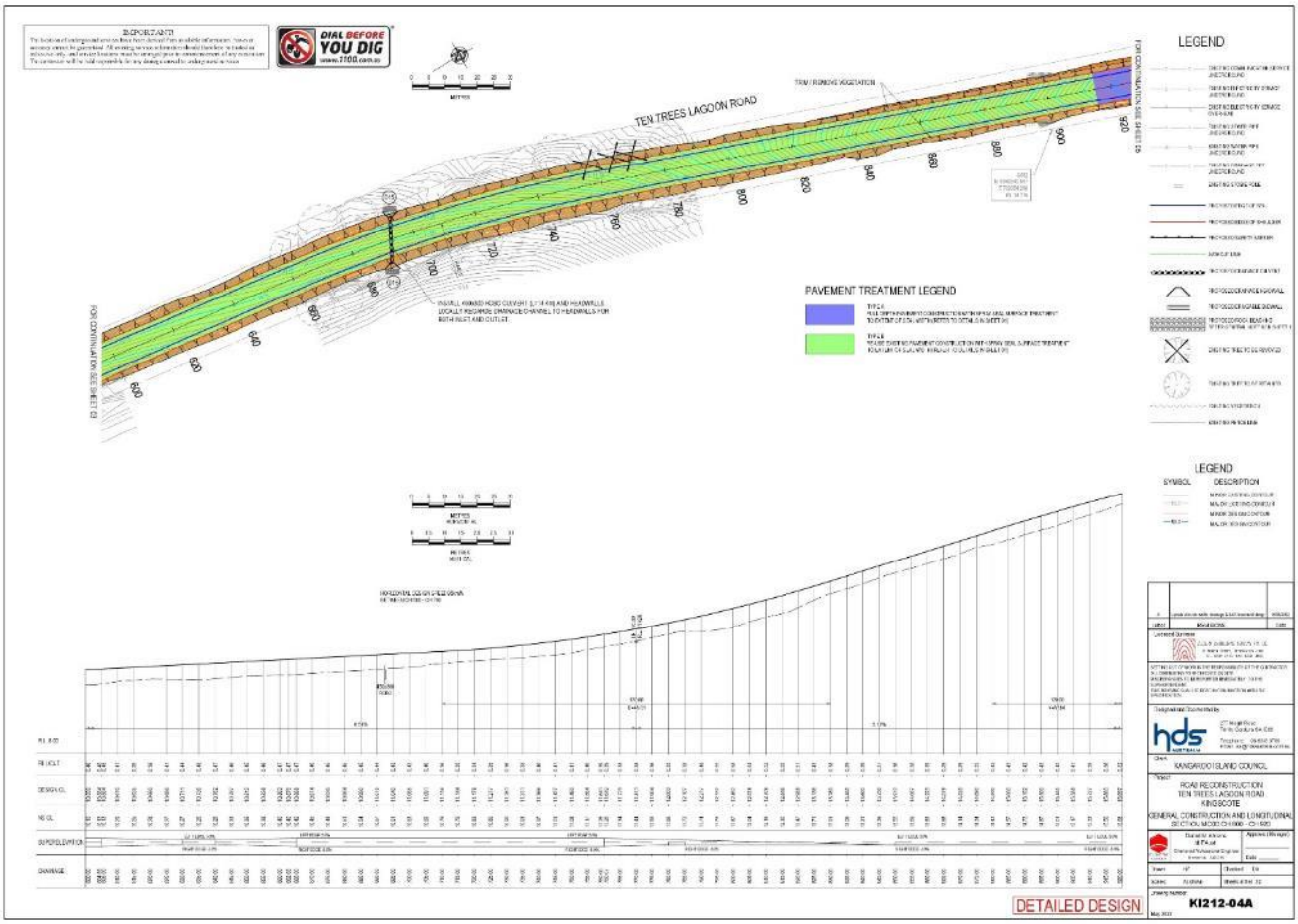

Figure 4. Example of design drawings for the road upgrade of Ten Trees Lagoon Road, Hundred of Menzies. Black crosses indicate trees that are marked for removal.

Where possible the assessed trees will be pollarded rather than removed if they are within the maintenance zone and will not pose a safety risk to road users.

2.5 Approvals **required** ***or*** **obtained**

This project does not require any further approvals

2.6 Native Vegetation Regulation

This proposal falls under Regulation 12, Schedule 1; clause 34, Infrastructure is for the upgrading of Ten Trees Lagoon Road.

Regulation 12(34) - Infrastructure
To allow clearance of vegetation incidental to the construction or expansion of a building or infrastructure (and associated services) where the Minister has declared that the clearance is in the public interest.

2.7 Development Application information (if applicable)

Ten Trees Lagoon Road is located within a Rural Zone and the Kangaroo Island subzone. The Native Vegetation and Medium Bushfire Risk Overlays apply.

3. Method

3.1 Flora assessment

The scattered trees proposed to be cleared for the upgrade of Ten Trees Lagoon Road was assessed on 16 August 2022. The flora was assessed using standard assessment techniques consisting of-

- A Scattered Tree Assessment was undertaken on 32 native trees
- Nationally Threatened, State Listed or Regionally Significant plant species populations were identified and their location recorded with a hand-held GPS to an accuracy of <5m;
- Proclaimed introduced plant species populations were identified and their location recorded with a hand-held GPS to an accuracy of <5m; and
- Survey data relating to records of Nationally Threatened, State Listed or Regionally Significant plant species was recorded, following BDBSA Minimum Data Standards, and provided to BDBSA for uploading.

Appendix 3 contains the flora list for the trees.

3.2 Fauna assessment

The potential fauna to occur within the road reserve along Ten Trees Road, Menzies was determined utilising the following-

- Fauna recorded within 5km of the site;
- Observations of fauna including, tracks and traces, while undertaking the flora assessment.

The comprehensive list from above was then added to the Bushland Assessment Spreadsheets, Appendix 1.

The roadside vegetation is in a degraded and weedy state due to the narrowness of the strip and historic disturbance events. Due to this, it provides limited habitat for threatened fauna species or a safe corridor for wildlife movement.

The proposed clearance will have minimal impact on the quality of the remnant, so it was not felt that a targeted fauna assessment was required.

4. Assessment Outcomes

4.1 Vegetation Assessment

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

The land surrounding Ten Trees Lagoon Road contains undulating hills that are dissected by several seasonal creeklets that drain into shallow depressions. This land was largely cleared for agricultural purposes during the early days of settlement on Kangaroo Island and as a result many of these depressions have turned brackish. Ten Trees Lagoon is one such area with the "ten trees" that gave the lagoon its name now only represented by dead trunks.

The remnant vegetation within the area is largely represented by thin linear strips along the watercourses, along the edges of paddocks and along the road reserve. These patches are mostly in poor condition due to their narrowness, lack of ecological disturbance, historic clearance events and invasion by proclaimed weeds such as *Asparagus asparagoides f. asparagoides*.

A few larger remnant patches remain in the landscape. These are mostly comprised of *Eucalyptus cneorifolia* mallee forest over *Melaleuca uncinata* and *Rhagodia candolleana ssp. candolleana* shrubs. This ecological community is listed as Endangered under the *EPBC Act* 1999. The remnant vegetation within the road reserve along Ten Trees Lagoon Road is consistent with this vegetation community. Like most of the thin strips in the area, it is in a highly degraded state. Historic clearance and more recent trimming for road safety has allowed for the infestation of many pasture grasses and other weeds. The patch is in a state of decline and does not meet the criteria for protection under the *EPBC Act*.

There are few protected areas in the vicinity of Ten Trees Lagoon Road. The closest is the Cygnet Estuary Conservation Park which is less than 1km from the south-eastern end of the road, however this contains a very different vegetation community. Heritage Agreement 895 lies 6km to the north-west of the northern end of the road and contains a similar species composition.

Patches of remnant vegetation are important in fragmented landscapes as they act as corridors for wildlife movement and provide refuges for fauna to take cover in. Due to the narrowness and degraded state of the vegetation along Ten Trees Lagoon Road, it is unlikely that it is providing many ecological services to native fauna species.

The *Eucalyptus cneorifolia* trees under assessment are mostly in good condition, however the *Eucalyptus phenax ssp. compressa* trees are mostly in poor health. They are providing limited habitat for fauna species.

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

Tree ID - Tree 1	
Eucalyptus cneorifolia	
1	
Height (m) – 6	
Hollows – 0	
Diameter (cm) – 22	
Canopy dieback (%) – 10	
Total Biodiversity Score – 1.11	
Direction: 246° **Latitude:** 35° 40′ 40.81″ S **Longitude:** 137° 34′ 14.98″ E	
Medium multi-stemmed mallee in good condition. The roadside of the tree has recently been pruned. It is not providing habitat for threatened species.	

Tree ID - Tree 2	
Eucalyptus cneorifolia	
1	
Height (m) – 6	
Hollows – 0	
Diameter (cm) – 41	
Canopy dieback (%) – 15	
Total Biodiversity Score – 2.10	
Direction: 155° **Latitude:** 35° 40′ 39.89″ S **Longitude:** 137° 34′ 15.22″ E	
Medium multi-stemmed mallee in good condition. It is not providing habitat for threatened species.	

Tree ID - Tree 3 *Eucalyptus cneorifolia* 1 Height (m) – 2 Hollows – 0 Diameter (cm) – 8 Canopy dieback (%) – 10 Total Biodiversity Score – 0.25	
Direction: 61° **Latitude:** 35° 40′ 39.81″ S **Longitude:** 137° 34′ 15.17″ E	
Small multi-stemmed mallee that has fallen over, but in good condition. It is not providing habitat for threatened species.	

Tree ID - Tree 4 *Eucalyptus cneorifolia* 3 Height (m) – 7 Hollows – 0 Diameter (cm) – 33 Canopy dieback (%) – 15 Total Biodiversity Score – 6.24	
Direction: 282° **Latitude:** 35° 40′ 38.85″ S **Longitude:** 137° 34′ 14.94″ E	
Small clump of medium sized mallees in good condition. It is not providing habitat for threatened species.	

Tree ID - Tree 5 *Eucalyptus cneorifolia* 1 Height (m) – 6 Hollows – 0 Diameter (cm) – 35 Canopy dieback (%) – 5 Total Biodiversity Score – 2.03	
Direction: 165° **Latitude:** 35° 40′ 35.72″ S **Longitude:** 137° 34′ 13.93″ E	
Medium mallee in good condition. The roadside of the tree has previously been pruned. It is not providing habitat for threatened species.	

Tree ID - Tree 6 *Eucalyptus cneorifolia* 1 Height (m) – 9 Hollows – 0 Diameter (cm) – 32.5 Canopy dieback (%) – 10 Total Biodiversity Score – 3.44	
Direction: 268° **Latitude:** 35° 40′ 33.50″ S **Longitude:** 137° 34′ 12.89″ E	
Tall multi-stemmed mallee in good condition. It is not providing habitat for threatened species.	

Tree ID - Tree 7 *Eucalyptus cneorifolia* 1 Height (m) – 7 Hollows – 0 Diameter (cm) – 44 Canopy dieback (%) – 50 Total Biodiversity Score – 1.44	
Direction: 150° **Latitude:** 35° 40′ 33.11″ S **Longitude:** 137° 34′ 13.01″ E	
Tall sized mallee in poor condition with considerable dieback. It is not providing habitat for threatened species.	

Tree ID - Tree 8 *Eucalyptus cneorifolia* 1 Height (m) – 5 Hollows – 0 Diameter (cm) – 21.5 Canopy dieback (%) – 10 Total Biodiversity Score – 0.63	
Direction: 340° **Latitude:** 35° 40′ 33.02″ S **Longitude:** 137° 34′ 12.95″ E	
Medium sized mallee in good condition. One of the trunks has previously been pruned off. It is not providing habitat for threatened species.	

Tree ID - Tree 9	
Eucalyptus phenax ssp. compressa	
1	
Height (m) – 11	
Hollows – 0	
Diameter (cm) – 63.5	
Canopy dieback (%) – 80	
Total Biodiversity Score – 2.59	
Direction: 259° **Latitude:** 35° 40′ 27.51″ S **Longitude:** 137° 34′ 10.97″ E	
Very tall mallee in very poor condition. The lower limbs have previously been pruned for road safety. It is not providing habitat for threatened species.	

Tree ID - Tree 10	
Eucalyptus phenax ssp. compressa	
1	
Height (m) – 9	
Hollows – 0	
Diameter (cm) – 86	
Canopy dieback (%) – 30	
Total Biodiversity Score – 6.30	
Direction: 37° **Latitude:** 35° 40′ 26.73″ S **Longitude:** 137° 34′ 11.02″ E	
Tall mallee in good, but senescent condition. It is not providing habitat for threatened species.	

Tree ID - Tree 11	
Eucalyptus phenax ssp. compressa	
1	
Height (m) – 9	
Hollows – 0	
Diameter (cm) – 34	
Canopy dieback (%) – 20	
Total Biodiversity Score – 3.53	
Direction: 165° **Latitude:** 35° 40′ 26.34″ S **Longitude:** 137° 34′ 10.90″ E	
Tall mallee in good, but senescent condition. It is not providing habitat for threatened species.	

Tree ID - Tree 12	
Eucalyptus cneorifolia	
1	
Height (m) – 9	
Hollows – 0	
Diameter (cm) – 39.5	
Canopy dieback (%) – 10	
Total Biodiversity Score – 3.89	
Direction: 200° **Latitude:** 35° 40′ 26.35″ S **Longitude:** 137° 34′ 10.55″ E	
Tall mallee in good, but senescent condition. Secondary trunks have previously been pollarded. It is not providing habitat for threatened species.	

Tree ID - Tree 13 *Eucalyptus cneorifolia* 1 Height (m) – 10 Hollows – 0 Diameter (cm) – 28 Canopy dieback (%) – 15 Total Biodiversity Score – 2.45	
Direction: 281° **Latitude:** 35° 40′ 18.84″ S **Longitude:** 137° 34′ 11.31″ E	
Tall mallee in good, but senescent condition. It is not providing habitat for threatened species.	

Tree ID - Tree 14 *Eucalyptus cneorifolia* 1 Height (m) – 11 Hollows – 0 Diameter (cm) – 61 Canopy dieback (%) – 5 Total Biodiversity Score – 4.82	
Direction: 224° **Latitude:** 35° 40′ 17.42″ S **Longitude:** 137° 34′ 11.73″ E	
Tall mallee in good, but senescent condition. It is not providing habitat for threatened species.	

Tree ID - Tree 15 *Eucalyptus cneorifolia* 1 Height (m) – 12 Hollows – 0 Diameter (cm) – 35 Canopy dieback (%) – 15 Total Biodiversity Score – 3.48	
Direction: 135° **Latitude:** 35° 40′ 16.77″ S **Longitude:** 137° 34′ 12.11″ E	
Very tall mallee in good, but senescent condition. Lower limbs have previously been removed for road safety. It is not providing habitat for threatened species.	

Tree ID - Tree 16 *Eucalyptus cneorifolia* 1 Height (m) – 5 Hollows – 0 Diameter (cm) – 23 Canopy dieback (%) – 5 Total Biodiversity Score – 1.02	
Direction: 251° **Latitude:** 35° 40′ 16.49″ S **Longitude:** 137° 34′ 12.14″ E	
Medium multi stemmed mallee in poor condition. One trunk has fallen over, another has been previously removed for road safety. It is not providing habitat for threatened species.	

Tree ID - Tree 17	
Eucalyptus cneorifolia	
1	
Height (m) – 10	
Hollows – 0	
Diameter (cm) – 32	
Canopy dieback (%) – 20	
Total Biodiversity Score – 2.55	
Direction: 203° **Latitude:** 35° 40′ 16.32″ S **Longitude:** 137° 34′ 12.20″ E	
Tall multi-stemmed mallee in good, but senescent condition. Two trunks have previously been pollarded; one of these is reshooting well. It is not providing habitat for threatened species.	

Tree ID - Tree 18	
Eucalyptus cneorifolia	
1	
Height (m) – 10	
Hollows – 0	
Diameter (cm) – 30	
Canopy dieback (%) – 50	
Total Biodiversity Score – 1.97	
Direction: 206° **Latitude:** 35° 40′ 15.31″ S **Longitude:** 137° 34′ 12.58″ E	
Tall multi-stemmed mallee in poor condition. It is not providing habitat for threatened species.	

Tree ID - Tree 19 *Eucalyptus cneorifolia* 1 Height (m) – 6 Hollows – 0 Diameter (cm) – 19 Canopy dieback (%) – 15 Total Biodiversity Score – 1.00	
Direction: 92° **Latitude:** 35° 40′ 0.57″ S **Longitude:** 137° 34′ 19.44″ E	
Medium multi-stemmed mallee in good, but senescent condition. Multiple trunks have previously been pollarded for road safety. It is not providing habitat for threatened species.	

Tree ID - Tree 20 *Eucalyptus cneorifolia* 1 Height (m) – 5 Hollows – 0 Diameter (cm) – 16 Canopy dieback (%) – 10 Total Biodiversity Score – 0.55	
Direction: 95° **Latitude:** 35° 39′ 59.16″ S **Longitude:** 137° 34′ 20.18″ E	
Small mallee in good, but senescent condition. It is not providing habitat for threatened species.	

Tree ID - Tree 21	
Eucalyptus cneorifolia	
1	
Height (m) – 4	
Hollows – 0	
Diameter (cm) – 18	
Canopy dieback (%) – 30	
Total Biodiversity Score – 1.59	
Direction: 273° **Latitude:** 35° 39′ 45.14″ S **Longitude:** 137° 34′ 24.37″ E	
Small clump of small multi-stemmed mallee in good to poor condition. They are not providing habitat for threatened species.	

Tree ID - Tree 22	
Eucalyptus phenax ssp. compressa	
1	
Height (m) – 10	
Hollows – 0	
Diameter (cm) – 44	
Canopy dieback (%) – 30	
Total Biodiversity Score – 3.81	
Direction: 121° **Latitude:** 35° 39′ 39.81″ S **Longitude:** 137° 34′ 24.43″ E	
Tall mallee in poor senescent condition. It is not providing habitat for threatened species.	

Tree ID - Tree 23 *Eucalyptus cneorifolia* 1 Height (m) – 9 Hollows – 0 Diameter (cm) – 31 Canopy dieback (%) – 25 Total Biodiversity Score – 2.41	
Direction: 97° **Latitude:** 35° 39′ 37.71″ S **Longitude:** 137° 34′ 24.03″ E	
Tall mallee in good, but senescent condition. It is not providing habitat for threatened species.	

Tree ID - Tree 24 *Eucalyptus cneorifolia* 1 Height (m) – 5 Hollows – 0 Diameter (cm) – 21 Canopy dieback (%) – 10 Total Biodiversity Score – 0.47	
Direction: 231° **Latitude:** 35° 39′ 21.83″ S **Longitude:** 137° 34′ 21.85″ E	
Small multi-stemmed mallee in good condition. Several trunks have previously been pollarded for road safety. It is not providing habitat for threatened species.	

Tree ID - Tree 25	
Eucalyptus cneorifolia	
1	
Height (m) – 6	
Hollows – 0	
Diameter (cm) – 17	
Canopy dieback (%) – 10	
Total Biodiversity Score – 1.02	
Direction: 260° **Latitude:** 35° 39′ 21.63″ S **Longitude:** 137° 34′ 21.83″ E	
Tall multi-stemmed mallee in good condition. Several trunks have recently been removed for road safety. It is not providing habitat for threatened species.	

Tree ID - Tree 26	
Eucalyptus cneorifolia	
1	
Height (m) – 5	
Hollows – 0	
Diameter (cm) – 38	
Canopy dieback (%) – 10	
Total Biodiversity Score – 1.35	
Direction: 154° **Latitude:** 35° 40′ 41.85″ S **Longitude:** 137° 34′ 14.91″ E	
Small multi-stemmed mallee in good condition. Several trunks have recently been removed for road safety. It is not providing habitat for threatened species.	

<u>Site map</u> showing areas of proposed impact

Figure 5. Vegetation communities around Ten Trees Lagoon Road. (Scale 1:18,056)

Photo log

Photo 1. **Direction:** 358° **Latitude:** 40′ 23.51″ S **Longitude:** 137° 34′ 10.40″ E. Section of road in Figure 4

Photo 2. **Direction:** 211º **Latitude:** 35º 39′ 57.33″ S **Longitude:** 137º 34′ 20.96″ E. Location of Trees 19 and 20

Photo 3. **Direction:** 343º **Latitude:** 35º 39′ 45.57″ S **Longitude:** 137º 34′ 24.47″ E. Trees near edge of Ten Trees Lagoon

Photo 4. **Direction:** 131° **Latitude:** 35° 39′ 36.93″ S **Longitude:** 137° 34′ 23.89″ E. Location of Trees 22 and 23

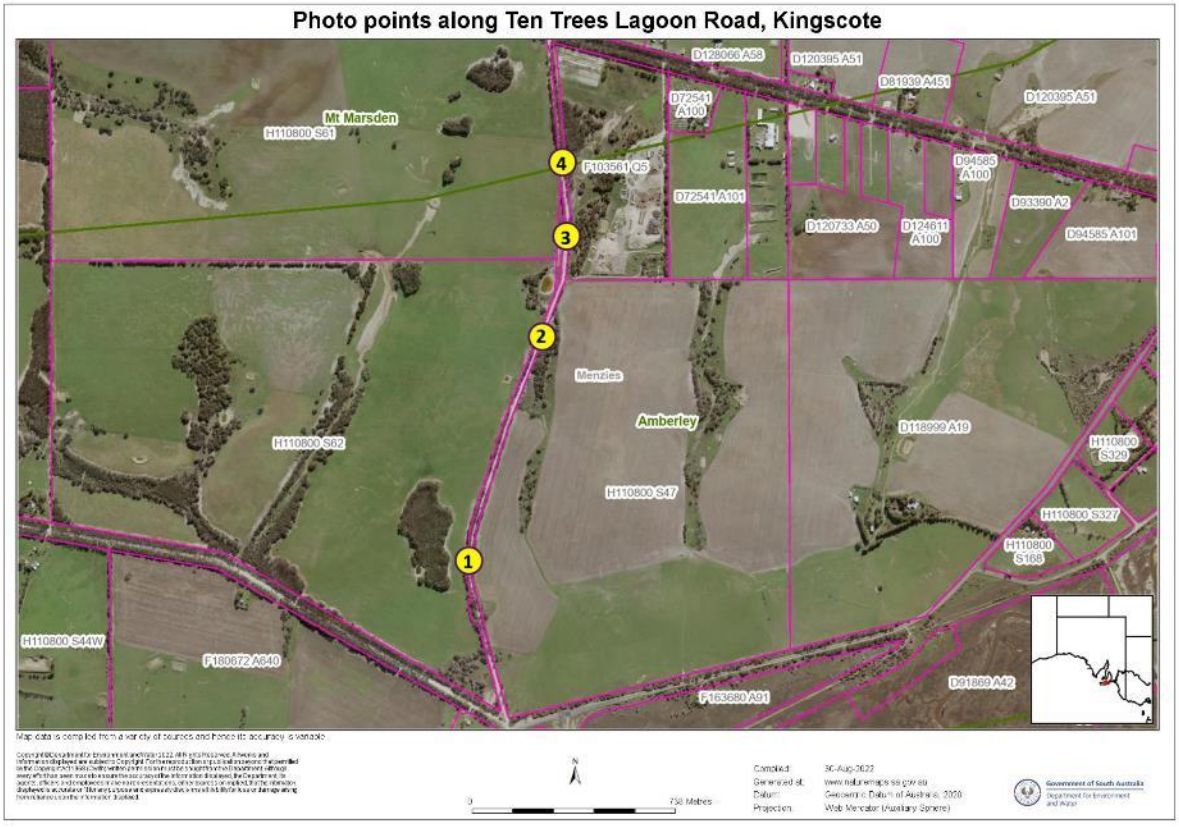

Figure 6. Location of photo points on Ten Trees Lagoon Road, Hundred of Menzies. (Scale 1:18,056)

4.2 Threatened Species assessment

Species observed on site, or recorded within 5km (50km in the arid zone) of the application area since 1995, or the vegetation is considered to provide suitable habitat

Species (common name)	NP&W Act	EPBC Act	Data source	Date of last record	Species known habitat preferences	Likelihood of use for habitat – Comments
Spatula rhynchotis (Australasian Shoveler)	R		3	2009	Brackish paperbark lagoons, saline samphire swamps	Unlikely to use trees – Likely to use Ten Trees Lagoon.
Cladorhynchus leucocephalus (Banded Stilt)	V		3	2014	Saline, hyper-saline and brackish wetlands	Unlikely to use trees – Likely to use Ten Trees Lagoon
Falco subniger (Black Falcon)	R		3	2013	Farmland areas with remnant mallee and wetlands	Likely – suitable habitat present
Burhinus grallarius (Bush Stonecurlew)	R		3	1997	Farmland areas with remnant mallee	Likely – suitable habitat present
Stictonetta naevosa (Freckled Duck)	V		3	2003	Brackish wetlands with dense cover of flooded paperbark	Unlikely – no suitable habitat present
Calyptorhynchus lathami halmaturinus (Glossy Black-Cockatoo)	E	EN	3	2017	Sheoak woodlands and Sugar Gum forests	Unlikely – no suitable habitat present
Egretta garzetta (Little Egret)	R		3	2012	Samphire saltmarsh, freshwater and brackish lagoons	Unlikely to use trees – Likely to use Ten Trees Lagoon
Anthochaera chrysoptera halmaturina (Little Wattlebird)		VU	3	1997	Stringy bark/Banksia scrub	Unlikely – no suitable habitat present
Biziura lobata menziesi (Musk Duck)	R		3	2012	Fresh, brackish, saline and marine wetlands	Unlikely to use trees – Likely to use Ten Trees Lagoon
Myiagra inquieta (Restless Flycatcher)	R		3	2001	Forest and woodland, brackish lagoons fringed by paperbark	Unlikely – no suitable habitat
Neophema petrophila zietzi (Rock Parrot)	R		3	2012	Coastal shore, samphire saltmarsh	Unlikely to use trees – Likely to use Ten Trees Lagoon
Acanthiza lineata whitei (Striated Thornbill)		VU	3	1997	Eucalypt forest and mallee woodland	Likely – suitable habitat present
Zanda funerea whiteae (Yellow-tailed Black Cockatoo)		V	3	2015	Stingy bark scrub over Banksia	Unlikely – no suitable habitat
Source; 1- BDBSA, 2 - AoLA, 3 – NatueMaps 4 – Observed/recorded in the field, 5 - Protected matters search tool, 6 – others NP&W Act; E= Endangered, V = Vulnerable, R= Rare						

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

Criteria for the likelihood of occurrence of species within the Study area.

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

4.3 Cumulative impact

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

The proposed upgrade of Ten Trees Lagoon Road from an unsealed road to a sealed road requires the removal of 32 scattered trees. The reserve that Ten Trees Lagoon Road has been constructed within is a one chain reserve. Due to the narrowness of the reserve, the remnant vegetation on either side of the road has been reduced to a thin strip. The trees within this strip have grown very tall due to a lack of ecological disturbance. Tall mallee trees within thin strips become vulnerable to strong winds, which can blow them over. They are particularly vulnerable to this in the winter months when the soil becomes wet. In some cases where the strip of trees has been reduced to a very thin strip, the removal of some of these trees may leave the remaining trees more vulnerable to being blown over.

There is little understory along Ten Trees Lagoon Road. The removal of these trees will have a minimal impact on the diversity of the area. Most of the understory within the impact zone has been trimmed by previous road safety works, has dropped out due to a lack of ecological disturbance or been choked out by weeds. Due to this, the clearance will have a minimal impact on the remnant understory.

Where possible, trees will be pollarded instead of removed. Both Eucalypt species respond well to pollarding as long as the trunk is cut no higher than 30cm above ground level. Many of the trees proposed to be removed are multi trunked and not every trunk is within the construction zone. In this instance, the trunks that are within the construction zone could be carefully removed and the remaining trunks pollarded. This would prevent the unstabilised tree from blowing over during strong wind events. The ensuing regrowth would then act as a windbreak to reduce the impact of strong winds on the remaining trees.

Existing drains and culverts will be upgraded as part of the construction works. Therefore, the hydrology of the area will not be altered. As Ten Trees Lagoon Road is unsealed, dust is created every time a vehicle drives along the road. The remnant vegetation is unaffected by this dust, so will likewise be unaffected by the dust that will be created during construction works.

4.4 Address the Mitigation Hierarchy

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

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

Avoidance is not possible as the road needs to be upgraded to ensure the safe passage of the increasing passage of heavy freight vehicles and the general public.

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

Where possible trees will be pollarded rather than removed to minimise the number of trees requiring removal for the upgrade of the road.

c) Rehabilitation or restoration – outline measures taken to rehabilitate ecosystems that have been degraded, and to restore ecosystems that have been degraded, or destroyed by the impact of clearance that cannot be avoided or further minimized, such as allowing for the re-establishment of the vegetation.

No restoration or rehabilitation is planned for the construction zone, however pollarded trees will be allowed to regenerate. Any trimmed understory species will also be left to naturally regenerate. Soil disturbance invariably elicits a response from seeds within the soil born seedbank. Any recruitment will be allowed to grow, however it will be subject to Standard Operating Procedures for roadside vegetation within the maintenance zone.

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

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

The Significant Environmental Benefit Offset will be met via a drawdown of credit from Section 41 Hundred of Gosse.

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	Relevant information Native: 6 Introduced: 8
	Assessment against the principles **Not At Variance**
	Moderating factors that may be considered by the NVC
Principle 1b - significance as a habitat for wildlife	Relevant information There are records of Glossy Black Cockatoo (*EPBC Act* Endangered), Little Wattlebird, Striated Thornbill (*EPBC Act* Vulnerable), Banded Stilt, Brown Quail, Freckled Duck, Yellow-tailed Black Cockatoo (*NPW SA Act* Vulnerable), Australasian Shoveler, Black Falcon, Bush Stonecurlew, Little Egret, Musk Duck, Restless Flycatcher and Rock Parrot (*NPW SA Act* Rare) within 5km of the site. As the vegetation is in poor degraded condition and a thin linear strip along a road corridor it would not support a high diversity of fauna species. The vegetation would provide limited services as a corridor for wildlife movement across the landscape, but is not of sufficient size to provide a habitat refuge. Trees; **Fauna Habitat Score –** Trees 1 – 23 and 26 = **1.8** Trees 24-25 = **1.0** **Biodiversity Score –** Tree 1 – **1.11**; Tree 2 – **2.10**; Tree 3 – **0.25**; Tree 4 – **2.08**; Tree 5 – **2.03**; Tree 6 – **3.44**; Tree 7 – **1.44**; Tree 8 – **0.63**; Tree 9 – **2.59**; Tree 10 – **6.30**; Tree 11 – **3.53**; Tree 12 – **3.89**; Tree 13 – **2.45**; Tree 14 – **4.82**; Tree 15 – **3.48**; Tree 16 – **1.02**; Tree 17 – **2.55**; Tree 18 – **1.97**; Tree 19 – **1.00**; Tree 20 – **0.55**; Tree 21 – **0.40**; Tree 22 – **3.57**; Tree 23 – **2.41**; Tree 24 – **0.43**; Tree 25 – **0.51**; Tree 26 – **1.35**
	Assessment against the principles **Seriously at Variance** - Trees 1 – 23 and 26 **At Variance** - Trees 24 - 25

	Moderating factors that may be considered by the NVC None of the trees would be utilised in any way by Glossy Black Cockatoos and are unlikely to be providing habitat for Little Wattlebirds, Banded Stilts, Freckled Duck, Brown Quail, Yellow-tailed Black Cockatoo, Australasian Shoveler, Little Egret, Musk Duck or Rock Parrots. As the trees are within a thin linear roadside reserve, they would be providing limited and non-esssential habitat for Striated Thornbill, Black Falcon and Restless Flycatchers.
Principle 1c - plants of a rare, vulnerable or endangered species	Relevant information *Eucalyptus phenax ssp. compressa* (*NPW SA Act* Rare) is located within the roadside vegetation in the middle section of the reserve. Four *E. phenax ssp. compressa* are proposed to be removed. *Eucalyptus phenax ssp. compressa* is only found in the Hundreds of Menzies and Haines on Kangaroo Island. The clearance of these four trees will not have a big impact on the local population of this species. There are no records of any other threatened species within 1km of the clearance area. **Threatened Flora Score(s) –** Trees 1 – 8, 12 – 21 and 23 – 26 = **0** Trees 9 – 11 and 22 = **0.3**
	Assessment against the principles **At Variance** - Trees 9 – 11 and 22 **Not at Variance** - Trees 1 – 8, 12 – 21 and 23 - 26
	Moderating factors that may be considered by the NVC The clearance of the four *Eucalyptus phenax ssp. compressa* trees will not have an impact on the long term survival of the species either in the local area or on Kangaroo Island. Less than 10% of the *E. phenax ssp. compressa* trees will be cleared from within the road reserve for Ten Trees Lagoon Road.
***Principle 1d - the vegetation comprises the whole or part of a plant community that is Rare, Vulnerable or endangered*:**	Relevant information The Narrow-leaf Mallee Ecological Community is listed as Endangered under the *EPBC Act 1999*. The vegetation within the road reserve is comprised of this community, however it does not meet the criteria for width (>60m wide), so is therefore not protected under this Act. **Threatened Community Score - 1**
	Assessment against the principles **Not at Variance** - Trees 1 - 26
	Moderating factors that may be considered by the NVC

Principle 1e - it is significant as a remnant of vegetation in an area which has been extensively cleared.	Relevant information IBRA Association: Amberley – 21% remnancy (Trees 1 – 23 and 26) IBRA Association: Mt Marsden – 26% remnancy (Trees 24 – 25) IBRA Subregion: Kangaroo Island – 52% remnancy The remnant vegetation within the Ten Trees Lagoon Road area is in a mostly senescent state due to a lack of ecological disturbance. The larger remnants are in good condition and will likely stay in this state for some time, however the smaller and narrow linear strips are in poor condition and will continue to decline as time goes by. **Total Biodiversity Score – 62.00**
	Assessment against the principles **At Variance**
	Moderating factors that may be considered by the NVC The remnant vegetation within the Ten Trees Lagoon Road reserve is in poor degraded condition and will continue to decline in condition as time goes by.
Principle 1f - it is growing in, or in association with, a wetland environment.	Relevant information The trees that are proposed to be removed from the Ten Trees Lagoon Road reserve are not growing in a wetland. Tree 21 is growing in the vicinity of Ten Trees Lagoon. Tree 21 is not a wetland species.
	Assessment against the principles **At Variance** - Tree 21 **Not at Variance** - Trees 1 – 20 and Trees 22 – 26
	Moderating factors that may be considered by the NVC The removal of Tree 21 will not impact on the quality of the wetland. This wetland is in a highly degraded state with only a low diversity of understory species present.
Principle 1g - it contributes significantly to the amenity of the area in which it is growing or is situated.	Relevant information The vegetation removal will occur within a roadside reserve during the upgrade of Ten Trees Lagoon Road. This clearance is not out of character for the area. It will have a negative influence on the amenity of the road reserve, however the vegetation contained within it is already in a highly degraded state.
	N/A
	Moderating factors that may be considered by the NVC

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	32
	Area (ha)	n/a
	Total biodiversity Score	62.00
Seriously at variance with principle 1(b), 1(c) or 1 (d)		1(b)
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.

All relevant information has been discussed above.

5. Clearance summary

Scattered trees Summary table

Tree or Cluster ID	Number of trees	Fauna Habitat score	Threatened flora score	Biodiversity score	Loss factor	SEB Points required	SEB Payment	Admin Fee
1	1	1.8	0	1.11	1	1.17	$795.11	
2	1	1.8	0	2.10	1	2.21	$1,498.30	
3	1	1.8	0	0.25	1	0.26	$175.16	
4	3	1.8	0	2.08	1	6.55	$4,450.56	
5	1	1.8	0	2.03	1	2.13	$1,447.36	
6	1	1.8	0	3.44	1	3.61	$2,454.35	
7	1	1.8	0	1.44	1	1.51	$1,024.58	
8	1	1.8	0	0.63	1	0.66	$447.18	
9	1	1.8	0.3	2.59	1	2.72	$1,851.10	
10	1	1.8	0.3	6.30	1	6.61	$4,492.79	
11	1	1.8	0.3	3.53	1	3.71	$2,521.06	
12	1	1.8	0	3.89	1	4.09	$2,776.00	
13	1	1.8	0	2.45	1	2.57	$1,747.16	
14	1	1.8	0	4.82	1	5.06	$3,438.74	
15	1	1.8	0	3.48	1	3.65	$2,482.00	
16	1	1.8	0	1.02	1	1.07	$725.01	
17	1	1.8	0	2.55	1	2.67	$1,817.40	
18	1	1.8	0	1.97	1	2.07	$1,408.79	
19	1	1.8	0	1.00	1	1.05	$712.66	
20	1	1.8	0	0.55	1	0.58	$392.20	
21	4	1.8	0	0.40	1	1.67	$1,137.67	
22	1	1.8	0.3	3.81	1	4.00	$2,543.57	
23	1	1.8	0	2.41	1	2.54	$1,722.81	
24	1	1	0	0.43	1	0.45	$304.13	
25	2	1	0	0.51	1	1.07	$728.33	
26	1	1.8	0	1.35	1	1.42	$963.68	
Total	**32**			**62.00**		**65.10**	**$41,924.90**	**$2,305.86**

Totals summary table

	Total Biodiversity score	Total SEB points required	SEB Payment	Admin Fee	Total Payment
Application	62.00	65.10	$41,924.90	$2,305.86	$44,230.76

Economies of Scale Factor	0.5
Rainfall (mm)	463

6. Significant Environmental Benefit

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

ACHIEVING AN SEB

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

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

☒ Use SEB Credit that the proponent has established. Provide the SEB Credit Ref. **No. 2006_2028**

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

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

☐ Pay into the Native Vegetation Fund.

PAYMENT SEB

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

7. Appendices

Appendix 1. Fauna Species List (desktop)

Threatened or Introduced Animal Species Recorded or Observed (Native and Introduced)		Threatened Species				Introduced
Species	Common Name	EPBC	SA	Past Record	Observed	Species
Acanthiza lineata whitei	Striated Thornbill (KI)	VU		Yes		
Acanthiza pusilla zietzi	Brown Thornbill (KI)			Yes		
Anas castanea	Chestnut Teal			Yes		
Anas gracilis gracilis	Grey Teal			Yes		
Anas superciliosa	Pacific Black Duck			Yes		
Anthochaera chrysoptera halmaturina	Little Wattlebird (KI)	VU		Yes		
Ardea alba modesta	Great Egret			Yes		
Aythya australis	Hardhead			Yes		
Biziura lobata menziesi	Musk Duck		R	Yes		
Burhinus grallarius	Bush Stonecurlew		R	Yes		
Calidris acuminata	Sharp-tailed Sandpiper			Yes		
Calidris ruficollis	Red-necked Stint			Yes		
Calyptorhynchus lathami halmaturinus	Glossy Black-Cockatoo (Kar	EN	E	Yes		
Carduelis carduelis britannica	European Goldfinch			Yes		*
Cercartetus concinnus	Western Pygmy-possum			Yes		
Cercartetus lepidus	Little Pygmy-possum			Yes		
Charadrius bicinctus bicinctus	Double-banded Plover			Yes		
Charadrius ruficapillus	Red-capped Plover			Yes		
bicocephalus novaehollandiae novaehollar	Silver Gull			Yes		
Cladorhynchus leucocephalus	Banded Stilt		V	Yes		
Coracina novaehollandiae	Black-faced Cuckooshrike			Yes		
Corvus coronoides	Australian Raven			Yes	Yes	
Corvus mellori	Little Raven			Yes		
Cygnus atratus	Black Swan			Yes		
Egretta garzetta nigripes	Little Egret		R	Yes		
Egretta novaehollandiae	White-faced Heron			Yes		
Eolophus roseicapilla	Galah			Yes		
Epthianura albifrons	White-fronted Chat			Yes		
Falco subniger	Black Falcon		R	Yes		
Gymnorhina tibicen	Australian Magpie			Yes	Yes	
Himantopus leucocephalus	Pied Stilt			Yes		
Hirundo neoxena neoxena	Welcome Swallow			Yes		
Lichenostomus cratitius cratitius	Purple-gaped Honeyeater (K			Yes		
Malurus cyaneus ashbyi	Superb Fairywren (KI)			Yes		
Melithreptus lunatus	White-naped Honeyeater			Yes		
Myiagra inquieta	Restless Flycatcher		R	Yes		
Neophema petrophila zietzi	Rock Parrot		R	Yes		
Ninox boobook	Australian Boobook			Yes		
Pachycephala fuliginosa fuliginosa	Western Whistler			Yes		
Pardalotus punctatus	Spotted Pardalote			Yes		
Passer domesticus domesticus	House Sparrow			Yes		*
Pavo cristatus	Indian Peafowl			Yes		*
Phylidonyris novaehollandiae campbelli	New Holland Honeyeater (K			Yes		
Platalea flavipes	Yellow-billed Spoonbill			Yes		
Platalea regia	Royal Spoonbill			Yes		
Pogona barbata	Eastern Bearded Dragon			Yes		
Poliocephalus poliocephalus	Hoary-headed Grebe			Yes		
Poodytes gramineus goulburni	Little Grassbird			Yes		
Pseudocheirus peregrinus	Common Ringtail Possum			Yes		
Rhipidura albiscapa	Grey Fantail			Yes		
Sericornis maculatus ashbyi	Spotted Scrubwren (KI)			Yes		

Spatula rhynchotis	Australasian Shoveler		R	Yes		
Stagonopleura bella samueli	Beautiful Firetail (MLR, KI)			Yes		
Stictonetta naevosa	Freckled Duck		V	Yes		
Strepera versicolor halmaturina	Black-winged Currawong (K			Yes		
Sturnus vulgaris vulgaris	Common Starling			Yes		*
Tadorna tadornoides	Australian Shelduck			Yes		
Threskiornis molucca molucca	Australian White Ibis			Yes		
Tiliqua scincoides	Eastern Bluetongue			Yes		
Trichoglossus moluccanus moluccanus	Rainbow Lorikeet			Yes		
Tringa nebularia	Common Greenshank			Yes		
Vanellus miles	Masked Lapwing			Yes	Yes	
Zanda funerea whiteae	Yellow-tailed Black Cockato		V	Yes		
Zosterops lateralis	Silvereye			Yes		

Appendix 2. Scattered Tree Assessment Scoresheets

SEB Required for Scattered Trees

(Version - 20 July 2022)

Landscapes Region	KI
Mean Annual Rainfall (mm)	463
Economies of Scale factor	0.5

IBRA Association	Amberley

Total Biodiversity Score	60.55
Total SEB Points required	63.58
Payment $ (GST exclusive)	$40,946.26
Admin fee (GST inclusive)	$2,252.04
Total SEB $ required	$43,198.30

Tree Species	Number of Trees (total)	Number of trees (proposed removed)	Number of trees (proposed pruning)	Total SEB Points required	Payment in NV Fund (GST Exclusive)	Administration fee (GST Inclusive)	Total
Eucalyptus cneorifolia	25	25	0	46.53	$29,968.47	$1,648.27	$31,616.73
Eucalyptus phenax ssp.	4	4	0	17.05	$10,977.79	$603.78	$11,581.57
0	0	0	0	0.00	$0.00	$0.00	$0.00

SEB Required for Scattered Trees

(Version - 20 July 2022)

Landscapes Region	KI
Mean Annual Rainfall (mm)	463
Economies of Scale factor	0.5

IBRA Association	Mt Marsden

Total Biodiversity Score	1.45
Total SEB Points required	1.52
Payment $ (GST exclusive)	$978.64
Admin fee (GST inclusive)	$53.82
Total SEB $ required	$1,032.46

Tree Species	Number of Trees (total)	Number of trees (proposed removed)	Number of trees (proposed pruning)	Total SEB Points required	Payment in NV Fund (GST Exclusive)	Administration fee (GST Inclusive)	Total
Eucalyptus cneorifolia	3	3	0	1.52	$978.64	$53.82	$1,032.46
0	0	0	0	0.00	$0.00	$0.00	$0.00

Appendix 3. Flora Species List

Plant Species Recorded (Native and Introduced)		Threatened Sp.		
Species	Common Name	EPBC	SA	Introduced Species
Enchylaena tomentosa var. tomentosa	Ruby Saltbush			
Dianella brevicaulis	Short-stem Flax-lily			
Pimelea serpyllifolia ssp. serpyllifolia	Thyme Riceflower			
Thryptomene ericaea	Heath Thryptomene			
Acacia paradoxa	Kangaroo Thorn			
Eremophila glabra ssp. glabra	Tar Bush			
Myoporum insulare	Common Boobialla			
Austrostipa sp.	Spear-grass			
Rhagodia candolleana ssp. candolleana	Sea-berry Saltbush			
Clematis microphylla	Old Man's Beard			
Pimelea stricta	Erect Riceflower			
Melaleuca lanceolata	Dryland Tea-tree			
Dodonaea baueri	Crinkled Hop-bush			
Melaleuca brevifolia	Short-leaf Honey-myrtle			
Acacia cupularis	Cup Wattle			
Comesperma volubile	Love Creeper			
Acacia pycnantha	Golden Wattle			
Threlkeldia diffusa	Coast Bonefruit			
Melaleuca acuminata ssp. acuminata	Mallee Honey-myrtle			
Orthrosanthus multiflorus	Morning Flag			
Atriplex semibaccata	Berry Saltbush			
Salicornia blackiana	Thick-head Samphire			
Romulea rosea var. australis	Common Onion-grass			*
Freesia cultivar	Freesia			*
Arctotheca calendula	Cape Weed			*
Avena barbata	Bearded Oat			*
Medicago sp.	Medic			*
Asparagus asparagoides f. asparagoides	Bridal Creeper			*
Holcus lanatus	Yorkshire Fog			*
Phalaris aquatica	Phalaris			*
Lolium sp.	Ryegrass			*
Ehrharta calycina	Perennial Veldt Grass			*
Plantago lanceolata var.	Ribwort			*
Sonchus oleraceus	Common Sow-thistle			*
Asphodelus fistulosus	Onion Weed			*
Lycium ferocissimum	African Boxthorn			*
Piptatherum miliaceum	Rice Millet			*
Oxalis pes-caprae	Soursob			*