

Flora and Vegetation Assessment

Cape Leeuwin Trail:
Dead Finish to Cape Leeuwin



Prepared December 2019
for the Shire of Augusta Margaret River



Litoria Ecoservices
Environmental Assessment, Planning & Management

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1.0 INTRODUCTION

1.1 Background

Litoria Ecoservices (LE) was commissioned by the Shire of Augusta Margaret River to undertake a flora and vegetation assessment to guide the development of the Cape Leeuwin dual use trail between Dead Finish and Cape Leeuwin.

1.2 Description of the proposal

The Augusta Margaret River Shire proposes to construct a walk and cycle path up to 2.5m wide from Dead Finish to the Cape Leeuwin Lighthouse, a distance of approximately 2,500m. This path would link with existing trails, as well as other trails currently under construction between the Augusta Boat Harbour and Dead Finish, to provide a trail linking Cape Leeuwin to Augusta.

The Shire has worked with Common Ground Trails to develop a proposed alignment between Leeuwin Road and the coast. Alternative alignments have also been identified in some areas.

1.3 Assessment Objectives and Scope

The assessment was undertaken in September, October and November 2019, with the following objectives:

1. To assess the condition, natural and conservation significance of native vegetation onsite, particularly targeted at priority listed, rare and threatened species and ecological communities previously recorded from the surrounding area; and
2. To identify management issues and develop recommendations to ensure conservation values are protected and enhanced during any trail construction.

This assessment of the site's flora and vegetation represents a targeted survey as described by the EPA's Technical Guidance: Flora and Vegetation Surveys for Environmental Impact Assessment (EPA 2016).

This level of survey is considered appropriate at this stage of the proposal.

2. EXISTING INFORMATION

2.1 Site Description

The site ranges between 40m and 300m in width, bounded by Leeuwin Road and the coast. It consists coastal vegetation communities intermixed with exposed granite. Vegetation within the site ranges from primary sand dune communities through to dense heathland, open granite areas and low, closed peppermint forest. It is undulating, with predominantly south facing slope, with some steeper hillsides and vertical rockfaces through the eastern portion of the site. The site includes a number of formal and informal pedestrian and vehicle beach tracks, lookouts and formal and informal coastal carparks.

2.2 Previous studies

Prior to undertaking this assessment, the following previous studies were reviewed from adjoining areas or the parts of the actual survey site:

- ‘2017 Flora and Vegetation Assessment, Augusta Boat Harbour to Dead Finish by Litoria Ecoservices;
- ‘2014 Spring Flora and Vegetation Surveys, Flinders Bay and Margaret River Foreshore Areas’ by Eco Logic Environmental Services Pty Ltd;
- ‘2013 Cape Leeuwin Tourism Precinct: Level 2 Flora and Vegetation Survey’ by Onshore Environmental.

It is noted that these studies identified the Endangered species *Kennedia lateritia* within 2 kilometres of the survey area and the then P4 listed priority species *Bossiaea disticha* within a few kilometres of the survey area – it is noted that *Bossiaea disticha* is no longer priority listed.

2.3 Bioregional context

Augusta Margaret River Shire is situated within the South West Botanical Province of WA, which is internationally recognised as a biodiversity hotspot. Within this, the site lies in the Boranup System of the Western Botanical subdistrict within the Darling Botanical District. The Western Botanical subdistrict spans from Cape Naturalist to Albany with Augusta/Cape Leeuwin falling within the Boranup System. This broader system is described as Tall Forest of Karri (*Eucalyptus diversicolor*) on red earths and Forest of Jarrah (*Eucalyptus marginata*) and Marri (*Corymbia calophylla*) on the red and yellow podzolic soils. Extensive paperbark (*Melaleuca* spp.) and sedge swamps occur in the valleys and flood plains. (Beard 1990)

3. SURVEY METHODOLOGY

3.1 Desktop Study and Preparation

Prior to commencing the field component of the survey, a review of relevant previous surveys was undertaken. A search was conducted of DBCA's database of Threatened and Priority Flora and Ecological Communities. An additional search was undertaken of the Department of Environment and Energy's Protected Matters Search Tool to identify Matters of National Environmental Significance that may be relevant to the subject site. In addition, an online search the DBCA and Western Australian Museum's NatureMap Database was conducted.

These lists and relevant species were reviewed in order to structure survey timing and methodology.

3.2 Field Assessment

The assessment was undertaken by Drew M^cKenzie BAppSc (Env) Hons. of Litoria Ecoservices, Margaret River. Drew has over 19 years of professional experience in vegetation assessment and management, including over 14 years of experience in native vegetation survey, assessment and management within south-west WA.

The field assessment was undertaken over four days including 27th September, 6th October, 8th November and 25th November 2019, with over 24 hours spent on site.

The assessment involved walking transects along and adjacent to the proposed trail alignment/s covering approximately 50m wide corridor. A more general assessment was made of the broader reserve adjoining the proposed alignments.

The assessment included the following elements:

- Ground truthing of the corridor and broader reserve;
- Development of preliminary species list for the site;
- Mapping and recording of vegetation condition, structure and floristics; and
- Collection of specimens for identification off site (where required);

All relevant elements and items were mapped using a Bad Elf Bluetooth GPS and a remote GIS mapping system.

The onsite records of vegetation communities and condition were used in combination with high resolution aerial photography to create maps covering the relevant portions of the Shire reserves.

3.2 Post Field Work

Following the field work, a number of specimens were confirmed using a number of references, raw mapping data was analysed and processed into the final figures using QGIS GIS mapping system. GIS mapping produced both digital and hard copy maps using the IBSA templates. Species lists were compiled and an overview of the site considered prior to making final conclusions and recommendations.

3.2.1 Vegetation Description

Vegetation communities were described and mapped based on floristic and structural characteristics in accordance with the classes of Muir (1977) and Aplin (1979) (shown in Table 1).

Table 1. Vegetation structural classification (adapted from Muir 1977 and Aplin 1979)

Strata	Canopy Cover				
	<2%	2-10%	10 – 30%	30 -70%	70 -100%
Trees over 30m	Scattered Tall Trees	Tall Open Woodland	Tall Woodland	Tall Open Forest	Tall Closed Forest
Trees 10 – 30m	Scattered Trees	Open Woodland	Woodland	Open Forest	Closed Forest
Trees under 10m	Scattered Low Trees	Open Woodland	Woodland	Low Open Forest	Low Closed Forest
Shrubs over 2m	Scattered Tall Shrubs	Tall Open Shrubland	Tall Shrubland	Tall Open Scrub	Tall Closed Scrub
Shrubs 1-2m	Scattered Low Shrubs	Open Shrubland	Shrubland	Open Heath	Closed Heath
Shrub under 1m	Scattered Low Shrubs	Low Open Shrubland	Low Shrubland	Low Open Heath	Low Closed Heath
Grasses	Scattered Grasses	Very Open Grassland	Open Grassland	Grassland	Closed Grassland
Herbs and Sedges	Scattered Sedges/ Herbs	Very Open Sedgeland/ Herbland	Open Sedgeland/ Herbland	Sedgeland/ Herbland	Closed Sedgeland/ Herbland

3.2.2 Vegetation Condition

Vegetation condition was assessed, categorised and mapped based on the condition rating scale adapted from Keighery (1994) and shown in Table 2.

Table 2. Vegetation Condition Scale (adapted from Keighery 1994)

CONDITION	DESCRIPTION
Pristine	Pristine or nearly so, no obvious signs of disturbance.
Excellent	Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive.
Very Good	Vegetation structure altered, obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and grazing.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbance. Retains basic vegetation structure or ability to regenerate. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and grazing.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and grazing.
Completely Degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora composing weed or crop species with isolated native trees or shrubs.

3.3 Limitations of the Botanical Survey

The potential limitations of the botanical survey are detailed within Table 3 below.

Table 3. Statement of survey constraints

Variable	Constraints	Details
Experience levels and resources	No constraints	The scientist that undertook the assessment was regarded as suitably qualified for the level of assessment undertaken.
Proportion of flora identified	No constraints	Native and weed species observed during the reconnaissance survey were identified
Sources of Information	No constraints	The Capes region has been covered by a number of targeted biological surveys. Documented information regarding the site was limited, however, the assessment was able to utilise a number of relevant databases and local records.
Proportion of the task achieved and further work to be undertaken	No Constraints	There is no requirement for further work.
Timing, weather, season, cycle	Minor Constraints	The survey was undertaken during Spring 2019. While this period will pick up most annual species, and flowering period for most of the target species. It is noted that it was a particularly dry Winter/ Spring influencing flowering of several species. Surveys undertaken over multiple seasons and years will record additional species.

Intensity of Survey	No constraints	The area was mapped and searched at a high intensity for a this level of survey
Completeness	No constraints	The area was mapped and searched at a high intensity for a this level of survey
Resources	No constraints	Extensive local knowledge and relevant keys and guides utilised
Remoteness or access	Minor constraints	The extreme density of vegetation within 2m of ground height through parts of the survey area provided challenges with regard to access with some small areas considered impenetrable and requiring diversion around and observation from the edge.
Availability of contextual information for the survey area	No constraints	Several relevant references and reports available and utilised.

4. RESULTS

After following the methodology detailed in Section 3, the following results were determined:

4.1 Rare and Priority Flora Searches

A search was undertaken of the relevant DBCA database to identify significant plant species known as occurring within the nearby locality. The result of this search is provided below as Table 4.

Table 4: State listed plant species known from surrounding areas

Taxon	Status	Rank
<i>Acacia lateritica</i> var. <i>Glabrous</i> variant (B.R.Maslin 6765)	3	
<i>Adenanthos detmoldii</i>	4	
<i>Banksia meisneri</i> subsp. <i>ascendens</i>	4	
<i>Banksia nivea</i> subsp. <i>uliginosa</i>	T	EN
<i>Banksia sessilis</i> var. <i>cordata</i>	4	
<i>Blennospora doliiformis</i>	3	
<i>Boronia anceps</i>	3	
<i>Boronia exilis</i>	T	EN
<i>Caladenia abbreviata</i>	3	
<i>Caladenia lodgeana</i>	T	CR
<i>Calothamnus lateralis</i> var. <i>crassus</i>	3	
<i>Chordifex gracilior</i>	3	
<i>Conospermum quadripetalum</i>	2	
<i>Cyathochaeta stipoides</i>	3	
<i>Darwinia ferricola</i>	T	EN
<i>Galium leptogonium</i>	3	
<i>Gastrolobium formosum</i>	3	
<i>Gonocarpus pusillus</i>	4	
<i>Grevillea brachystylis</i> subsp. <i>australis</i>	T	EN
<i>Grevillea papillosa</i>	3	
<i>Hemiandra</i> sp. Windy Harbour (B.J. Conn & J.A. Scott BJC 3344)	3	
<i>Hybanthus volubilis</i>	2	
<i>Isopogon formosus</i> subsp. <i>dasylepsis</i>	3	
<i>Kennedia lateritia</i>	T	EN
<i>Lambertia orbifolia</i> subsp. <i>Scott River Plains</i> (L.W. Sage 684)	T	EN
<i>Leptomeria dielsiana</i>	X	EX
<i>Leptomeria furtiva</i>	2	
<i>Loxocarya magna</i>	3	
<i>Philydrella pygmaea</i> subsp. <i>minima</i>	1	
<i>Schoenus loliaceus</i>	2	
<i>Stylidium leeuwinense</i>	4	
<i>Synaphea nexosa</i>	1	
<i>Tripterococcus</i> sp. <i>Brachylobus</i> (A.S. George 14234)	4	
<i>Verticordia lehmannii</i>	4	
<i>Verticordia plumosa</i> var. <i>vassensis</i>	T	EN

Conservation Codes

Declared Rare Flora - Extant Taxa

Taxa which have been adequately searched for and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such.

X: Declared Rare Flora - Presumed Extinct Taxa

Taxa which have not been collected, or otherwise verified, over the past 50 years despite thorough searching, or of which all known wild populations have been destroyed more recently, and have been gazetted as such.

Priority One - Poorly known Taxa

Taxa which are known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat, e.g. road verges, urban areas, farmland, active mineral leases, etc., or the plants are under threat, e.g. from disease, grazing by feral animals, etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.

Priority Two - Poorly Known Taxa

Taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.

Priority Three - Poorly Known Taxa

Taxa which are known from several populations, and the taxa are not believed to be under immediate threat (i.e. not currently endangered), either due to the number of known populations (generally >5), or known populations being large, and either widespread or protected. Such taxa are under consideration for declaration as 'rare flora' but are in need of further survey.

Priority Four - Rare Taxa

Taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5-10 years.

An additional search was also undertaken of the Department of Environment and Energy's Protected Matters Search Tool to identify Matters of National Environmental Significance that may be relevant to the subject site. The report generated out of this search identified the Nationally listed plant species that may be likely to occur within 10km of the subject site. The results of this search are summarised below as Table 5.

Table 5: Nationally significant plant species known from surrounding areas

Taxon	EPBC Status
<i>Banksia nivea subsp. uliginosa</i>	Endangered
<i>Caladenia lodgeana</i>	Critically Endangered
<i>Calectasia cyanea</i>	Critically Endangered
<i>Drakea micrantha</i>	Vulnerable
<i>Grevillea brachystylis subsp. australis</i>	Vulnerable
<i>Kennedia lateritia</i>	Endangered
<i>Lambertia orbifolia</i>	Endangered
<i>Leptomeria dielsiana</i>	Vulnerable
<i>Sphenotoma drummondii</i>	Endangered
<i>Verticordia plumosa var. vassensis</i>	Endangered

4.2 NatureMap database search

An online search of the DBCA and Western Australian Museum's NatureMap database produced a list of flora species previously recorded within a 10km radius of the site. This list included 656 flora species including many significant species – the list is contained within the Appendix 2.

4.3 Threatened and Priority Ecological Communities

An ‘ecological community’ is a naturally occurring grouping of plants and/or animals that together with their habitat form ecosystems. A threatened ecological community (TEC) is one which is deemed to be subject to processes which threaten to destroy or significantly modify it across much of its range and which are found to fit into one of the following categories: ‘presumed totally destroyed’, ‘critically endangered’, ‘endangered’ or ‘vulnerable’ (DEC, 2007).

Possible TECs which are not yet adequately defined or do not meet the criteria for the above categories are identified under the DBCA’s Priority Ecological Community (PEC) List under Priorities 1, 2 and 3 in order of priority for definition, evaluation and survey. Other ecological communities that are rare but adequately known, not threatened, are listed as Priority 4 and require regular monitoring.

A search of the DBCA Threatened and Priority Ecological Communities Database for known records of TEC and/or PEC within a 10km radius of the site and an EPBC Act online Protected Matters Report within a 10km radius were undertaken. These identified the following communities:

- Nationally and State listed Endangered Threatened Ecological Community (TEC): ‘Rimstone Pools and Cave structures formed by microbial activity on the marine shoreline: Augusta Microbial – (Aquatic rootmat community Number 1 in caves of the Leeuwin – Naturalist Ridge.)’
- Nationally Vulnerable and State Listed Priority 3 (PEC) and (EPBC) Threatened/Priority ecological community (TEC) : ‘Coastal saltmarsh – Subtropical and Temperate Coastal Saltmarsh.)’
- State Listed Priority 1 Ecological Community (PEC): ‘Sedgeland of Cape Leeuwin Spring - Tall closed sedgeland on shallow soils derived from granite gneiss on the Leeuwin Naturaliste Ridge’

4.4 Vegetation Representation

The broadscale vegetation mapping of Mattiske and Havel (1998) identifies three vegetation complex across the site:

- Wilyabrup Wr: Woodland of *Corymbia calophylla*-*Eucalyptus marginata* subsp. *marginata* with closed heath of Myrtaceae-Proteaceae-Papilionaceae spp. on steep rocky slopes in the hyperhumid zone.
- Wilyabrup WE: Mosaic of coastal heath and low woodland to woodland of *Corymbia calophylla*-*Eucalyptus marginata* subsp. *marginata*-*Banksia* spp. on westward slope in hyperhumid to humid zones.
- Gracetown GE: Closed heath of *Olearia axillaris*-*Rhagodia baccata*-*Agonis flexuosa* on seaward slopes in hyperhumid to humid zones.

The extent remaining of this complex was assessed using the data available from the Department of Agriculture and Food (2014).

The State Government’s commitment to the National Objectives Targets for Biodiversity Conservation includes a target to prevent the clearance of ecological communities with extents below 30% of their pre European coverage or less than 1500 ha total extent remaining.

With 73%, 69.7% and 97.5% of the original pre European extent remaining, the Wilyabrup Wr, Wilyabrup WE and Gracetown GE vegetation complexes do not trigger the criteria of less than 30% remaining.

4.5 Flora and Species Diversity

Appendix 1 shows all flora species, native and introduced, that were identified during the course of this survey.

A total of 110 species were recorded during the survey. Of these, 75 native species from 37 genera were recorded.

4.6 Rare and Priority Flora Occurrences

Following extensive searching within and surrounding the proposed trail alignments, a single priority species was recorded by this survey. This species was the State listed P4 species *Banksia sessilis var. cordata* which was recorded just east of Groper Bay. Over 50 individual were estimated to occur within the subject area. The location of this occurrence is identified within Figure 2. It is noted that this population extends beyond the survey area to the north across Leeuwin Road.

It is noted that whilst not recorded on site during the survey it is possible that some rare and priority flora eg) *Kennedia laterita* exist in the seed bank within the site and have the potential to germinate and provide ‘new occurrences’ following fire or other disturbance.

4.7 Introduced Flora

A total of 35 introduced species were recorded during the course of the survey. These species are denoted by an asterisk in Appendix 1.

Of these, one species (Arum lily (*Zantedeschia aethiopica*) is declared under Section 22 of the *Biosecurity and Agriculture Management Act 2007* was identified on site. Within the Shire of Augusta Margaret River both of these species are categorised as C3 (Management) declared pests. It is noted that Arum lily was found in low densities (less than 10%) throughout much of the Low Closed Forest of *Agonis flexuosa*.

A number of other environmental weed species considered as high priorities for control were identified and mapped as part of the assessment. these were prioritised either due to the level of invasiveness and impact of the species under local conditions and due to relatively restricted nature of the current infestation. These include:

- Dolichos pea (*Dipogon lignosus*);
- Wavy Gladioli (*Gladiolus undulatus*); and
- Bridal creeper (*Asparagus asparagoides*).

The location of the isolated priority environmental weeds are shown on figure 3.

4.8 Threatened and Priority Ecological Communities occurrences

The Endangered (at both State and Commonwealth level) Threatened Ecological Community (TEC): ‘Rimstone Pools and Cave structures formed by microbial activity on the marine shoreline: Augusta Microbial – (Aquatic rootmat community Number 1 in caves of the Leeuwin – Naturalist Ridge.)’ was identified on site and confirmed during a site visit with

Clare Forward and Natasha Moore both from DBCA. These occurrences represent previously unmapped communities not currently on the register or existing databases.

In addition to the above mentioned endangered TEC, the Priority 2 listed ecological community (PEC) : ‘*Melaleuca lanceolata* forests (*Melaleuca lanceolata* forests, Leeuwin Naturaliste Ridge)’ was recorded from western most portion of the site. This community was not identified within the database searches covering a 10km radius around the site. It is noted that this community continues also occurs immediately west of the site across Leeuwin Rd.

Whilst not listed as a PEC or TEC community it is noted that the granitic outcrop vegetation of the Margaret River plateau (which includes the Augusta and Cape Leeuwin granites) is of significant conservation value and considered as “regionally significant”. (Webb 2013)

These systems are known to contain a number of significant isolated or morphologically variant species, which require additional study to determine if they deserve taxonomic recognition (Keighery et al. 2011).

Furthermore, these vegetation communities are fragile systems at a high risk of loss through disease or weed introduction, climate change, inappropriate development and other disturbance events (Webb 2013). The open nature of these systems make access control difficult and prone to trampling.

It has previously been recommended (Webb 2013) that as a minimum, development activities that may cause impact to granite outcrops in areas of formal reservation need to be prevented.

The locations of the TEC and PEC occurrences are identified in Figure 2.

4.9 Vegetation Units

Vegetation units were described and mapped based on structural and floristic characteristics using the system detailed in Appendix 3. In total, six units were identified across the site as shown in Figure 4, with representative photographs provided in Appendix 4.

The vegetation units are described as follows:

Veg Unit 1: Very Good Condition **Low Closed Forest of *Agonis flexuosa*** over open grassland/ sedgeland/herbland of *Lepidosperma gladiatum*, *Rhagodia baccata*, *Dichondra repens*, *Microlaena stipoides*, *Pteridium esculentum*, *Muehlenbeckia adpressa* and *Acanthocarpus preissii*.

Veg Unit 2: Very Good Condition **Closed Heath** of *Spyridium globulosum*, *Olearia axillaris*, *Scaevola crassifolia*, *Agonis flexuosa* and *Leucopogon parviflorus* over a predominantly sedgeland/herbland of *Lepidosperma gladiatum*, *Rhagodia baccata*, *Muehlenbeckia adpressa*, *Acanthocarpus preissii*, *Senecio elegans*, *Phyllanthus calycinus*, *Ficinia nodosa*, *Lagurus ovatus* and *Carpobrotus vireseens*.

Veg Unit 3: Very Good to Excellent condition **Tall closed scrub** *Spyridium globulosum*, *Olearia axillaris*, and *Leucopogon parviflorus*, *Corymbia callophylla*, *Banksia sessilis* var. *cordata* with scattered *Agonis flexuosa*, over a open grassland/ sedgeland of *Lepidosperma gladiatum*, *Hibbertia grossularifolia*, *Dichondra repens*, *Clematis pubescens*, *Dianella revoluta* and *Hardenbergia comptoniana*

Veg Unit 4: Very Good to Excellent Condition **Low Closed Heath** of *Eutaxia myrtifolia*, *Pimelea ferrugineae*, *Agonis flexuosa*, *Acacia saligna*, *Dodonaea ceratophylla*, *Xanthorrea preissi*, *Hakea oliefolia*, *Acacia pulchella*, *Spyridium globulosum* and *Leucopogon parviflorus*

over a sedgeland/grassland/herbland of *Lepidosperma gladiatum*, *Lepidosperma squamatum*, introduced annual grasses and *Carpobrotus virescens* interspersed with patches of exposed granite.

Veg Unit 5: Degraded to Good Condition **Low Shrubland** of *Dodonaea ceratophylla*, *Eutaxia myrtifolia*, *Pimelea ferrugineae* and *Agonis flexuosa*, over a grassland of introduced annual and perennial grasses. interspersed with patches of exposed granite.

Veg Unit 6: Very Good condition **Low Closed Forest of *Melaleuca lanceolata*** over sparse *Rhagodia baccata*, *Lepidosperma gladiatum*, *Spyridium globulosum*

4.10 Vegetation Condition

The vegetation of the site was assessed using a condition assessment based on the Vegetation Condition Scale of Keighery (1994) as per Table 2.

Based on this system, condition ratings across the site are as shown on Figure 5 and summarised as follows:

- The vast majority of the site vegetation is assessed as very good condition or better;
- Degradation and high levels of environmental weed infestation are largely limited to small patches and edges related to past or continuing disturbance; and
- Vegetation condition in many areas could be relatively easily improved through environmental weed control, erosion control and better management of vehicle and pedestrian access.

4.11 Ecological Connectivity

Based on the South West Regional Ecological Linkages mapping the property is identified as having a 1a proximity value – ie with an edge touching or <100m from an edge.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The site contains significant conservation values worthy of protection and where possible enhancement. It represents some of the most ecologically significant and in tact bushland reserves managed by the Shire. It contains a range of significant tracts of very good or excellent condition vegetation, significant vegetation units, threatened and priority ecological communities and priority listed vegetation species. Values of specific note include:

- The vast majority of the site represents good, very good or excellent condition remnant vegetation;
- A high level of existing ecological connectivity and linkage with surrounding tracts of native vegetation to the North, West and East;
- Areas of the Endangered (at both State and Commonwealth level) Threatened Ecological Community (TEC): ‘Rimstone Pools and Cave structures formed by microbial activity on the marine shoreline: Augusta Microbial – (Aquatic rootmat community Number 1 in caves of the Leeuwin – Naturalist Ridge.)’
- Areas of the P2 listed Priority Ecological Community (PEC) ‘*Melaleuca lanceolata* forests (*Melaleuca lanceolata* forests, Leeuwin Naturaliste Ridge)’
- Significant areas of ‘regionally significant’ granitic outcrop vegetation;
- Significant areas of Low Closed Peppermint Forest, Tall Closed Scrub and Dense Heath confirmed or predicted to be utilised by the critically endangered Western Ringtail Possums;
- At least one pocket of groundwater dependent vegetation supporting the endangered Leeuwin Freshwater Snail;
- Considerable areas of Very Good to Good condition areas of coastal granite vegetation communities considered as ‘regionally significant’
- A diverse range of vegetation mapping units across the site;
- A diverse array of flora species were recorded, with significantly more expected if a more detailed assessment was undertaken across the year;
- Parts of the site represent important buffer areas for coastal erosion and protection of the reserve and carpark and the adjoining road;

5.2 Recommendations

Management recommendations to protect and enhance the identified vegetation values of the site include:

1. Wherever possible, avoid clearing and disturbance of good or better condition native vegetation;
2. Where possible utilise existing paths, vehicle access paths;
3. Wherever possible, limit any clearing to the pathway corridor, use this corridor for the movement of all material in and out of the site;
4. Avoid trail construction through the *Melaleuca lanceolata* PEC community within the western most portion of the site.
5. Avoid disturbance to the TEC listed Tufa communities including the adjacent vegetation and hydrology which supports the Tufa community.
6. Consult closely with DBCA with respect to the protection and management of the Tufa TEC including consideration given to boardwalking the adjacent section of trail in order to prevent disturbance to groundwater and the spring which the Tufa community is dependant upon.

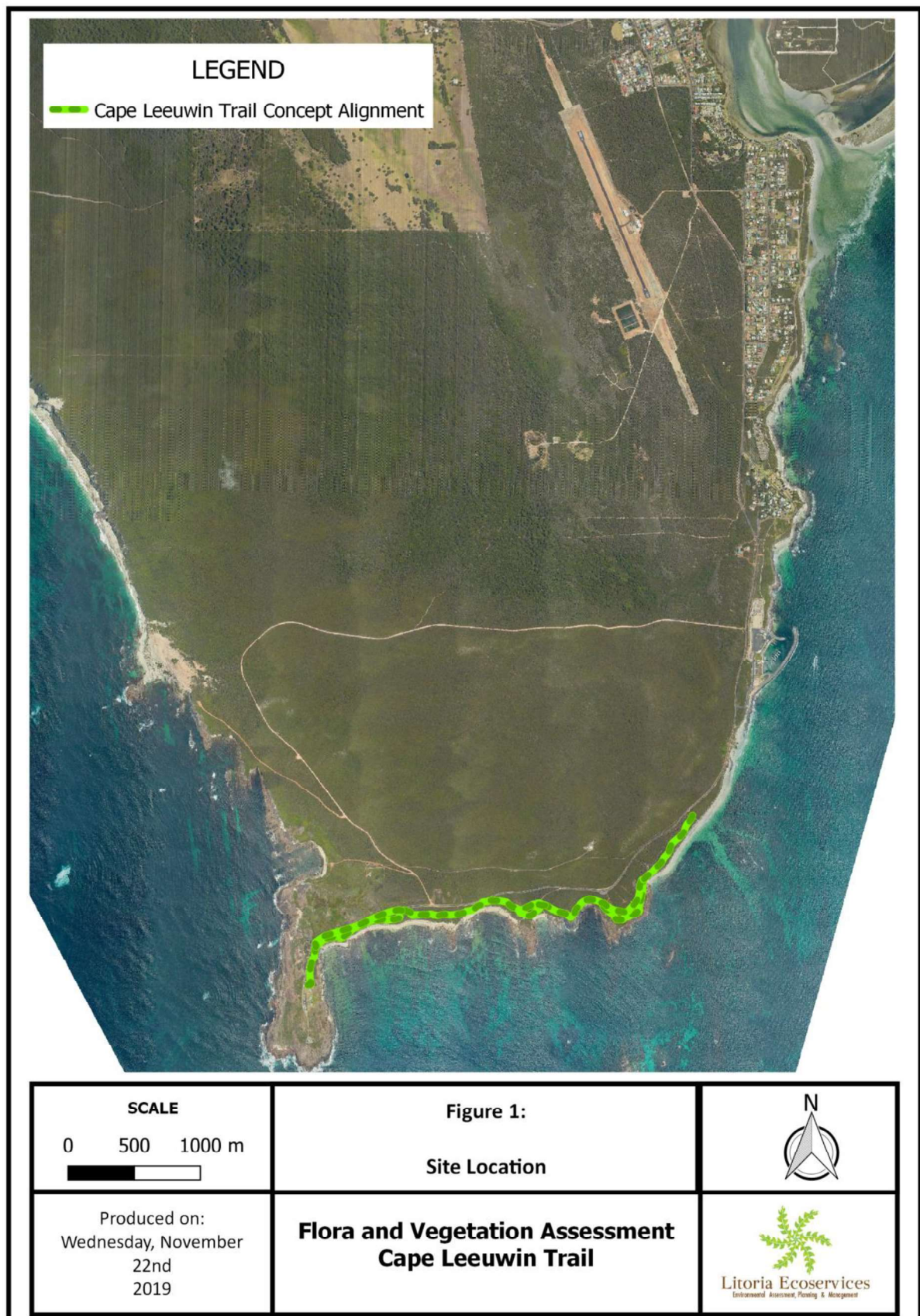
7. Wherever possible avoid disturbance or development within the regionally significant granitic outcrop vegetation communities;
8. Consult closely with DBCA regarding the protection and enhancement of the granitic outcrop vegetation within the site;
9. Ensure the population of *Banksia sessilis var cordata* within the reserve and the proposed trail alignment is protected both from trail construction but also follow on impacts including disease spread/ introduction (*Banksia* species very susceptible to *Phytophthora dieback*)
10. The Low Closed Forest of *Agonis flexuosa*, the Tall Closed Scrub and the dense heath vegetation units represent confirmed or predicted habitat for the critically endangered Western Ringtail Possum. Clearing and disturbance within these communities should be minimised and where possible maintain branch and canopy connectivity alongside and over the pathway to minimise impacts on WRP habitat;
11. The potential exists to recover some plant material from within the pathway alignment prior to clearing eg) *Lepidosperma gladiatum*. This could be valuable for use in local revegetation projects including revegetation of the disturbed edges of the pathway.
12. Rapidly mulch/ brush and revegetate any disturbed areas.
13. Ensure that the priority environmental weed species are not spread as part of the proposal;
14. Undertake bush regeneration works to improve the condition of the degraded and good condition portions of the reserve;
15. Prepare and implement a management plan for the Cape Leeuwin reserves impacted by the project to ensure best practice management of these key ecological, recreational and amenity assets. Such a plan would need to address construction and post construction impacts of the project and broader use and management of the reserves including inappropriate four wheel drive access. A plan would need to address issues such as ; access, environmental weed management, revegetation of degraded areas, feral animal control, interpretive signage;
16. Actively control the priority environmental weed species recorded within the Reserve;
17. Conduct additional flora surveys at alternative times of the year and following any fire events in order to expand the species list for the site.
18. Ensure hygiene management protocols are followed to address the potential spread and introduction of diseases such dieback and environmental weeds into the site.

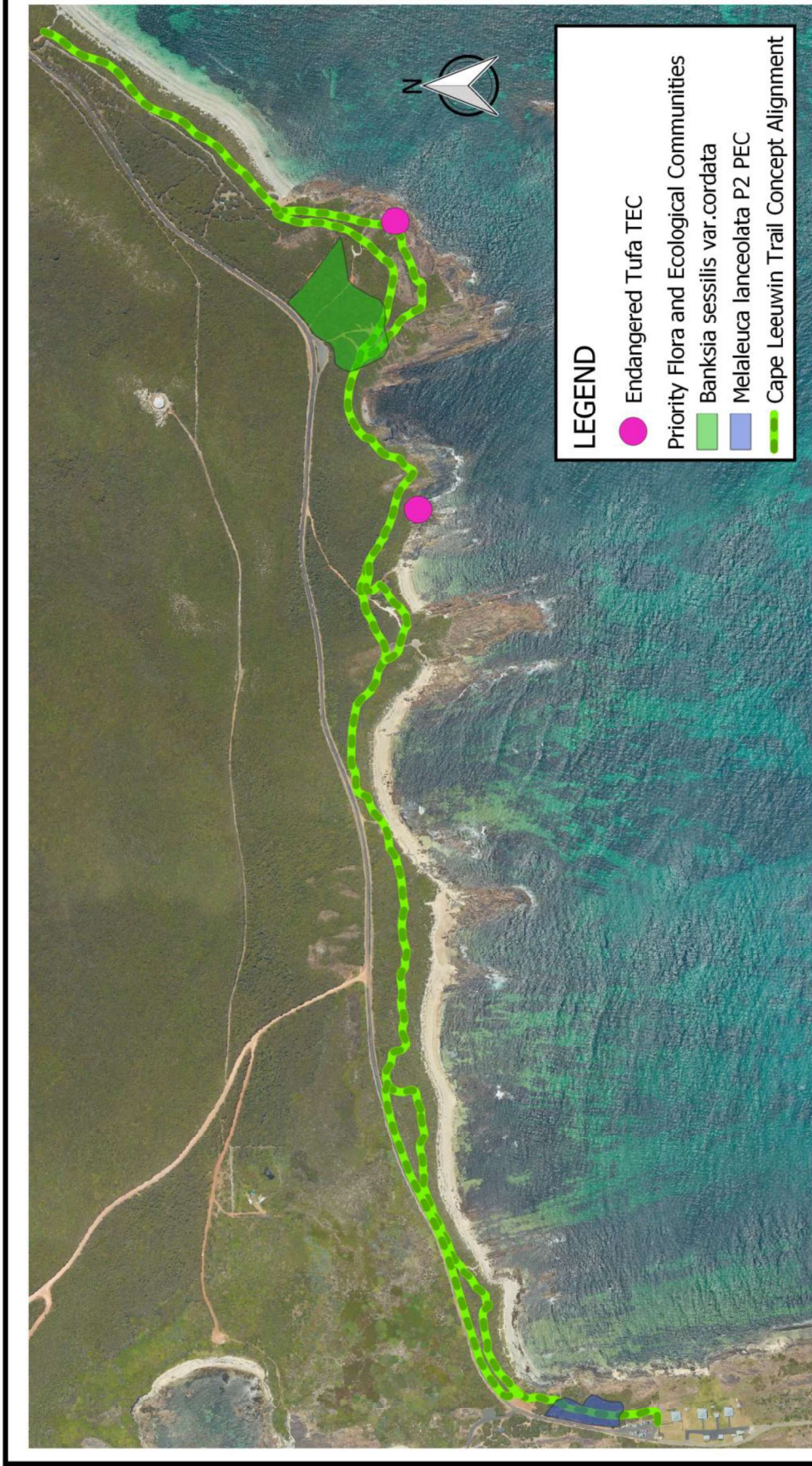
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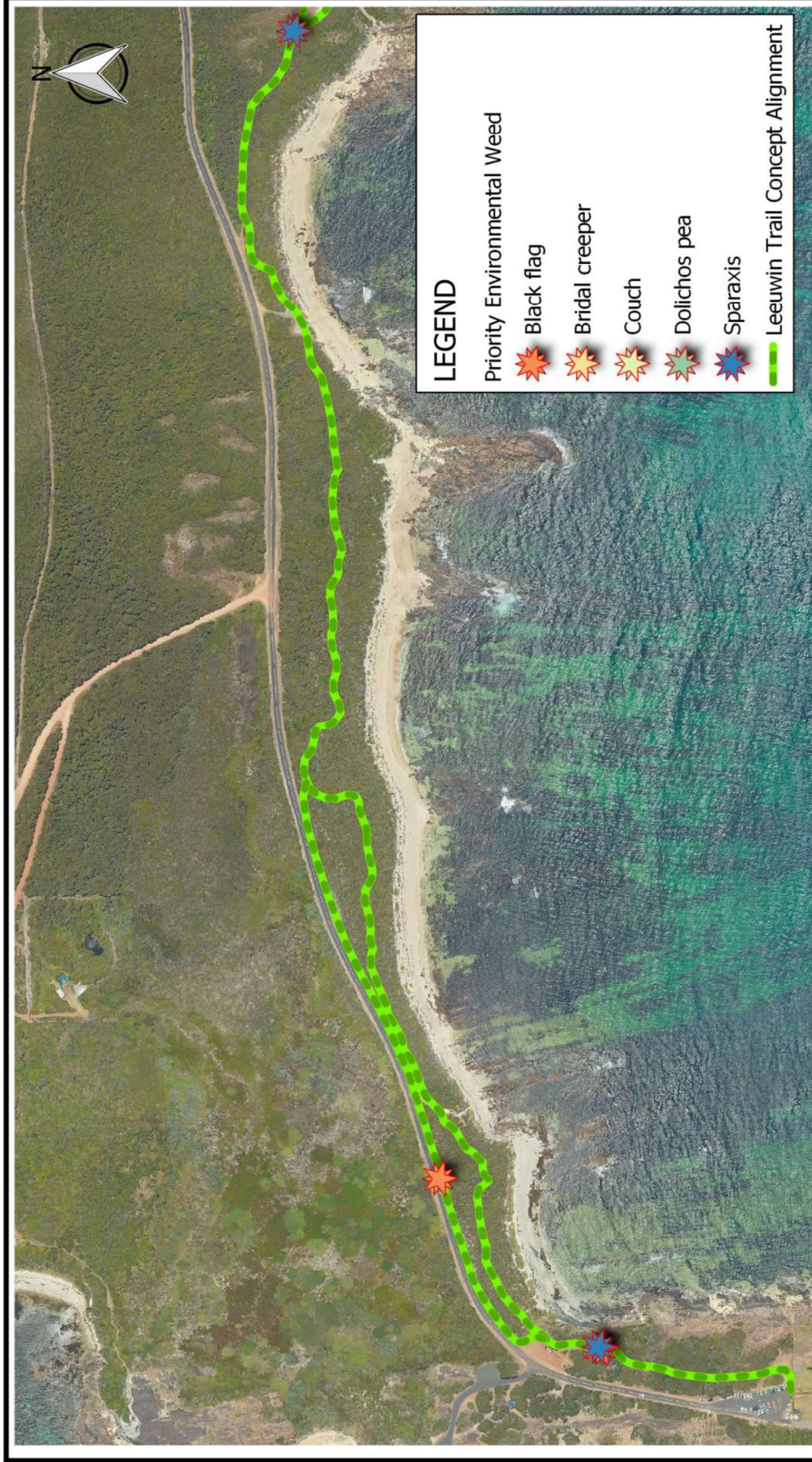
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FIGURES





**Figure 2: Locations of DRF, TEC and PEC
 Flora and Vegetation Assessment
 Cape Leeuwin Trail**



<p>SCALE</p> <p>0 100 200 300 m</p> 	<p>Figure 3a: Priority Environmental Weeds Flora and Vegetation Assessment Cape Leeuwin Trail</p>
<p>Produced on: November 22nd, 2019</p>	
 <p>Litoria Ecoservices Environmental Assessment, Planning & Management</p>	

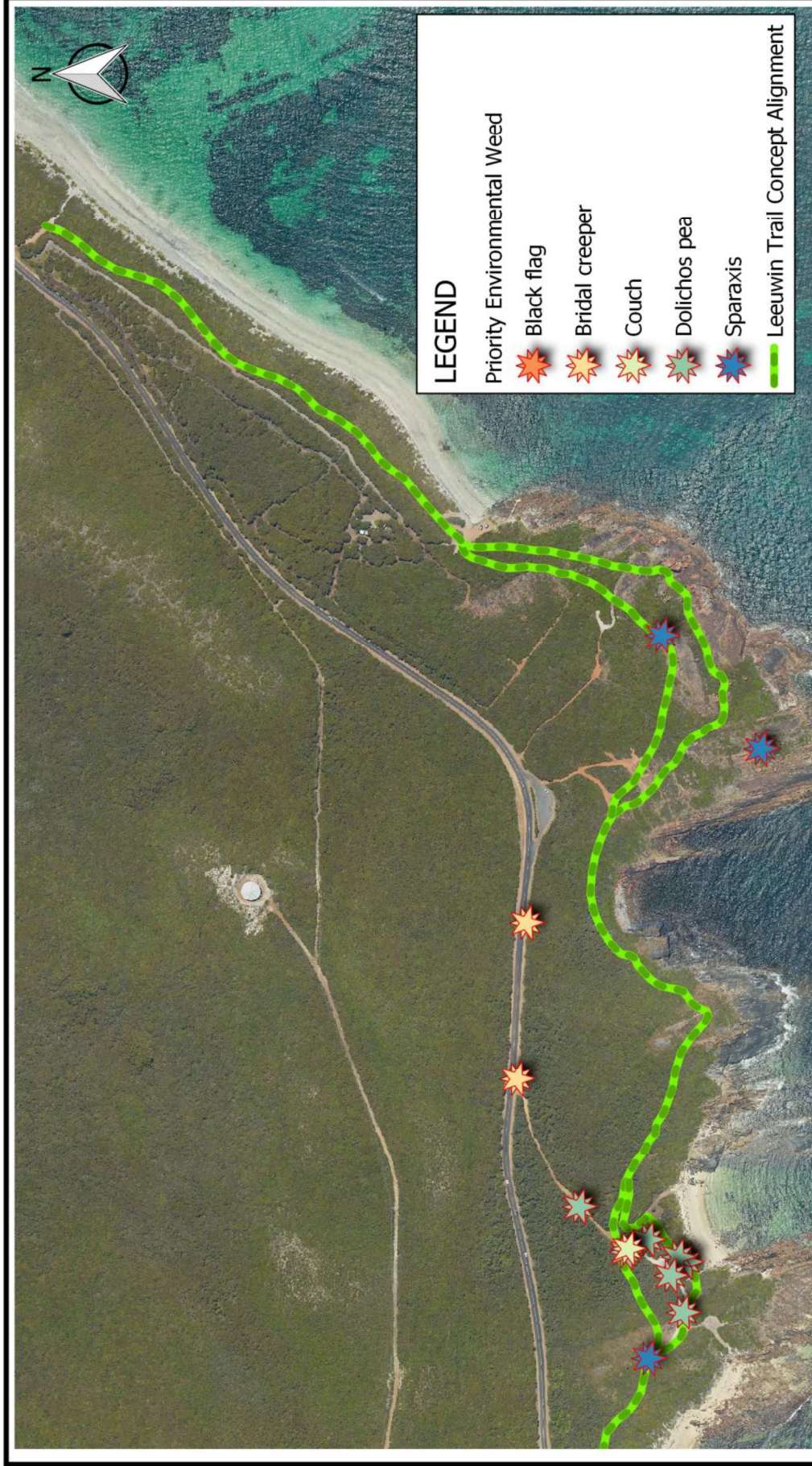
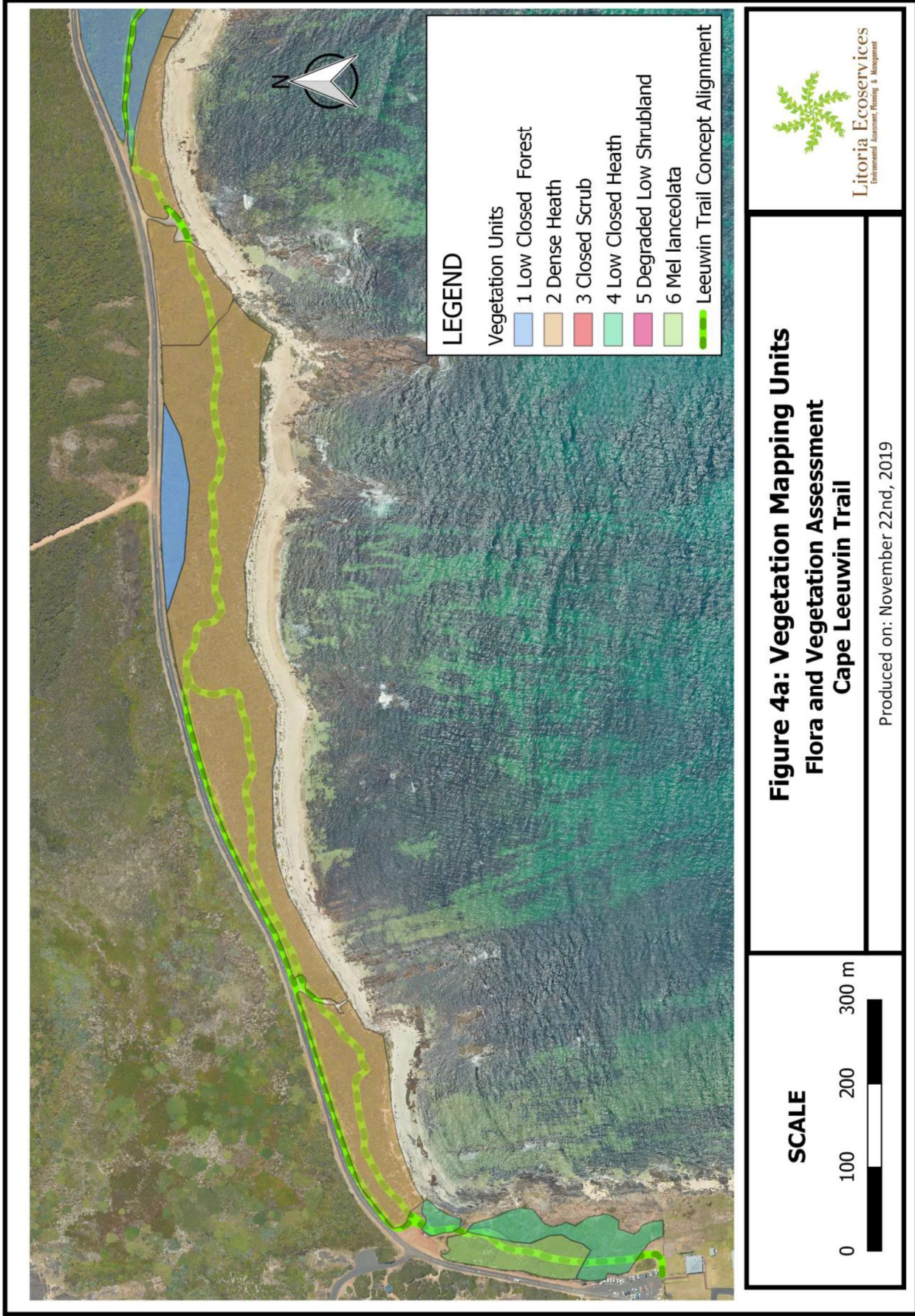
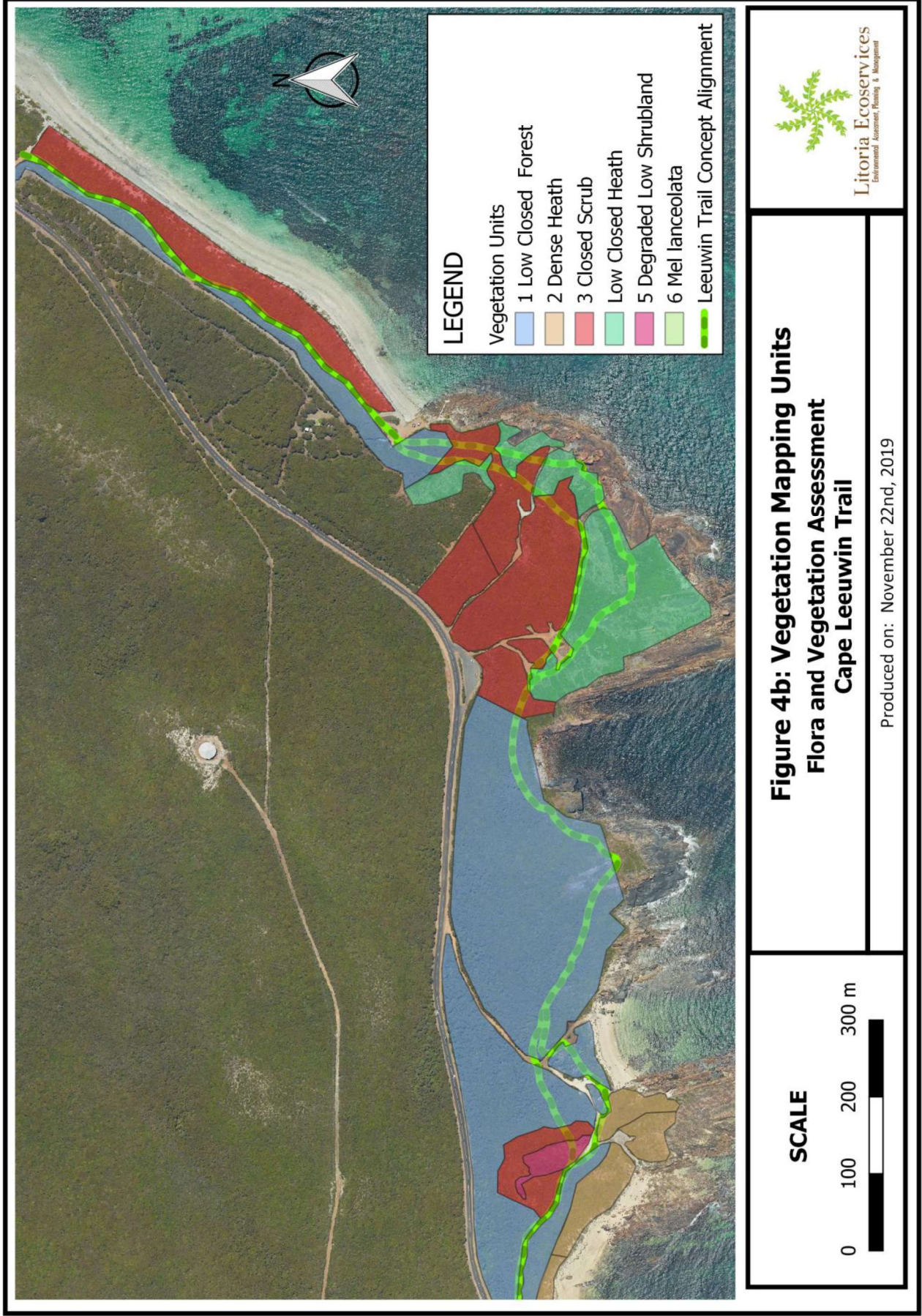


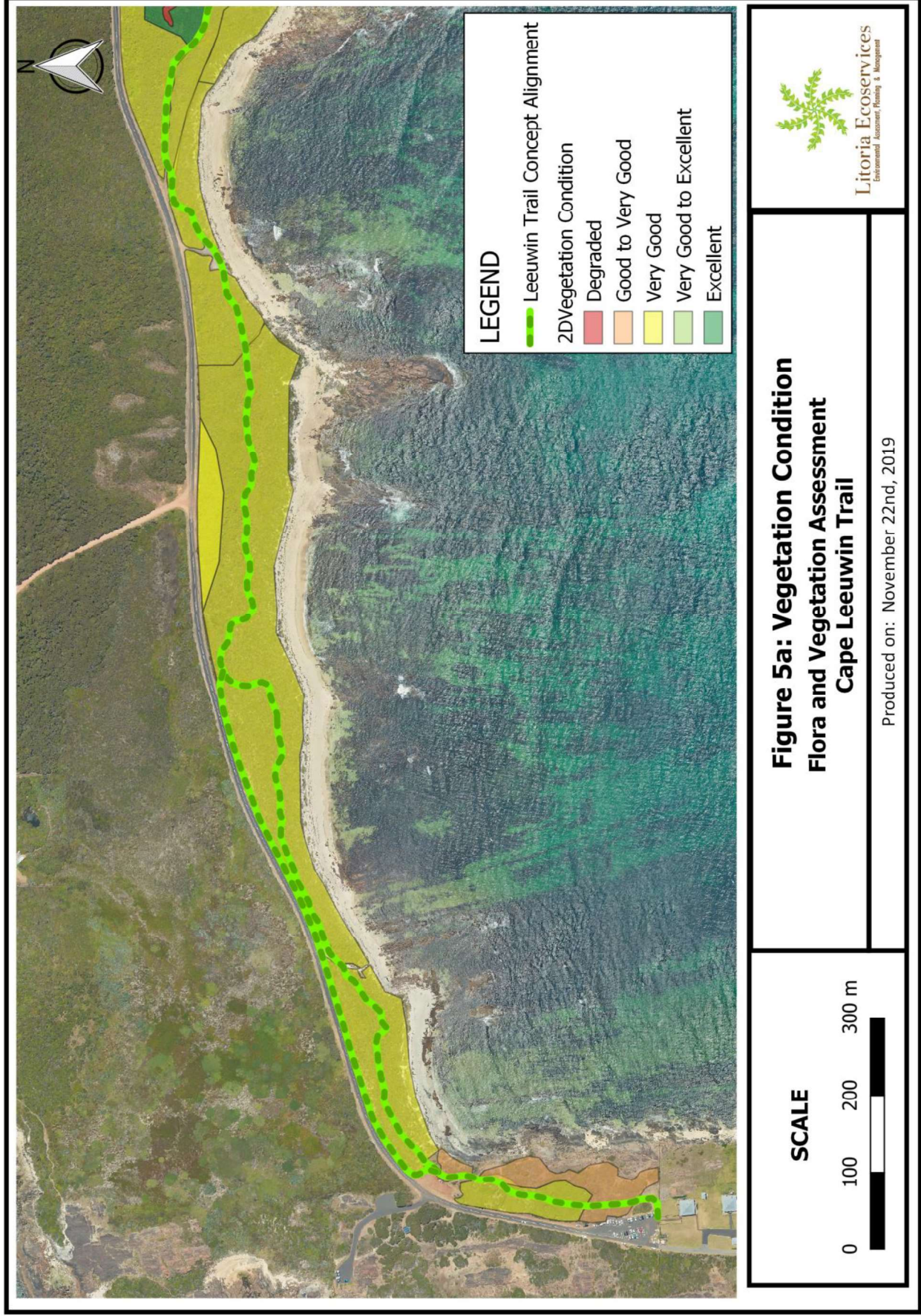
Figure 3b: Priority Environmental Weeds
 Flora and Vegetation Assessment
 Cape Leeuwin Trail

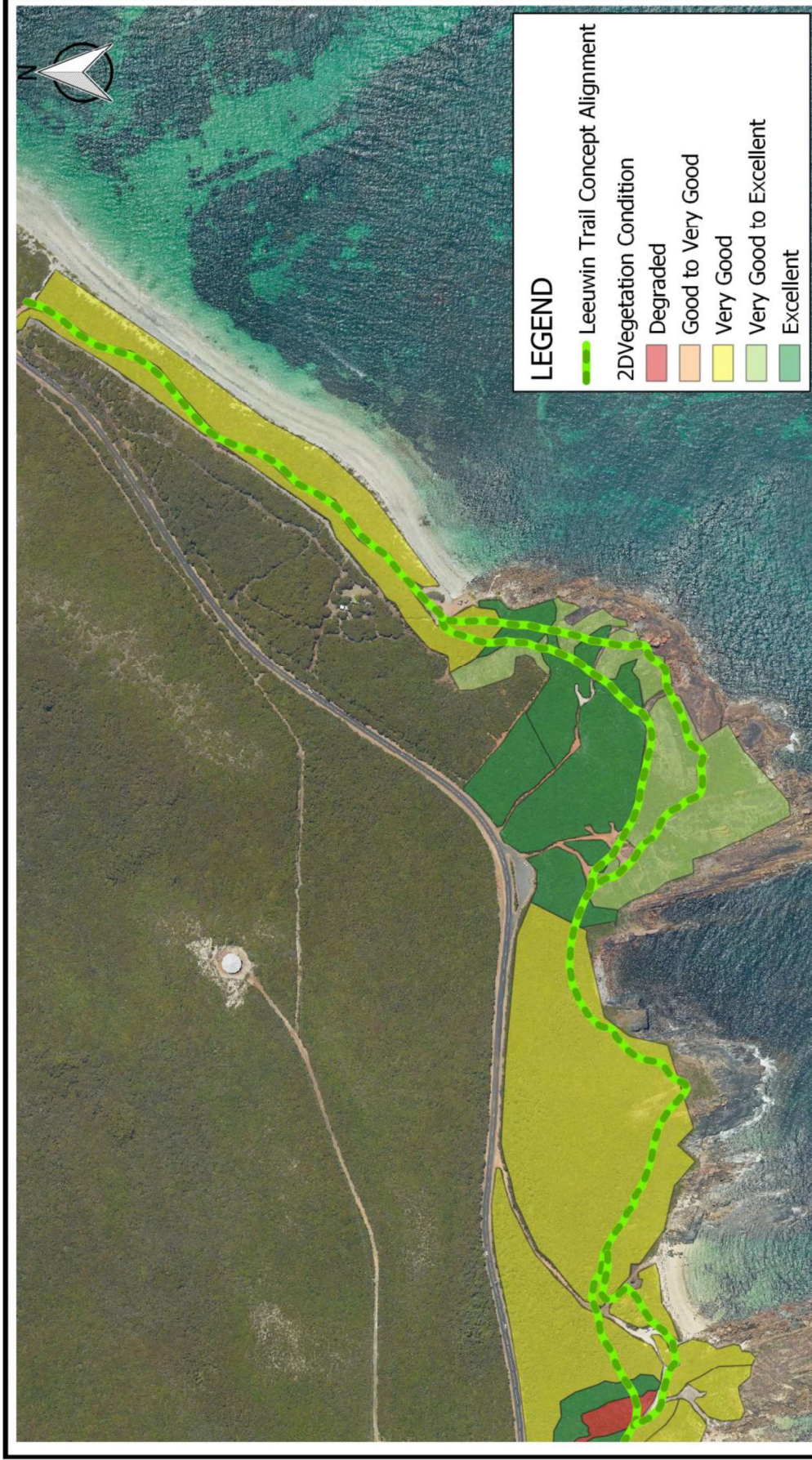
Produced on: November 22nd, 2019

Litoria Ecoservices
 Environmental Assessment, Planning & Management









<p>SCALE</p> <p>0 100 200 300 m</p>	<p>Figure 5b: Vegetation Condition Flora and Vegetation Assessment Cape Leeuwin Trail</p> <p>Produced on: November 22nd, 2019</p>	<p>Litoria Ecoservices Environmental Assessment, Planning & Management</p>
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APPENDIX 1: FLORA SPECIES RECORDED ON-SITE

Family	Species	Weed
<i>Aizoaceae</i>	<i>Carpobrotus virescens</i>	
<i>Aizoaceae</i>	<i>Tetragonia decumbens</i>	*
<i>Apiaceae</i>	<i>Centella asiatica</i>	
<i>Apiaceae</i>	<i>Foeniculum vulgare</i>	*
<i>Araceae</i>	<i>Zantedeschia aethiopica</i>	*
<i>Asparagaceae</i>	<i>Asparagus asparagoides</i>	*
<i>Asparagaceae</i>	<i>Chamaescilla corymbosa</i>	
<i>Asparagaceae</i>	<i>Sowerbaea laxiflora</i>	
<i>Asphodelaceae</i>	<i>Trachyandra divaricata</i>	*
<i>Asteraceae</i>	<i>Arctotheca calendula</i>	*
<i>Asteraceae</i>	<i>Arctotheca populifolia</i>	*
<i>Asteraceae</i>	<i>Brachysome iberidifolia</i>	
<i>Asteraceae</i>	<i>Conyza sumatrensis</i>	*
<i>Asteraceae</i>	<i>Hypochaeris radicata</i>	*
<i>Asteraceae</i>	<i>Leucophyta brownii</i>	
<i>Asteraceae</i>	<i>Olearia axillaris</i>	
<i>Asteraceae</i>	<i>Ozothamnus cordatus</i>	
<i>Asteraceae</i>	<i>Rhodanthe citrina</i>	
<i>Asteraceae</i>	<i>Senecio elegans</i>	*
<i>Asteraceae</i>	<i>Taraxicum officinale</i>	*
<i>Brassicaceae</i>	<i>Cakile maritima</i>	*
<i>Chenopodiaceae</i>	<i>Rhagodia baccata</i> subsp. <i>baccata</i>	
<i>Chenopodiaceae</i>	<i>Threlkeldia diffusa</i>	
<i>Convolvulaceae</i>	<i>Dichondra repens</i>	
<i>Cyperaceae</i>	<i>Ficinia nodosa</i>	
<i>Cyperaceae</i>	<i>Lepidosperma gladiatum</i>	
<i>Cyperaceae</i>	<i>Lepidosperma pubisquameum</i>	
<i>Cyperaceae</i>	<i>Lepidosperma squamatum</i>	
<i>Dasyopogonaceae</i>	<i>Acanthocarpus preisii</i>	
<i>Dennstaedtiaceae</i>	<i>Pteridium esculentum</i>	
<i>Dilleniaceae</i>	<i>Hibbertia cuneiformis</i>	
<i>Dilleniaceae</i>	<i>Hibbertia grossulariifolia</i>	
<i>Droseraceae</i>	<i>Drosera pallida</i>	
<i>Euphorbiaceae</i>	<i>Euphorbia paralias</i>	*
<i>Euphorbiaceae</i>	<i>Euphorbia peplus</i>	*
<i>Ericaceae</i>	<i>Leucopogon parviflorus</i>	
<i>Ericaceae</i>	<i>Leucopogon cordatus</i>	
<i>Fabaceae</i>	<i>Bossiaea disticha</i>	
<i>Fabaceae</i>	<i>Bossiaea linophylla</i>	
<i>Fabaceae</i>	<i>Dipogon lignosus</i>	*
<i>Fabaceae</i>	<i>Eutaxia myrtifolia</i>	
<i>Fabaceae</i>	<i>Gompholobium polymorphum</i>	
<i>Fabaceae</i>	<i>Hardenbergia comptoniana</i>	
<i>Fabaceae</i>	<i>Isotropis cuneifolia</i>	
<i>Fabaceae</i>	<i>Kennedia prostrata</i>	
<i>Fabaceae</i>	<i>Medicago polymorpha</i>	*
<i>Fumariaceae</i>	<i>Fumaria capreolata</i>	*

Family	Species	Weed
<i>Geraniaceae</i>	<i>Pelargonium capitatum</i>	*
<i>Goodenaceae</i>	<i>Scaevola crassifolia</i>	
<i>Haemodoraceae</i>	<i>Anigozanthus manglesii</i>	
<i>Haemodoraceae</i>	<i>Conostylis aculeata</i>	
<i>Hemerocallidaceae</i>	<i>Dianella revoluta</i>	
<i>Hemerocallidaceae</i>	<i>Stypandra glauca</i>	
<i>Iridaceae</i>	<i>Ferraria crispa</i>	*
<i>Iridaceae</i>	<i>Gladiolis undulatus</i>	*
<i>Iridaceae</i>	<i>Moraea flaccida</i>	*
<i>Iridaceae</i>	<i>Orthrosanthus polystachyus</i>	
<i>Iridaceae</i>	<i>Pattersonia occidentalis</i>	
<i>Iridaceae</i>	<i>Sparaxis bulbifera</i>	*
<i>Iridaceae</i>	<i>Romulea rosea</i>	*
<i>Lauraceae</i>	<i>Cassytha racemosa</i>	
<i>Malvaceae</i>	<i>Thomasia triphylla</i>	
<i>Mimosaceae</i>	<i>Acacia alata</i>	
<i>Mimosaceae</i>	<i>Acacia cochlearis</i>	
<i>Mimosaceae</i>	<i>Acacia cyclops</i>	
<i>Mimosaceae</i>	<i>Acacia littorea</i>	
<i>Mimosaceae</i>	<i>Acacia pulchella</i>	
<i>Mimosaceae</i>	<i>Acacia saligna</i>	
<i>Myrtaceae</i>	<i>Agonis flexuosa</i>	
<i>Myrtaceae</i>	<i>Corymbia callophylla</i>	
<i>Myrtaceae</i>	<i>Melaleuca lanceolata</i>	
<i>Orchidaceae</i>	<i>Caladenia latifolia</i>	
<i>Orchidaceae</i>	<i>Thelymitra granitora</i>	
<i>Orobanchaceae</i>	<i>Orobanche minor</i>	*
<i>Oxalidaceae</i>	<i>Oxalis incarnata</i>	*
<i>Phyllanthaceae</i>	<i>Phyllanthus calycinus</i>	
<i>Pittosporaceae</i>	<i>Billardiera fusiformis</i>	
<i>Pittosporaceae</i>	<i>Marianthus candidus</i>	
<i>Plantaginaceae</i>	<i>Plantago lanceolata</i>	*
<i>Poaceae</i>	<i>Avena barbata</i>	*
<i>Poaceae</i>	<i>Briza maxima</i>	*
<i>Poaceae</i>	<i>Briza minor</i>	*
<i>Poaceae</i>	<i>Cynodon dactylon</i>	*
<i>Poaceae</i>	<i>Lagurus ovatus</i>	*
<i>Poaceae</i>	<i>Cenchrus clandestinus</i>	*
<i>Poaceae</i>	<i>Microlaena stipoides</i>	
<i>Poaceae</i>	<i>Spinifex hirsutus</i>	
<i>Poaceae</i>	<i>Sporobolus virginicus</i>	
<i>Poaceae</i>	<i>Stenotaphrum secundatum</i>	*
<i>Polygalaceae</i>	<i>Comesperma confertum</i>	
<i>Proteaceae</i>	<i>Banksia sessilis var. cordata (P4)</i>	
<i>Proteaceae</i>	<i>Banksia grandis</i>	
<i>Proteaceae</i>	<i>Hakea oleifolia</i>	
<i>Proteaceae</i>	<i>Persoonia longifolia</i>	
<i>Polygonaceae</i>	<i>Muehlenbeckia adpressa</i>	
<i>Ranunculaceae</i>	<i>Clematis pubescens</i>	
<i>Rhamnaceae</i>	<i>Spyridium globulosum</i>	

Family	Species	Weed
<i>Rutaceae</i>	<i>Boronia alata</i>	
<i>Rutaceae</i>	<i>Chorilaena quercifolia</i>	
<i>Sapindaceae</i>	<i>Dodonea ceratocarpa</i>	
<i>Santalaceae</i>	<i>Exocarpus sparteus</i>	
<i>Scrophulariaceae</i>	<i>Myoporum insulare</i>	
<i>Scrophulariaceae</i>	<i>Verbascum virgatum</i>	*
<i>Solanaceae</i>	<i>Solanum nigrum</i>	*
<i>Thymelaeaceae</i>	<i>Pimelea ferrugineae</i>	
<i>Xanthorrhoeaceae</i>	<i>Xanthorrhoea preissii</i>	
<i>Zamiaceae</i>	<i>Macrozamia riedlei</i>	

APPENDIX 2: RESULTS OF THE NATUREMAP SEARCH

Plantae

480.	3207	<i>Acacia alata</i> (Winged Wattle)		
481.	15429	<i>Acacia alata</i> var. <i>alata</i>		
482.	11731	<i>Acacia browniana</i> var. <i>browniana</i>		
483.	3262	<i>Acacia cochlearis</i> (Rigid Wattle)		
484.	3307	<i>Acacia divergens</i>		
485.	3347	<i>Acacia gilbertii</i>		
486.	3374	<i>Acacia huegelii</i>		
487.	18217	<i>Acacia ileaphylla</i>	Y	
488.	3424	<i>Acacia illorea</i>		
489.	3453	<i>Acacia myrtifolia</i>		
490.	3464	<i>Acacia obovata</i>		
491.	3502	<i>Acacia pulchella</i> (Prickly Moses)		
492.	15483	<i>Acacia pulchella</i> var. <i>pulchella</i>		
493.	3525	<i>Acacia rostellifera</i> (Summer-scented Wattle)		
494.	3527	<i>Acacia saligna</i> (Orange Wattle, Kudjong)		
495.	3588	<i>Acacia uliginosa</i>		
496.	3591	<i>Acacia urophylla</i>		
497.	1206	<i>Acanthocarpus preissii</i>		
498.	44678	<i>Acanthus mollis</i>	Y	
499.	13146	<i>Acetabularia peniculus</i>		
500.	6295	<i>Acrotriche cordata</i> (Coast Ground Berry)		
501.	6206	<i>Actinotus omnifertile</i>		
502.	7818	<i>Actites megalocarpus</i> (Dune Thistle)		
503.	1776	<i>Adenanthos detnoidii</i> (Scott River Jugflower)		P4
504.	1790	<i>Adenanthos meisneri</i>		
505.	1791	<i>Adenanthos obovatus</i> (Basket Flower)		
506.	26281	<i>Adenanthos</i> sp. <i>Whicher Range</i> (G. J. Kelghery 9730)		
507.	5316	<i>Agonis flexuosa</i> (Peppermint, Woni)		
508.	17202	<i>Agonis flexuosa</i> var. <i>flexuosa</i>		
509.	184	<i>Aira caryophylla</i> (Silvery Hairgrass)	Y	
510.	35159	<i>Ammophila arenaria</i> subsp. <i>arenaria</i>	Y	
511.	1062	<i>Anarthria prolifera</i>		
512.	1063	<i>Anarthria scabra</i>		
513.	6306	<i>Andersonia caerulea</i> (Foxtails)		
514.	1407	<i>Anigozanthos flavidus</i> (Tail Kangaroo Paw)		
515.	6049	<i>Anthocercis illorea</i> (Yellow Tailflower)		
516.	202	<i>Anthoxanthum odoratum</i> (Sweet Vernal Grass)	Y	
517.	3685	<i>Actus carinata</i>		P4
518.	6210	<i>Aplium annuum</i>		
519.	12040	<i>Aplium prostratum</i> subsp. <i>prostratum</i> var. <i>prostratum</i> (Sea Celery)		
520.	26481	<i>Apjohnia laetevirens</i>		
521.	7838	<i>Arctotheca calendula</i> (Cape Weed, African Marigold)	Y	
522.	7839	<i>Arctotheca populifolia</i> (Dune Arctotheca, Beach Pumpkin, Coast Capeweed, Beach Daisy)	Y	
523.	26484	<i>Areschougia ligulata</i>		
524.	26485	<i>Asparagus armata</i>		

Flora and Vegetation Assessment
Cape Leeuwin Trail Dead Finish to Cape Leeuwin, December 2019

525.	20752	<i>Asparagus aethiopicus</i>		Y	
526.	16943	<i>Asparagus declinatus</i>		Y	
527.	20283	<i>Astaritea scoparia</i> (Common Astaritea)			
528.	4401	<i>Asterolaia squamuligera</i>			
529.	6323	<i>Astroloma ciliatum</i> (Candle Cranberry)			
530.	6334	<i>Astroloma pallidum</i> (Kick Bush)			
531.	2462	<i>Atriplex hypoleuca</i>			
532.	2471	<i>Atriplex prostrata</i> (Hastate Orache)		Y	
533.	26495	<i>Austrocinium charoides</i>			Y
534.	17234	<i>Austrostipa compressa</i>			
535.	32525	<i>Banksia formosa</i> (Showy Dryandra)			
536.	1819	<i>Banksia grandis</i> (Bull Banksia, Puigaria)			
537.	1822	<i>Banksia ilicifolia</i> (Holly-leaved Banksia)			
538.	1830	<i>Banksia littoralis</i> (Swamp Banksia, Pungura)			
539.	17107	<i>Banksia meisneri</i> subsp. <i>ascendens</i> (Scott River Banksia)			P4
540.	1837	<i>Banksia occidentalis</i> (Red Swamp Banksia)			
541.	32078	<i>Banksia sessilis</i> var. <i>cordata</i>			P4
542.	32315	<i>Barbula calycina</i>			
543.	740	<i>Baumea arthrophylla</i>			
544.	741	<i>Baumea articulata</i> (Jointed Rush)			
545.	743	<i>Baumea juncea</i> (Bare Twigrush)			
546.	744	<i>Baumea laxa</i>			
547.	748	<i>Baumea vaginatis</i> (Sheath Twigrush)			
548.	5392	<i>Beaufortia sparsa</i> (Swamp Bottlebrush)			
549.	7853	<i>Berkheya rigida</i> (African Thistle, Hamelin Thistle)		Y	
550.	12686	<i>Berula erecta</i> (Narrowleaf Water Parsnip)		Y	
551.	3157	<i>Billardiera floribunda</i> (White-flowered Billardiera)			
552.	25798	<i>Billardiera fusiformis</i> (Australian Bluebell)			
553.	3185	<i>Billardiera varifolia</i>			
554.	4403	<i>Boronia alata</i> (Winged Boronia)			
555.	16313	<i>Boronia anceps</i>			P3
556.	4413	<i>Boronia crenulata</i> (Antseed Boronia)			
557.	29274	<i>Boronia crenulata</i> subsp. <i>crenulata</i>			
558.	11503	<i>Boronia crenulata</i> subsp. <i>crenulata</i> var. <i>crenulata</i>			
559.	16632	<i>Boronia juncea</i> subsp. <i>minima</i>			
560.	4441	<i>Boronia spatulata</i> (Boronia)			
561.	4442	<i>Boronia stricta</i>			
562.	20392	<i>Boronia tenulor</i>			
563.	1272	<i>Borya scirpoides</i>			
564.	3708	<i>Bossiaea alsticha</i>			
565.	3710	<i>Bossiaea eriocarpa</i> (Common Brown Pea)			
566.	3713	<i>Bossiaea inophylla</i>			
567.	14291	<i>Bossiaea praetermissa</i>			
568.	3718	<i>Bossiaea rufa</i>			
569.	26518	<i>Botryocidias sonderi</i>			
570.	6341	<i>Brachyotoma preissii</i> (Globe Heath)			
571.	7878	<i>Brachyscome ibertifolia</i>			
572.	244	<i>Briza maxima</i> (Blowfly Grass)		Y	
573.	12770	<i>Burchardia congesta</i>			
574.	1385	<i>Burchardia multiflora</i> (Dwarf Burchardia)			
575.	1277	<i>Caesia occidentalis</i>			
576.	3002	<i>Caete maritima</i> (Sea Rocket)		Y	
577.	13852	<i>Caladenia abbreviata</i>			P3
578.	15328	<i>Caladenia appianata</i> subsp. <i>appianata</i>			
579.	13853	<i>Caladenia arrecta</i>			
580.	15332	<i>Caladenia attingens</i> subsp. <i>attingens</i>			
581.	15335	<i>Caladenia brownii</i>			
582.	1580	<i>Caladenia cairnsiana</i> (Zebra Orchid)			
583.	1581	<i>Caladenia corynephora</i>			
584.	10776	<i>Caladenia ensata</i>			
585.	13619	<i>Caladenia excelsa</i>			T
586.	1592	<i>Caladenia flava</i> (Cowslip Orchid)			
587.	15351	<i>Caladenia gardneri</i>			
588.	1597	<i>Caladenia infundibularis</i>			
589.	1599	<i>Caladenia latifolia</i> (Pink Fairy Orchid)			
590.	18037	<i>Caladenia lodgeana</i>			T
591.	15366	<i>Caladenia longicauda</i> subsp. <i>menziesii</i>			
592.	15372	<i>Caladenia nana</i> subsp. <i>unita</i>			
593.	15375	<i>Caladenia phalcoidea</i>			
594.	18034	<i>Caladenia phalcoidea</i> subsp. <i>augustensis</i>			P1 Y

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Name ID	Species Name	Naturalised	Conservation Code	Endemic To Query Area
595.	18033 <i>Caladenia phalcolidea</i> subsp. <i>phalcolidea</i>			
596.	15379 <i>Caladenia serotina</i>			
597.	2645 <i>Calandrinia brevipedata</i> (Short-stalked Purslane)			
598.	40827 <i>Calandrinia tholiformis</i>			
599.	10861 <i>Callistachyus lanceolata</i> (Wonnich)			
600.	26534 <i>Callophycus dorsifer</i>			
601.	26536 <i>Callophycus oppositifolius</i>			
602.	35799 <i>Calothamnus lateralis</i> var. <i>crassus</i>		P3	
603.	32461 <i>Campylopus bicolor</i> var. <i>bicolor</i>			
604.	43241 <i>Carex thecata</i>			
605.	2952 <i>Cassytha glabella</i> (Tangled Dodder Laurel)			
606.	2956 <i>Cassytha pomiformis</i> (Dodder Laurel)			
607.	2957 <i>Cassytha racemosa</i> (Dodder Laurel)			
608.	11242 <i>Cassytha racemosa</i> forma <i>pilosa</i>			
609.	11799 <i>Cassytha racemosa</i> forma <i>racemosa</i>			
610.	26555 <i>Caulerpa brownii</i>			
611.	26556 <i>Caulerpa cactoides</i>			
612.	48455 <i>Caulerpa geminata</i>			
613.	26570 <i>Caulerpa obscura</i>			
614.	26574 <i>Caulerpa scalpelliformis</i>			
615.	41564 <i>Cenchrus clandestinus</i> (Kikuyu Grass)	Y		
616.	6539 <i>Centaurium erythraea</i> (Common Centaury)	Y		
617.	6542 <i>Centaurium tenuiflorum</i>	Y		
618.	6214 <i>Centella asiatica</i>			
619.	1121 <i>Centrolepis aristata</i> (Pointed Centrolepis)			
620.	1125 <i>Centrolepis drummondiana</i>			
621.	13489 <i>Cerastium pumilum</i>	Y		
622.	26613 <i>Chaetomorpha valida</i>			
623.	11299 <i>Chamaecilia corymbosa</i> var. <i>corymbosa</i>			
624.	26622 <i>Chauvinella contorta</i>			
625.	2490 <i>Chenopodium glaucum</i> (Glaucous Goosefoot)	Y		
626.	20659 <i>Chlorophytum comosum</i>	Y		Y
627.	4448 <i>Chorlaena quercifolia</i> (Chorlaena)			
628.	13112 <i>Chorizema aciculare</i> subsp. <i>aciculare</i>			
629.	3754 <i>Chorizema diversifolium</i>			
630.	3760 <i>Chorizema reticulatum</i> (Showy Flame Pea)			
631.	26665 <i>Ciavicionium ovatum</i>			
632.	2929 <i>Clematis pubescens</i> (Common Clematis)			
633.	4552 <i>Comesperma confertum</i>			
634.	4554 <i>Comesperma flavum</i>			
635.	4564 <i>Comesperma virgatum</i> (Milkwort)			
636.	40663 <i>Commersonia corymbosa</i> (Hazel-leaved Ruilingia)			
637.	15607 <i>Conospermum acerosum</i> subsp. <i>acerosum</i>			
638.	1662 <i>Conospermum caeruleum</i> (Blue Brother)			
639.	16678 <i>Conospermum caeruleum</i> subsp. <i>spathulatum</i>			
640.	16653 <i>Conospermum capitatum</i> subsp. <i>glacratum</i>			
641.	1418 <i>Conostylis aculeata</i> (Prickly Conostylis)			
642.	11826 <i>Conostylis aculeata</i> subsp. <i>aculeata</i>			
643.	1436 <i>Conostylis laxiflora</i>			
644.	11597 <i>Conostylis setigera</i> subsp. <i>setigera</i>			
645.	20074 <i>Conyza sumatrensis</i>	Y		
646.	29283 <i>Coprosma repens</i>	Y		
647.	48259 <i>Cortaderia seioana</i> subsp. <i>seioana</i>	Y		
648.	17104 <i>Corymbia calophylla</i> (Marr)			
649.	7945 <i>Cotula coronopifolia</i> (Waterbuttons)	Y		
650.	20271 <i>Crassula extrorsa</i>			
651.	1514 <i>Crocodylia x crocosmiflora</i>	Y		
652.	17368 <i>Crotalaria agatiflora</i> subsp. <i>agatiflora</i>	Y		
653.	1627 <i>Cryptostylis ovata</i> (Slipper Orchid)			
654.	26712 <i>Curdlea obesa</i>			
655.	6683 <i>Cuscuta epithymum</i> (Lesser Dodder, Greater Dodder)	Y		
656.	283 <i>Cynodon dactylon</i> (Couch)	Y		
657.	783 <i>Cyperus congestus</i> (Dense Flat-sedge)	Y		
658.	792 <i>Cyperus eragrostis</i> (Umbrella Sedge)	Y		
659.	801 <i>Cyperus laevigatus</i>	Y		
660.	10916 <i>Cyrtostylis huegelii</i>			
661.	7444 <i>Dampiera hederacea</i> (Karrri Dampiera)			
662.	7446 <i>Dampiera heteroptera</i>		P3	
663.	7454 <i>Dampiera linearis</i> (Common Dampiera)			
664.	18193 <i>Darwinia thymoides</i> subsp. <i>thymoides</i>			

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665.	26751 <i>Dasyctionium fleccidum</i>			
666.	26753 <i>Dasyphila preissii</i>			
667.	1218 <i>Dasyogon bromeliifolius</i> (Pineapple Bush)			
668.	19747 <i>Daviesia decurrens</i> subsp. <i>decurrens</i>			
669.	3811 <i>Daviesia flexuosa</i>			
670.	3817 <i>Daviesia inflata</i>			
671.	26757 <i>Delisea pulchra</i>			
672.	16595 <i>Desmodium flexuosum</i>			
673.	1259 <i>Dianella revoluta</i> (Blueberry Lily)			
674.	7487 <i>Diaspasis filifolia</i> (Thread-leaved Diaspasis)			
675.	306 <i>Dichelachne crinita</i> (Longhair Plumegrass)			
676.	6616 <i>Dichondra repens</i> (Kidney Weed)			
677.	29616 <i>Dichotomania marginata</i>			
678.	34959 <i>Dichotomania spathulata</i>			
679.	32345 <i>Didymodon australis</i>			
680.	17736 <i>Digitaria aequilumis</i>	Y		
681.	311 <i>Digitaria ciliaris</i> (Summer Grass)	Y		
682.	320 <i>Digitaria sanguinalis</i> (Crab Grass)	Y		
683.	4454 <i>Diploaena dampieri</i> (Southern Diploaena)			
684.	4457 <i>Diploaena microcephala</i> (Lesser Diploaena)			
685.	3011 <i>Diplostaxis muralis</i> (Wall Rocket)	Y		
686.	3867 <i>Dipogon ilinosus</i> (Dolchos Pea)	Y		
687.	44140 <i>Diuris jonesii</i>			
688.	1633 <i>Diuris laevis</i> (Nannygoat Orchid)			
689.	1635 <i>Diuris longifolia</i> (Common Donkey Orchid)			
690.	49036 <i>Diuris</i> sp. <i>Augusta</i> (G. Brockman GBB 1400)			Y
691.	4757 <i>Dodonaea ceratocarpa</i>			
692.	17338 <i>Dodonaea viscosa</i> subsp. <i>viscosa</i>	Y		
693.	1640 <i>Drakaea glyptodon</i> (King-in-his-carriage)			
694.	48751 <i>Drosera drummondii</i>			
695.	3098 <i>Drosera glanduligera</i> (Pimpernel Sundew)			
696.	3102 <i>Drosera huegelii</i> (Boid Sundew)			
697.	11388 <i>Dysphania glomulifera</i> subsp. <i>glomulifera</i>			
698.	1643 <i>Elythranthera brunonis</i> (Purple Enamel Orchid)			
699.	6131 <i>Epilobium billardiereanum</i> (Glabrous Willow Herb)			
700.	11570 <i>Epilobium billardiereanum</i> subsp. <i>billardiereanum</i> (Smooth Willow Herb)			
701.	3149 <i>Eremosyne pectinata</i>			
702.	15410 <i>Eriochilus dilatatus</i> subsp. <i>dilatatus</i>			
703.	4333 <i>Erodium cicutarium</i> (Common Storksbill)	Y		
704.	6219 <i>Eryngium pinnatifidum</i> (Blue Devils)			
705.	15446 <i>Eryngium pinnatifidum</i> subsp. <i>pinnatifidum</i>			
706.	26822 <i>Erythrocnidum sedoides</i>			
707.	5605 <i>Eucalyptus cornuta</i> (Yate, Yeld)			
708.	5625 <i>Eucalyptus diversicolor</i> (Karr)			
709.	13547 <i>Eucalyptus marginata</i> subsp. <i>marginata</i> (Jamah)			
710.	4636 <i>Euphorbia paralias</i> (Sea Spurge)	Y		
711.	4638 <i>Euphorbia pepius</i> (Petty Spurge)	Y		
712.	20214 <i>Eutaxia myrtilloides</i>			
713.	3880 <i>Eutaxia vitigata</i>			
714.	634 <i>Evandra aristata</i>			
715.	10907 <i>Exocarpos odoratus</i> (Scented Bailart)			
716.	10765 <i>Exocarpos sparteus</i> (Broom Bailart, Djuk)			
717.	11445 <i>Ferraria crispa</i> subsp. <i>crispa</i>	Y		
718.	20216 <i>Fichia nodosa</i> (Knotted Club Rush)			
719.	32470 <i>Fissidens tenellus</i> var. <i>australensis</i>			
720.	6221 <i>Foeniculum vulgare</i> (Fennel)	Y		
721.	1945 <i>Franklandia triaristata</i> (Lanoline Bush)		P4	
722.	31532 <i>Fumaria muralis</i> subsp. <i>muralis</i>	Y		
723.	907 <i>Gahnia trifida</i> (Coast Saw-seed)			
724.	34216 <i>Galium leptogonum</i>		P3	
725.	20473 <i>Gastrolobium ebracteolatum</i>			
726.	20504 <i>Gastrolobium formosum</i>		P3	
727.	26841 <i>Gayralia oxysperma</i>			
728.	16311 <i>Gazania linearis</i>	Y		
729.	32380 <i>Gemmabryum pachythemum</i>			
730.	4340 <i>Geranium retrorsum</i>			
731.	26852 <i>Gibsmithia womersleyi</i>			
732.	26854 <i>Gigartina disticha</i>			
733.	26864 <i>Glomoseccion brownii</i>			
734.	3948 <i>Gompholobium capitatum</i>			

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735.	3953 <i>Gompholobium ovatum</i>			
736.	3954 <i>Gompholobium polymorphum</i>			
737.	6146 <i>Gonocarpus benthamii</i>			
738.	16746 <i>Gonocarpus benthamii</i> subsp. <i>benthamii</i>			
739.	7505 <i>Goodenia eatoniana</i>			
740.	13165 <i>Goodenia pusilla</i>			
741.	26876 <i>Gracilaria verrucosa</i>			
742.	37500 <i>Grammatotheca bergiana</i> var. <i>bergiana</i>	Y		
743.	14010 <i>Grevillea brachystylis</i> subsp. <i>australis</i>		T	
744.	2080 <i>Grevillea quercifolia</i> (Oak-leaf Grevillea)			
745.	1472 <i>Haemodorum simplex</i>			
746.	1475 <i>Haemodorum spicatum</i> (Mardja)			
747.	2126 <i>Hakea amplexicaulis</i> (Prickly Hakea)			
748.	2137 <i>Hakea ceratophylla</i> (Horned Leaf Hakea)			
749.	2159 <i>Hakea faicata</i>			
750.	2170 <i>Hakea lasianthoides</i>			
751.	2191 <i>Hakea oleifolia</i> (Dungyn)			
752.	2203 <i>Hakea ruscifolia</i> (Candle Hakea)			
753.	47213 <i>Halmisandra versatilis</i>			
754.	3961 <i>Hardenbergia comptoniana</i> (Native Wisteria)			
755.	3016 <i>Helophila pusilla</i>	Y		
756.	11451 <i>Hemarthra uncinata</i> var. <i>uncinata</i>			
757.	6639 <i>Hemilandra pungens</i> (Snakebush)			
758.	38322 <i>Hemilandra</i> sp. <i>Windy Harbour</i> (B.J. Conn & J.A. Scott BJC 3344)		P3	
759.	26915 <i>Hennedya crispa</i>			
760.	26940 <i>Heterothamnion platythalae</i>			Y
761.	31115 <i>Heterozostera polychlamys</i>			
762.	5109 <i>Hibbertia amplexicaulis</i>			
763.	5117 <i>Hibbertia cuneiformis</i> (Cutleaf Hibbertia)			
764.	5118 <i>Hibbertia cunninghamii</i>			
765.	20051 <i>Hibbertia diamisogenos</i>			
766.	5132 <i>Hibbertia grossularifolia</i>			
767.	45534 <i>Hibbertia hypericoides</i> subsp. <i>hypericoides</i>			
768.	5137 <i>Hibbertia inconspicua</i>			
769.	19687 <i>Hibbertia notibractea</i>			
770.	5154 <i>Hibbertia perfoliata</i>			
771.	5162 <i>Hibbertia racemosa</i> (Stalked Guinea Flower)			
772.	5169 <i>Hibbertia serrata</i> (Serrate Leaved Guinea Flower)			
773.	5171 <i>Hibbertia spicata</i>			
774.	1294 <i>Hodgsoniola junceiformis</i>			
775.	6222 <i>Homaloscladium homalocarpum</i>			
776.	5616 <i>Homalospemum firmum</i>			
777.	449 <i>Hordeum leponum</i> (Barley Grass)	Y		
778.	18137 <i>Homungia procumbens</i>	Y		
779.	3964 <i>Hovea chonczemifolia</i> (Holly-leaved Hovea)			
780.	3965 <i>Hovea elliptica</i> (Tree Hovea)			
781.	3966 <i>Hovea trisperma</i> (Common Hovea)			
782.	12859 <i>Hovea trisperma</i> var. <i>trisperma</i>			
783.	5216 <i>Hybanthus debilissimus</i>			
784.	6224 <i>Hydrocotyle biepherocarpe</i>			
785.	6229 <i>Hydrocotyle diantha</i>			
786.	6237 <i>Hydrocotyle piebeya</i>			
787.	6241 <i>Hydrocotyle tetragonocarpa</i>			
788.	452 <i>Hyparrhenia hirta</i> (Tambookie Grass)	Y		
789.	5182 <i>Hypericum perforatum</i> (St John's Wort)	Y		
790.	26971 <i>Hypnea ramentacea</i>			
791.	5617 <i>Hypocalymma angustifolium</i> (White Myrtle, Kudjid)			
792.	5619 <i>Hypocalymma encitbilium</i>			
793.	43120 <i>Hypocalymma minus</i>			
794.	5625 <i>Hypocalymma robustum</i> (Swan River Myrtle)			
795.	17841 <i>Hypolaena pubescens</i>			
796.	6630 <i>Ipomoea indica</i> (Morning Glory)	Y		
797.	20199 <i>Isolepis cernua</i> var. <i>cernua</i>			
798.	20200 <i>Isolepis cernua</i> var. <i>setiformis</i>			
799.	917 <i>Isolepis marginata</i> (Coarse Club-rush)			
800.	10631 <i>Isolepis proflera</i> (Budding Club-rush)	Y		
801.	7396 <i>Isotoma hypocrateriformis</i> (Woodbridge Poison)			
802.	7399 <i>Isotoma scapigera</i> (Long-scaped Isotome)			
803.	19700 <i>Isotropis cuneifolia</i> subsp. <i>cuneifolia</i>			
804.	1532 <i>Ixia maculata</i> (Yellow Ixia)	Y		

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805.	1533 <i>Via paniculata</i>	Y		
806.	8092 <i>Xirolaena viscosa</i> (Sticky Xirolaena)			
807.	4012 <i>Jacksonia furcellata</i> (Grey Stinkwood)			
808.	4017 <i>Jacksonia horrida</i>			
809.	1297 <i>Johnsonia lupulina</i> (Hooded Lily)			
810.	1177 <i>Juncus articulatus</i> (Jointed Rush)	Y		
811.	1178 <i>Juncus bufonius</i> (Toad Rush)	Y		
812.	1179 <i>Juncus caespiticus</i> (Grassy Rush)			
813.	1184 <i>Juncus holoschoenus</i> (Jointleaf Rush)			
814.	1185 <i>Juncus kraussii</i> (Sea Rush)			
815.	11922 <i>Juncus kraussii</i> subsp. <i>australiensis</i>			
816.	1190 <i>Juncus planifolius</i> (Broadleaf Rush)			
817.	1195 <i>Juncus subsecundus</i> (Finger Rush)			
818.	4036 <i>Kennedia carinata</i>			
819.	4037 <i>Kennedia coccinea</i> (Coral Vine)			
820.	37960 <i>Kennedia coccinea</i> subsp. <i>calcarata</i>			
821.	33518 <i>Kennedia lateralis</i> (Augusta Kennedia)		T	Y
822.	26995 <i>Kuetzingia canaliculata</i>			
823.	17461 <i>Kunzea micrantha</i> subsp. <i>micrantha</i>			
824.	5641 <i>Kunzea recurva</i>			
825.	14776 <i>Kunzea rostrata</i>			
826.	14775 <i>Kunzea spathulata</i>			
827.	18585 <i>Lagenophora huegellii</i>			
828.	14646 <i>Lagunaria patersonia</i>	Y		
829.	467 <i>Lagurus ovatus</i> (Hare's Tail Grass)	Y		
830.	1309 <i>Laxmannia squarrosa</i>			
831.	7572 <i>Lechenaultia expansa</i>			
832.	44490 <i>Leontodon rhagadioloides</i>	Y		
833.	8089 <i>Leontodon saxatilis</i> (Hairy Hawkbit)	Y		
834.	925 <i>Lepidosperma angustatum</i>			
835.	932 <i>Lepidosperma effusum</i> (Spreading Sword-sedge)			
836.	933 <i>Lepidosperma gladiatum</i> (Coast Sword-sedge, Kerbin)			
837.	940 <i>Lepidosperma pubisquamium</i>			
838.	20398 <i>Lepidosperma</i> sp. <i>Blackwood</i> (R. Davis 7090)			
839.	945 <i>Lepidosperma squamatum</i>			
840.	46376 <i>Leptocarpus denmarkicus</i>			
841.	1080 <i>Leptocarpus scariosus</i>			
842.	15416 <i>Leptoceras menziesii</i>			
843.	2355 <i>Leptomerenia squarulosa</i>			
844.	17852 <i>Leptomynchos scaber</i> (Lanky Buttons)			
845.	5850 <i>Leptospermum laevigatum</i> (Coast Teatree)	Y		
846.	17552 <i>Lepyrodia porterae</i>			
847.	28292 <i>Leucanthemum x superbum</i> (Shasta Daisy)	Y		
848.	16449 <i>Leucophyta brownii</i>			
849.	6360 <i>Leucopogon australis</i> (Spiked Beard-heath)			
850.	6367 <i>Leucopogon capitellatus</i>			
851.	6387 <i>Leucopogon distans</i>			
852.	6402 <i>Leucopogon hirsutus</i>			
853.	6417 <i>Leucopogon obovatus</i>			
854.	40941 <i>Leucopogon obovatus</i> subsp. <i>revolutus</i>			
855.	35499 <i>Leucopogon paradoxus</i>			
856.	6427 <i>Leucopogon parviflorus</i> (Coast Beard-heath)			
857.	6428 <i>Leucopogon pendulus</i>			
858.	6436 <i>Leucopogon prophanus</i>			
859.	34718 <i>Leucopogon</i> sp. <i>Southern Forests</i> (B.G. Hammersley 1000)			
860.	35559 <i>Leucopogon tenuicaulis</i>			
861.	6454 <i>Leucopogon verticillatus</i> (Tassel Flower)			
862.	7676 <i>Levenhookia pusilla</i> (Midget Stylewort)			
863.	59 <i>Lindsaea linearis</i> (Screw Fern)			
864.	4362 <i>Linum marginale</i> (Wild Flax)			
865.	4363 <i>Linum trigynum</i> (French Flax)	Y		
866.	36160 <i>Liparophyllum capitatum</i>			
867.	36180 <i>Liparophyllum latifolium</i>			
868.	9289 <i>Lobelia anceps</i> (Angled Lobelia)			
869.	7408 <i>Lobelia tenuior</i> (Slender Lobelia)			
870.	6515 <i>Logania vaginalis</i> (White Spray)			
871.	476 <i>Lolium rigidum</i> (Wimmera Ryegrass)	Y		
872.	1223 <i>Lomandra caespitosa</i> (Tufted Mat Rush)			
873.	1229 <i>Lomandra integra</i>			
874.	14542 <i>Lomandra micrantha</i> subsp. <i>micrantha</i>			

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875.	1234 <i>Lomandra nigricans</i>			
876.	1236 <i>Lomandra pauciflora</i>			
877.	1239 <i>Lomandra preissii</i>			
878.	1240 <i>Lomandra purpurea</i> (Purple Mat Rush)			
879.	1244 <i>Lomandra sonderi</i>			
880.	4059 <i>Lotus angustissimus</i> (Narrowleaf Trefoil)	Y		
881.	1198 <i>Luzula meridionalis</i> (Field Woodrush)			
882.	18049 <i>Lyginia imberbis</i>			
883.	1656 <i>Lyperanthus serratus</i> (Rattle Beak Orchid)			
884.	36375 <i>Lysimachia arvensis</i> (Pimpernel)	Y		
885.	6456 <i>Lysinema ciliatum</i> (Curry Flower)			
886.	6457 <i>Lysinema conspicuum</i>			
887.	34736 <i>Lysinema pentapetalum</i>			
888.	5281 <i>Lythrum hyssopifolia</i> (Lesser Loosestrife)	Y		
889.	85 <i>Macrozamiaiedlei</i> (Zamia, Dying)			
890.	17637 <i>Marianthus candidus</i> (White Marianthus)			
891.	17630 <i>Marianthus tenuis</i>			
892.	4072 <i>Medicago arabica</i> (Spotted Medic)	Y		
893.	34676 <i>Melonectes brownii</i> (Swamp Raspberry)			
894.	36296 <i>Meibomia armillaris</i> subsp. <i>armillaris</i>	Y		
895.	5900 <i>Meibomia cuticularis</i> (Saltwater Paperbark)			
896.	13271 <i>Meibomia huegellii</i> subsp. <i>huegellii</i>			
897.	5921 <i>Meibomia incana</i> (Grey Honeymyrtle)			
898.	13273 <i>Meibomia incana</i> subsp. <i>incana</i>			
899.	5922 <i>Meibomia lanceolata</i> (Rottnest Teatree, Moonah)			
900.	5952 <i>Meibomia preissiana</i> (Moonah)			
901.	5959 <i>Meibomia raphiophylla</i> (Swamp Paperbark)			
902.	5980 <i>Meibomia thymoides</i>			
903.	17682 <i>Melanostachya ustulata</i>			
904.	6883 <i>Mentha pulegium</i> (Pennyroyal)	Y		
905.	6884 <i>Mentha spicata</i> (Spearmint)	Y		
906.	953 <i>Mesomelaena graciliceps</i>			
907.	957 <i>Mesomelaena tetragona</i> (Semaphore Sedge)			
908.	27069 <i>Metagoniobolus stellerianus</i>			
909.	34158 <i>Microtis albivittis</i>			
910.	15419 <i>Microtis media</i> subsp. <i>media</i>			
911.	8105 <i>Mitella myosotidifolia</i>			
912.	4090 <i>Mirbelia dilatata</i> (Holy-leaved Mirbelia)			
913.	2412 <i>Muehlenbeckia adpressa</i> (Climbing Lignum)			
914.	7292 <i>Myoporum oppositifolium</i> (Twin-leaf Myoporum)			
915.	18330 <i>Nephrolepis cordifolia</i>	Y		
916.	27103 <i>Nizymenia conferta</i>			
917.	8127 <i>Olearia axillaris</i> (Coastal Daisybush)			
918.	8130 <i>Olearia cassinia</i>			
919.	8133 <i>Olearia elaeophila</i>			
920.	8143 <i>Olearia paucidentata</i> (Autumn Scrub Daisy)			
921.	8149 <i>Olearia rudis</i> (Rough Daisybush)			
922.	7346 <i>Opercularia echnocephala</i> (Erect Headed Stink Weed)			
923.	7348 <i>Opercularia hispida</i> (Hispid Stinkweed)			
924.	46316 <i>Oranthera serpyllifolia</i> subsp. <i>angustifolia</i>			
925.	36181 <i>Orodia parrissifolia</i>			
926.	7122 <i>Orobancha minor</i> (Lesser Broomrape)	Y		
927.	1539 <i>Orthrosanthus multiflorus</i> (Morning Iris)			
928.	1540 <i>Orthrosanthus polystachyus</i> (Many Spike Orthrosanthus)			
929.	27107 <i>Osmunda prolifera</i>			
930.	4349 <i>Oxalis corniculata</i> (Yellow Wood Sorrel)	Y		
931.	30375 <i>Oxalis exilis</i>			
932.	4352 <i>Oxalis glabra</i>	Y		
933.	4354 <i>Oxalis incarnata</i>	Y		
934.	17114 <i>Paraserianthes lophantha</i> subsp. <i>lophantha</i>			
935.	7089 <i>Parentucella latifolia</i> (Common Bartsia)	Y		
936.	1546 <i>Patersonia juncea</i> (Rush Leaved Patersonia)			
937.	1550 <i>Patersonia occidentalis</i> (Purple Flag, Koma)			
938.	30472 <i>Patersonia occidentalis</i> var. <i>occidentalis</i>			
939.	1553 <i>Patersonia umbrosa</i> (Yellow Flags)			
940.	11550 <i>Patersonia umbrosa</i> var. <i>xanthina</i> (Yellow Flags)			
941.	43760 <i>Peucedanum occidentale</i>			
942.	4343 <i>Peperomia capitatum</i> (Rose Peperomia)	Y		
943.	4346 <i>Peperomia littoralis</i>			
944.	15501 <i>Pericalymma spongiolepis</i>			

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Name ID	Species Name	Naturalised	Conservation Code	Endemic To Query Area
945.	2287 <i>Persoonia longifolia</i> (Snottygobbie)			
946.	27129 <i>Peyssonella novae-hollandiae</i>			
947.	27131 <i>Phacelocarpus alatus</i>			
948.	27133 <i>Phacelocarpus labillardieri</i>			
949.	18529 <i>Phlotocha spicata</i> (Pepper and Salt)			
950.	1478 <i>Phlebocarya ciliata</i>			
951.	16825 <i>Phyllangium divergens</i>			
952.	4675 <i>Phyllanthus calycinus</i> (False Boronia)			
953.	6983 <i>Physalis peruviana</i> (Cape Gooseberry)	Y		
954.	14370 <i>Picris angustifolia</i> subsp. <i>angustifolia</i>			
955.	8160 <i>Picris squarrosa</i>			
956.	5231 <i>Pimelea angustifolia</i> (Narrow-leaved Pimelea)			
957.	5239 <i>Pimelea clavata</i>			
958.	5243 <i>Pimelea ferruginea</i>			
959.	5249 <i>Pimelea hispida</i> (Bristly Pimelea)			
960.	5252 <i>Pimelea lanata</i>			
961.	5255 <i>Pimelea longiflora</i>			
962.	18117 <i>Pimelea rosea</i> subsp. <i>rosea</i>			
963.	5269 <i>Pimelea sylvestris</i>			
964.	42281 <i>Pithocarpa cordata</i>			
965.	42260 <i>Pithocarpa ramosa</i>			
966.	7303 <i>Plantago lanceolata</i> (Ribwort Plantain)	Y		
967.	6249 <i>Platysace compressa</i> (Tapeworm Plant)			
968.	6259 <i>Platysace tenuissima</i>			
969.	27156 <i>Plocamium mertensii</i>			
970.	27157 <i>Plocamium preissianum</i>			
971.	577 <i>Poa poliformis</i> (Coastal Poa)			
972.	578 <i>Poa porphyroclados</i>			
973.	86 <i>Podocarpus drouynianus</i> (Wild Plum, Kula)			
974.	8175 <i>Podolepis gracilis</i> (Slender Podolepis)			
975.	2905 <i>Polycarpon tetraphyllum</i> (Fourleaf Ailseed)	Y		
976.	8395 <i>Polygala myrtifolia</i> (Myrtleleaf Milkwort)	Y		
977.	4578 <i>Polygala virgata</i>	Y		
978.	4688 <i>Poranthera drummondii</i>			
979.	4690 <i>Poranthera huegelii</i>			
980.	122 <i>Posidonia angustifolia</i>			
981.	110 <i>Potamogeton drummondii</i>			
982.	1688 <i>Prasophyllum brownii</i>			
983.	1671 <i>Prasophyllum elatum</i> (Tail Leek Orchid)			
984.	1677 <i>Prasophyllum macrostachyum</i> (Laughing Leek Orchid)			
985.	44084 <i>Prasophyllum</i> sp. <i>early</i> (G. Brockman GBB 1026)			
986.	8189 <i>Pseudognaphalium luteoalbum</i> (Jersey Cutweed)			
987.	27194 <i>Psilothalia striata</i>			
988.	40080 <i>Psoralea arborea</i>	Y		
989.	57 <i>Pteridium esculentum</i> (Bracken)			
990.	27195 <i>Pterociadia lucida</i>			
991.	27196 <i>Pterociadia rectangularis</i>			
992.	44526 <i>Pterostylis karri</i>			
993.	1693 <i>Pterostylis recurva</i> (Jug Orchid)			
994.	1694 <i>Pterostylis rogersii</i> (Cunled-tongue Shell Orchid)			
995.	48683 <i>Pterostylis serotina</i>			
996.	10996 <i>Pterostylis turfosa</i> (Bird Orchid)			
997.	15856 <i>Ptilotus sericostachyus</i> subsp. <i>sericostachyus</i>			
998.	2783 <i>Ptilotus stringii</i> (String's Mulla Mulla)			
999.	20185 <i>Pultenaea brachytrypis</i>			
1000.	4181 <i>Pultenaea reticulata</i>			
1001.	2932 <i>Ranunculus colonorum</i> (Common Buttercup)			
1002.	2933 <i>Ranunculus muricatus</i> (Sharp Buttercup)	Y		
1003.	32421 <i>Rhacocarpus purpurascens</i>			
1004.	18547 <i>Rhadlothamnus anceps</i>			
1005.	2578 <i>Rhagodia baccata</i> (Berry Saltbush)			
1006.	11341 <i>Rhagodia baccata</i> subsp. <i>baccata</i>			
1007.	36279 <i>Rhizoclonium riparium</i>			
1008.	13300 <i>Rhodanthe citrina</i>			
1009.	27220 <i>Rhodopeltis australis</i>			
1010.	3066 <i>Ronnea nasturtium-aquaticum</i> (Watercress)	Y		
1011.	32426 <i>Rosulabryum campylocheum</i>			
1012.	20506 <i>Rubus anglocandicans</i>	Y		
1013.	17718 <i>Rubus rugosus</i>	Y		
1014.	115 <i>Ruppia megacarpa</i>			

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Name ID	Species Name	Naturalised	Conservation Code	Endemic To Query Area
1015.	2906 <i>Sagha maritima</i>	Y		
1016.	6484 <i>Samolus repens</i> (Creeping Brookweed)			
1017.	6485 <i>Samolus valerandi</i> (Water Pimpernel)	Y		
1018.	7602 <i>Scaevola calliptera</i>			
1019.	7614 <i>Scaevola globulifera</i>			
1020.	7626 <i>Scaevola nitida</i> (Shining Fanflower)			
1021.	986 <i>Schoenus efbilatus</i>			
1022.	1004 <i>Schoenus nitens</i> (Shiny Bog-rush)			
1023.	16269 <i>Schoenus</i> sp. Grassy (E. Gude & J. Harvey 250)		P2	
1024.	44487 <i>Schoenus</i> sp. Little black fruit (A.C. Beauglehole ACB 12538)			
1025.	19946 <i>Schoenus</i> sp. South coast (R. Davis 10239)			
1026.	8204 <i>Senecio elegans</i> (Purple Groundsel)	Y		
1027.	8206 <i>Senecio hispidulus</i> (Hispid Fireweed)			
1028.	25884 <i>Senecio pinnatifidus</i> var. <i>latilobus</i>			
1029.	25882 <i>Senecio pinnatifidus</i> var. <i>maritimus</i> (Coastal Groundsel)			
1030.	8218 <i>Senecio ramosissimus</i> (Auricled Groundsel)			
1031.	8225 <i>Siloxerus humifusus</i> (Procumbent Siloxerus)			
1032.	7020 <i>Solanum inneserum</i> (Apple of Sodom)	Y		
1033.	7022 <i>Solanum nigrum</i> (Black Berry Nightshade)	Y		
1034.	7037 <i>Solanum symonii</i>			
1035.	1765 <i>Soleirolia soleirolii</i> (Babys Tears)	Y		
1036.	8230 <i>Sonchus asper</i> (Rough Sowthistle)	Y		
1037.	8231 <i>Sonchus oleraceus</i> (Common Sowthistle)	Y		
1038.	1312 <i>Sowerbaea laxiflora</i> (Purple Tassels)			
1039.	1556 <i>Sparaxis bulbifera</i>	Y		
1040.	31931 <i>Sphenotoma capitata</i>			
1041.	31952 <i>Sphenotoma gracilis</i> (Swamp Paper-heath)			
1042.	27301 <i>Spongoconium conspicuum</i>			
1043.	14915 <i>Sporadanthus strictus</i>			
1044.	8710 <i>Sporobolus africanus</i> (Parramatta Grass)	Y		
1045.	635 <i>Sporobolus virginicus</i> (Mariane Couch)			
1046.	4828 <i>Spyridium globulosum</i> (Basket Bush)			
1047.	9069 <i>Stackhousea huegelii</i>			
1048.	2918 <i>Stellaria media</i> (Chickweed)	Y		
1049.	3080 <i>Stenopetalum robustum</i>			
1050.	636 <i>Stenotaphrum secundatum</i> (Buffalo Grass)	Y		
1051.	44492 <i>Stuckenia pectinata</i>			
1052.	7684 <i>Stylidium amoenum</i> (Lovely Triggerplant)			
1053.	30278 <i>Stylidium androsaceum</i>			
1054.	35960 <i>Stylidium angustifolium</i> subsp. <i>angustifolium</i>			
1055.	7706 <i>Stylidium crassifolium</i> (Thick-leaved Triggerplant)			
1056.	19251 <i>Stylidium eriopodum</i>			
1057.	7725 <i>Stylidium fasciculatum</i> (Pale Beaked Triggerplant)			
1058.	7734 <i>Stylidium guttatum</i> (Dotted Triggerplant)			
1059.	17850 <i>Stylidium irenae</i>		P4	
1060.	7773 <i>Stylidium petiolare</i> (Horn Triggerplant)			
1061.	7774 <i>Stylidium pfliferum</i> (Common Butterfly Triggerplant)			
1062.	7787 <i>Stylidium rhynchocarpum</i> (Black-beaked Triggerplant)			
1063.	7796 <i>Stylidium schoenoides</i> (Cow Kicks)			
1064.	<i>Stylidium</i> sp.			
1065.	7799 <i>Stylidium spatulatum</i> (Creamy Triggerplant)			
1066.	1260 <i>Stypandra glauca</i> (Blind Grass)			
1067.	49143 <i>Styphelia</i> sp. <i>Nannup</i> (R.D. Royce 3975)			
1068.	2639 <i>Suaeda australis</i> (Seablite)			
1069.	25902 <i>Symphycarum squamatum</i> (Bushy Starwort)	Y		
1070.	16883 <i>Synaphea damopis</i>			
1071.	32437 <i>Synschia antarctica</i>			
1072.	45613 <i>Taraxacum khatoonae</i>	Y		
1073.	20113 <i>Taxandria inundata</i>			
1074.	20135 <i>Taxandria linearifolia</i>			
1075.	20133 <i>Taxandria parviceps</i>			
1076.	4256 <i>Templetonia retusa</i> (Cockles Tongues)			
1077.	2820 <i>Tetragonia decumbens</i> (Sea Spinach)	Y		
1078.	1036 <i>Tetralia octandra</i>			
1079.	35682 <i>Tetralia</i> sp. <i>Mt Madden</i> (C.D. Tuney 40 BR/897)			
1080.	667 <i>Tetramena laevis</i> (Forest Ricegrass)			
1081.	4533 <i>Tetrameca nitiformis</i>			
1082.	4544 <i>Tetrameca setigera</i>			
1083.	134 <i>Thalassodendron pachyrhizum</i>			
1084.	1704 <i>Theilmannia cornicina</i> (Lilac Sun Orchid)			

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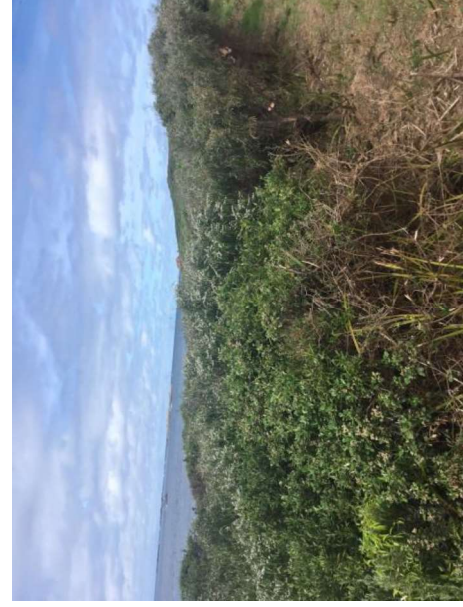
Name ID	Species Name	Naturalised	Conservation Code	Endemic To Query Area
1085.	1705 <i>Thelymitra crinita</i> (Blue Lady Orchid)			
1086.	1708 <i>Thelymitra fuscolutea</i> (Chestnut Sun Orchid)			
1087.	18248 <i>Thelymitra grantiora</i>			
1088.	5092 <i>Thomasia pauciflora</i> (Few Flowered Thomasia)			
1089.	5105 <i>Thomasia triphylla</i>			
1090.	2644 <i>Threkioidia diffusa</i> (Coast Bonefruit)			
1091.	19716 <i>Thunbergia aiata</i>	Y		
1092.	27331 <i>Thuretia quercifolia</i>			
1093.	1319 <i>Thysanotus arenarius</i>			
1094.	1328 <i>Thysanotus dichotomus</i> (Branching Fringe Lily)			
1095.	1338 <i>Thysanotus manglesianus</i> (Fringed Lily)			
1096.	1339 <i>Thysanotus multiflorus</i> (Many-flowered Fringe Lily)			
1097.	1354 <i>Thysanotus tenuis</i>			
1098.	32443 <i>Tortelia flavovirens</i>			
1099.	6280 <i>Trachymene pilosa</i> (Native Parsnip)			
1100.	4547 <i>Tremandra diffusa</i>			
1101.	4548 <i>Tremandra stelligera</i>			
1102.	1481 <i>Tribonanthes australis</i> (Southern Turmoil)			
1103.	1485 <i>Tribonanthes violacea</i> (Violet Turmoil)			
1104.	8251 <i>Trichocline spatulata</i> (Native Gerbera)			
1105.	1362 <i>Tricornyne humilis</i>			
1106.	4302 <i>Trifolium ligusticum</i> (Ligurian Clover)	Y		
1107.	14738 <i>Trifolium resupinatum</i> var. <i>resupinatum</i>	Y		
1108.	151 <i>Triglochin striata</i>			
1109.	152 <i>Triglochin trichophora</i>			
1110.	32451 <i>Triquetrella papillata</i>			
1111.	33438 <i>Trymalium odoratissimum</i> subsp. <i>trifolium</i>			
1112.	99 <i>Typha orientalis</i> (Bulrush, Cumbung)			
1113.	17680 <i>Tyrbastes glaucescens</i>			
1114.	35126 <i>Uva linza</i>			
1115.	7145 <i>Utricularia menziesii</i> (Redcoats)			
1116.	7148 <i>Utricularia multiflora</i>			
1117.	7662 <i>Velleia macrophylla</i> (Large-leaved Velleia)			
1118.	7665 <i>Velleia ornensis</i>			
1119.	7110 <i>Veronica distans</i>			
1120.	4322 <i>Vicia sativa</i> (Common Vetch)	Y		
1121.	11474 <i>Vicia sativa</i> subsp. <i>nigra</i>	Y		
1122.	12070 <i>Vicia sativa</i> subsp. <i>sativa</i>	Y		
1123.	4325 <i>Viminaria juncea</i> (Swishbush, Koweda)			
1124.	7388 <i>Wahlenbergia multicaulis</i>			
1125.	13333 <i>Waltzia suaveolens</i> var. <i>suaveolens</i>			
1126.	27362 <i>Weberbauerbossea spicchioidea</i>			
1127.	27364 <i>Wolastoniaella myriophylloides</i>			
1128.	12072 <i>Wurmbea dioica</i> subsp. <i>alba</i>			
1129.	1398 <i>Wurmbea monantha</i>			
1130.	1256 <i>Xanthorrhoea preissii</i> (Grass tree, Faiga)			
1131.	6283 <i>Xanthosia atkinsoniana</i>			
1132.	6294 <i>Xanthosia candida</i>			
1133.	6289 <i>Xanthosia huegelii</i>			
1134.	16330 <i>Xanthosia tasmanica</i>			
1135.	2331 <i>Xylomelum occidentale</i> (Woody Pear, Djardin)			

Conservation Codes:
 ? - Rare or likely to become extinct
 X - Presumed extinct
 IA - Protected under international agreement
 S - Other specially protected fauna
 1 - Priority 1
 2 - Priority 2
 3 - Priority 3
 4 - Priority 4
 5 - Priority 5

APPENDIX 3: PHOTOS OF THE VARIOUS VEGETATION MAPPING UNITS IDENTIFIED ON SITE



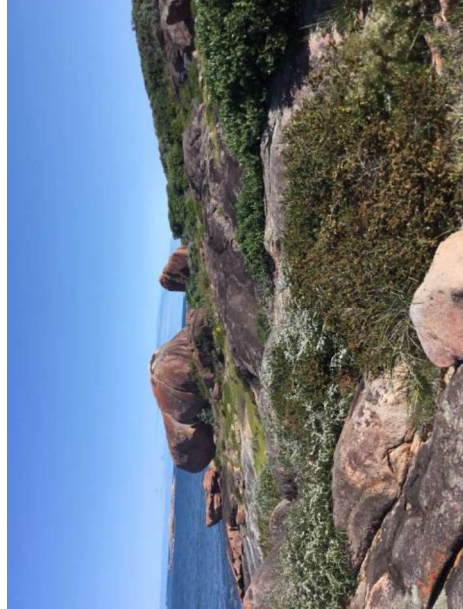
Veg Unit 1: Low Closed Forest



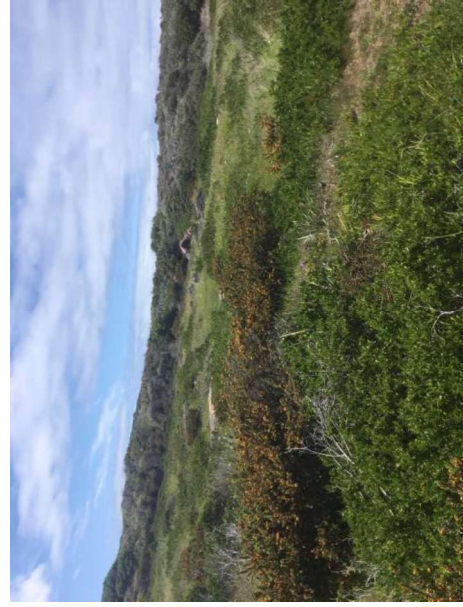
Veg Unit 2: Tall Closed Scrub



Veg Unit 3: Closed Heath



Veg Unit 4: Low Closed Heath with exposed Granite



Veg Unit 5: Low Shrubland over grassland



Veg Unit 6: Low Closed forest of Melaleuca Lanceolata



Endangered Tufa Threatened Ecological Community



P2 Melaleuca lanceolata PEC



Regionally Significant Granite Vegetation