

Native Vegetation Clearance

Road Construction, Arno Bay

Data Report

Clearance under the *Native Vegetation Regulations 2017*

June 2023

Prepared by West Coast Revegetation, NVC Accredited Consultant Phil Landless



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1. Application information

Application Details

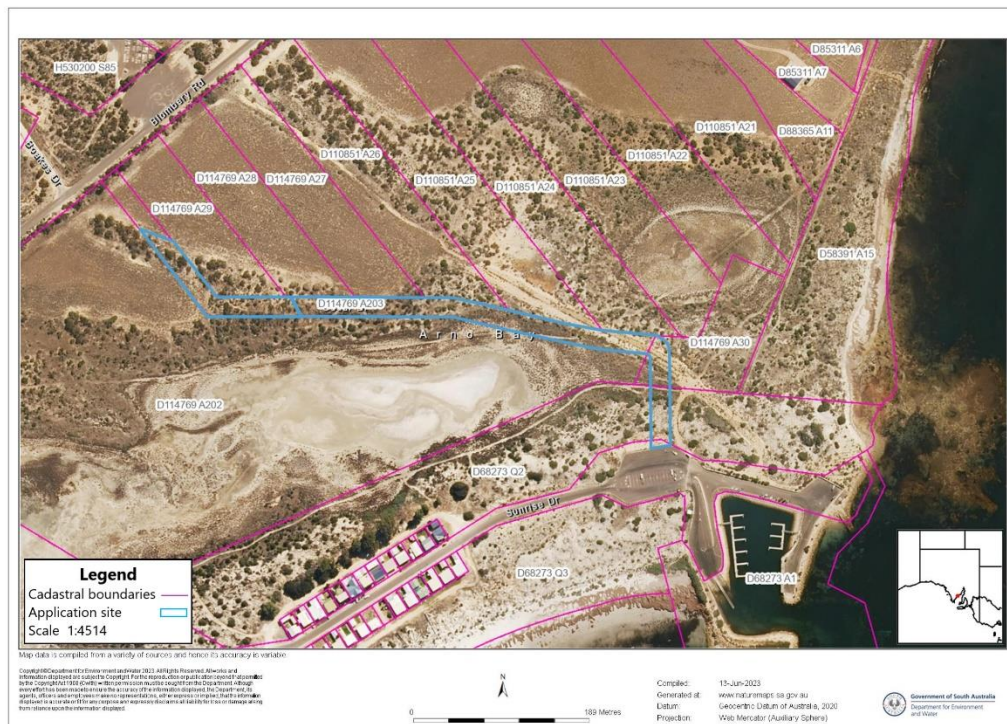
Applicant:	District Council of Cleve		
Key contact:	Grant Crosby		
Landowner:	District Council of Cleve		
Site Address:	Oscar Drive, Arno Bay		
Local Government Area:	District Council of Cleve	Hundred:	Boothby
Title ID:	1. CT6190/446 2. CT6190/444 3. CR5997/215	Parcel ID	1. D114769AR203 2. D114769AL30 3. D68273QP2

Summary of proposed clearance

Purpose of clearance	Clearance is required for the construction of a new road linking Blombery Rd to the Arno Bay Marina.
Native Vegetation Regulation	Schedule 1; Regulation 12(34), Infrastructure.
Description of the vegetation under application	1. 0.383 ha of <i>Eucalyptus angulosa</i> Coast Ridge-fruited Mallee Low Mallee with mid-dense sclerophyll shrub understorey. 2. 1.005 ha of <i>Myoporum insulare</i> Common Boobialla Coastal Shrubland.
Total proposed clearance - area (ha) and number of trees	1.388 ha are proposed to be cleared.
Level of clearance	Level 4
Overlay (Planning and Design Code)	<p>1. CT6190/446</p> <p>Zones</p> <ul style="list-style-type: none"> • Neighbourhood – N • Rural – R <p>Overlays</p> <ul style="list-style-type: none"> • Water Resources • Hazards (Flooding – Evidence Required) • Native vegetation • Dwelling Excision • Hazards (Bushfire – Regional) • Building Near Airfields • <p>2. CT6190/444</p> <p>Zones</p> <ul style="list-style-type: none"> • Infrastructure (Ferry and Marina Facilities) – Inf (FMF) • Neighbourhood – N <p>Overlays</p> <ul style="list-style-type: none"> • Coastal Areas • Hazards (Bushfire – Regional) • Hazards (Flooding – Evidence Required) • Native Vegetation • Water Resources • <p>3. CR5997/215</p> <p>Zones</p> <ul style="list-style-type: none"> • Infrastructure (Ferry and Marina Facilities) – Inf (FMF)

- Neighbourhood – N
 - Open Space – OS
- Overlays**
- Coastal Areas
 - Hazards (Acid Sulfate Soils)
 - Hazards (Bushfire – Regional)
 - Hazards (Flooding – Evidence Required)
 - Native Vegetation
 - Water Resources

Map of proposed clearance area



Mitigation hierarchy

Avoidance

The location, design, size or scale of the clearance cannot be adjusted in order to reduce the scale of the impact. The areas under application will be cleared for the construction of a new road which will measure 10.4 m wide, including the sealed road surface and shoulders on either side.

Minimisation

Development of the site requires removal of all vegetation. Extent, duration, and intensity of the impacts to the site will be minimized by the following:

- Access to the proposed clearance sites will be from existing roads,
- Cleared vegetation will be stored on-site before removal, minimizing impacts to surrounding vegetation,
- All clearance activities necessary will be staged from within the application area,
- Servicing, refueling and inspection for machinery contaminant leaks will be carried out on the worksite.

Rehabilitation

The proposed development of the site will be permanent. Rehabilitation will not be possible.

SEB Offset proposal

Payment of \$28370.22 (SEB payment plus administration fee).

2. Purpose of clearance

2.1 Description

Clearance is required for the construction of a new road linking the Arno Bay Marina to Blombery Road.

2.2 Background

Arno Bay is a popular fishing and tourist town located on the Eyre Highway between Whyalla and Port Lincoln. It serves as a minor service centre for local agricultural communities. Arno Bay is also the site for a developing aquaculture industry. Clean Seas Seafood Ltd have a large fish hatchery on the outskirts of the town and maintains sea-based fish farming facilities offshore from the town.

The Arno Bay Marina is used by Clean Seas as a staging point for feeding fish held in cages in the bay. Feed is trucked to the marina via Sunrise Drive, a residential area of holiday and fishers' shacks and houses.

The area under application is directly east of the township. Agricultural land lies to the north. To the south is a low mud flat or playa which supports a low chenopod samphire shrubland dominated by *Tecticornia* species, with areas of bare soil.

2.3 General location map

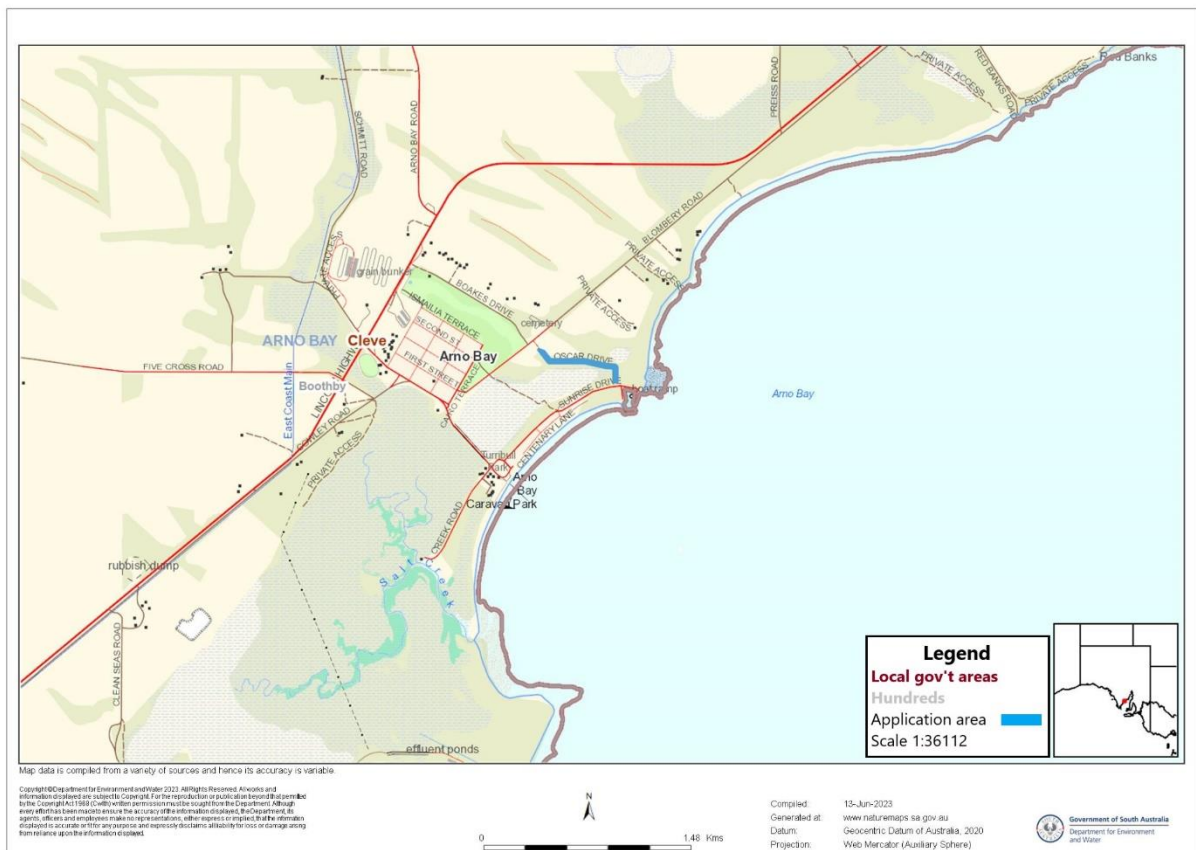


Figure 1. General location map.



Figure 2. General location satellite image.

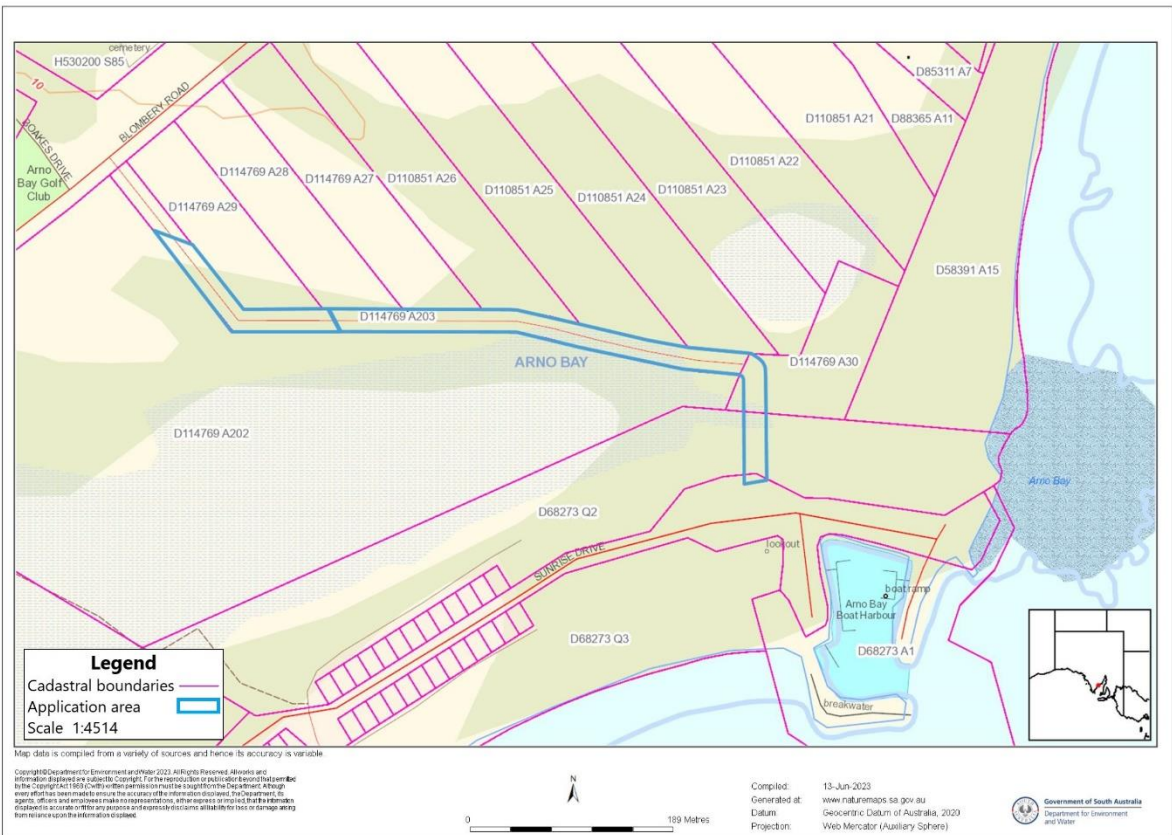


Figure 3. Site map.

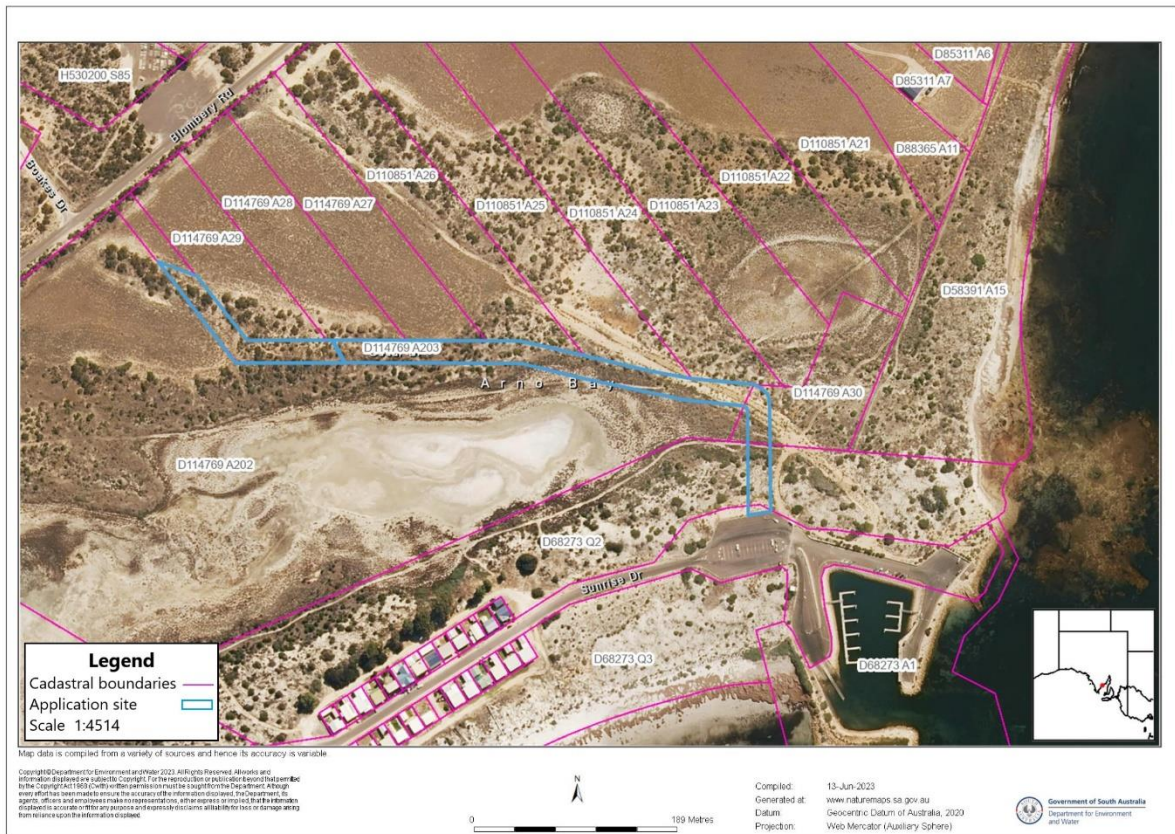


Figure 4. Site satellite image.

2.4 Details of the proposal

This application is in relation to the construction of a new road which will offer an alternative route for commercial vehicles to access the marina (Figures 5 and 6). The new road will:

- be built in the Oscar Drive road reserve,
- link Blombery Road and the marina, which will remove heavy traffic from the residential area on Sunrise Drive and so improve conditions on Sunrise Drive for residents,
- have the option of joining to Boakes Drive, therefore removing heavy traffic from the town centre,

The new road will traverse Lots D114769 A203 (Road Reserve, Oscar Drive), D114769 A30, and D68273 Q2 (Figures 3, 4). Native vegetation under application includes:

- Site A1: 0.383 ha of *Eucalyptus angulosa* Coast Ridge-fruited Mallee Low Mallee with mid-dense sclerophyll shrub understorey at the north-western end of the new road (adjacent to Blombery Road),
- Site A2: 1.005 ha of *Myoporum insulare* Common Boobialla Coastal Shrubland at the south-eastern end (adjacent to the marina).

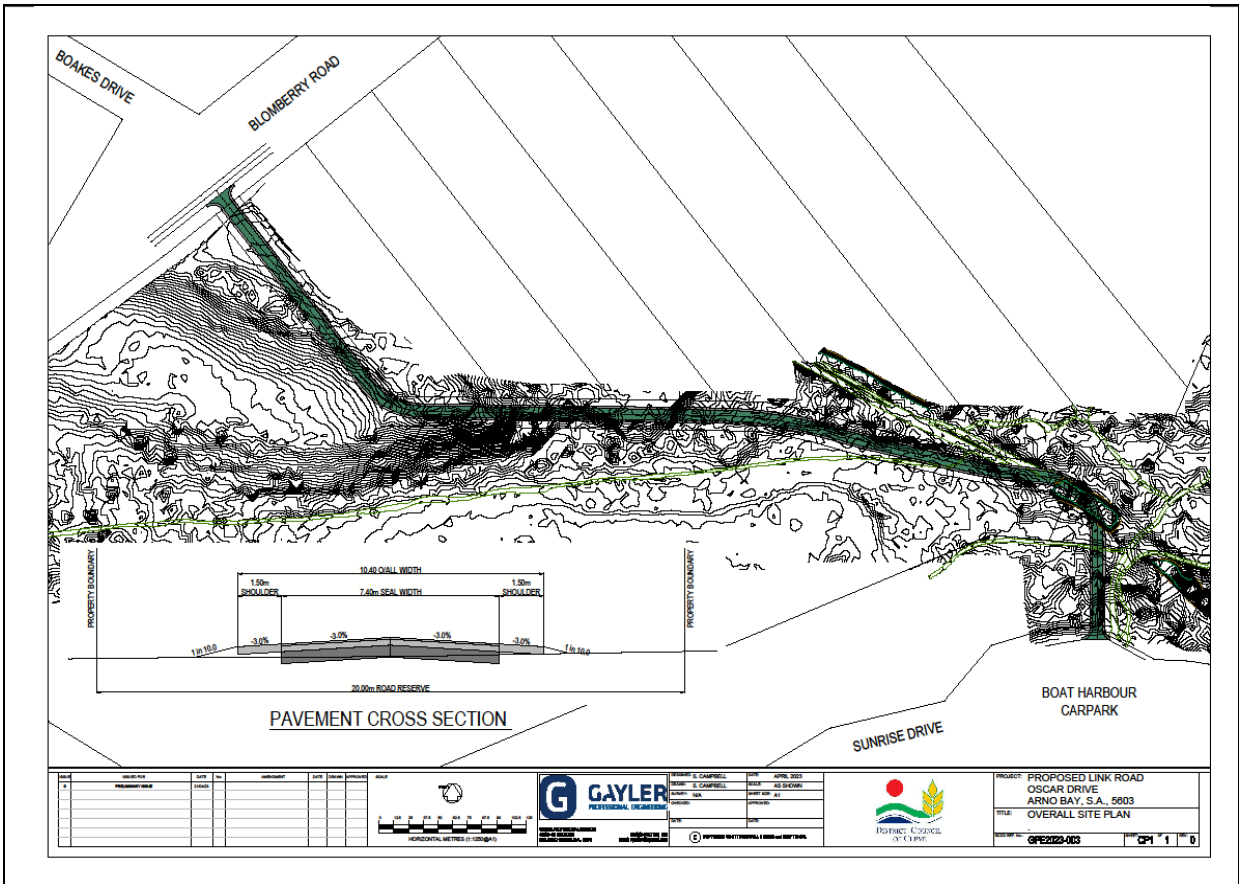


Figure 5. Proposed road design plan.

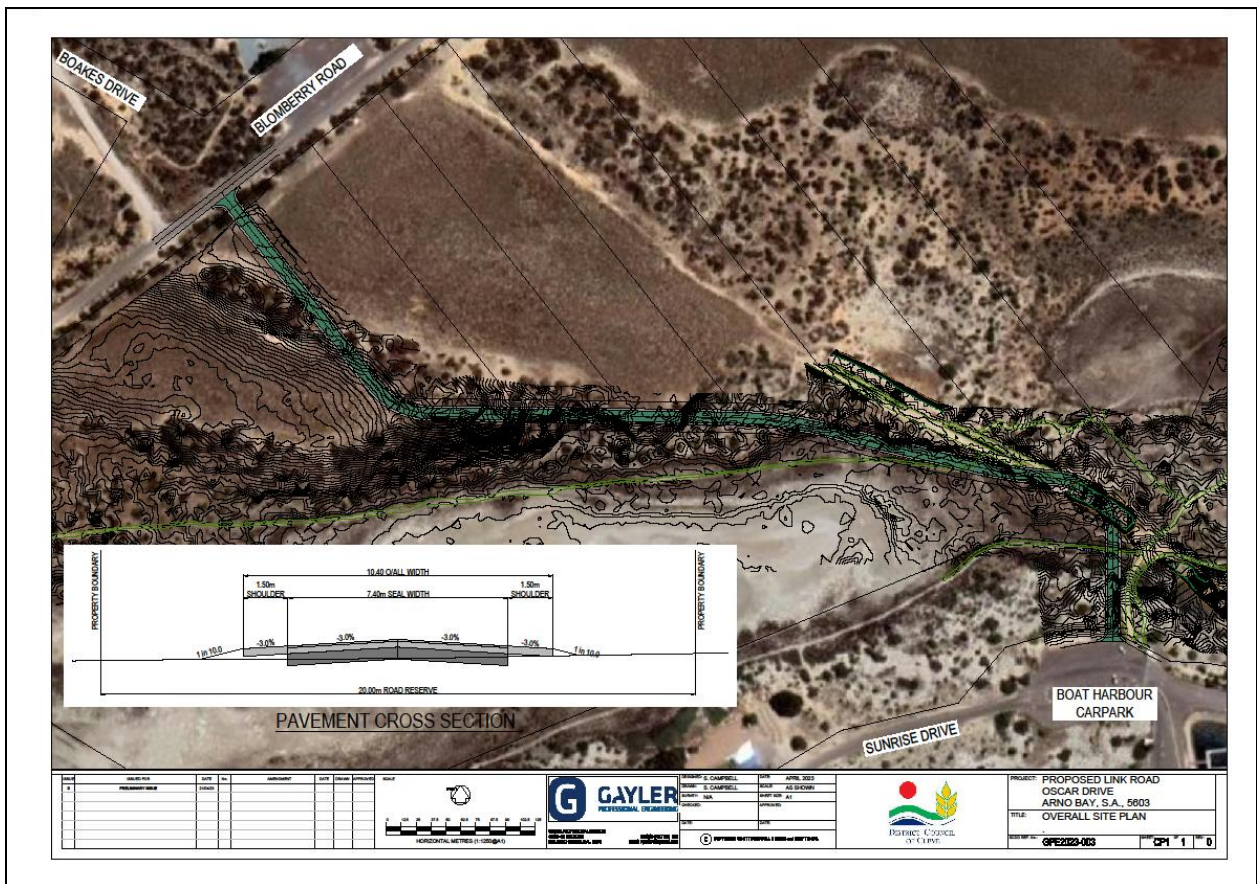


Figure 6. Proposed road satellite image.

2.5 Approvals required or obtained

Native Vegetation Act 1991. Application 2009_3013 was granted in the past over part of the area under this application, but there is no evidence that vegetation was cleared. Clearance under the Native Vegetation Act 1991 is the subject of this proposal.

2.6 Native Vegetation Regulation

The proposed clearance will be assessed under Regulation 12(34) Infrastructure.

2.7 Development Application information (if applicable)

The application area traverses three titles:

1. Title reference CT6190, Parcel ID 114769AR203

Zones

- Neighbourhood – N
- Rural – R

Overlays

- Water Resources
- Hazards (Flooding – Evidence Required)
- Native vegetation
- Dwelling Excision
- Hazards (Bushfire – Regional)
- Building Near Airfields

Variations

- Minimum Site Area
- Maximum Building Height (Metres and Levels)
- Finished Ground and Floor Levels

2. Title Reference CT6190/444, Parcel ID D114769AL30

Zones

- Infrastructure (Ferry and Marina Facilities) – Inf (FMF)
- Neighbourhood – N

Overlays

- Coastal Areas
- Hazards (Bushfire – Regional)
- Hazards (Flooding – Evidence Required)
- Native Vegetation
- Water Resources

Variations

- Finished Ground and Floor Levels
- Maximum Building Height (Metres and Levels)
- Minimum Site Area

3. Title Reference CR5997/215, Parcel ID D68273QP2

Zones

- Infrastructure (Ferry and Marina Facilities) – Inf (FMF)
- Neighbourhood – N
- Open Space – OS

Overlays

- Coastal Areas
- Hazards (Acid Sulfate Soils)
- Hazards (Bushfire – Regional)
- Hazards (Flooding – Evidence Required)

- Native Vegetation
- Water Resources

Variations

- Finished Ground and Floor Levels
- Maximum Building Height (Metres and Levels)
- Minimum Site Area

3. Method

3.1 Flora assessment

A desktop survey was conducted, prior to the field work, using the BDBSA on NatureMaps for the presence of species with state and/or national conservation status within a 5 km radius of the block, recorded before 1995 (Table 1).

The field work was carried out on 4 June 2023 by Phil Landless (NVC Accredited Consultant) following the methodology set out in the NVC Bushland Assessment Manual 2020. Sites A1 and A2 were surveyed, species lists prepared, and scores for the other attributes listed on the field data sheet were recorded. Plants with conservation status under the NP&W 1972 or the EPBC Act 1999 (as identified by the desktop survey) were actively searched for during the field survey.

3.2 Fauna assessment

A desktop fauna survey was conducted prior to the field work, using the BDBSA on NatureMaps for the presence of species with state and/or national conservation status within a 5 km radius of the block, recorded before 1995. Fauna species with conservation status under the NP&W 1972 or the EPBC Act 1999 (as identified by the desktop survey) were actively searched for during the field survey (Table 2).

4. Assessment Outcomes

4.1 Vegetation Assessment

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

The area under application falls within the Hambidge IBRA Region and the Eyre mallee IBRA Subregion. Landform ranges from consolidated dune in the north-west to undulating coastal dunes in the south-east. Soil is sandy with some limestone strew in the north-west area. There are no significant features such as watercourses or rocky outcrops.


Two vegetation associations were observed within the application area (Figure 7):


- *Eucalyptus angulosa* Coast Ridge-fruited Mallee Low Mallee with mid-dense sclerophyll shrub understorey,
- *Myoporum insulare* Common Boobialla Coastal Shrubland.

The vegetation in each area was relatively homogenous and in good condition although there were considerable numbers of introduced plant species.

Franklin Harbour Conservation Park is 31 km to the north-east. Nearest Heritage Agreement areas are HA1026, 2.3 km to the north-east, and HA 1469, 1.7 km to the south-west. The nearest clearance applications are 2019_3182 and 2009_3013.

Details of the vegetation associations

Vegetation Association	Site A1: <i>Eucalyptus angulosa</i> Coast Ridge-fruited Mallee Low Mallee with mid-dense sclerophyll shrub understorey				
					
Position: 53S 645879E 6246806N Direction of photo: S 180°					
General description	The vegetation under application is a coastal mallee remnant. Forty species were recorded, thirty-two native and eight introduced. The dominant species was <i>Eucalyptus angulosa</i> Coast Ridge-fruited Mallee. Other common species included <i>Eucalyptus leptophylla</i> Narrow-leaf Red mallee, <i>Allocasuarina muelleriana</i> Common Oak-bush, <i>Geijera linearifolia</i> Sheep Bush and <i>Myoporum insulare</i> Common Boobialla. Introduced species included <i>Lycium ferocissimum</i> African Boxthorn, <i>Gazania linearis</i> Gazania and <i>Asparagus asparagoides</i> Bridal Creeper.				
Threatened species or community	<p>Threatened flora species</p> <p>Three threatened species were noted in the threatened species search to be present within a 5 km radius of the site and recorded since 1995. Two species (<i>Scaevola myrtifolia</i> Myrtle Fanflower and <i>Myoporum parvifolium</i> Creeping Boobialla) were considered as possibly occurring on the site.</p> <p>Threatened plant community</p> <p>The vegetation association on the site, <i>Eucalyptus angulosa</i> Coast Ridge-fruited Mallee Low Mallee with mid-dense sclerophyll shrub understorey, does not appear in the Provisional List of Threatened Ecosystems included in the NVC Bushland Assessment Manual 2020.</p> <p>Threatened fauna species</p> <p>Five threatened fauna species were noted in the threatened species search to be present within a 5 km radius of the site and recorded since 1995. One threatened bird species, <i>Neophema petrophila zietzi</i> Rock parrot was considered as possible user of the vegetation as habitat.</p>				
Landscape context score	1.14	Vegetation Condition Score	25.38	Conservation significance score	1.10
Unit biodiversity Score	31.82	Area (ha)	0.383 ha	Total biodiversity Score	12.19

Vegetation Association	Site A2: 1 <i>Myoporum insulare</i> Common Boobialla Coastal Shrubland.				
 <p data-bbox="416 1070 1158 1104">Position: 53S 646281E 6246719N Direction of photo: W 288°</p>					
General description	<p>The vegetation under application is a coastal shrubland. Thirty-three species were recorded, twenty-seven native and six introduced. The dominant species was <i>Myoporum insulare</i> Common Boobialla. Other common species were <i>Geijera linearifolia</i> Sheep Bush, <i>Pittosporum angustifolium</i> Native Apricot and <i>Atriplex paludosa ssp. cordata</i> Marsh Saltbush. Introduced species included <i>Lycium ferocissimum</i> African Boxthorn, <i>Gazania linearis</i> Gazania and <i>Ehrharta calycina</i> Perennial Veldt Grass.</p>				
Threatened species or community	<p>Threatened flora species Three threatened species were noted in the threatened species search to be present within a 5 km radius of the site and recorded since 1995. Two species (<i>Scaevola myrtifolia</i> Myrtle Fanflower and <i>Myoporum parvifolium</i> Creeping Boobialla) were considered as possibly occurring on the site.</p> <p>Threatened plant community The vegetation association on the site, <i>Myoporum insulare</i> Common Boobialla Coastal Shrubland, does not appear in the Provisional List of Threatened Ecosystems included in the NVC Bushland Assessment Manual 2020.</p> <p>Threatened fauna species Five threatened fauna species were noted in the threatened species search to be present within a 5 km radius of the site and recorded since 1995. Five threatened bird species, <i>Actitis hypoleucos</i> Common Sandpiper, <i>Egretta garzetta nigripes</i> Little Egret, <i>Neophema petrophila zietzi</i> Rock Parrot, <i>Pandion halieatus cristatus</i> Eastern Osprey, and <i>Sternula nereis nereis</i> Fairy Tern were considered as possible users of the vegetation as habitat.</p>				
Landscape context score	1.14	Vegetation Condition Score	39.96	Conservation significance score	1.10
Unit biodiversity Score	50.11	Area (ha)	1.005 ha	Total biodiversity Score	50.36

Site map showing areas of proposed impact



Figure 7. Site map showing vegetation associations.

Photo log

Photolog appears as Appendix 4.

4.2 Threatened Species assessment

Table 1. Threatened flora species observed on site, or recorded within 5km 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
<i>Tecticornia flabelliformis</i> (Bead Samphire)	V	VU	3	2023	Inland saline flats, evaporation pans, salt lake margins, coastal salt marshes over gypsum, tidal flats and coastal salt-pans and clay pans.	Unlikely. The author conducted a search for Bead Samphire for Cleve Council in January 2023. Not found in this application site, but recorded 350 m to the SW in low lying

						areas not regularly inundated.
<i>Scaevola myrtifolia</i> (Myrtle Fanflower)	R		3	1996	Sandy or clay soils often over limestone.	Possible.
<i>Myoporum parvifolium</i> (Creeping Boobialla)	R		3	1998	Limestone cliffs, river flats, and in woodland on sandy, sometimes saline soils.	Possible.
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						

Table 2. Threatened fauna species observed on site, or recorded within 5km 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
<i>Actitis hypoleucos</i> (Common Sandpiper)	R		3	2006	Coastal or inland wetlands (saline or fresh), on muddy edges and rocky shores.	Possible.
<i>Egretta garzetta nigripes</i> (Little Egret)	R		3	2003	Shallows of wetlands, intertidal mudflats.	Possible.
<i>Neophema petrophila zietzi</i> (Rock Parrot)	R		3	2019	Coastal dunes, saltmarsh, rocky islands.	Possible.
<i>Pandion halieatus cristatus</i> (Eastern Osprey)	E		3	2018	Mangroves, rivers, estuaries, inshore seas, coastal islands.	Possible.
<i>Sternula nereis nereis</i> (Fairy Tern)	E	VU	3	2009	Coasts, estuaries.	Possible.
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 provides 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 provides 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

Direct impact

The area under application will be completely cleared to facilitate the construction of a new road linking Blombery Road to the Arno Bay Marina.

Indirect impact

Measures to minimize indirect impacts will include:

- Dust suppression during clearing and construction activities,
- Accessing the site only from Blombery Road and the marina carpark,
- Stockpiling vegetative debris on site before removal,
- Staging necessary clearing activities from within the site,
- Storing, servicing and fueling of machinery within the site.

4.4 Address the Mitigation Hierarchy

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

The location, design, size or scale of the clearance cannot be adjusted in order to reduce the scale of the impact. The areas under application will be cleared for the construction of a new road which will measure 10.4 m wide, including the sealed road surface and shoulders on either side.

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).**

Development of the site requires removal of all vegetation. Extent, duration, and intensity of the impacts to the site will be minimized by the following:

- Access to the proposed clearance sites will be from existing roads,
- Cleared vegetation will be stored on-site before removal, minimizing impacts to surrounding vegetation,
- All clearance activities necessary will be staged from within the application area,
- Servicing, refueling and inspection for machinery contaminant leaks will be carried out on the worksite.

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.**

The proposed development of the site will be permanent. Rehabilitation will not be possible.

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 applicant proposes to achieve the SEB by paying \$30690.07 (SEB payment plus administration fee) into the Native Vegetation Fund.

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

Principle of clearance	Considerations
Principle 1a - it comprises a high level of diversity of plant species	<p><u>Relevant information</u></p> <p>Site A1 Forty species were recorded, thirty-two native and eight introduced. Bushland Plant Diversity Score – 22.0</p> <p>Site A2 Thirty-three species were recorded, twenty-seven native and six introduced. Bushland Plant Diversity Score – 28.0</p>
	<p><u>Assessment against the principles</u></p> <p>Site A1: At Variance Vegetation Association: <i>Eucalyptus angulosa</i> Coast Ridge-fruited Mallee Low Mallee with mid-dense sclerophyll shrub understorey.</p> <p>Site A2: Seriously at Variance Vegetation Association: <i>Myoporum insulare</i> Common Boobialla Coastal Shrubland.</p>
	<p><u>Moderating factors that may be considered by the NVC</u></p> <p>A relatively small area of vegetation will be impacted relative to the amount of vegetation within the local vicinity.</p>
Principle 1b - significance as a habitat for wildlife	<p><u>Relevant information</u></p> <p>Five threatened fauna species were noted in the threatened species search to be present within a 5 km radius of the Sites A1 and A2 and recorded since 1995. One threatened bird species, <i>Neophema petrophila zietzi</i> Rock parrot was considered as possible user of the vegetation of Sites A1 and A2 as habitat.</p> <p>Threatened Fauna Scores</p> <ul style="list-style-type: none"> • Site A1: 0.1 • Site A2: 0.1 <p>Unit Biodiversity Scores</p> <ul style="list-style-type: none"> • Site A1: 31.82 • Site A2: 50.11
	<p><u>Assessment against the principles</u></p> <p>Site A1: Seriously at Variance Vegetation Association: <i>Eucalyptus angulosa</i> Coast Ridge-fruited Mallee Low Mallee with mid-dense sclerophyll shrub understorey.</p> <p>Site A2: Seriously at Variance Vegetation Association: <i>Myoporum insulare</i> Common Boobialla Coastal Shrubland.</p>
	<p><u>Moderating factors that may be considered by the NVC</u></p>

	<p>Only a very small area of vegetation will be impacted relative to the amount of vegetation in the local vicinity, and the proposed clearance is not likely to have a significant impact on the threatened species which may use the vegetation, as:</p> <ul style="list-style-type: none"> • It will not lead to a long-term decrease in the population size, • The reduction of the local area of occupancy will be minimal, • Existing populations will not be fragmented, • It will not result in the establishment of invasive species which could be harmful to threatened species. <p>Availability and/or quality of habitat will not be modified, destroyed, removed, or isolated to the extent that any species are likely to decline.</p>
<p>Principle 1c - plants of a rare, vulnerable or endangered species</p>	<p><u>Relevant information</u></p> <p>Three threatened species were noted in the threatened species search to be present within a 5 km radius of the Sites A1 and A2 and recorded since 1995. Two species (<i>Scaevola myrtifolia</i> Myrtle Fanflower and <i>Myoporum parvifolium</i> Creeping Boobialla) were considered as possibly occurring on the site.</p> <p>Threatened Flora Scores</p> <ul style="list-style-type: none"> • Site A1: 0 • Site A2: 0 <p><u>Assessment against the principles</u></p> <p>Site A1: Not at Variance</p> <p>Vegetation Association: <i>Eucalyptus angulosa</i> Coast Ridge-fruited Mallee Low Mallee with mid-dense sclerophyll shrub understorey.</p> <p>Site A2: Not at Variance</p> <p>Vegetation Association: <i>Myoporum insulare</i> Common Boobialla Coastal Shrubland.</p> <p><u>Moderating factors that may be considered by the NVC</u></p>
<p>Principle 1d - the vegetation comprises the whole or part of a plant community that is Rare, Vulnerable or endangered:</p>	<p><u>Relevant information</u></p> <p>The vegetation associations on Site 1, <i>Eucalyptus angulosa</i> Coast Ridge-fruited Mallee Low Mallee with mid-dense sclerophyll shrub understorey, and Site 2, <i>Myoporum insulare</i> Common Boobialla Coastal Shrubland do not appear in the Provisional List of Threatened Ecosystems included in the NVC Bushland Assessment Manual 2020.</p> <p>Threatened Community Scores</p> <ul style="list-style-type: none"> • Site 1: 1 • Site 2: 1 <p><u>Assessment against the principles</u></p> <p>Site A1: Not at Variance</p> <p>Vegetation Association: <i>Eucalyptus angulosa</i> Coast Ridge-fruited Mallee Low Mallee with mid-dense sclerophyll shrub understorey.</p> <p>Site A2: Not at Variance</p> <p>Vegetation Association: <i>Myoporum insulare</i> Common Boobialla Coastal Shrubland.</p> <p><u>Moderating factors that may be considered by the NVC</u></p>
<p>Principle 1e - it is significant as a remnant of vegetation in an area which has been</p>	<p><u>Relevant information</u></p> <p>Remnancy figures for IBRA Association: 28%</p> <p>Remnancy figures for IBRA Subregion: 38%</p> <p>Total Biodiversity Scores</p> <ul style="list-style-type: none"> • Site A1: 12.19 • Site A2: 50.36

extensively cleared.	<u>Assessment against the principles</u> Site A1: At Variance Vegetation Association: <i>Eucalyptus angulosa</i> Coast Ridge-fruited Mallee Low Mallee with mid-dense sclerophyll shrub understorey. Site A2: At Variance Vegetation Association: <i>Myoporum insulare</i> Common Boobialla Coastal Shrubland.
	<u>Moderating factors that may be considered by the NVC</u>
Principle 1f - it is growing in, or in association with, a wetland environment.	<u>Relevant information</u> The proposed clearance area is within the vicinity of a wetland (coastal saltpan/mud flats). The saltpan lies to the south-west of the application area, and is closest to the area at the eastern end of Site A2 (see maps, Appendix 3).
	<u>Assessment against the principles</u> Seriously at Variance
	<u>Moderating factors that may be considered by the NVC</u> The new road will be restricted to higher areas above the saltpan. Consequently: <ul style="list-style-type: none"> • Wetland areas will not be destroyed or substantially modified, • Wetland hydrology will not be affected, • Habitat and/or lifecycles of native species dependent on the wetland will not be affected, • Physio-chemical conditions (salinity, pollutants, nutrients, water temperature) will not be affected, • Invasive species will not be introduced into the wetland habitat.
Principle 1g - it contributes significantly to the amenity of the area in which it is growing or is situated.	<u>Relevant information</u> Not applicable.
	<u>Relevant information</u> Not applicable.
	<u>Moderating factors that may be considered by the NVC</u>

4.6 Risk Assessment

Determine the level of risk associated with the application

Total clearance	No. of trees	
	Area (ha)	Site A1: 0.383 ha Site A2: 1.005 ha Total: 1.388 ha
	Total Biodiversity Score	Site A1: 12.19 Site A2: 50.36
Seriously at variance with principle 1(b), 1(c) or 1 (d)	Site A1 and Site A2 both Seriously at Variance with Principle 1(b).	
Risk assessment outcome	Level 4	

5. Clearance summary

Table 3. Clearance Area Summary table

Block	Site	Species diversity score	Threatened Ecological community Score	Threatened plant score	Threatened fauna score	UBS	Area (ha)	Total Biodiversity score	Loss factor	Loadings	Reductions	SEB Points required	SEB payment	Admin Fee
A	A1	22.0	1	0	0.1	31.82	0.383	12.19	1			12.80	\$5268.55	\$289.77
A	A2	28.0	1	0	0.1	50.11	1.005	50.36	1			52.88	\$21622.65	\$1189.25
							Total	1.388	62.55			65.68	\$26891.20	\$1479.02

Table 4. Totals summary table

	Total Biodiversity score	Total SEB points required	SEB Payment	Admin Fee	Total Payment
Application	62.55	65.68	\$26891.20	\$1479.02	\$28370.22

Economies of Scale Factor	0.5
Rainfall (mm)	Site A1: 296 mm Site A2: 294 mm

6. Significant Environmental Benefit

ACHIEVING AN SEB

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

- Establish a new SEB Area on land owned by the proponent.
- Use SEB Credit that the proponent has established. Provide the SEB Credit Ref. No. _____
- Apply to have SEB Credit assigned from another person or body. The [application form](#) needs to be submitted with this Data Report.
- Apply to have an SEB to be delivered by a Third Party. The [application form](#) needs to be submitted with this Data Report.

Pay into the Native Vegetation Fund.

PAYMENT SEB

The applicant proposes to achieve the SEB by paying \$28370.22 (SEB payment plus administration fee) into the Native Vegetation Fund.

7. Appendices

Appendix 1. Flora species recorded during the field survey.

Note: asterisk (*) denotes introduced species.

Family	Species	Common name	Site	
			A1	A2
<i>Aizoaceae</i>	* <i>Aizoon secundum</i>	Galenia	X	X
	<i>Carpobrotus rossii</i>	Native Pigface	X	X
	<i>Disphyma crassifolium ssp. clavellatum</i>	Round-leaf Pigface	X	X
	<i>Tetragonia implexicoma</i>	Bower Spinach	X	
<i>Amaranthaceae</i>	<i>Hemichroa diandra</i>	Mallee Hemichroa	X	X
<i>Apocynaceae</i>	<i>Alyxia buxifolia</i>	Sea Box	X	X
<i>Asparagaceae</i>	* <i>Asparagus asparagoides f.</i>	Bridal Creeper	X	
	<i>Lomandra leucocephala ssp.robusta</i>	Woolly Mat-rush	X	
<i>Asphodelaceae</i>	* <i>Asphodelus fistulosus</i>	Onion Weed	X	X
<i>Asteraceae</i>	<i>Calotis cymbacantha</i>	Showy Burr-daisy	X	
	* <i>Gazania linearis</i>	Gazania	X	X
	<i>Olearia axillaris</i>	Coast Daisy-bush	X	X
	<i>Senecio pinnatifolius</i>	Variable Groundsel	X	X
	* <i>Sonchus oleraceus</i>	Common Sow-thistle	X	X
<i>Casuarinaceae</i>	<i>Allocasuarina muelleriana</i>	Common Oak-bush	X	X
<i>Chenopodiaceae</i>	<i>Atriplex cinerea</i>	Coast Saltbush		X
	<i>Atriplex paludosa ssp. cordata</i>	Marsh Saltbush	X	X
	<i>Enchylaena tomentosa var. tomentosa</i>	Ruby Saltbush	X	X
	<i>Maireana oppositifolia</i>	Salt Bluebush		X
	<i>Rhagodia crassifolia</i>	Fleshy Saltbush		X
	<i>Rhagodia preissii ssp. preissii</i>	Mallee Saltbush	X	X
	<i>Salsola australis</i>	Buckbush	X	
	<i>Tecticornia halocnemoides ssp.</i>	Grey Samphire		X
	<i>Tecticornia indica ssp.</i>	Brown-head Samphire		X
	<i>Threlkeldia diffusa</i>	Coast Bonefruit	X	X
<i>Cyperaceae</i>	<i>Gahnia deusta</i>	Limestone Saw-sedge	X	
<i>Frankeniaceae</i>	<i>Frankenia sessilis</i>	Small-leaf Sea-heath	X	X
<i>Goodeniaceae</i>	<i>Scaevola crassifolia</i>	Cushion Fanflower		X
<i>Liliaceae</i>	<i>Dianella revoluta var.</i>	Flax Lily	X	X
<i>Myoporaceae</i>	<i>Myoporum insulare</i>	Common Boobialla	X	X

<i>Myrtaceae</i>	<i>Eucalyptus angulosa</i>	Coast Ridge-fruited Mallee	X	
	<i>Eucalyptus leptophylla</i>	Narrow-leaf Red Mallee	X	
	<i>Homoranthus wilhelmii</i>	Wilhelm's Homoranthus	X	X
	* <i>Leptospermum laevigatum</i>	Coast Tea-tree		
<i>Pittosporaceae</i>	<i>Pittosporum angustifolium</i>	Native Apricot	X	X
<i>Poaceae</i>	<i>Austrostipa</i> sp.	Spear-grass	X	X
	<i>Cynodon dactylon</i> var.	Couch		X
	* <i>Ehrharta calycina</i>	Perennial Veldt Grass	X	X
	<i>Rytidosperma</i> sp.	Wallaby-grass	X	
<i>Proteaceae</i>	<i>Hakea mitchellii</i>	Heath Needlebush	X	
<i>Rhamnaceae</i>	<i>Spyridium subochreatum</i>	Velvet Spyridium	X	
<i>Rutaceae</i>	<i>Geijera linearifolia</i>	Sheep Bush	X	X
<i>Santalaceae</i>	<i>Exocarpos aphyllus</i>	Leafless Cherry	X	X
	<i>Exocarpos sparteus</i>	Slender Cherry	X	
	<i>Santalum acuminatum</i>	Quandong	X	X
<i>Solanaceae</i>	* <i>Lycium ferocissimum</i>	African Boxthorn	X	X
<i>Zygophyllaceae</i>	<i>Nitraria billardierei</i>	Nitre Bush	X	X

Appendix 2. Bushland Vegetation Assessment Scoresheet associated with the proposed clearance (also submitted in Excel format)

Site A1

Bushland Assessment Scoresheets		(Version - 20 July 2022)	
Block	A	ASSESSOR(S)	P Landless
Size of Block (Ha)	1.388	DATE OF ASSESSMENT	4.6.2023
Landscapes Region	Eyre Peninsula		
BCM Region	Eyre Peninsula		
IBRA Association	Hambidge		
IBRA Subregion	Eyre Mallee		
Map of the Block (Including the Sites)			
Landscape Context Scores		% native veg. remaining in IBRA Assoc.	28
		% native veg. remaining in IBRA subregion	38
		0 - 10% = 0.05 pts; >10-20% = 0.04 pts; >20-30% = 0.03 pts; >30-60% = 0.02 pts; > 60 = 0 pts	Score 0.05
		Score received for both IBRA assoc. and subregion then summed	
Percent Vegetation Cover (5km radius) (%)	29	% native veg. protected IBRA Assoc.	74
0-5% = 0 pts; >5-10% = 0.02 pts; >10-25% = 0.04 pts; >25-50% = 0.06 pts; >50-75% = 0.03 pt; >75-100% = 0 pts		0-10% = 0.03 pts; >10-20% = 0.02 pts; >20-40% = 0.01 pt; >40% = 0	
Score 0.06		Score 0	
Block Shape Cleared perimeter:Area (km/km2)		Wetland or Riparian Habitat present	
Cleared Perimeter (m) =	0	Riparian zone present (Yes/No) = 0.02 pt	No
Cleared Perimeter to area ratio	0.00	Swamp/wetland present (Yes/No) = 0.03 pts	No
<6 = 0.03 pts; 6 to <12 = 0.02 pts; 12 to <18 = 0.01 pt		(Swamp/wetland may be +/- riparian zone)	
Score 0.03		Score 0	
<i>Note; Blocks will score a minimum Landscape Context Score of 1</i>		LANDSCAPE CONTEXT SCORE (max 1.25)	1.14

Vegetation Condition Scores

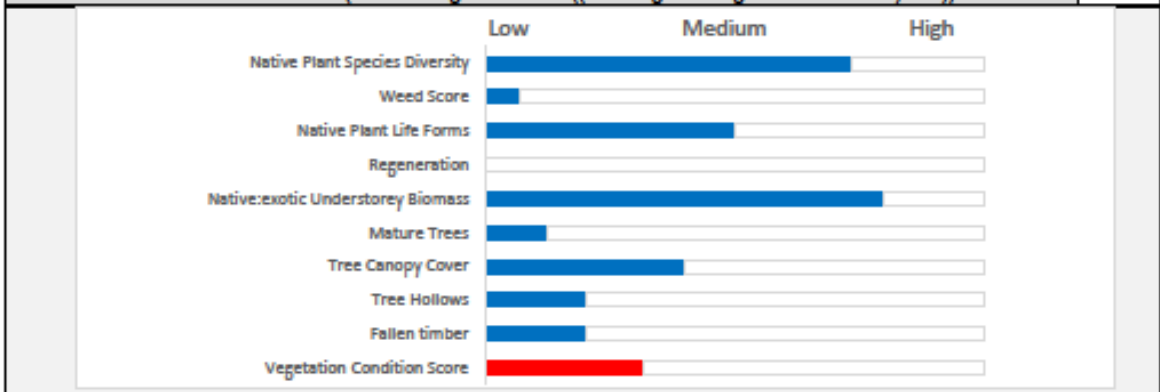
SITE:	A1
BCM COMMUNITY	EP 11.2 Sub coastal & Coastal Low Mallee with Mid Dense Sclerophyll Shrub Understorey on Limestone Soils
VEGETATION ASSOCIATION DESCRIPTION	<i>Eucalyptus angulosa</i> Low Mallee with mid-dense sclerophyll shrub und
SIZE OF SITE (Ha)	0.383

Benchmarked attributes (Scores determined by comparing to a Benchmark community)				Native Plant Life Forms	Cover rating
Number of Native Species (Minus herbaceous annuals for spring Surveys)	32			Trees > 15m	
Native Plant Species Diversity Score (max 30) from benchmark score weighted by a factor of 2	22.0			Trees 5 - 15 m	
				Trees < 5m	1
Number of regenerating native species	0			Mallee > 5m	
Regeneration Score (max 12) from benchmark community weighted by a factor of 1.5	0			Mallee < 5m	3
				Shrubs > 2m	1
Weed species (Top 5 Cover x Invasiveness)	Cover (max 6)	Weed Threat Rating (max 5)	C x I	Shrubs 0.5 - 2m	1
<i>Lycium ferocissimum</i>	2	4	8	Shrubs < 0.5	1
<i>Asparagus asparagoides</i> forma	2	5	10	Forbs	1
<i>Ehrharta calycina</i>	2	4	8	Mat Plants	1
<i>Gazania linearis</i>	2	3	6	Grasses > 0.2m	1
<i>Leptospermum laevigatum</i>	2	3	6	Grasses < 0.2m	1
				Sedges > 1m	1
				Sedges < 1m	1
Weed Score (max 15) from benchmark community	1			Hummock grasses	
				Vines, scramblers	
				Mistletoe	
				Ferns	
				Grass-tree	
				Total	12
Native Plant Life Forms (max 20) from benchmark score weighted by a factor of 2					10.0

Non-Benchmarked Attributes (Scores determined from direct field observations)		Is the community naturally treeless?	
Native:exotic Understorey biomass Score (max 5)	4		<input type="checkbox"/>
		Fallen Timber/Debris (max 5)	1
		Hollow-bearing trees Score (max 5)	1
		Mature Tree Score (max 8)	1
		Tree Canopy Cover Score (max 5)	2

Vegetation Condition Score calculation

Positive Vegetation Attributes Score = Native species diversity + Regeneration + Native Plant Life Forms Fallen timber/debris + Hollow-bearing trees - If the community Score is Not Benchmarked (SNB) for regeneration this score is multiplied 1.24 - If the community is naturally treeless this score is multiplied by 1.29	35.00
Negative Vegetation Attributes Score = (15 - Weeds) + ((10 - Biomass score - Tree Canopy Cover Score)exp2/2)	22.00
VEGETATION CONDITION SCORE (Positive veg attributes x ((80 - Negative vegetation attributes) / 80))	25.38



Conservation Significance Score

Is the vegetation association considered a Threatened Ecological community or Ecosystem?	Yes/No
State (Provisional List of Threatened Ecosystems of SA) Rare community (0.1 pt)	<input type="checkbox"/>
State (Provisional List of Threatened Ecosystems of SA) Vulnerable community (0.2 pts)	<input type="checkbox"/>
State (Provisional List of Threatened Ecosystems of SA) Endangered community (0.3 pts)	<input type="checkbox"/>
Nationally (EPBC Act) Vulnerable community (0.35 pts)	<input type="checkbox"/>
Nationally (EPBC Act) Endangered or Critically Endangered community (0.4 pts)	<input type="checkbox"/>
<i>Note: all sites will score a minimum Conservation Significance Score of 1</i>	
Threatened Community Score	1
Number of Threatened Flora Species recorded for the site (within the site)	
<i>If a species has both a State (NP&W Act) and National (EPBC Act) rating, it's only recorded for its National rating.</i>	
State Rare species recorded (1 pt each)	0
State Vulnerable species recorded (2.5 pt each)	0
State Endangered recorded (5 pts each)	0
Nationally Vulnerable species recorded (10 pts each)	0
Nationally Endangered or Critically endangered species recorded (20 pts each)	0
0 = 0 pts; <2 = 0.04 pts; 2 - <5 = 0.08 pts; 5 - <10 = 0.12 pts; 10 - <20 = 0.16 pts; 20 or > = 0.2 pts	0
Threatened Flora Score	0
Potential habitat for Threatened Fauna Species (number observed or previously recorded)	
<i>If a species has both a State (NP&W Act) and National (EPBC Act) rating, it's only recorded for its National rating.</i>	
State Rare species observed or locally recorded (1 pt each)	3
State Vulnerable species observed or locally recorded (2.5 pt each)	0
State Endangered species observed or locally recorded (5 pt each)	1
Nationally Vulnerable species observed or locally recorded (10 pts each)	2
Nationally Endangered or Critically endangered species observed or locally recorded (20 pts each)	0
0 = 0 pts; <2 = 0.02 pts; 2 - <5 = 0.04 pts; 5 - <10 = 0.06 pts; 10 - <20 = 0.08pts; 20 or > = 0.1 pts	28
Threatened Fauna Score	0.1
CONSERVATION SIGNIFICANCE SCORE	1.1

Total Scores for the Site

	Score	Vegetation Condition x Landscape Context x Conservation Significance =	UNIT BIODIVERSITY SCORE
LANDSCAPE CONTEXT SCORE	1.14		31.82
VEGETATION CONDITION SCORE	25.38		
CONSERVATION SIGNIFICANCE SCORE	1.10		
Total Biodiversity Score (Biodiversity Score x hectares)			12.19

Photo Point and Vegetation Survey Location	Direction of the Photo
	E 95 degrees
	GPS Reference
	Datum WGS84
	Zone (52, 53 or 54) 53
	Easting (8 digits) 645853
	Northing (7 digits) 6246800
	Description Eucalyptus angulosa Coastal Low Mallee

What is the purpose of Assessment?

Clearance

SEB Area

Other

Assessment for Clearance

Loss Factor	1.0	Approximate hectares required	1.60
Loadings for clearance of protected areas		Economies of Scale Factor	0.5
Reductions for rehabilitation of impact site		Mean Annual rainfall for the site (mm)	298
SEB Points required	12.80	Payment into the fund (GST Exclusive)	\$5,268.55
		Administration fee (GST Inclusive)	\$289.77

Site A2

Bushland Assessment Scoresheets (Version - 20 July 2022)

Block	A
Size of Block (Ha)	1.388
Landscapes Region	Eyre Peninsula
BCM Region	Eyre Peninsula
IBRA Association	Hambidge
IBRA Subregion	Eyre Mallee

ASSESSOR(S)	P Landless
DATE OF ASSESSMENT	4.6.2023

Map of the Block (Including the Sites)



Landscape Context Scores

Percent Vegetation Cover (5km radius) (%)	29	% native veg. remaining in IBRA Assoc.	28
0-5% = 0 pts; >5-10% = 0.02 pts; >10-25% = 0.04 pts; >25-50% = 0.06 pts; >50-75% = 0.03 pt; >75-100% = 0 pts	Score 0.06	% native veg. remaining in IBRA subregion	38
Block Shape Cleared perimeter:Area (km/km2)		0 - 10% = 0.05 pts; >10-20% = 0.04 pts; >20-30% = 0.03 pts; >30-60% = 0.02 pts; > 60 = 0 pts	Score 0.05
Cleared Perimeter (m) =	0	Score received for both IBRA assoc. and subregion then summed	
Cleared Perimeter to area ratio	0.00	% native veg. protected IBRA Assoc.	74
<6 = 0.03 pts; 6 to <12 = 0.02 pts; 12 to <18 = 0.01 pt	Score 0.03	0-10% = 0.03 pts; >10-20% = 0.02 pts; >20-40% = 0.01 pt; >40% = 0	Score 0
		Wetland or Riparian Habitat present	
		Riparian zone present (Yes/No) = 0.02 pt	No
		Swamp/wetland present (Yes/No) = 0.03 pts	No
		(Swamp/wetland may be +/- riparian zone)	
		Score	0
<i>Note; Blocks will score a minimum Landscape Context Score of 1</i>		LANDSCAPE CONTEXT SCORE (max 1.25)	1.14

Vegetation Condition Scores

SITE:	A2
BCM COMMUNITY	EP 12.2 Coastal Shrublands of Stable Dunes & Cliff top Dunes
VEGETATION ASSOCIATION DESCRIPTION	<i>Myoporum insulare</i> Coastal Shrubland
SIZE OF SITE (Ha)	1.005

Benchmarked attributes (Scores determined by comparing to a Benchmark community)				Native Plant Life Forms	Cover rating
Number of Native Species (Minus herbaceous annuals for spring Surveys)				Trees > 15m	
Native Plant Species Diversity Score (max 30) from benchmark score weighted by a factor of 2				Trees 5 - 15 m	
28.0				Trees < 5m	
Number of regenerating native species				Mallee > 5m	
Regeneration Score (max 12) from benchmark community weighted by a factor of 1.5				Mallee < 5m	
0				Shrubs > 2m	2
Weed species (Top 5 Cover x Invasiveness)				Shrubs 0.5 - 2m	2
Lycium ferocissimum	Cover (max 6)	Weed Threat Rating (max 5)	C x I	Shrubs < 0.5	2
	3	4	12	Forbs	1
Gazania sp.	2	3	6	Mat Plants	1
Ehrharta calycina	2	4	8	Grasses > 0.2m	2
Asphodelus fistulosus	2	2	4	Grasses < 0.2m	1
Galenia secunda	1	2	2	Sedges > 1m	
	Cover x Threat		32	Sedges < 1m	1
Weed Score (max 15) from benchmark community				Hummock grasses	
2				Vines, scramblers	
Native Plant Life Forms (max 20) from benchmark score weighted by a factor of 2				Mistletoe	
				Ferns	
				Grass-tree	
				Total	12
					14.0

Non-Benchmarked Attributes (Scores determined from direct field observations)		Is the community naturally treeless?	L
Native:exotic Understorey biomass Score (max 5)	3	Tree attributes not scored for treeless communities or communities with only emergent trees	

Vegetation Condition Score calculation

Positive Vegetation Attributes Score = Native species diversity + Regeneration + Native Plant Life Forms Fallen timber/debris + Hollow-bearing trees - If the community Score is Not Benchmarked (SNB) for regeneration this score is multiplied 1.24 - If the community is naturally treeless this score is multiplied by 1.20	54.18
Negative Vegetation Attributes Score = (15 - Weeds) + ((10 - (Biomass score x 2))exp2/2)	21.00
VEGETATION CONDITION SCORE (Positive veg attributes x ((80 - Negative vegetation attributes) / 80))	39.96



Conservation Significance Score

Is the vegetation association considered a Threatened Ecological community or Ecosystem?	Yes/No
State (Provisional List of Threatened Ecosystems of SA) Rare community (0.1 pt)	<input type="checkbox"/>
State (Provisional List of Threatened Ecosystems of SA) Vulnerable community (0.2 pts)	<input type="checkbox"/>
State (Provisional List of Threatened Ecosystems of SA) Endangered community (0.3 pts)	<input type="checkbox"/>
Nationally (EPBC Act) Vulnerable community (0.35 pts)	<input type="checkbox"/>
Nationally (EPBC Act) Endangered or Critically Endangered community (0.4 pts)	<input type="checkbox"/>
<i>Note: all sites will score a minimum Conservation Significance Score of 1</i>	
Threatened Community Score	1
Number of Threatened Flora Species recorded for the site (within the site)	
<i>If a species has both a State (NP&W Act) and National (EPBC Act) rating, it's only recorded for its National rating.</i>	
State Rare species recorded (1 pt each)	0
State Vulnerable species recorded (2.5 pt each)	0
State Endangered recorded (5 pts each)	0
Nationally Vulnerable species recorded (10 pts each)	0
Nationally Endangered or Critically endangered species recorded (20 pts each)	0
0 = 0 pts; <2 = 0.04 pts; 2 - <5 = 0.08 pts; 5 - <10 = 0.12 pts; 10 - <20 = 0.16 pts; 20 or > = 0.2 pts	0
Threatened Flora Score	0
Potential habitat for Threatened Fauna Species (number observed or previously recorded)	
<i>If a species has both a State (NP&W Act) and National (EPBC Act) rating, it's only recorded for its National rating.</i>	
State Rare species observed or locally recorded (1 pt each)	3
State Vulnerable species observed or locally recorded (2.5 pt each)	0
State Endangered species observed or locally recorded (5 pt each)	1
Nationally Vulnerable species observed or locally recorded (10 pts each)	2
Nationally Endangered or Critically endangered species observed or locally recorded (20 pts each)	0
0 = 0 pts; <2 = 0.02 pts; 2 - <5 = 0.04 pts; 5 - <10 = 0.06 pts; 10 - <20 = 0.08pts; 20 or > = 0.1 pts	28
Threatened Fauna Score	0.1
CONSERVATION SIGNIFICANCE SCORE	1.1

Total Scores for the Site		Vegetation Condition x Landscape Context x Conservation Significance =	
LANDSCAPE CONTEXT SCORE	Score	UNIT BIODIVERSITY SCORE	50.11
	1.14		
VEGETATION CONDITION SCORE	39.96	Total Biodiversity Score	
CONSERVATION SIGNIFICANCE SCORE	1.10	(Biodiversity Score x hectares)	50.36

Photo Point and Vegetation Survey Location		Direction of the Photo	
		W 288 degrees	
		GPS Reference	
		Datum	WGS84
		Zone (52, 53 or 54)	53
		Easting (8 digits)	646281
Northing (7 digits)	6246719		
Description		Myoporum insulare Coastal Shrubland	

What is the purpose of Assessment?

Clearance

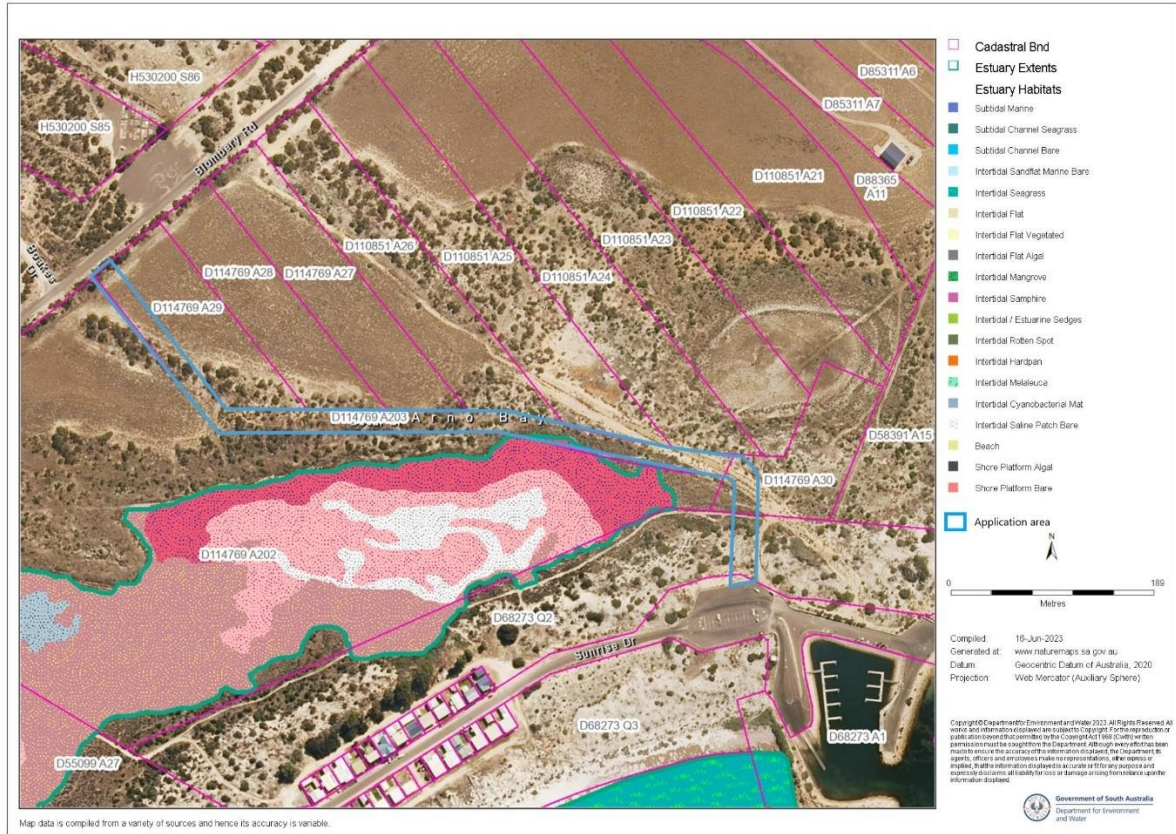
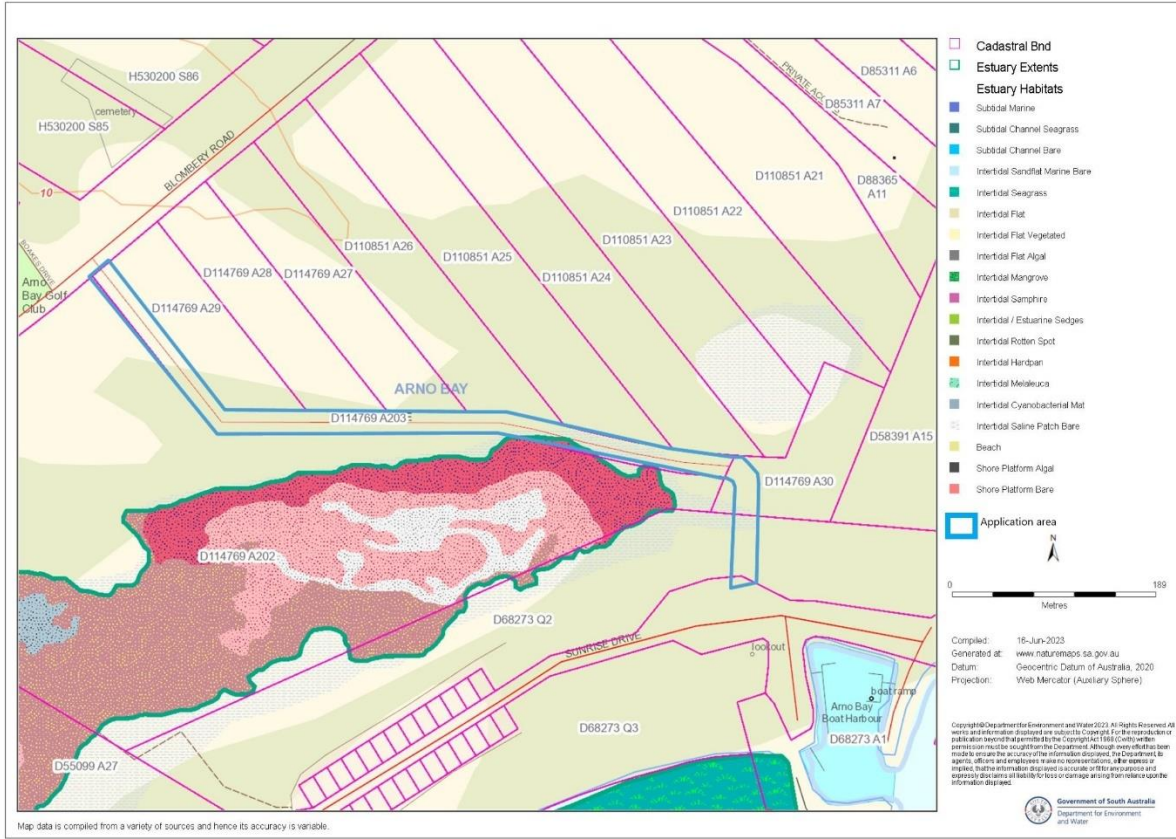
SEB Area

Other

Assessment for Clearance

Loss Factor	1.0	Approximate hectares required	6.61
Loadings for clearance of protected areas		Economies of Scale Factor	0.5
Reductions for rehabilitation of impact site		Mean Annual rainfall for the site (mm)	294
SEB Points required	52.88	Payment into the fund (GST Exclusive)	\$21,622.65
		Administration fee (GST Inclusive)	\$1,189.25

Appendix 3. Application area in relation to wetland



Appendix4. Photolog



Position: 53S 645818E 6246825N **Direction of photo:** SE 122° **Site:** A1



Position: 53S 645879E 6246806N **Direction of photo:** S 180° **Site:** A1



Position: 53S 645861E 6246812N **Direction of photo:** S 180° **Site:** A1



Position: 53S 645848E 6246806N **Direction of photo:** SE 135° **Site:** A1



Position: 53S 646061E 6246738N **Direction of photo:** E 93° **Site:** A2



Position: 53S 646135E 6246740N **Direction of photo:** W 268° **Site:** A2



Position: 53S 646304E 6246710N **Direction of photo:** E 110° **Site:** A2



Position: 53S 646281E 6246719N **Direction of photo:** W 288° **Site:** A2