

Port Stanvac: Remnant Vegetation Mapping

Survey conducted by Sonia Croft and Tim Croft on 19/1/2023 and 31/1/2023

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Introduction

The purpose of this survey was to provide updated mapping of the remnant vegetation occurring at Port Stanvac. The remnant vegetation was divided into different associations based on dominant overstorey species and also the foliage cover of the dominant overstorey species. The vegetation was surveyed by Sonia Croft and Tim Croft on 19th and 31st January 2023. For each vegetation association, native and exotic plant species were recorded, along with an estimate of their cover/abundance. For many species, their abundance and/or visible presence will vary throughout the year, hence species present and their abundance reflect a summer inspection. The primary aim of the survey was to determine vegetation association boundaries, rather than being an exhaustive survey of all plant species present. It is also likely that some species present may have not been recorded, if their occurrence was highly restricted.

Vegetation mapping was done using ArcGIS 10.6 with Department for Environment and Water aerial imagery dated January 2021, resolution 60 cm.

This report provides:

- A brief description of each vegetation association, and its location in the landscape
- A list of exotic and native species recorded for each association in January, and an estimate of each species cover/abundance as perceived in January 2023. Conservation ratings are provided for the Mount Lofty Ranges IBRA sub-region.
- Representative photos of Associations.

Figure 1 shows the vegetation association boundaries.

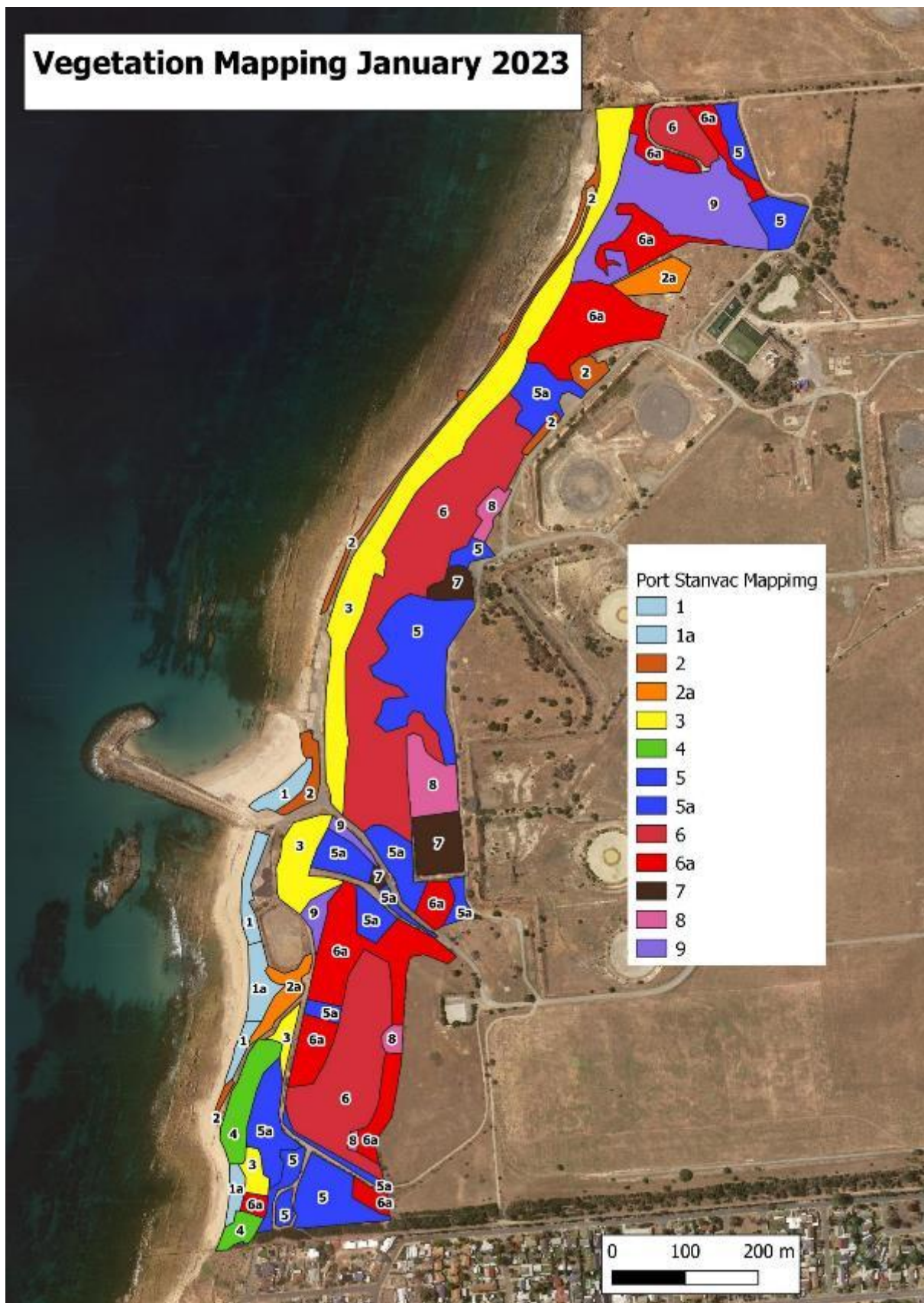


Figure 1: Vegetation Associations January 2023

Summary of Vegetation Associations Recorded January 2023

Vegetation Association	Soil/Landform	Area Mapped (ha)	% Native biomass	Native Species Diversity recorded January 2023	Regionally Rated Species**
1 <i>Euphorbia paralias</i> +/- <i>Thinopyrum junceiforme</i> +/- <i>Spinifex hirsutus</i> herbland/grassland	Sandy Foreshore/ Foredune	0.6	5%	6	Nil
1a <i>Acacia cyclops</i> (Western Coastal Wattle) shrubland over exotic herbs and grasses		0.5	5% - 10%	12	<i>Pelargonium australe</i> (V) <i>Scaevola crassifolia</i> (V)
2. <i>Nitraria billardierei</i> (Nitrebush) Very Open Shrubland	Cliff/foreshore boundary zone; Upper cliff top	0.9	5 – 50%	17	<i>Nitraria billardierei</i> (R)
2a <i>Nitraria billardierei</i> sparse regrowth		0.7	1 – 10%	6	
3. <i>Atriplex paludosa</i> (Marsh Saltbush) Low Open Shrubland	Steep cliff face	4.3	> 90%	22	<i>Lawrenciasquamata</i> (V) <i>Rhagodia spinescens</i> (V) <i>Nitraria billardierei</i> (R) <i>Dissocarpus biflorus</i> (R)
4 <i>Maireana oppositifolia</i> (Salt Bluebush) +/- (Pale Turpentine Bush) +/- <i>Atriplex paludosa</i> (Marsh Saltbush) Low Shrubland	Steep cliff face	0.8	>95%	14	<i>Lawrenciasquamata</i> (V)
5 and 5a <i>Acacia cyclops</i> (Western Coastal Wattle) +/- <i>Olea europaea</i> (Olive) Shrubland	Gentle cliff top slopes	3.5	5 – 25%	12	<i>Santalum acuminatum</i> (R)
		2.6	5 – 50%	16	<i>Myoporum parvifolium</i> (V) <i>Roepera glaucum</i> (R) <i>Santalum acuminatum</i> (R)
6 <i>Beyeria lechenaultii</i> (Pale Turpentine Bush) – <i>Acrotriche patula</i> (Prickly Ground-berry) Low Shrubland	Gentle cliff top slopes	7.3	> 90%	53	<i>Acacia cupularis</i> (R) <i>Alyxia buxifolia</i> (R) <i>Dodonaea hexandra</i> (V) <i>Gahnia filum</i> (V) <i>Gahnia lanigera</i> (R) <i>Lepidosperma congestum</i> (R) <i>Lomandra collina</i> (R) <i>Lomandra effusa</i> (R) <i>Melaleuca lanceolata</i> (R) <i>Minuria leptophylla</i> (R) <i>Pomaderris paniculosa</i> ssp. <i>paralia</i> (R) <i>Santalum acuminatum</i> (R) <i>Sclerolaena diacantha</i> (R) <i>Thysanotus baueri</i> (EN) <i>Velleia arguta</i> (R) <i>Westringia rigida</i> (V)
6 <i>Beyeria lechenaultii</i> (Pale Turpentine Bush) – <i>Acrotriche patula</i> (Prickly Ground-berry) Low Open Shrubland	Steeper cliff top slopes	5.1	>75%		

Vegetation Association	Soil/Landform	Area Mapped (ha)	% Native biomass	Native Species Diversity recorded January 2023	Regionally Rated Species**
7 <i>Eucalyptus porosa</i> (Mallee Box) Low Woodland	Shallow gullies of gently sloping cliff top	0.8	50 – 75%	19	<i>Gahnia lanigera</i> (R) <i>Lepidosperma congestum</i> (R) <i>Myoporum parvifolium</i> (V) <i>Nitraria billardieri</i> (R) <i>Santalum acuminatum</i> (R) <i>Westringia rigida</i> (V)
8 <i>Melaleuca lanceolata</i> (Dryland Teatree) Shrubland	Upper, gentle slopes near eastern boundary. Surface calcrete present	0.9	50 - 75%	24	<i>Acacia cupularis</i> (R) <i>Alyxia buxifolia</i> (R) <i>Dodonaea hexandra</i> (V) <i>Gahnia lanigera</i> (R) <i>Lepidosperma congestum</i> (R) <i>Lomandra collina</i> (R) <i>Melaleuca lanceolata</i> (R) <i>Roepera confluens</i> (V) <i>Roepera glaucum</i> (R) <i>Santalum acuminatum</i> (R) <i>Westringia rigida</i> (V)
9 Sparsely vegetated steep rock slopes	Very steep rock slopes	2.4	50 – 75%	12	<i>Acacia cupularis</i> (R)
		30 ha			

*Rapid visual estimate of native plant biomass as a % of total plant biomass

** Mount Lofty Ranges IBRA sub-region (extends from Yankalilla to 5 km north of Nuriootpa, and east to Angaston/Mt Torrens/Mt Baker). RA = Rare. VU = Vulnerable, EN = Endangered

1: *Euphorbia paralias* (Sea Spurge) +/- *Thinopyrum junceiforme* (Sea Wheat-grass) +/- *Spinifex hirsutus* (Rolling Spinifex) herbland/grassland on sandy foredune

Landform: Sandy shore and low foredune

Soil: White sand

Rock Cover: Nil

Exotic coloniser species dominate the sandy shore and foredune. *Euphorbia paralias* is widespread and abundant. North of the groin, Sea Wheat-grass, *Thinopyrum junceiforme*, forms a dense monoculture at the western edge of this association. South of the groin, at the southern end of this association, Marramgrass (*Ammophila arenaria*), averages about 5% cover over an area of approximately 70 m x 10 m.

The native grass *Spinifex hirsutus*, the native sedge, Knobby Club-rush (*Ficinia nodosa*) and native groundcover, Native Pig-face (*Carpobrotus rossii*), are widespread but patchy.

Environmental Assets: Still retains 6 remnant native species including Spinifex and Knobby Club-rush. Weed control should work outwards from these areas.



1a: *Acacia cyclops* (Western Coastal Wattle) Shrubland over *Euphorbia paralias* (Sea Spurge) – *Senna pendula* (Cassia) - *Lagurus ovatus* (Hares tail grass)

Landform: Sandy foreshore and low foredune

Soil: White sand

The exotic Western Coastal Wattle (*Acacia cyclops*) has recolonised this area and now dominates, with ongoing and rapid regeneration occurring. The shrubs average 1 – 1.5 m tall. Exotic coloniser species also dominate the groundcover, particularly *Senna glandula* which is of dense cover over large dense cover of large areas. *Tetragonia decumbens*, *Lagurus ovata* and *Euphorbia paralias* are also widespread and abundant.

However, Knobby Club-rush (*Ficinia nodosa*), Native Pigface (*Carpobrotus rossii*) were widespread and common native species, and there were localised patches of Emu-grass (*Distichlis distichophylla*) and Knotty-butt Paspalidium (*Setaria constricta*).

Environmental Assets: Austral Stork's-bill (*Pelargonium australe*) and Cushion Fanflower (*Scaevola crassifolia*) are regionally Vulnerable, although sparsely present.

Native Species recorded January 2023

Scientific Name	Common Name	Cover Abundance*		
		1	1a	Region Rating**
<i>Atriplex paludosa</i> ssp. <i>cordata</i>	Marsh Saltbush		1	
<i>Beyeria lechenaultii</i>	Pale Turpentine Bush		1	
<i>Carpobrotus rossii</i>	Native Pigface	1	2	
<i>Dianella brevicaulis</i>	Short-stem Flax-lily		1	
<i>Distichlis distichophylla</i>	Emu-grass		1 to 2	
<i>Ficinia nodosa</i>	Knobby Club-rush	1 to 2	1a	
<i>Myoporum insulare</i>	Native Juniper	1		
<i>Pelargonium australe</i>	Austral Stork's-bill		1	VU
<i>Scaevola crassifolia</i>	Cushion Fanflower		1	VU
<i>Senecio spanomerus</i>	Groundsel	1	1a	
<i>Setaria constricta</i>	Knotty-butt Paspalidium		1a	
<i>Spinifex hirsutus</i>	Rolling Spinifex	2	1	
<i>Threlkeldia diffusa</i>	Coast Bonefruit	1	1 to 2	

*1 = not many, < 1% cover; 1a = plentiful but <1% cover; 2 = 1 – 5% cover; 3 = 6 – 25% cover; 4 = 26 – 50% cover

** Mount Lofty Ranges IBRA sub-region

Exotic Species recorded January 2023

Species	Common Name	Cover/Abundance*	
		Association 1	Association 1a
<i>Acacia cyclops</i>	Western Coastal Wattle	1a	1a
<i>Acacia saligna</i>	Golden Wreath Wattle		1
<i>Aizoon pubescens</i>	Galenia	1	1 to 2
<i>Ammophila arenaria</i>	Marra grass	2	2 to 3
<i>Bromus madritensis</i>	Compact Brome	1	
<i>Chrysanthemoides monilifera</i>	Boneseed	1	
<i>Cynara cardunculus</i>	Artichoke Thistle		1

Species	Common Name	Cover/Abundance*	
		Association 1	Association 1a
<i>Euphorbia paralias</i>	Sea spurge	4	2
<i>Gazania linearis</i>	Gazania	1a	
<i>Lagurus ovatus</i>	Hare's Tail Grass	2	3
<i>Lycium ferocissimum</i>	African Boxthorn		1
<i>Olea europaea</i>	Olive		N
<i>Parapholis incurva</i>	Curly rye-grass	1	
<i>Reichardia tingitana</i>	False Sow thistle	2	2
<i>Scabiosa atropurpurea</i>	Scabiosa	1	
<i>Senna pendula</i> var <i>glabrata</i>	Easter Cassia	1 to 4	2 to 3
<i>Tetragonia decumbens</i>	Sea Spinach	1	1a
<i>Thinopyrum junceiforme</i>	Sea wheat-grass	4	
<i>Trifolium glomeratum</i>	Cluster Clover		1a

*1 = not many, < 1% cover; 1a = plentiful but <1% cover; 2 = 1 – 5% cover; 3 = 6 – 25% cover; 4 = 26 – 50% cover

2: *Nitraria billardiarei* (Nitrebush) Very Open Shrubland

Landform: bottom of cliff/ upper edge of tidal flat; and localised occurrences on cliff top at eastern boundary of surveyed area

Soil: Sandy loam

Rock cover: 20 – 80%

This association occurs as a relatively narrow band at the base of the cliff and adjoining upper shoreline, where the land is relatively flat or very gently sloping. A localised occurrence occurs at the upper slope, eastern boundary. The Nitrebush shrubs are 1 – 2 m tall, generally occurring as isolated clusters or shrubs, with a low overall density. However, numerous juveniles were present. *Atriplex cinerea* is locally common.

Exotic species are dominant, particularly *Euphorbia paralias*, *Scabiosa atropurpurea*, *Plantago lanceolata* and *Plantago coronopus*. The introduced grasses, *Cenchrus clandestinus* (Kikuyu) and *Cynodon dactylon* (Couch) form locally dense patches in the northern half of this association. In the southern half, south of the groin, the exotic *Senna pendula* is suckering aggressively and has a cover of > 50% over large areas. This species is recognised as an environmental weed (particularly coastal habitats) in eastern States of Australia. Just north of the eastern end of the groin is a dense patch of *Gazania* (*Aizoon pubescens*). A few Canary Island Palms are beginning to spread near the eastern end of the groin.

In the northern parts of this association, there are a few isolated plants of *Salicornia* sp. (Samphire) growing on the rock platform that extends to the base of the cliff.

2a: Degraded form of *Nitraria billardiarei* (Nitrebush) Very Open Shrubland

These areas are largely exotic, but Nitrebush may have formerly been more prominent. On the foredunes, the area mapped as 2a has Nitrebush largely absent. Cassia (*Senna glandula*), *Aizoon pubescens* (Galenia) and *Avena barbata* (Wild Oats) dominate, with native plants confined largely to sparse *Enchylaena tomentosa*, *Maireana brevifolia* and *Atriplex paludosa*. A further area mapped as 2a is on a steep slope in the north-east of the surveyed area, previously cleared and now slowly recolonising with several species of native shrubs and groundcovers, including *Nitraria billardiarei*, *Beyeria lechenaultii* and *Maireana brevifolia*. This slope contains numerous Artichoke Thistle (*Cynara cardunculus*).



Native Species recorded January 2023

Scientific Name	Common Name	Cover/Abundance*		Region Rating**
		2	2a	
<i>Acrotriche patula</i>	Prickly Ground-berry	1		
<i>Atriplex cinerea</i>	Grey Saltbush	1		
<i>Atriplex paludosa</i> ssp. <i>cordata</i>	Marsh Saltbush	1	1	
<i>Atriplex semibaccata</i>	Berry Saltbush		1	
<i>Beyeria lechenaultii</i>	Pale Turpentine Bush		1	
<i>Chloris truncata</i>	Windmill Grass	1		
<i>Disphyma crassifolium</i> ssp. <i>clavellatum</i>	Round-leaf Pigface	1		
<i>Dissocarpus biflorus</i>	Woolly Twin-flower Saltbush	1		

Scientific Name	Common Name	Cover/Abundance*		Region Rating**
		2	2a	
<i>Distichlis distichophylla</i>	Emu-grass	1		
<i>Goodenia amplexans</i>	Clasping Goodenia	1		
<i>Maireana brevifolia</i>	Short-leaf Bluebush		1	
<i>Muehlenbeckia gunnii</i>	Coastal Climbing Lignum	1		
<i>Nitraria billardiarei</i>	Nitrebush	1 to 2	1a	RA
<i>Pimelea serpyllifolia</i>	Thyme Riceflower	1		
<i>Rhagodia candolleana ssp. candolleana</i>	Sea-berry Saltbush	1		
<i>Salicornia sp. (S. blackiana/quingueflora)</i>	Samphire	1		
<i>Salsola australis</i>	Tumbleweed		1a	
<i>Senecio spanomerus</i>	Groundsel	1		
<i>Setaria constricta</i>	Knotty-butt Paspalidium	1		
<i>Suaeda australis</i>		1		
<i>Threlkeldia diffusa</i>	Coast Bonefruit	1		

*1 = not many, < 1% cover; 1a = plentiful but 1% cover; 2 = 1 – 5% cover; 3 = 6 – 25% cover; 4 = 26 – 50% cover

** Mount Lofty Ranges IBRA sub-region

Exotic Species recorded January 2023

Species	Common Name	Cover/Abundance*	
		2	2a
<i>Acacia cyclops</i>	Western Coastal Wattle	1 to 2	
<i>Acacia saligna</i>	Golden Wreath Wattle	1	
<i>Aizoon pubescens</i>	Galenia	1	2
<i>Asphodelus fistulosus</i>	Onion Weed	1a	2
<i>Avena barbata</i>	Bearded Oat	2	3
<i>Cakile maritima</i>	Sea Rocket	2	
<i>Cenchrus clandestinus</i>	Kikuyu	2	
<i>Coprosma repens</i>	Mirror bush	N	
<i>Cynara cardunculus</i>	Artichoke Thistle		2
<i>Cynodon dactylon</i>	Couch	1a	
<i>Euphorbia paralias</i>	Sea spurge	3	2
<i>Gazania linearis</i>	Gazania	1	1a
<i>Gomphocarpus cancellatus</i>	Broad-leaved Cotton bush	1	
<i>Heliotropium europaeum</i>	Heliotrope	1	
<i>Lagurus ovatus</i>	Hare's Tail Grass	1 to 3	1
<i>Mesembryanthemum crystallinum</i>	Iceplant		1
<i>Myrtaceae sp</i>	Garden escape?	1	
<i>Olea europaea</i>	Olive		1
<i>Panicum capillare</i>	Witchgrass	N	
<i>Phoenix canariensis</i>	Canary Island date palm	N	
<i>Plantago coronopus</i>	Buckshorn Plantain	1a to 2	1a
<i>Reichardia tingitana</i>	False Sow thistle	1a to	
<i>Scabiosa atropurpurea</i>	Scabiosa	3	
<i>Senna pendula var glabrata</i>	Easter Cassia	3	
<i>Tetragonia decumbens</i>	Sea Spinach	1	
<i>Thinopyrum junceiforme</i>	Sea wheat-grass	1	
<i>Trifolium glomeratum</i>	Cluster Clover	1a	1a

*1 = not many, < 1% cover; 1a = plentiful but < 1% cover; 2 = 1 – 5% cover; 3 = 6 – 25% cover; 4 = 26 – 50% cover



Photo 2.1. Scattered Nitrebush at base of cliff. Easting 270015 Northing 6112654. Photo bearing is south

3: *Atriplex paludosa* (Marsh Saltbush) Low Open Shrubland

Landform: Steep cliff face

Soil: Loam/ Clay-loam

Rock Cover: approximately 20% - 30% (shale)

Atriplex paludosa (Marsh Saltbush) was the dominant shrub with *Beyeria lechenaultii* also common and locally co-dominant. Species that were largely confined to the cliff face within the surveyed area included *Dodonaea viscosa*, *Lawrenzia squamata* and *Dissocarpus biflorus*.

Exotics were generally of low to very low weed cover. Annual grasses and herbs were of greatest cover at the northern end of the property, and on the lower slopes where soil is deepest. Olives were locally common in cliff "gullies".

Conservation Assets

Lawrenzia squamata and *Rhagodia spinescens* are rated Vulnerable for the Mt Lofty Ranges IBRA sub-region. These plants are more typically associated with mallee environments (and additionally for *Lawrenzia squamata*, coastal habitats). Both species were recorded at the southern end of this association, and at the base of the cliff.

Nitraria billardierei and *Dissocarpus biflorus* are rated Rare for the region. *Dissocarpus biflorus* was widespread and abundant.



Native Species recorded January 2023

Scientific Name	Common Name	Cover/Abundance*	Regional Rating**
<i>Amphipogon caricinus</i> var. <i>caricinus</i>	Long Grey-beard Grass	1	
<i>Atriplex paludosa</i> ssp. <i>cordata</i>	Marsh Saltbush	3	
<i>Atriplex semibaccata</i>	Berry Saltbush	1	
<i>Beyeria lechenaultii</i>	Pale Turpentine Bush	2 to 3	
<i>Dianella brevicaulis</i>	Short-stem Flax-lily	1	
<i>Disphyma crassifolium</i> ssp. <i>clavellatum</i>	Round-leaf Pigface	2	
<i>Dissocarpus biflorus</i> var. <i>biflorus</i>	Two-horn Saltbush	2 to 3	RA
<i>Dodonaea viscosa spatulata</i>	Spoon-leaf Hop-bush	1 to 2	
<i>Einadia nutans</i>	Climbing Saltbush	1	
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	Ruby Saltbush	2	

Scientific Name	Common Name	Cover/Abundance*	Regional Rating**
<i>Amphipogon caricinus</i> var. <i>caricinus</i>	Long Grey-beard Grass	1	
<i>Goodenia amplexans</i>	Clasping Goodenia	2	
<i>Lawrenzia squamata</i>	Thorny Lawrenzia	1	VU
<i>Lotus australis</i>	Australian Trefoil	1	
<i>Maireana brevifolia</i>	Short-leaf Bluebush	1	
<i>Nitraria billardierei</i>	Nitrebush	1	RA
<i>Olearia ramulosa</i>	Twiggy Daisy-bush	1	
<i>Rhagodia candolleana</i> ssp. <i>candolleana</i>	Sea-berry Saltbush	1	
<i>Rhagodia spinescens</i>	Spiny Saltbush	1	VU
<i>Roepera billardierei</i>	Coast Twinleaf	1	
<i>Rytidosperma caespitosum</i>	Common Wallaby-grass	2	
<i>Setaria constricta</i>	Knotty-butt Paspalidium	2	
<i>Threlkeldia diffusa</i>	Coast Bonefruit	1	

*1 = not many, < 1% cover; 1a = plentiful but <1% cover; 2 = 1 – 5% cover; 3 = 6 – 25% cover; 4 = 26 – 50% cover

** Mount Lofty Ranges IBRA sub-region

Exotic Species recorded January 2023

Scientific Name	Common Name	Cover/Abundance*
<i>Acacia cyclops</i>	Western Coastal Wattle	1
<i>Aizoon pubescens</i>	Galenia	1
<i>Asphodelus fistulosus</i>	Onion Weed	1
<i>Avena barbata</i>	Bearded Oat	1a to 2
<i>Brachypodium distachyon</i>	False Brome	1 to 2
<i>Briza maxima</i>	Large Quaking-grass	1 to 2
<i>Cynara cardunculus</i>	Artichoke Thistle	1
<i>Euphorbia paralias</i>	Sea spurge	1
<i>Euphorbia terracina</i>	False Caper	1
<i>Kickxia elatine</i>	Toad Flax	N
<i>Lagurus ovatus</i>	Hare's Tail Grass	1
<i>Lycium ferocissimum</i>	African Boxthorn	1
<i>Olea europaea</i>	Olive	1 to 2
<i>Phoenix canariensis</i>	Canary Island date palm	1 (x 1 plant)
<i>Plantago lanceolata</i>	Ribwort	1
<i>Reichardia tingitana</i>	False Sow thistle	1a
<i>Scabiosa atropurpurea</i>	Scabiosa	1
<i>Solanum nigrum</i>	Black Nightshade	1
<i>Trifolium glomeratum</i>	Cluster Clover	1
<i>Vicia sp</i>	Vetch	1

*1 = not many, < 1% cover; 1a = plentiful but <1% cover; 2 = 1 – 5% cover; 3 = 6 – 25% cover; 4 = 26 – 50% cover



Photo 3.1: *Atriplex paludosa* (Marsh Saltbush) was the dominant shrub on steep cliff slopes in the northern half of the surveyed area.

4: *Maireana oppositifolia* (Salt Bluebush) +/- (Pale Turpentine Bush) +/- *Atriplex paludosa* (Marsh Saltbush) Low Shrubland

Landform: Steep cliff

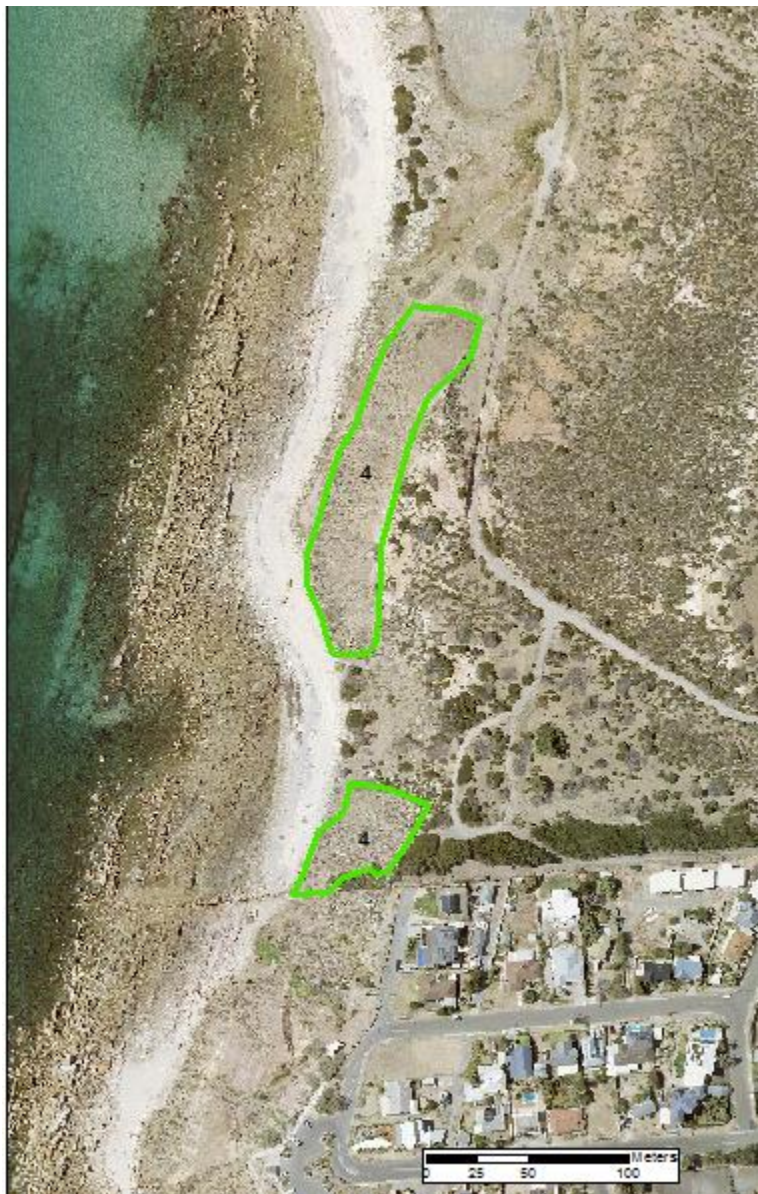
Soil: Loam to Clay-loam

Rock: approximately 25% cover

Maireana oppositifolia (Salt Bluebush) is the dominant shrub on the steep cliff slopes in the southern half of the surveyed area. *Beyeria lechenaultii* (pale Turpentine Bush) and *Atriplex paludosa* (Marsh Saltbush) are also widespread and common. Weeds are largely confined to the lower slope/dune base.

Conservation Assets

Lawrenzia squamata was locally common near the base of the cliff, and rated Vulnerable for the Mt Lofty Ranges IBRA sub-region. It is associated with coastal and arid habitats, however, the population at Port Stanvac is likely to be one of the last remaining populations in the Green Adelaide region.



Native Species recorded January 2023

Scientific Name	Common Name	Cover/Abundance*	Regional Rating**
<i>Atriplex paludosa</i> ssp. <i>cordata</i>	Marsh Saltbush	2	
<i>Beyeria lechenaultii</i>	Pale Turpentine Bush	2	
<i>Dianella brevicaulis</i>	Short-stem Flax-lily	1	
<i>Disphyma crassifolium</i> ssp. <i>clavellatum</i>	Round-leaf Pigface	1	
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	Ruby Saltbush	1	
<i>Goodenia amplexans</i>	Clasping Goodenia	1	
<i>Lawrenia squamata</i>	Thorny Lawrenia	1a	VU
<i>Maireana brevifolia</i>	Short-leaf Bluebush	1	
<i>Maireana oppositifolia</i>	Salt Bluebush	3	
<i>Muehlenbeckia gunnii</i>	Coastal Climbing Lignum	1	
<i>Pimelea serpyllifolia</i>	Thyme Riceflower	1	
<i>Rytidosperma caespitosum</i>	Common Wallaby-grass	2	
<i>Setaria constricta</i>	Knotty-butt Paspalidium	1	
<i>Threlkeldia diffusa</i>	Coast Bonefruit	1	

*1 = not many, < 1% cover; 1a = plentiful but <1% cover; 2 = 1 – 5% cover; 3 = 6 – 25% cover; 4 = 26 – 50% cover

** Mount Lofty Ranges IBRA sub-region

Exotic Species recorded January 2023

Species	Common Name	Cover/Abundance*
<i>Briza maxima</i>	Large Quaking-grass	2
<i>Chrysanthemoides monilifera</i>	Boneseed	1
<i>Lycium ferocissimum</i>	African Boxthorn	1
<i>Olea europaea</i>	Olive	1
<i>Trifolium glomeratum</i>	Cluster Clover	1a

*1 = not many, < 1% cover; 1a = plentiful but <1% cover; 2 = 1 – 5% cover; 3 = 6 – 25% cover; 4 = 26 – 50% cover

5 and 5a: *Acacia cyclops* (Western Coastal Wattle) +/- *Olea europaea* (Olive) Shrubland

Landform: Gentle cliff top slopes

Soil: Loam

Rock Cover: Negligible

The majority of this association was formerly cleared and has recolonised largely with the exotic Western Coastal Wattle (*Acacia cyclops*) and, to a lesser extent, Olives (*Olea europaea*). Aerial imagery taken in 1949 shows much of this association to be cleared land, largely devoid of any vegetation (mapped as Association 5). The remainder of this association has a history of high mechanical disturbance, rather than historically being completely cleared (mapped as Association 5a). Historical imagery indicated that re-colonisation with *Acacia cyclops* appears to have substantially begun in the 1990s. Olive density is highest in the centre of the surveyed area.

During the January 2023 survey, the groundcover was dominated by exotic herbs and grasses (*Asphodelus fistulosus*, *Avena*, *Brachypodium distachyon*, *Scabiosa atropurpurea* and *Trifolium glomeratum*) but there was also a sparse native groundcover beginning to colonise, including Wallaby-grass (*Rytidosperma caespitosum*)

and Short-stem Flax-lily (*Dianella brevicaulis*). In areas, the native shrubs have substantially recolonised, particularly, *Beyeria lechenaultii* and *Acrotriche patula*, with a combined cover of up to 5 – 10%.

Mid-way along the eastern boundary of the surveyed area, there is a degraded gully with a dense patch of Artichoke Thistle (*Cynara cardunculus*), a Canary Island Date Palm (*Phoenix canariensis*) and a few Golden Pallenis (*Asteriscus spinosus*), the latter considered capable of rapid increase and spread.

The far north-east of the surveyed area comprises a gully dominated by exotics, including *Acacia cyclops*. Numerous Olives have been controlled in this area. American Aloe (*Agave americana*) is present.

Conservation Assets:

Roepera glaucum and *Santalum acuminatum* are rated as Regionally Rare. *Roepera glaucum* (Pale Twinleaf) was recorded at a few locations, appearing to be confined within the surveyed area to more disturbed areas. Approximately 100+ plants were recorded near the eastern boundary of the surveyed area in a past heavily disturbed area. *Santalum acuminatum* (Quandong) is widespread on the cliff top, including in Association 5a.

Myoporum parvifolium is rated as Regionally Vulnerable. It was sparsely present in Association 5a.



Native Species recorded January 2023

Scientific Name	Common Name	Cover Abundance*		Region Rating**
		5	5a	
<i>Acacia paradoxa</i>	Kangaroo Wattle	1		
<i>Acrotriche patula</i>	Prickly Ground-berry	1 to 2	2	
<i>Atriplex paludosa ssp. cordata</i>	Marsh Saltbush		1	
<i>Austrostipa nodosa</i>	Tall Spear-grass	1		
<i>Austrostipa sp.</i>	Spear-grass		1	
<i>Beyeria lechenaultii</i>	Pale Turpentine Bush	1 to 3	3	
<i>Dianella brevicaulis</i>	Short-stem Flax-lily		1	
<i>Disphyma crassifolium ssp. clavellatum</i>	Round-leaf Pigface		1	
<i>Enchylaena tomentosa var.</i>	Ruby Saltbush	1	1	
<i>Goodenia amplexans</i>	Clasping Goodenia		1	
<i>Maireana brevifolia</i>	Short-leaf Bluebush		1	
<i>Myoporum parvifolium</i>	Dwarf Native Myrtle		1	VU
<i>Olearia ramulosa</i>	Twiggy Daisy-bush	1	1	
<i>Pimelea glauca</i>	Smooth Riceflower		1	
<i>Pimelea serpyllifolia</i>	Thyme Riceflower	1		
<i>Pomaderris paniculosa ssp. paniculosa</i>	Mallee Pomaderris	1		
<i>Rhagodia candolleana ssp. candolleana</i>	Sea-berry Saltbush	1		
<i>Roepera glaucum</i>	Pale Twinleaf		1	RA
<i>Rytidosperma caespitosum</i>	Common Wallaby-grass	1	1	
<i>Salsola australis</i>	Tumbleweed	1		
<i>Santalum acuminatum</i>	Quandong	1	1	RA
<i>Senecio spanomerus</i>			1	
<i>Vittadinia gracilis</i>	Woolly New Holland Daisy		1	

*1 = not many, < 1% cover; 1a = plentiful but <1% cover; 2 = 1 – 5% cover; 3 = 6 – 25% cover; 4 = 26 – 50% cover

** Mount Lofty Ranges IBRA sub-region

Exotic Species recorded January 2023

Species	Common Name	Cover Abundance*	
		5	5a
<i>Acacia cyclops</i>	Western Coastal Wattle	4	3
<i>Acacia saligna</i>	Golden Wreath Wattle	1	
<i>Agave americana</i>	American Aloe	1	
<i>Asphodelus fistulosus</i>	Onion Weed	1 to 2	
<i>Asteriscus spinosus</i>	Golden pallensis	1	
<i>Avena barbata</i>	Bearded Oat	2 to 3	
<i>Brachypodium distachyon</i>	False Brome	2	
<i>Briza maxima</i>	Large Quaking-grass		1a
<i>Casuarina glauca</i>	Swamp Sheoak	2	
<i>Chrysanthemoides monilifera</i>	Boneseed	N	
<i>Cynara cardunculus</i>	Artichoke Thistle	1a	1
<i>Foeniculum vulgare</i>	Fennel	1	
<i>Lagurus ovatus</i>	Hare's Tail Grass		1a
<i>Olea europaea</i>	Olive	1 to 2	1a
<i>Pinus halepensis</i>	Aleppo Pine	N	
<i>Rapistrum rugosum ssp. rugosum</i>	Turnip Weed	2	
<i>Scabiosa atropurpurea</i>	Scabiosa	2 to 3	
<i>Trifolium glomeratum</i>	Cluster Clover	3	

*1 = not many, < 1% cover; 1a = plentiful but <1% cover; 2 = 1 – 5% cover; 3 = 6 – 25% cover; 4 = 26 – 50% cover



Photo 5.1 *Acacia cyclops* has recolonised previously cleared land. Easting 269578 Northing 6111259 facing NE



Photo 5.2. Association 5a –area of abundant *Acacia cyclops* but also a patch of dense *Santalum acuminatum*, suckering, and *Beyeria lechenaultii*. Easting 269580 Northing 6111373. Bearing = west

6 and 6a: *Beyeria lechenaultii* (Pale Turpentine Bush) – *Acrotriche patula* (Prickly Ground-berry) Low (Open) Shrubland

Landform: gentler upper slopes (association 6) and steeper cliff top slopes (6a)

Soil: Loam

Rock Cover: negligible (Association 6), 5 – 20% (Association 6a)

Both associations contain a very similar species composition, but differ in their shrub density and landforms. Association 6 contains more densely spaced shrubs and occurs on the gentler upper slopes (approximately 5° slope). Soils are sandy loam to loam. Association 6a contains more widely spaced shrubs and occurs on the steeper cliff top slopes with large areas of bare rock cover, or at the eastern boundary of the surveyed area, on a limestone ridge, or areas with a higher disturbance history. Native species diversity of 6a is slightly lower than 6, and weed diversity and abundance is higher in 6a.

The overstorey of both 6 and 6a was generally dominated by *Beyeria lechenaultii* and *Acrotriche patula* low shrubs (approximately 0.5 m tall) but several other species are widespread and common, including *Olearia ramulosa*, *Westringia rigida*, *Dodonaea hexandra* and *Calytrix tetragona*. *Gahnia lanigera* and *Lepidosperma congestum* are widespread and abundant groundcovers. *Santalum acuminatum* was widespread and common and appears to be expanding rapidly by suckering. Weed cover is very low in Association 6 with highest threat weeds largely restricted to sparsely present Western Coastal Wattle (*Acacia cyclops*), Olives (*Olea europaea*) and isolated African Boxthorn (*Lycium ferocissimum*). *Acacia cyclops* was more abundant in Association 6a.



Conservation Assets

This area contains very high conservation value shrubland, with a high species diversity (53+ native species) and 15 species with a regional conservation rating, including the following:

***Gahnia filum*, Thatching Grass** is regionally **Vulnerable**. This was recorded at the northern end of the surveyed area with approximately 50+ plants occurring over 20 x 15 m. Surrounding plants were *Beyeria lechenaultii*, *Santalum acuminatum*, *Olearia ramulosa*, *Disphyma crassifolium*, *Lepidosperma congestum*, *Goodenia amplexans*. A few exotic *Acacia cyclops* were also present, recommended as high priority for control. This localised occurrence of *Gahnia filum* may be associated with a soak. A further two isolated plants were recorded approximately 25 m east at Easting 270138 Northing 6112770



Gahnia filum, located at Easting 270108 Northing 6112767.

Euphrasia collina* ssp. *osbornii, regionally, State and Nationally endangered. Population of 690 plants recorded in November 2023 (Seedbank SA, unpublished report). This species was also recorded during the January 2023, with most individuals being < 15 cm tall. The population is confined to a relatively small area at the southern end of Association 6.



Relatively young plant of *Euphrasia collina* ssp *osbornii*, about 10 cm – 20 cm tall, typical of those recorded 31/1/2023. Approximately 50 plants were recorded within a radius of 5 m of Easting 269662 Northing 6111345



Habitat of *Euphrasia collina* ssp. *osbornii* in the surveyed area (*Beyeria lechenaultii* – *Acrotriche patula* shrubland). Photo from Easting 269670 Northing 6111349. Many of the plants were on the banks of these erosion gullies. Encroaching *Acacia cyclops* is a threat and considered a high priority for control in this area.

***Thysanotus baueri*, regionally Endangered**

In January 2023, two individuals of this species were recorded near the southern end of association 6, (NB: this was not a targetted survey for this species and the population may be greater than that recorded in Jan 2023)

***Dodonaea hexandra* and *Westringia rigida*, regionally Vulnerable**

These species were widespread and abundant on Association 6, and to a lesser extent in Association 6a.

Native Species recorded January 2023

(Combined list for 6 and 6a, as floristic composition was similar)

Scientific Name	Common Name	Cover Abundance*	Region Rating**
<i>Acacia cupularis</i>	Cup Wattle	1	RA
<i>Acacia spinescens</i>	Spiny Wattle	1	
<i>Acrotriche patula</i>	Prickly Ground-berry	3	
<i>Allocasuarina muelleriana</i>	Slaty Sheoak	(x1)	
<i>Alyxia buxifolia</i>	Sea box	1a	RA
<i>Aristida behriana</i>	Brush Wire-grass	1	
<i>Austrostipa elegantissima</i>	Feather Spear-grass	1	
<i>Austrostipa eremophila</i>	Rusty Spear-grass	1	
<i>Austrostipa mollis</i>	Soft Spear-grass	1a	
<i>Austrostipa nodosa</i>	Tall Spear-grass	1	
<i>Beyeria lechenaultii</i>	Pale Turpentine Bush	3	
<i>Calytrix tetragona</i>	Common Fringe-myrtle	2	
<i>Cassytha glabella dispar</i>	Slender Dodder-laurel	1	
<i>Chrysocephalum apiculatum</i>	Common Yellow Button	1	
<i>Dampiera rosmarinifolia</i>	Rosemary Dampiera	1	
<i>Dianella brevicaulis</i>	Short-stem Flax-lily	1	
<i>Dianella revoluta</i> var. <i>revoluta</i>	Black-anther Flax-lily	1	

Scientific Name	Common Name	Cover Abundance*	Region Rating**
<i>Disphyma crassifolium</i> ssp. <i>clavellatum</i>	Round-leaf Pigface	1	
<i>Dodonaea hexandra</i>	Horned Hop-bush	2	VU
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	Ruby Saltbush	1	
<i>Euphrasia collina</i> ssp. <i>osbornii</i>	Osborn's Eyebright	1a	
<i>Eutaxia microphylla</i>	Common Eutaxia	1a	
<i>Gahnia filum</i>	Thatching Grass	1	VU
<i>Gahnia lanigera</i>	Black Grass Saw-sedge	3	RA
<i>Gonocarpus mezianus</i>	Broad-leaf Raspwort	1	
<i>Goodenia amplexans</i>	Clasping Goodenia	1	
<i>Grevillea lavandulacea</i> ssp. <i>lavandulacea</i>	Spider-flower	1	
<i>Hakea rugosa</i>	Wrinkled Hakea	1	
<i>Lepidosperma congestum</i>	Sword-sedge	2	RA
<i>Leptorhynchos squamatus</i> ssp. <i>squamatus</i>	Scaly Buttons	1a	
<i>Lomandra collina</i>	Sand Mat-rush	1	RA
<i>Lomandra effusa</i>	Scented Mat-rush	1	RA
<i>Lomandra micrantha</i>	Small-flower Mat-rush	1	
<i>Maireana enchylaenoides</i>	Wingless Fissure-plant	1	
<i>Maireana oppositifolia</i>	Salt Bluebush	1	
<i>Melaleuca lanceolata</i>	Dryland Tea-tree	1	RA
<i>Minuria leptophylla</i>	Minnie Daisy	1a	RA
<i>Muehlenbeckia gunnii</i>	Coastal Climbing Lignum	1	
<i>Olearia axillaris</i>	Coast Daisy-bush	2	
<i>Olearia ramulosa</i>	Twiggy Daisy-bush		
<i>Opercularia turpis</i>	Twiggy Stinkweed	1	
<i>Pomaderris paniculosa</i> ssp. <i>paniculosa</i>	Mallee Pomaderris	1a	
<i>Pomaderris paniculosa</i> ssp. <i>paralia</i>	Coast Pomaderris	1	RA
<i>Rhagodia candolleana</i> ssp. <i>candolleana</i>	Sea-berry Saltbush	1	
<i>Rytidosperma caespitosum</i>	Common Wallaby-grass	1a	
<i>Santalum acuminatum</i>	Quandong	2	RA
<i>Sclerolaena diacantha</i>	Grey Bindyi	1	RA
<i>Senecio spanomerus</i>	Groundsel	1	
<i>Setaria constricta</i>	Knotty-butt Paspalidium	1	
<i>Themeda triandra</i>	Kangaroo Grass	1	
<i>Thysanotus baueri</i>	Mallee Fringe-lily	1	EN
<i>Velleia arguta</i>	Toothed Velleia	1a	RA
<i>Westringia rigida</i>	Stiff Westringia	1a	VU

*1 = not many, < 1% cover; 1a = plentiful but <1% cover; 2 = 1 – 5% cover; 3 = 6 – 25% cover; 4 = 26 – 50% cover

** Mount Lofty Ranges IBRA sub-region

Exotic Species recorded January 2023

Scientific Name	Common Name	Cover Abundance*	
		6	6a
<i>Acacia cyclops</i>	Western Coastal Wattle	1	1a
<i>Acacia saligna</i>	Golden Wreath Wattle	1	
<i>Asphodelus fistulosus</i>	Onion Weed		1
<i>Avena barbata</i>	Bearded Oat	1a	2
<i>Brachypodium distachyon</i>	False Brome		1
<i>Briza maxima</i>	Large Quaking-grass	1a	1a
<i>Disa bracteata</i>	African Weed Orchid	1	
<i>Lagurus ovatus</i>	Hare's Tail Grass		1a
<i>Leontodon rhagadioloides</i>	Cretan Weed	1	
<i>Lycium ferocissimum</i>	African Boxthorn		1 to 2
<i>Olea europaea</i>	Olive	1	1
<i>Plantago lanceolata</i>	Ribwort		1a
<i>Rapistrum rugosum ssp. rugosum</i>	Turnip Weed	1	2
<i>Scabiosa atropurpurea</i>	Scabiosa		2 to 4
<i>Silene nocturna</i>	Mediterranean Catchfly	1	1a
<i>Trifolium glomeratum</i>	Cluster Clover		2

*1 = not many, < 1% cover; 1a = plentiful but <1% cover; 2 = 1 – 5% cover; 3 = 6 – 25% cover; 4 = 26 – 50% cover



Photo 6.1 Easting 269617 Northing 6111377. Bearing NE. *Beyeria lechenaultii* – *Acrotriche patula* over *Gahnia lanigera*. A cluster of *Acacia cyclops* in right mid ground.



Photo 6.2 From limestone ridge (association 6a) facing SW looking at good condition association 6. Easting 269738 Northing 6111472.



Photo 6.3. Association 6a - *Beyeria lechenaultii*, *Alyxia buxifolia*, *Pomaderris paniculosa* on cliff with relatively high rock cover. Easting 269564 Northing 6111264. Bearing = west



Photo 6.4 Limestone ridge on eastern boundary. Shrubs are more widely spaced with groundcover containing more introduced species. Bearing = south. Easting 269738 Northing 6111472.

7: *Eucalyptus porosa* (Mallee Box) Low Woodland

Landform: Shallow gullies of gently sloping cliff top (eastern boundary)

Soil: Loam

Rock: negligible

Remnant Mallee Box trees are associated with slight gully lines on the upper slopes (eastern boundary). *Acacia cyclops* is widespread and abundant. Exotic grasses and herbs are also abundant, but the area also retains a high cover of native shrubs, particularly *Beyeria lechenaultii* and *Enchylaena tomentosa*.

Conservation Assets

Mallee Box, once widespread in the Green Adelaide region has largely been cleared.

The regionally Vulnerable, *Myoporum parvifolium* and *Westringia rigida* were widespread.

Regionally Rare plants: *Gahnia lanigera*, *Lepidosperma congestum*, *Nitraria billardiarei* and *Santalum acuminatum* were present on the fringes of this community.



Native Species recorded January 2023

Scientific Name	Common Name	Cover/Abundance*	Regional Rating**
<i>Acacia spinescens</i>	Spiny Wattle	1	
<i>Acrotriche patula</i>	Prickly Ground-berry	1a	
<i>Austrostipa elegantissima</i>	Feather Spear-grass	1	
<i>Austrostipa sp.</i>	Spear-grass	1a	
<i>Beyeria lechenaultii</i>	Pale Turpentine Bush	2	
<i>Calytrix tetragona</i>	Common Fringe-myrtle	1	
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	Ruby Saltbush	2	
<i>Eucalyptus porosa</i>	Black Mallee Box	3	
<i>Gahnia lanigera</i>	Black Grass Saw-sedge	1	RA
<i>Goodenia amplexans</i>	Clasping Goodenia	1	
<i>Lepidosperma congestum</i>	Sword-sedge	1	RA
<i>Myoporum parvifolium</i>	Dwarf Native Myrtle	2	VU
<i>Nitraria billardierei</i>	Nitrebush	1	RA
<i>Olearia ramulosa</i>	Twiggy Daisy-bush	1	
<i>Pimelea glauca</i>	Smooth Riceflower	1	
<i>Pomaderris paniculosa</i> ssp. <i>paniculosa</i>	Mallee Pomaderris	2	
<i>Rhagodia candolleana</i> ssp. <i>candolleana</i>	Sea-berry Saltbush	1	
<i>Santalum acuminatum</i>	Quandong	1a	RA
<i>Westringia rigida</i>	Stiff Westringia	1	VU

*1 = not many, < 1% cover; 1a = plentiful but <1% cover; 2 = 1 – 5% cover; 3 = 6 – 25% cover; 4 = 26 – 50% cover

** Mount Lofty Ranges IBRA sub-region

Exotic Species recorded January 2023

Species	Common Name	Cover/Abundance*
<i>Acacia cyclops</i>	Western Coastal Wattle	3 to 4
<i>Avena barbata</i>	Bearded Oat	2
<i>Catapodium rigidum</i>	Fern Grass	1
<i>Rapistrum rugosum</i> ssp. <i>rugosum</i>	Turnip Weed	1a
<i>Scabiosa atropurpurea</i>	Scabiosa	2
<i>Trifolium glomeratum</i>	Cluster Clover	2

*1 = not many, < 1% cover; 1a = plentiful but <1% cover; 2 = 1 – 5% cover; 3 = 6 – 25% cover; 4 = 26 – 50% cover



Photo 7.1: Patch of *Eucalyptus porosa* in background Easting 269820 Northing 6111783



Photo 7.2: *Myoporum parvifolium* in disturbed area with strewn gravel and abundant *Acacia cyclops*. Easting 269816 Northing 6111735

8: *Melaleuca lanceolata* (Dryland Teatree) Shrubland

Landform: upper, gentle slopes near eastern boundary

Soil: Calcareous loam

Rock: High cover of calcrete strew

Near the eastern cliff top boundary, there are a few small dense patches of Dryland Teatree, coinciding with areas of heavy calcrete strew. The shrubs are in good health, with numerous juveniles noted. Ground cover is dominated by exotic annual herbs and grasses. *Acacia cyclops* is also of high cover (5 – 25%).



Native Species recorded January 2023

Scientific Name	Common Name	Cover/Abundance*	Regional Rating**
<i>Acacia cupularis</i>	Cup Wattle	1	RA
<i>Acrotriche patula</i>	Prickly Ground-berry	2	
<i>Alyxia buxifolia</i>	Sea box	2	RA
<i>Atriplex paludosa</i> ssp. <i>cordata</i>	Marsh Saltbush	1	
<i>Austrostipa nodosa</i>	Tall Spear-grass	2	
<i>Beyeria lechenaultii</i>	Pale Turpentine Bush	3	
<i>Calytrix tetragona</i>	Common Fringe-myrtle	1	
<i>Dodonaea hexandra</i>	Horned Hop-bush	2	VU
<i>Eutaxia microphylla</i>	Common Eutaxia	1	
<i>Gahnia lanigera</i>	Black Grass Saw-sedge	3	RA
<i>Helichrysum leucopsidium</i>	Satin Everlasting	1	
<i>Lepidosperma congestum</i>	Sword-sedge	2	RA
<i>Lomandra collina</i>	Sand Mat-rush	1	RA
<i>Lomandra micrantha</i>	Small-flower Mat-rush	1	
<i>Melaleuca lanceolata</i>	Dryland Tea-tree	4	RA
<i>Olearia ramulosa</i>	Twiggy Daisy-bush	2	
<i>Pimelea serpyllifolia</i>	Thyme Riceflower	1	
<i>Pomaderris paniculosa</i> ssp. <i>paniculosa</i>	Mallee Pomaderris	1	
<i>Roepera confluens</i>	Forked Twinleaf	1	VU
<i>Roepera glaucum</i>	Pale Twinleaf	1	RA
<i>Rytidosperma caespitosum</i>	Common Wallaby-grass	1	
<i>Santalum acuminatum</i>	Quandong	2	RA
<i>Threlkeldia diffusa</i>	Coast Bonefruit	1	
<i>Westringia rigida</i>	Stiff Westringia	1	VU

*1 = not many, < 1% cover; 1a = plentiful but <1% cover; 2 = 1 – 5% cover; 3 = 6 – 25% cover; 4 = 26 – 50% cover

** Mount Lofty Ranges IBRA sub-region

Exotic Species recorded January 2023

Species	Common Name	Cover/Abundance*
<i>Acacia cyclops</i>	Western Coastal Wattle	2 to 3
<i>Avena barbata</i>	Bearded Oat	2
<i>Brachypodium distachyon</i>	False Brome	2 to 3
<i>Bromus diandrus</i>	Great Brome	1a
<i>Lycium ferocissimum</i>	African Boxthorn	1
<i>Pinus halepensis</i>	Aleppo Pine	N
<i>Rapistrum rugosum</i> ssp. <i>rugosum</i>	Turnip Weed	2
<i>Silene nocturna</i>	Mediterranean Catchfly	1a
<i>Trifolium glomeratum</i>	Cluster Clover	2

*1 = not many, < 1% cover; 1a = plentiful but <1% cover; 2 = 1 – 5% cover; 3 = 6 – 25% cover; 4 = 26 – 50% cover

Conservation Assets

Melaleuca lanceolata is rated Rare for the region, and *Melaleuca lanceolata* shrublands are likely to have been naturally restricted in the Green Adelaide region.

Melaleuca lanceolata shrubland is considered to be a naturally occurring Association, namely occurring as an overstorey species rather than understorey to *Eucalyptus porosa*. At Port Stanvac *Melaleuca lanceolata* shrubland occurs on slopes of high calcareous strew, compared with *Eucalyptus porosa* being associated with gullies and lacking surface strew.

Occasional plants of the following regionally **Vulnerable** species: *Westringia rigida*, and *Roepera confluens*.

Frequent plants of the regionally **Vulnerable**, *Dodonaea hexandra*.

Contains occasional plants of the following species rated **Rare** for the region: *Acacia cupularis*, *Lomandra collina*.

Contains frequent plants to high cover of the following species rated **Rare** for the region: *Lepidosperma congestum*, *Santalum acuminatum*, *Gahnia lanigera*, *Alyxia buxifolia*



Photo 8.1: Small patch of dense *Melaleuca lanceolata* in midground. Easting 269800 Northing 6111825

9: Sparsely vegetated steep rock slopes

The surveyed area contains areas of very steep slopes, naturally devoid or of low vegetation cover. The most prominent native shrubs surveyed were *Goodenia amplexans*, *Beyeria lechenaultii*, *Olearia ramulosa*, *Atriplex paludosa* and *Acrotriche patula*, with *Myoporum insulare* of localised occurrence in a gully

Conservation Assets

Contains a sparse population of *Acacia cupularis*, rated Rare for the Region.



Native Species recorded January 2023

Scientific Name	Common Name	Cover/Abundance*	Regional Rating**
<i>Acacia cupularis</i>	Cup Wattle	1	RA
<i>Atriplex paludosa</i> ssp. <i>cordata</i>	Marsh Saltbush	2	
<i>Beyeria lechenaultii</i>	Pale Turpentine Bush	2	
<i>Dianella brevicaulis</i>	Short-stem Flax-lily	1	
<i>Disphyma crassifolium</i> ssp. <i>clavellatum</i>	Round-leaf Pigface	2	
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	Ruby Saltbush	1	
<i>Eutaxia microphylla</i>	Common Eutaxia	1	
<i>Goodenia amplexans</i>	Clasping Goodenia	2	
<i>Myoporum insulare</i>	Native Juniper	1a	
<i>Olearia axillaris</i>	Coast Daisy-bush	1	
<i>Olearia ramulosa</i>	Twiggy Daisy-bush	2	
<i>Pogonolepis muelleriana</i>	Stiff Cup-flower	1	

*1 = not many, < 1% cover; 1a = plentiful but <1% cover; 2 = 1 – 5% cover; 3 = 6 – 25% cover; 4 = 26 – 50% cover

** Mount Lofty Ranges IBRA sub-region

Exotic Species recorded January 2023

Species	Common Name	Cover/Abundance*
<i>Acacia cyclops</i>	Western Coastal Wattle	2
<i>Disa bracteata</i>	African Weed Orchid	1
<i>Hordeum marinum</i>	Barley-grass	1a
<i>Olea europaea</i>	Olive	1a
<i>Plantago lanceolata</i>	Ribwort	1
<i>Trifolium angustifolium</i>	Narrow-leaved Clover	3
<i>Trifolium glomeratum</i>	Cluster Clover	3

*1 = not many, < 1% cover; 1a = plentiful but <1% cover; 2 = 1 – 5% cover; 3 = 6 – 25% cover; 4 = 26 – 50% cover



Photo 9.1: Easting 270138 Northing 6112651. Gully dominated by *Acacia cyclops* but also *Acrotriche patula*, *Atriplex paludosa*, *Disphyma crassifolium*. Photo bearing is east



Photo 9.2: Easting 270138 Northing 6112651. largely bare rock. Plant species present in photo view are *Disphyma crassifolium*, *Goodenia amplexans*, *Beyeria lechenaultii*, *Atriplex paludosa* and *Acacia cyclops*. Photo bearing is west

Appendix A: Native plant species recorded from Port Stanvac refinery

Species*	Common Name	Status**	Cover/Abundance for each Vegetation Association										
			1	1a	2	3	4	5	5a	6	7	8	9
<i>Acacia cupularis</i>	Cup Wattle	RA								1		1	1
<i>Acacia ligulata</i>	Dune Wattle												
<i>Acacia paradoxa</i>	Kangaroo Wattle							1					
<i>Acacia spinescens</i>	Spiny Wattle									1	1		
<i>Acrotriche patula</i>	Prickly Ground-berry				1			1/2	2	3	1a	2	
<i>Allocasuarina muelleriana</i> ssp. <i>muelleriana</i>	Slaty Sheoak									1			
<i>Alyxia buxifolia</i>	Sea box	RA								1a		2	
<i>Amphipogon caricinus</i> var. <i>caricinus</i>	Long Grey-beard Grass					1							
<i>Aristida behriana</i>	Brush Wire-grass									1			
<i>Atriplex cinerea</i>	Grey Saltbush				1								
<i>Atriplex paludosa</i> ssp. <i>cordata</i>	Marsh Saltbush			1	1	3	2		1			1	2
<i>Atriplex semibaccata</i>	Berry Saltbush				1	1							
<i>Austrostipa acroclita</i>	Graceful Spear-grass	RA											
<i>Austrostipa curticoma</i>	Short-crest Spear-grass												
<i>Austrostipa drummondii</i>	Cottony Spear-grass												
<i>Austrostipa elegantissima</i>	Feather Spear-grass									1	1		
<i>Austrostipa eremophila</i>	Rusty Spear-grass									1			
<i>Austrostipa mollis</i>	Soft Spear-grass									1a			
<i>Austrostipa multispiculis</i>	Many-flowered Spear-grass	RA											
<i>Austrostipa nodosa</i>	Tall Spear-grass							1		1		2	
<i>Austrostipa puberula</i>	Fine-hairy Spear-grass	RA											
<i>Austrostipa scabra</i> ssp. <i>falcata</i>	Slender Spear-grass												
<i>Austrostipa scabra</i> ssp. <i>scabra</i>	Rough Spear-grass												
<i>Austrostipa</i> sp.	Spear-grass								1		1a		
<i>Austrostipa tenuifolia</i>	Narrow-leaf Spear-grass	RA											
<i>Austrostipa trichophylla</i>	Fine-leaf Spear-grass	RA											
<i>Beyeria lechenaultii</i>	Pale Turpentine Bush			1		2/3	2	1/3	3	3	2	3	2
<i>cymosa</i>	Sweet Apple-berry												
<i>Calytrix tetragona</i>	Common Fringe-myrtle									2	1	1	
<i>Carpobrotus rossii</i>	Native Pigface		1	2									
<i>Cassytha glabella</i> dispar	Slender Dodder-laurel									1			
<i>Chloris truncata</i>	Windmill Grass				1								
<i>Chrysocephalum apiculatum</i>	Common Yellow Button									1			
<i>Comesperma volubile</i>	Love Creeper	RA											
<i>Convolvulus angustissimus</i>	Australian Bindweed	RA											
<i>Dampiera rosmarinifolia</i>	Rosemary Dampiera									1			
<i>Daucus glochidiatus</i>	Native Carrot												
<i>Dianella brevicaulis</i>	Short-stem Flax-lily			1		1	1		1	1			1
<i>Dianella revoluta</i> var. <i>revoluta</i>	Black-anther Flax-lily									1			
<i>Disphyma crassifolium</i> ssp. <i>clavellatum</i>	Round-leaf Pigface				1	2	1		1	1			2
<i>Dissocarpus biflorus</i>	Woolly Twin-flower Saltbush				1								
<i>Dissocarpus biflorus</i> var. <i>biflorus</i>	Two-horn Saltbush	RA				2/3							
<i>Distichlis distichophylla</i>	Emu-grass			1/2	1								
<i>Dodonaea hexandra</i>	Horned Hop-bush	VU								2		2	

Species*	Common Name	Status **	Cover/Abundance for each Vegetation Association										
			1	1a	2	3	4	5	5a	6	7	8	9
<i>Dodonaea viscosa spatulata</i>	Spoon-leaf Hop-bush					1/2							
<i>Einadia nutans</i>	Climbing Saltbush					1							
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	Ruby Saltbush					2	1	1	1	1	2		1
<i>Eucalyptus porosa</i>	Black Mallee Box										3		
<i>Euphrasia collina</i> ssp. <i>osbornii</i> (EN E)	Osborn's Eyebright	EN								1a			
<i>Eutaxia microphylla</i>	Common Eutaxia									1a		1	1
<i>Ficinia nodosa</i>	Knobby Club-rush		1/2	1a									
<i>Gahnia filum</i>	Thatching Grass	VU								1			
<i>Gahnia lanigera</i>	Black Grass Saw-sedge	RA								3	1	3	
Glycine sp.													
<i>Gonocarpus mezeianus</i>	Broad-leaf Raspwort									1			
<i>Goodenia amplexans</i>	Clasping Goodenia				1	2	1		1	1	1		2
Goodenia pinnatifida	Cut-leaf Goodenia												
<i>Grevillea lavandulacea</i> ssp. <i>lavandulacea</i>	Spider-flower									1			
<i>Hakea rugosa</i>	Wrinkled Hakea									1			
Hardenbergia violacea	Purple Coral-pea												
<i>Helichrysum leucopsidium</i>	Satin Everlasting											1	
Hibbertia devitata	Smooth Guinea-flower												
Kennedia prostrata	Scarlet Runner												
Kunzea pomifera	Muntries												
<i>Lawrenzia squamata</i>	Thorny Lawrenzia	VU				1	1						
<i>Lepidosperma congestum</i>	Sword-sedge	RA								2	1	2	
<i>Leptorhynchus squamatus</i> ssp. <i>squamatus</i>	Scaly Buttons									1a			
Leucophyta brownii	Cushion Bush												
<i>Lomandra collina</i>	Sand Mat-rush	RA								1		1	
Lomandra densiflora	Pointed Mat-rush												
<i>Lomandra effusa</i>	Scented Mat-rush	RA								1a			
<i>Lomandra micrantha</i>	Small-flower Mat-rush									1		1	
<i>Lotus australis</i>	Australian Trefoil					1							
<i>Maireana brevifolia</i>	Short-leaf Bluebush				1	1	1		1				
<i>Maireana enchylaenoides</i>	Wingless Fissure-plant									1			
<i>Maireana oppositifolia</i>	Salt Bluebush						3			1			
<i>Melaleuca lanceolata</i>	Dryland Tea-tree	RA								1		4	
Microtis sp.	Onion orchid												
<i>Minuria leptophylla</i>	Minnie Daisy	RA								1a			
<i>Muehlenbeckia gunnii</i>	Coastal Climbing Lignum				1		1			1			
<i>Myoporum insulare</i>	Native Juniper		1										1a
<i>Myoporum parvifolium</i>	Dwarf Native Myrtle	VU							1		2		
<i>Nitraria billardierei</i>	Nitrebush	RA			1/2	1					1		
<i>Olearia axillaris</i>	Coast Daisy-bush									2			1
<i>Olearia ramulosa</i>	Twiggy Daisy-bush					1		1	1		1	2	2
<i>Opercularia turpis</i>	Twiggy Stinkweed									1			
<i>Pelargonium australe</i>	Austral Stork's-bill	VU		1									
<i>Pimelea curviflora sericea</i>	Curved Riceflower	RA											
<i>Pimelea glauca</i>	Smooth Riceflower								1		1		
Pimelea humilis	Low Riceflower												
<i>Pimelea serpyllifolia</i>	Thyme Riceflower				1		1	1				1	

Species*	Common Name	Status **	Cover/Abundance for each Vegetation Association										
			1	1a	2	3	4	5	5a	6	7	8	9
Pittosporum angustifolium	Native apricot												
<i>Pogonolepis muelleriana</i>	Stiff Cup-flower												1
<i>Pomaderris paniculosa</i> ssp. <i>paniculosa</i>	Mallee Pomaderris							1		1	2	1	
<i>Pomaderris paniculosa</i> ssp. <i>paralia</i>	Coast Pomaderris	RA											
<i>Rhagodia candolleana</i> ssp. <i>candolleana</i>	Sea-berry Saltbush				1	1		N		1	1		
Rhagodia parabolica	Mealy Saltbush	RA											
<i>Rhagodia spinescens</i>	Spiny Saltbush	VU				1							
<i>Roepera billardierei</i>	Coast Twinleaf	DD				1							
<i>Roepera confluens</i>	Forked Twinleaf	VU										1	
<i>Roepera glaucum</i>	Pale Twinleaf	RA							1			1	
<i>Rytidosperma caespitosum</i>	Common Wallaby-grass					2	2	1	1	1a		1	
<i>Salicornia</i> sp. (<i>S. blackiana</i> / <i>quinqueflora</i>)	Samphire				1								
<i>Salsola australis</i>	Tumbleweed				1			1					
<i>Santalum acuminatum</i>	Quandong	RA						1		2	1a	2	
<i>Scaevola crassifolia</i>	Cushion Fanflower	VU		N									
<i>Sclerolaena diacantha</i>	Grey Bindyi	RA								1			
Senecio pinnatifolius var.	Variable Groundsel												
<i>Senecio spanomerus</i>	Groundsel		1	1a	1				1	1			
<i>Setaria constricta</i>	Knotty-butt Paspalidium			1a	1	2	1			1			
<i>Spinifex hirsutus</i>	Rolling Spinifex		2	1									
<i>Suaeda australis</i>	Austral Seablite				1								
Tetragonia implexicoma	Bower Spinach												
Thelemytra sp.													
<i>Themeda triandra</i>	Kangaroo Grass									1			
<i>Threlkeldia diffusa</i>	Coast Bonefruit		1	1/2	1	1	1					1	
<i>Thysanotus baueri</i>	Mallee Fringe-lily	EN								1			
Tricoryne elatior	Yellow Rush-lily												
<i>Velleia arguta</i>	Toothed Velleia	RA								1a			
<i>Vittadinia gracilis</i>	Woolly New Holland Daisy								1				
<i>Westringia rigida</i>	Stiff Westringia	VU								1a	1	1	

*Species in bold were NOT recorded in January 2023

**Mount Lofty Ranges IBRA sub-regional status

Appendix B: Exotic Species recorded from Port Stanvac survey January 2023

Species	Common Name	Cover/Abundance for each Vegetation Association											
		1	1a	2	3	4	5	5a	6	6a	7	8	9
<i>Acacia cyclops</i>	Western Coastal Wattle	1a	1a	1a	1		4	3	1	1a	3/4	2/3	2
<i>Acacia saligna</i>	Golden Wreath Wattle		1	1			1		N				
<i>Agave americana</i>	American Aloe						1						
<i>Aira elegantissima</i>	Delicate Hair-grass												
<i>Aizoon pubescens</i>	Galenia	1	1/2	2	1								
<i>Ammophila arenaria</i>	Marram grass	2	2/3										
<i>Asphodelus fistulosus</i>	Onion Weed			1a	1		1/2			1			
<i>Asteriscus spinosus</i>	Golden Spinensis						1						
<i>Avena barbata</i>	Bearded Oat			2	1a		2/3		1a	2	2	2	
<i>Brachypodium distachyon</i>	False Brome				1/2		2			1		2/3	
<i>Briza maxima</i>	Large Quaking-grass				1/2	2		1a	1a	1a			
<i>Bromus diandrus</i>	Great Brome											1a	
<i>Bromus madritensis</i>	Compact Brome	1											
<i>Cakile maritima</i>	Sea Rocket			2									
<i>Casuarina glauca</i>	Swamp Sheoak						2						
<i>Catapodium rigidum</i>	Fern Grass										1		
<i>Cenchrus clandestinus</i>	Kikuyu			2									
<i>Centaurium tenuiflorum</i> (NC)	Branched Centaury												
<i>Chrysanthemoides monilifera</i>	Boneseed	1				1	N						
<i>Coprosma repens</i>	Mirror bush			N									
<i>Cynara cardunculus</i>	Artichoke Thistle		1	1a	1a		1a	1					
<i>Cynodon dactylon</i>	Couch			1a									
<i>Disa bracteata</i>	African Weed Orchid								N				1
<i>Echium plantagineum</i>	Salvation Jane												
<i>Euphorbia paralias</i>	Sea spurge	4	2	3	1								
<i>Euphorbia terracina</i>	False Caper				1								
<i>Foeniculum vulgare</i>	Fennel						1						
<i>Gazania linearis</i>	Gazania	1a		1a									
<i>Gomphocarpus cancellatus</i>	Broad-leaved Cotton bush			1									
<i>Heliotropium europaeum</i>	Heliotrope			1									
<i>Hordeum marinum</i>	Barley-grass												1a
<i>Kickxia elatine</i>	Toad Flax				N								
<i>Lagurus ovatus</i>	Hare's Tail Grass	2	3	2/3	1			1a		1a			
<i>Leontodon rhagadioloides</i>	Cretan Weed								1				
<i>Lycium ferocissimum</i>	African Boxthorn		1		1	1				1/2		1	
<i>Lysimachia arvensis</i>	Pimpernel												
<i>Medicago truncatula</i>	Barrel Medic												
<i>Mesembryanthemum crystallinum</i>	Iceplant			1									
<i>Myrtaceae sp</i>	Garden escape?			1									
<i>Olea europaea</i>	Olive		N	1	1/2	1	1/2	1a	1	1			1a
<i>Panicum capillare</i>	Witchgrass			1									
<i>Parapholis incurva</i>	Curly rye-grass	1											
<i>Phoenix canariensis</i>	Canary Island date palm			1	1								
<i>Pinus halepensis</i>	Aleppo Pine						1					1	
<i>Piptatherum miliaceum</i>	Rice Millet												
<i>Plantago coronopus</i>	Buckshorn Plantain			1a / 2									
<i>Plantago lanceolata</i>	Ribwort				1					1a			1
<i>Rapistrum rugosum ssp. rugosum</i>	Turnip Weed						2		1	2	1a	2	

Species	Common Name	Cover/Abundance for each Vegetation Association											
		1	1a	2	3	4	5	5a	6	6a	7	8	9
<i>Reichardia tingitana</i>	False Sow thistle	2	2	1a /2	1a								
<i>Scabiosa atropurpurea</i>	Scabiosa	1		3	1		2/3			2/4	2		
<i>Senna pendula var glabrata</i>	Easter Cassia	1/4	2/3	3									
<i>Silene nocturna</i>	Mediterranean Catchfly								1	1a		1a	
<i>Solanum nigrum</i>	Black Nightshade				1								
<i>Tetragonia decumbens</i>	Sea Spinach	1	1a	1									
<i>Thinopyrum junceiforme</i>	Sea wheat-grass	4		1									
<i>Trifolium angustifolium</i>	Narrow-leaved Clover												3
<i>Trifolium arvense var. arvense</i>	Hare's-foot Clover												
<i>Trifolium glomeratum</i>	Cluster Clover		1a	1a	1	1a	3			2	2	2	3
<i>Vicia sp</i>	Vetch				1								
<i>Vulpia myuros f. myuros</i>	Rat's-tail Fescue												