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Dear Mark

Windy Hill TEC Assessment

1 Introduction

Rottnest Island Authority (RIA) commissioned 360 Environmental Pty Ltd part of SLR Consulting (360 Environmental) to undertake a flora and vegetation assessment with a focus on conservation significant communities in Windy Hill within the main Rottnest Island settlement (the Survey Area) on 17 February 2022 (Figure 1). In June 2021, 360 Environmental surveyed an area overlapping the Survey Area (the June 2021 Survey Area), and the results from the survey have helped to inform the current survey.

The reconnaissance survey was undertaken in accordance with EPA technical guidelines (Environmental Protection Authority, 2016), to understand key flora and vegetation values within the Survey Area. The focus of the survey was to delineate any identified instances of the State Threatened Ecological Community (TEC) SCP30a '*Callitris preissii* (or *Melaleuca lanceolata*) forests and woodlands, Swan Coastal Plain', which is listed as Vulnerable.

This brief letter report outlines the key findings from the survey with management mitigation measures, if required.

2 Scope of Works

The scope of works included provision of:

- A desktop assessment using relevant database searches and a literature review of the previous survey results to compile and summarise existing records of flora, vegetation, and fauna (including conservation significant species and communities) in the vicinity of the Survey Area
- A reconnaissance flora and vegetation survey using detailed mapping notes to identify and describe the vegetation and flora occurring within the Survey Area
- A brief letter report outlining key findings and proposed management actions
- A geospatial data package prepared in accordance with IBSA requirements.

3 Methodology

3.1 Desktop Assessment

3.1.1 Literature Review

Background information on the Survey Area and surrounds was compiled prior to the field survey referencing previous surveys completed in the vicinity of the Survey Area (see Section 4.2.2):

- Rottnest Island Survey (360 Environmental Pty Ltd, 2020), located less than 1.0 km northwest of the Survey Area
- Windy Hill Staff Accommodation Project - Assessment Report (360 Environmental Pty Ltd, 2021), which overlaps the current Survey Area.

3.1.2 Database Searches

Database searches were conducted in the vicinity of the Survey Area:

- A NatureMap (Department of Biodiversity Conservation and Attractions, 2020a) database search (10 km buffer) was undertaken in November 2020 to obtain a list of potential flora species occurring within the Survey Area, including conservation significant flora taxa (Appendix A)
- An EPBC Protected Matters Search (PMST) was undertaken in March 2022 to identify the potential for Matters of National Environmental Significance (MNES) to occur within or surrounding the Survey Area (Department of Agriculture Water and the Environment, 2022a) (Appendix B).

3.2 Flora and Vegetation

3.2.1 Field Survey

The reconnaissance flora and vegetation survey was undertaken on 17th February 2022 by Senior Botanist Simon Colwill who has over 10 years of experience conducting surveys of similar scope throughout Western Australia. The Survey Area was predominantly restricted to existing cleared and heavily impacted areas, or highly restricted sections of native vegetation. Any vegetation outside the Survey Area was only assessed in reference to targeting undescribed or conservation significant flora. All data was collected using a Fulcrum mobile data collection device.

3.2.2 Establishment of Flora Sites

The Survey Area was assessed via detailed mapping notes and meandering traverses to gather information to characterise and delineate vegetation and compile an inventory of vascular flora. At each site, detailed mapping notes were undertaken with the following information collected:

- Site photograph
- Location – GPS Coordinates
- Landform and soil description
- Species list – including heights and foliar cover
- Vegetation Description – in accordance with the National Vegetation Information System (NVIS) Level 5
- Vegetation Condition.

A total of eight detailed mapping notes were completed during the survey. Where an instance of the conservation significant community was encountered, a mapping note was taken and a small search to delineate community boundaries was undertaken.

3.2.3 Taxonomy and Nomenclature

Where field identification of plant taxa was not possible, specimens were collected for identification using resources of the WAH. Identification of flora collections was completed by Principal Botanist Narelle Whittington.

The finalised species list was checked against FloraBase (Western Australian Herbarium, 2022) to determine the conservation status and known distribution of each taxon. Introduced species were compared against the current Biosecurity and Agriculture Management (BAM) Act Declared Plants list and the Weeds of National Significance (WoNS) list to determine their control status (Department of Agriculture Water and the Environment, 2022b; Department of Primary Industries and Regional Development, 2022).

4 Results

4.1 Limitations

Limitations and constraints of the flora, vegetation and fauna survey are detailed below in Table 1.

Table 1: Limitations and Constraints Associated with the Survey Area

Variable	Degree of Limitation (Yes/Partial/No)	Potential Constraints on Survey Outcomes
Survey Scope	No	<p>The reconnaissance flora and vegetation survey was undertaken in accordance with EPA guidelines (Environmental Protection Authority, 2016) and was considered appropriate to support approvals applications.</p> <p>The Survey Area was assessed via detailed mapping notes and meandering traverses to gather information to characterise and delineate vegetation and compile an inventory of vascular flora</p> <p>The entire Survey Area was not systematically searched, and therefore additional flora taxa, and records of significant flora and weed species may be recorded with additional survey effort. However, this was not considered a limitation due to the dry condition of the Survey Area and the below-average rainfall recorded for the three months prior to commencing the survey.</p>
Availability of Data	No	All data required to complete the scope of works including regional and local contextual information was available.
Site Access	No	The Survey Area was able to be accessed on foot.
Survey Intensity and Resources	No	<p>Eight mapping notes were undertaken to aid vegetation mapping and delineation, as well as preparing an inventory of vascular flora for the Survey Area.</p> <p>The entire Survey Area was not systematically searched, and therefore additional flora taxa, and records of significant flora and weed species may be recorded with additional survey effort.</p> <p>The survey effort was considered adequate to assess the flora and vegetation values of the Survey Area and provide information required to support approvals applications.</p>
Experience	No	<p>Senior Botanist Simon Colwill undertook the detailed flora and vegetation survey. Simon has over 10 years' experience conducting surveys of similar scope throughout Western Australia.</p> <p>Principal Botanist Narelle Whittington identified collected flora specimens.</p>

Variable	Degree of Limitation (Yes/Partial/No)	Potential Constraints on Survey Outcomes
Timing, weather, season	Partial	<p>The recommended primary flora survey period for the region as per the EPA Technical Guidance, is Spring (September – November). The survey was not undertaken during the recommended primary survey period. Additionally, the rainfall recorded for the three months prior to commencing the survey was below average, and this resulted in dry conditions and sterile flora. It is expected that additional flora taxa would be recorded during the primary survey period or following a significant rain event.</p> <p>This was considered a partial limitation as, although additional flora taxa would have been recorded, it did not represent a constraint to assess the presence of the TEC.</p>
Life Forms Sampled	No	<p>The Survey Area was traversed on foot and detailed mapping notes of all remnant vegetation were undertaken. All flora species encountered within the Survey Area were recorded. A total of 24 vascular flora taxa were recorded from the Survey Area, of which five were introduced flora taxa.</p> <p>Of the 24 flora taxa recorded, three taxa (12.5%), could not be identified to species level because they were sterile at the time of the survey.</p> <p>None of the unknown flora taxa collected were analogous to Threatened or Priority flora taxa identified by the database searches as possible to occur within the Survey Area.</p>
Mapping Reliability	No	Vegetation types were described and mapped based on mapping notes taken during the field survey.
Disturbances (fire, flood etc.)	No	Areas of disturbance associated with weeds, historical clearing, and rehabilitation areas were recorded but were not a constraint on the results of the survey.
Completeness	No	The survey was considered complete for a reconnaissance flora and vegetation survey, and all vegetation types were surveyed and delineated within the Survey Area.

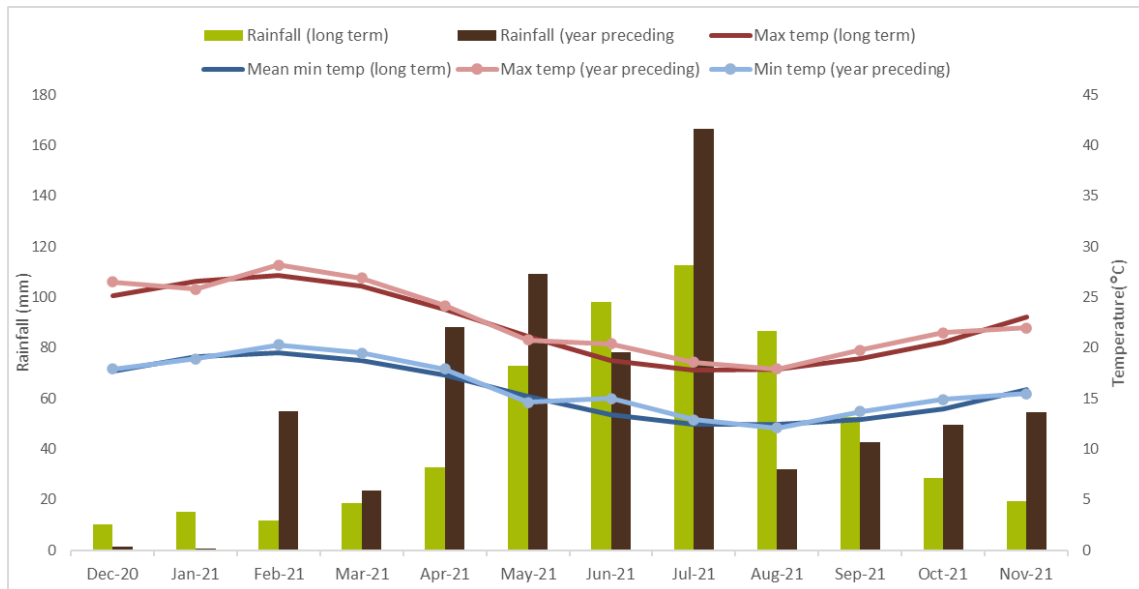
4.2 Desktop Assessment

4.2.1 Climate

The closest long-term Bureau of Meteorology weather station with a complete dataset is Rottnest Island (Station 009193), located approximately 3.6 km east of the Survey Area. Climate statistics were calculated utilising data from the most current climate normal, which is defined as a 30 year interval (Bureau of Meteorology, 2007), where possible. A climate normal is a period long enough to include year-to-year variations while avoiding the influence of longer-term changes in climate (Bureau of Meteorology, 2007).

The long-term mean minimum temperature for Rottnest Island from 12.4°C (July and August) to 17.8°C (July) (1983 to 2022) and the long-term mean maximum temperature ranges from 19.5°C (February) to 27.2°C (February) (Graph 1) (Bureau of Meteorology, 2022).

The Rottnest Island weather station recorded 232.2 mm of rainfall in the 12 months prior to the survey (November 2020 to October 2021), which is 213.7 mm above the long-term average of 567.7 mm (Bureau of Meteorology, 2021). In the three months prior to the survey (August 2021 to October 2021), 167.5 mm of rainfall was recorded, which is 79.9 mm below the long-term average of 247.4 mm for the same time period (Bureau of Meteorology, 2022).



Graph 1: Long term and Monthly Total Rainfall, Maximum and Minimum temperatures for Rottnest Island (009193) (Bureau of Meteorology, 2022)

4.2.2 Literature Review

4.2.2.1 Rottnest Island Survey

RIA engaged 360 Environmental to conduct a survey to determine the local significance of vegetation, flora and fauna habitat on a portion of land in the north-east of Rottnest Island, between the golf course and ‘The Basin’, which is located less than 1.0 km northwest of the current Survey Area (360 Environmental Pty Ltd, 2020). The survey was completed on the 24 of November 2020 by Senior Botanist Simon Colwill.

Three vegetation types were identified:

- *Melaleuca lanceolata* tall sparse shrubland over *Acanthocarpus preissii* low heathland over **Trachyandra divaricata* open herbland, which was the dominant vegetation covering 90.1% of the site. This vegetation type had the potential to be considered analogous to the *Callitris preissii* (or *Melaleuca lanceolata*) forests and woodlands, Swan Coastal Plain TEC.

- *Acacia rostellifera* mid closed shrubland over *Acanthocarpus preissii* low sparse heathland over **Trachyandra divaricata* sparse herbland covering 4.2% of the site.
- *Eucalyptus gomphocephala* mid open forest over **Trachyandra divaricata* (mixed weed spp.) sparse herbland, which covered 5.7% of the site. Two patches of this vegetation type were identified, and only one was considered analogous to the Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain TEC, which is listed as Critically Endangered.

A total of 30 vascular flora species were recorded, comprising 20 native flora species and 10 weed species. No Threatened or Priority flora were recorded within the site. Weeds were present across the site, with **Trachyandra divaricata* being the most dominant and aggressive weed recorded.

4.2.2.2 Windy Hill Staff Accommodation Project - Assessment Report

360 Environmental was commissioned by the RIA to perform an initial botanical assessment of the site of the proposed Staff Accommodation Project at Windy Hill, which was completed in June 2021 (360 Environmental Pty Ltd, 2021). The focus of the work was to examine vegetation on the site and its surrounds that may have the potential to be part of the '*Callitris preissii* (or *Melaleuca lanceolata*) forests and woodlands, Swan Coastal Plain' Threatened Ecological Community.

Three vegetation types were identified and mapped during the survey, of which one was identified as having a high chance of being analogous to the TEC.

The February 2022 Survey Area represents an extension of the area previously surveyed by 360 Environmental (2021).

4.2.3 Soil Systems

Soil system mapping of Western Australia describes broad soil and landscape characteristics from regional to local scales, ranging from 1:20,000 to 1:250,000 (Department of Primary Industries and Regional Development, 2018). The Survey Area occurs within the Quindalup South System (211Qu), which is characterised by coastal dunes of the Swan Coastal Plain, with calcareous deep sands and yellow sands, and is represented by coastal scrub (Department of Primary Industries and Regional Development, 2018).

4.2.4 Conservation and Environmentally Sensitive Areas

The Survey Area is identified within a Conservation Area (Department of Biodiversity Conservation and Attractions, 2021), which is vested under the RIA (R 16713).

Environmentally Sensitive Areas (ESAs) are declared by the Department of Water and Environmental Regulation (DWER) to prevent the degradation of important environmental values such as Threatened flora, TECs or significant wetlands.

The entire Survey Area is mapped over an ESA, which is associated with the SCP30a TEC (Department of Water and Environmental Regulation, 2021). Another ESA is identified within 5 km of the Survey Area, which is linked to Government House Lake located west of the Survey Area.

4.2.5 Database Searches

Database searches identified five conservation significant flora taxa occurring within 10 km of the Survey Area, comprising:

- One Threatened taxon, *Diuris micrantha* (Vulnerable)
- Two Priority 1 taxa, *Lachnagrostis nesomytica* subsp. *nesomytica* and *Lachnagrostis nesomytica* subsp. *pseudofiliformis*
- Two Priority 4 taxa, *Myosotis australis* and *Lepidium puberulum*.

A PMST search also identified the TEC Banksia Woodlands of the Swan Coastal Plain ecological community, which is listed as Endangered, within a 5 km buffer of the Survey Area.

4.3 Flora and Vegetation Survey

4.3.1 Flora Composition

The survey recorded a total of 24 taxa from 18 genera across 12 families (Table 2). The dominant families were Poaceae and Myrtaceae (seven taxa each).

No Threatened flora taxa pursuant to the EPBC Act 1999 and/or gazetted as Threatened pursuant to the BC Act 2016 were recorded during the survey. No Priority flora taxa as listed by DBCA were recorded within the Survey Area.

Six introduced flora taxa were recorded within the Survey Area. None are listed as Declared Pests under the BAM Act (Department of Primary Industries and Regional Development, 2022) or WoNS (Department of Agriculture Water and the Environment, 2022b).

Three specimens could not be identified to species level because the taxa were sterile at the time of the survey, *Eucalyptus* sp., *Poa* sp. and Poaceae sp. One of these was not able to be assigned a confirmed genus. None of the unconfirmed flora taxa were analogous to Priority flora taxa identified by the database searches.

Table 2: Inventory of Vascular Flora

Family	Taxa	Status under the BAM Act	WoNS
Asparagaceae	<i>Acanthocarpus preissii</i>	-	-
Asphodelaceae	* <i>Trachyandra divaricata</i>	Permitted – s11	No
Asteraceae	* <i>Dittrichia graveolens</i>	Permitted – s11	No
Casuarinaceae	* <i>Casuarina glauca</i>	Permitted – s11	No
Cupressaceae	<i>Callitris preissii</i>	-	-
Cyperaceae	<i>Lepidosperma gladiatum</i>	-	-
Fabaceae	<i>Acacia rostellifera</i>	-	-
Haemodoraceae	<i>Conostylis candicans</i> subsp. <i>calcicola</i>	-	-
Lamiaceae	<i>Westringia dampieri</i>	-	-
Malvaceae	<i>Guichenotia ledifolia</i>	-	-
Myrtaceae	<i>Agonis flexuosa</i>	-	-
	<i>Eucalyptus gomphocephala</i>	-	-
	<i>Eucalyptus</i> sp.	-	-
	<i>Eucalyptus utilis</i>	-	-
	<i>Melaleuca huegelii</i>	-	-
	<i>Melaleuca lanceolata</i>	-	-
Pittosporaceae	<i>Pittosporum ligustrifolium</i>	-	-
	* <i>Cynodon dactylon</i>	Permitted – s11	No
Poaceae	<i>Poa poiformis</i>	-	-
	<i>Poa</i> sp.	-	-
	Poaceae sp.	-	-
	* <i>Rostraria cristata</i>	Permitted – s11	No
	<i>Sporobolus virginicus</i>	-	-
	* <i>Stenotaphrum secundatum</i>	Permitted – s11	No



*denotes weed status



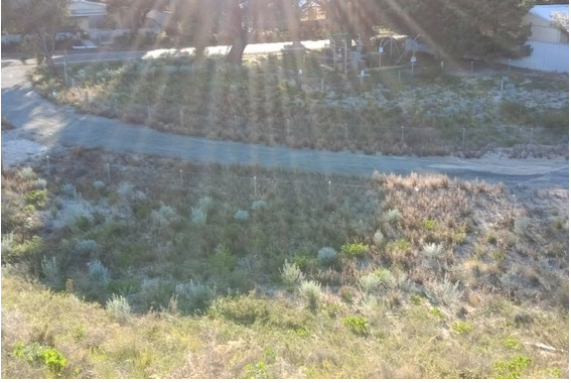
4.3.2 Vegetation Types

Five vegetation types were identified and mapped within the Survey Area (Figure 2).

The remaining of the Survey Area included vegetation rehabilitation areas (0.22 ha, 5.68%) and cleared areas (0.13 ha, 3.40%).

Table 3: Vegetation Types

Vegetation Type Code and Description	Extent and Proportion within the Survey Area	Representative Photo
<p>MIcPpAp: <i>Melaleuca lanceolata</i> and <i>Callitris preissii</i> tall shrubland over <i>Acanthocarpus preissii</i>, <i>Guichenotia ledifolia</i>, <i>Conostylis candicans</i> subsp. <i>calcicola</i> low open shrubland over <i>Poaceae</i> spp. and <i>Poa</i> sp. isolated tussock grasses over <i>*Trachyandra divaricata</i> and mixed weed spp.</p>	<p>0.29 ha 7.53%</p>	
<p>MIAp: <i>Melaleuca lanceolata</i>, <i>*Casuarina glauca</i>, <i>Eucalyptus utilis</i> and <i>Melaleuca</i> spp. tall open shrubland over <i>Acanthocarpus preissii</i>, <i>Guichenotia ledifolia</i>, <i>Conostylis candicans</i> subsp. <i>calcicola</i> low open shrubland over <i>Poaceae</i> spp. and <i>Poa</i> sp. isolated tussock grasses over <i>*Trachyandra divaricata</i> and mixed weed spp.</p>	<p>2.09 ha 54.17%</p>	
<p>Cg: <i>*Casuarina glauca</i> tall shrubland over <i>Acanthocarpus preissii</i>, <i>Guichenotia ledifolia</i>, <i>Conostylis candicans</i> subsp. <i>calcicola</i> low open shrubland over <i>Poaceae</i> spp. and <i>Poa</i> sp. isolated tussock grasses over <i>*Trachyandra divaricata</i> and mixed weed spp.</p>	<p>0.19 ha 4.83%</p>	

Vegetation Type Code and Description	Extent and Proportion within the Survey Area	Representative Photo
<p>Ap: <i>Acanthocarpus preissii</i>, <i>Guichenotia ledifolia</i>, <i>Conostylis candidans</i> subsp. <i>calicicola</i> low open shrubland over <i>Poaceae</i> spp. and <i>Poa</i> sp. isolated tussock grasses over <i>*Trachyandra divaricata</i> and mixed weed spp.</p>	<p>0.94 ha 24.32%</p>	
<p>Lg: <i>Pittosporum ligustrifolium</i> tall isolated shrubs over <i>Lepidosperma gladiatum</i> closed sedgeland over <i>Acanthocarpus preissii</i>, <i>Guichenotia ledifolia</i> and <i>Poa</i> sp.</p>	<p><0.01 ha 0.10%</p>	
<p>Rehabilitation</p>	<p>0.22 ha 5.69%</p>	
<p>Cleared</p>	<p>0.13 ha 3.37%</p>	<p>N/A</p>
<p>Total</p>	<p>3.85 ha</p>	<p>N/A</p>

4.3.3 Vegetation Condition

Vegetation condition within the Survey Area ranged from Good to Completely Degraded (Figure 3), including:

- Good (1.92 ha, 49.75%)
- Degraded (1.59 ha, 41.18%)
- Completely Degraded (0.35 ha, 9.06%).

Disturbances within the Survey Area comprised weeds, historical clearing to facilitate access tracks and infrastructure, and rehabilitation areas. Small portions of the Survey Area may have been considered in Very Good condition, however weed numbers were considered to be higher than they appeared due to the dry conditions. The understorey was heavily affected by weeds across the entire Survey Area.

4.3.4 Vegetation of Conservation Significance

The Banksia Woodlands of the Swan Coastal Plain ecological community identified by the database searches was not present within the Survey Area, as *Banksia* spp. were not recorded.

The State TEC SCP30a '*Callitris preissii* (or *Melaleuca lanceolata*) forests and woodlands, Swan Coastal Plain', which is listed as Vulnerable is described as follows:

"The community is located on calcareous sandy soils of the Quindalup Dunes generally occurring between Craigie and Point Peron and on the Swan River in Peppermint Grove. The community also occurs on Garden Island and Penguin Islands. Species richness is naturally quite low in the community. Typical and common native taxa include: Callitris preissii (Rottnest Island pine), Melaleuca lanceolata (Rottnest Island Teatree), Spyridium globulosum (Basket Bush), Acanthocarpus preissii (Prickle Lily), Rhagodia baccata (Berry Saltbush), Austrostipa flavescens (Spear-grass), and Trachymene pilosa (Native Parsnip)" (Department of Biodiversity Conservation and Attractions, 2020b).

Community type 30a is restricted to the Quindalup system, on which the Survey Area is located, and represented by forests and woodlands (Gibson et al., 1994). This community lists a further three taxa as being common, **Galium murale*, **Asparagus asparagoides*, and **Trachyandra divaricata*.

Vegetation types MICpAp and MIAp were represented by *C. preissii* (MICpAp only) and *M. lanceolata*, which are the key taxa describing the SCP30a TEC, as well as the common community species *Acanthocarpus preissii*, and **Trachyandra divaricata*. For this reason, these vegetation types were considered analogous to the SCP30a TEC. Combined, these two vegetation types cover 2.38 ha (61.69%) of the Survey Area.

The remaining vegetation types did not support the key taxa *C. preissii* and *M. lanceolata* and therefore were not considered analogous to the TEC.

5 Discussion

5.1 Flora

Floristic diversity within the Survey Area was considered low. This was expected due to disturbances such as weeds, tracks and historic clearing, which have resulted in degraded vegetation condition within the Survey Area. The condition of the site was dry, which could be attributed to the below average rainfall recorded within the Survey Area in the three months prior to the field survey. Furthermore, the SCP30a TEC identified within the Survey Area is described as having low floristic diversity due to the dense overstorey with few understorey taxa (Department of Biodiversity Conservation and Attractions, 2020b; Gibson et al., 1994).

No conservation significant flora taxa were recorded within the Survey Area.

Six weed species were recorded in the Survey Area; however, none are listed as WoNS or DPs. The weed species recorded (**Casuarina glauca*, **Cynodon dactylon*, **Dittrichia graveolens*, **Rostraria cristata*, **Stenotaphrum secundatum* and **Trachyandra divaricata*) have a legal status of Permitted – s11, and do not have an assigned control category.

Weed species were ubiquitous throughout the Survey Area, which was expected due to vegetation condition and disturbances. The Survey Areas were not systematically grid searched, therefore additional weed species and abundance could be recorded with greater survey effort. **Trachyandra divaricata* in particular was considered to be present in large numbers across the entirety of the Survey Area.

5.2 Vegetation

The vegetation of the Survey Area comprised remnant vegetation, native regrowth, planted natives and weed species.

The previous survey undertaken in June 2021 was inconclusive as to whether the vegetation in the south-eastern portion of the Survey Area was analogous to the TEC, the June 2021 Survey Area did not include any individuals of *C. preissii*. The current Survey Area included an expansion to the southeast which aided to confirm the presence of the TEC due to the key taxon *C. preissii*.

Two vegetation types within the Survey Area were considered analogous to the State TEC SCP30a 'Callitris preissii (or *Melaleuca lanceolata*) forests and woodlands, Swan Coastal Plain' ecological community. It was noted that areas of these vegetation types continued outside of the Survey Area to the south and east. Further advice can be sought from the Communities branch of the DBCA to confirm the presence and extent of this TEC within the Survey Area. Condition varied in these areas from Good to Degraded, as multiple other dominant (*Melaleuca* spp. and *Eucalyptus* spp.) individuals were present. However, across the general area the two descriptive tall shrubs (*C. preissii* and *M. lanceolata*) are considered to be generally dominant and should be treated holistically as a larger patch, analogous to the TEC.

Rehabilitation areas are considered to be Completely Degraded as the clearing laws only apply to native vegetation, whose definition in the EP Act does not include native species in a plantation. Under Section 51A of the EP Act, native vegetation does not include vegetation that is intentionally sown, planted or propagated unless:

- The vegetation was sown, planted or propagated as required under the EP Act or another written law; or
- It is declared to be native vegetation under the regulations.

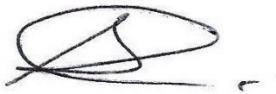
Most of the Survey Area comprises native vegetation (3.50 ha, 90.94%). Additionally, the Survey Area is entirely mapped over an ESA and Conservation Area, and therefore may be subject to Native Vegetation regulations if clearing was proposed for the area.

6 Conclusion

- One Threatened flora taxon pursuant to the EPBC Act 1999 and/or gazetted as Threatened Flora pursuant to the BC Act 2016 was identified as occurring within 10 km of the Survey Area by database searches, *Diuris micrantha* (Vulnerable). No Threatened flora taxa were recorded during the field survey.
- The database searches identified four Priority flora taxa as occurring within 10 km of the Survey Area. None were recorded within the Survey Area.
- Five introduced flora taxa were recorded during the survey. None of these are listed as Declared Pests under the BAM Act or WoNS.
- Five vegetation types were mapped within the Survey Area. Two vegetation types were considered analogous to the State TEC SCP30a 'Callitris preissii (or Melaleuca lanceolata) forests and woodlands, Swan Coastal Plain' ecological community.

We trust this meets your requirements. Should you have any questions or require further action please do not hesitate to contact Simon Colwill or the undersigned on (08) 9388 8360. We look forward to hearing from you.

For and on behalf of 360 Environmental Pty Ltd



Scott Walker – Principal Ecologist/Group Leader

Enc:

Figure 1: Survey Area

Figure 2: Vegetation Types and TEC Extent

Figure 3: Vegetation Condition

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<https://florabase.dpaw.wa.gov.au/>

Figures



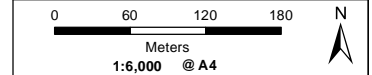
Legend

- Survey Area
- June 2021 Survey Area

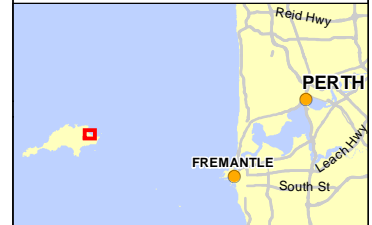
- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
 - LOCALITY MAP SOURCED LANDGATE 2022
 - OTHER DATA SOURCED LANDGATE 2022
 - AERIAL PHOTOGRAPHY SOURCED LANDGATE 2022
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LOCALITY MAP



PROJECT ID	DATE
5185	30/03/2022

HORIZONTAL DATUM AND PROJECTION
 GDA2020 MGA Zone 50

CREATED	CHECKED	APPROVED	REVISION
CL	BD	SB	0

Rottnest Island Authority
 Windy Hill
 Windy Hill TEC Assessment

Figure 1
 Survey Area



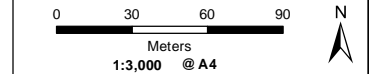
Legend

- Survey Area
- Vegetation Types**
- Ap
- Cg
- Lg
- MIAP
- MICpAp
- Rehabilitation
- Cleared
- Threatened Ecological Communities

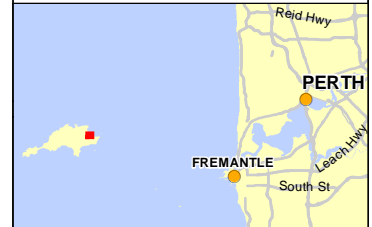
- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
 - LOCALITY MAP SOURCED LANDGATE 2022
 - OTHER DATA SOURCED LANDGATE 2022
 - AERIAL PHOTOGRAPHY SOURCED LANDGATE 2022
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LOCALITY MAP



PROJECT ID 5185		DATE 31/03/2022	
HORIZONTAL DATUM AND PROJECTION GDA2020 MGA Zone 50			
CREATED CL	CHECKED BD	APPROVED SB	REVISION 0

Rottnest Island Authority
Windy Hill
Windy Hill TEC Assessment

Figure 2
Vegetation Types and TEC Extent



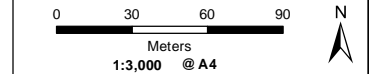
Legend

- Survey Area
- Vegetation Condition**
- Good
- Degraded
- Completely Degraded

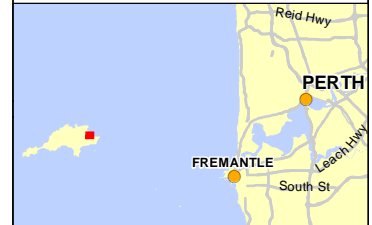
- NOTE THAT POSITION ERRORS CAN BE >5M IN SOME AREAS
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 - OTHER DATA SOURCED LANDGATE 2022
 - AERIAL PHOTOGRAPHY SOURCED LANDGATE 2022
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LOCALITY MAP



PROJECT ID 5185		DATE 31/03/2022	
HORIZONTAL DATUM AND PROJECTION GDA2020 MGA Zone 50			
CREATED CL	CHECKED BD	APPROVED SB	REVISION 0

Rottnest Island Authority
Windy Hill
Windy Hill TEC Assessment

Figure 3
Vegetation Condition

Appendices

Appendix A NatureMap

NatureMap Species Report

Created By Guest user on 23/11/2020

Kingdom Plantae
Current Names Only Yes
Core Datasets Only Yes
Method 'By Circle'
Centre 115° 32' 05" E, 31° 59' 26" S
Buffer 10km
Group By Family

Family	Species	Records
Acrotylaceae	3	10
Aizoaceae	4	18
Alliaceae	1	1
Amaranthaceae	1	4
Amaryllidaceae	4	8
Anadyomenaceae	2	8
Apiaceae	2	7
Apocynaceae	3	15
Araceae	1	9
Araliaceae	6	11
Arecaceae	4	4
Areschougaceae	10	26
Asparagaceae	6	23
Asphodelaceae	2	12
Asteraceae	27	80
Bignoniaceae	1	1
Bonnemaisoniaceae	2	13
Boodleaceae	2	13
Boraginaceae	2	4
Brassicaceae	10	35
Bryopsidaceae	5	5
Campanulaceae	1	3
Caryophyllaceae	10	40
Casuarinaceae	3	5
Caulerpaceae	21	103
Celastraceae	1	4
Centrolepidaceae	1	2
Ceramiaceae	18	33
Champiaceae	3	8
Chenopodiaceae	13	41
Ciadophoraceae	10	25
Codiaceae	7	28
Colchicaceae	1	2
Convolvulaceae	2	9
Coralliaceae	11	68
Crassulaceae	7	16
Cupressaceae	1	4
Cymodoceaceae	4	8
Cyperaceae	12	25
Cystocloniaceae	5	12
Dasyaceae	5	5
Delesseriaceae	9	19
Derbesiaceae	1	1
Dichotomosiphonaceae	1	1
Dicranemataceae	2	8
Dilleniaceae	1	1
Droseraceae	1	2
Ericaceae	3	14
Euphorbiaceae	4	38
Fabaceae	12	48
Faucheaceae	2	2
Francoaceae	1	3
Frankeniaceae	1	1
Galaxauraceae	5	38
Gelidiaceae	4	27
Gentianaceae	4	11
Geraniaceae	4	11
Goodeniaceae	1	5
Gracilariaceae	5	13
Haemodoraceae	2	10
Halimedaceae	1	14
Haloragaceae	1	1
Halymeniaceae	10	37
Hemerocallidaceae	2	2
Hydrocharitaceae	2	3
Hymenocladaceae	2	4
Hypoxidaceae	1	1
Iridaceae	6	19
Juncaceae	2	2
Juncaginaceae	4	11
Kallymeniaceae	5	8
Lamiaceae	1	7
Liagoraceae	10	33
Loganiaceae	1	1
Lomentariaceae	2	3

Loranthaceae	1	1
Malvaceae	6	38
Meliaceae	1	3
Montiaceae	2	5
Moraceae	5	9
Mychodeaceae	2	3
Myrtaceae	12	20
Nitriariaceae	1	4
Nizymeniaceae	2	5
Oleaceae	1	3
Orchidaceae	3	8
Orobanchaceae	2	2
Oxalidaceae	3	7
Peyssonneliaceae	3	12
Phacelocarpaceae	2	2
Phyllanthaceae	2	7
Pinaceae	2	2
Pittosporaceae	1	11
Plantaginaceae	4	9
Plocamiaceae	4	7
Poaceae	46	200
Polygalaceae	2	3
Polydaceae	2	19
Polyphysaceae	1	2
Portulacaceae	1	1
Posidoniaceae	2	3
Potamogetonaceae	1	4
Pottiaceae	3	3
Primulaceae	2	17
Ranunculaceae	3	12
Resedaceae	2	8
Rhamnaceae	2	12
Rhodomelaceae	23	55
Rhodymeniaceae	7	31
Rubiaceae	1	13
Ruppiaceae	2	6
Rutaceae	2	9
Sapindaceae	1	1
Sarcomeniaceae	1	1
Schizymeniaceae	1	8
Sciniaaceae	2	5
Scrophulariaceae	5	24
Sebdeniaceae	1	3
Siphonocladaceae	4	8
Solanaceae	5	20
Solieriaceae	2	4
Spongitaceae	1	1
Styliidiaceae	1	1
Tamaricaceae	1	3
Typhaceae	1	1
Udoteaceae	4	13
Ulvaceae	3	7
Urticaceae	3	22
Valoniaceae	1	2
Wrangeliaceae	5	6
Zygophyllaceae	2	3
TOTAL	552	1836

Name ID	Species Name	Naturalised	Conservation Code	Endemic To Query Area
Acrotyleaceae				
1.	26456 <i>Amphiplexia hymenocladoides</i>			
2.	26665 <i>Claviconium ovatum</i>			
3.	26915 <i>Hennedya crispa</i>			
Aizoaceae				
4.	2798 <i>Carpobrotus virescens</i> (Coastal Pigface, Kolboko, Bain)			
5.	2813 <i>Mesembryanthemum crystallinum</i> (Iceplant)	Y		
6.	2820 <i>Tetragonia decumbens</i> (Sea Spinach)	Y		
7.	2823 <i>Tetragonia implexicoma</i> (Bower Spinach)			
Alliaceae				
8.	1374 <i>Allium ampeloprasum</i>	Y		
Amaranthaceae				
9.	2689 <i>Hemichroa pentandra</i> (Trailing Jointweed)			
Amaryllidaceae				
10.	1493 <i>Leucojum aestivum</i> (Snowflake)	Y		
11.	11019 <i>Narcissus papyraceus</i>	Y		
12.	1495 <i>Narcissus tazetta</i> (Jonquil)	Y		
13.	44496 <i>Narcissus tazetta</i> subsp. <i>italicus</i>	Y		
Anadyomenaceae				
14.	35123 <i>Microdictyon okamurae</i>			
15.	27074 <i>Microdictyon umbilicatum</i>			
Apiaceae				
16.	6210 <i>Apium annuum</i>			
17.	6218 <i>Daucus glochidiatus</i> (Australian Carrot)			
Apocynaceae				
18.	6565 <i>Alyxia buxifolia</i> (Dysentery Bush)			
19.	6587 <i>Gomphocarpus fruticosus</i> (Narrowleaf Cottonbush)	Y		
20.	18356 <i>Nerium oleander</i>	Y		
Araceae				
21.	1049 <i>Zantedeschia aethiopica</i> (Arum Lily)	Y		
Araliaceae				
22.	6224 <i>Hydrocotyle blepharocarpa</i>			
23.	6229 <i>Hydrocotyle diantha</i>			
24.	6232 <i>Hydrocotyle hispidula</i>			
25.	6241 <i>Hydrocotyle tetragonocarpa</i>			
26.	6266 <i>Trachymene coerulea</i> (Blue Lace Flower)			
27.	19041 <i>Trachymene coerulea</i> subsp. <i>coerulea</i>			
Areaceae				
28.	44540 <i>Phoenix canariensis</i> (Canary Islands Date Palm)	Y		
29.	1042 <i>Phoenix dactylifera</i> (Date Palm)	Y		
30.	17910 <i>Washingtonia filifera</i>	Y		
31.	<i>Washingtonia robusta</i>			Y
Areschougiaceae				
32.	26484 <i>Areschougia ligulata</i>			
33.	26533 <i>Callophycus costatus</i>			
34.	26534 <i>Callophycus dorsifer</i>			
35.	26535 <i>Callophycus harveyanus</i>			
36.	26536 <i>Callophycus oppositifolius</i>			
37.	26823 <i>Erythroclonium sonderi</i>			
38.	26854 <i>Gigartina disticha</i>			
39.	27062 <i>Meristotheca papulosa</i>			
40.	27210 <i>Rhabdonia clavigera</i>			
41.	27230 <i>Sarconema filiforme</i>			
Asparagaceae				
42.	1208 <i>Acanthocarpus preissii</i>			
43.	1505 <i>Agave americana</i> (Century Plant)	Y		
44.	47094 <i>Agave attenuata</i>	Y		
45.	18379 <i>Agave sisalana</i>	Y		Y
46.	1372 <i>Ornithogalum arabicum</i> (Lesser Cape Lily)	Y		
47.	1343 <i>Thysanotus patersonii</i>			
Asphodelaceae				

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
48.	1364 <i>Asphodelus fistulosus</i> (Onion Weed)	Y		
49.	1368 <i>Trachyandra divaricata</i>	Y		
Asteraceae				
50.	7833 <i>Angianthus preissianus</i>			
51.	7838 <i>Arctotheca calendula</i> (Cape Weed, African Marigold)	Y		
52.	7839 <i>Arctotheca populifolia</i> (Dune Arctotheca, Beach Pumpkin, Coast Capeweed, Beach Daisy)	Y		
53.	7841 <i>Argyranthemum frutescens</i> (Marguerite)	Y		
54.	7909 <i>Carduus pycnocephalus</i> (Slender Thistle)	Y		
55.	7916 <i>Centaurea melitensis</i> (Maltese Cockspur, Malta Thistle)	Y		
56.	7937 <i>Cirsium vulgare</i> (Spear Thistle, Scotch Thistle)	Y		
57.	7939 <i>Conyza bonariensis</i> (Flaxleaf Fleabane)	Y		
58.	7941 <i>Conyza parva</i>	Y		
59.	20074 <i>Conyza sumatrensis</i>	Y		
60.	7943 <i>Cotula australis</i> (Common Cotula)			
61.	7944 <i>Cotula bipinnata</i> (Ferny Cotula)	Y		
62.	7945 <i>Cotula coronopifolia</i> (Waterbuttons)	Y		
63.	7961 <i>Dittrichia graveolens</i> (Stinkwort)	Y		
64.	20247 <i>Gamochoaeta calviceps</i>	Y		
65.	7983 <i>Gnaphalium indutum</i> (Tiny Cudweed)			
66.	8086 <i>Hypochaeris glabra</i> (Smooth Catsear)	Y		
67.	44490 <i>Leontodon rhagadioloides</i>	Y		
68.	16449 <i>Leucophyta brownii</i>			
69.	8105 <i>Millotia myosotidifolia</i>			
70.	8127 <i>Olearia axillaris</i> (Coastal Daisybush)			
71.	8182 <i>Podotrocha angustifolia</i> (Sticky Longheads)			
72.	25884 <i>Senecio pinnatifolius</i> var. <i>latilobus</i>			
73.	25882 <i>Senecio pinnatifolius</i> var. <i>maritimus</i> (Coastal Groundsel)			
74.	8230 <i>Sonchus asper</i> (Rough Sowthistle)	Y		
75.	8231 <i>Sonchus oleraceus</i> (Common Sowthistle)	Y		
76.	13328 <i>Waitzia nitida</i>			
Bignoniaceae				
77.	17923 <i>Tecoma stans</i>	Y		
Bonnemaisoniaceae				
78.	26486 <i>Asparagopsis taxiformis</i>			
79.	26757 <i>Delisea pulchra</i>			
Boodleaceae				
80.	27141 <i>Phyllocladon anastomosans</i>			
81.	27318 <i>Struvea plumosa</i>			
Boraginaceae				
82.	6707 <i>Heliotropium curassavicum</i> (Smooth Heliotrope)			
83.	6722 <i>Myosotis australis</i> (Southern Forget-me-not)		P4	
Brassicaceae				
84.	3002 <i>Cakile maritima</i> (Sea Rocket)	Y		
85.	3005 <i>Cardamine hirsuta</i> (Common Bittercress)	Y		
86.	3011 <i>Diplotaxis muralis</i> (Wall Rocket)	Y		
87.	3016 <i>Heliophila pusilla</i>	Y		
88.	18137 <i>Hornungia procumbens</i>	Y		
89.	19989 <i>Lepidium didymum</i>	Y		
90.	3027 <i>Lepidium foliosum</i> (Leafy Peppergrass)			
91.	3043 <i>Lepidium puberulum</i>		P4	
92.	3061 <i>Raphanus raphanistrum</i> (Wild Radish)	Y		
93.	3072 <i>Sisymbrium orientale</i> (Indian Hedge Mustard)	Y		
Bryopsidaceae				
94.	26521 <i>Bryopsis australis</i>			
95.	<i>Bryopsis gemellipara</i>			
96.	26523 <i>Bryopsis macrailldii</i>			
97.	26525 <i>Bryopsis plumosa</i>			
98.	27191 <i>Pseudobryopsis hainanensis</i>			
Campanulaceae				
99.	9289 <i>Lobelia anceps</i> (Angled Lobelia)			
Caryophyllaceae				
100.	19883 <i>Arenaria leptoclados</i>	Y		
101.	13119 <i>Cerastium balearicum</i>	Y		
102.	2889 <i>Cerastium glomeratum</i> (Mouse Ear Chickweed)	Y		
103.	16693 <i>Minuartia mediterranea</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
104.	2905 <i>Polycarpon tetraphyllum</i> (Fourleaf Allseed)	Y		
105.	2906 <i>Sagina apetala</i> (Annual Pearlwort)	Y		
106.	2908 <i>Sagina maritima</i>	Y		
107.	2910 <i>Silene nocturna</i> (Mediterranean Catchfly)	Y		
108.	2918 <i>Stellaria media</i> (Chickweed)	Y		
109.	20397 <i>Stellaria pallida</i>	Y		
Casuarinaceae				
110.	19842 <i>Casuarina equisetifolia</i>	Y		
111.	18321 <i>Casuarina glauca</i>	Y		
112.	1742 <i>Casuarina obesa</i> (Swamp Sheoak, Kuli)			
Caulerpaceae				
113.	26553 <i>Caulerpa articulata</i>			
114.	26556 <i>Caulerpa cactoides</i>			
115.	26559 <i>Caulerpa cupressoides</i>			
116.	47053 <i>Caulerpa cupressoides</i> var. <i>cupressoides</i>			
117.	44539 <i>Caulerpa cylindracea</i>			
118.	26561 <i>Caulerpa ellistoria</i>			
119.	26562 <i>Caulerpa fergusonii</i>			
120.	26563 <i>Caulerpa flexilis</i>			
121.	27380 <i>Caulerpa flexilis</i> var. <i>muelleri</i>			
122.	48455 <i>Caulerpa geminata</i>			
123.	26564 <i>Caulerpa hedleyi</i>			
124.	26565 <i>Caulerpa heterophylla</i>			
125.	26568 <i>Caulerpa lentillifera</i>			
126.	27382 <i>Caulerpa longifolia</i> forma <i>crispata</i>			
127.	26570 <i>Caulerpa obscura</i>			
128.	26571 <i>Caulerpa papillosa</i>			
129.	37643 <i>Caulerpa parvifolia</i>			
130.	26574 <i>Caulerpa scalpelliformis</i>			
131.	26575 <i>Caulerpa sedoides</i>			
132.	26578 <i>Caulerpa simpliciuscula</i>			
133.	46993 <i>Caulerpa taxifolia</i> var. <i>distichophylla</i>			
Celastraceae				
134.	9070 <i>Stackhousia pubescens</i> (Downy Stackhousia)			
Centrolepidaceae				
135.	1134 <i>Centrolepis polygyna</i> (Wiry Centrolepis)			
Ceramiaceae				
136.	26447 <i>Acrothamnion preissii</i>			
137.	26465 <i>Anisoschizus propaguli</i>			Y
138.	27374 <i>Anotrichium tenue</i> var. <i>thyrsigerum</i>			Y
139.	26475 <i>Antithamnion hanovioides</i>			
140.	26500 <i>Balliella hirsuta</i>			Y
141.	26511 <i>Bornetia binderiana</i>			
142.	26587 <i>Centroceras clavulatum</i>			
143.	26593 <i>Ceramium filicula</i>			
144.	26599 <i>Ceramium puberulum</i>			
145.	26600 <i>Ceramium pusillum</i>			
146.	26797 <i>Drewiana nitella</i>			
147.	26829 <i>Euptiloclada spongiosa</i>			
148.	26830 <i>Euptilota articulata</i>			
149.	26887 <i>Guiryella repens</i>			
150.	27194 <i>Psilothallia striata</i>			
151.	27286 <i>Spermothamnion miniatum</i>			Y
152.	27309 <i>Spyridia dasyoides</i>			
153.	27310 <i>Spyridia filamentosa</i>			
Champiaceae				
154.	26616 <i>Champia affinis</i>			
155.	26617 <i>Champia compressa</i>			
156.	26619 <i>Champia stipitata</i>			
Chenopodiaceae				
157.	2452 <i>Atriplex cinerea</i> (Grey Saltbush)			
158.	2463 <i>Atriplex isatidea</i> (Coast Saltbush)			
159.	2494 <i>Chenopodium murale</i> (Nettle-leaf Goosefoot)	Y		
160.	12064 <i>Enchylaena tomentosa</i> var. <i>tomentosa</i> (Barrier Saltbush)			
161.	2578 <i>Rhagodia baccata</i> (Berry Saltbush)			
162.	11341 <i>Rhagodia baccata</i> subsp. <i>baccata</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
163.	11930 <i>Rhagodia baccata</i> subsp. <i>dioica</i> (Sea Berry Saltbush)			
164.	48433 <i>Salicornia blackiana</i>			
165.	48430 <i>Salicornia quinqueflora</i>			
166.	2639 <i>Suaeda australis</i> (Seablite)			
167.	33236 <i>Tecticornia halocnemoides</i> (Shrubby Samphire)			
168.	33319 <i>Tecticornia indica</i> subsp. <i>bidens</i>			
169.	2644 <i>Threlkeldia diffusa</i> (Coast Bonefruit)			
Cladophoraceae				
170.	26481 <i>Apjohnia laetevirens</i>			
171.	26607 <i>Chaetomorpha aerea</i>			
172.	26649 <i>Cladophora albida</i>			
173.	48391 <i>Cladophora dalmatica</i>			
174.	26653 <i>Cladophora laetevirens</i>			
175.	26654 <i>Cladophora lehmanniana</i>			
176.	26656 <i>Cladophora prolifera</i>			
177.	48667 <i>Cladophora rhizoclonioidea</i>			
178.	48668 <i>Cladophora subsimplex</i>			
179.	26659 <i>Cladophora valonioides</i>			
Codiaceae				
180.	26671 <i>Codium duthieae</i>			
181.	26672 <i>Codium galeatum</i>			
182.	26675 <i>Codium laminarioides</i>			
183.	26676 <i>Codium lucasii</i>			
184.	26678 <i>Codium muelleri</i>			
185.	26679 <i>Codium perrinae</i>			
186.	26683 <i>Codium spongiosum</i>			
Colchicaceae				
187.	1398 <i>Wurmbea monantha</i>			
Convolvulaceae				
188.	6616 <i>Dichondra repens</i> (Kidney Weed)			
189.	6659 <i>Wilsonia humilis</i> (Silky Wilsonia)			
Corallinaceae				
190.	26458 <i>Amphiroa anceps</i>			
191.	26463 <i>Amphiroa gracilis</i>			
192.	26984 <i>Jania affinis</i>			
193.	26985 <i>Jania micrarthrodia</i>			
194.	36141 <i>Jania pulchella</i>			
195.	48292 <i>Jania rosea</i>			
196.	26988 <i>Jania verrucosa</i>			
197.	27067 <i>Metagoniolithon chara</i>			
198.	27068 <i>Metagoniolithon radiatum</i>			
199.	27069 <i>Metagoniolithon stelliferum</i>			
200.	27070 <i>Metamastophora flabellata</i>			
Crassulaceae				
201.	3137 <i>Crassula colorata</i> (Dense Stonecrop)			
202.	11563 <i>Crassula colorata</i> var. <i>colorata</i>			
203.	3138 <i>Crassula decumbens</i> (Rufous Stonecrop)			
204.	11349 <i>Crassula decumbens</i> var. <i>decumbens</i>			
205.	3140 <i>Crassula glomerata</i>	Y		
206.	15706 <i>Crassula natans</i> var. <i>minus</i>	Y		
207.	11345 <i>Crassula thunbergiana</i> subsp. <i>thunbergiana</i>	Y		
Cupressaceae				
208.	96 <i>Callitris preissii</i> (Rottneest Island Pine, Maro)			
Cymodoceaceae				
209.	126 <i>Amphibolis antarctica</i> (Sea Nymph)			
210.	127 <i>Amphibolis griffithii</i>			
211.	132 <i>Syringodium isoetifolium</i>			
212.	134 <i>Thalassodendron pachyrhizum</i>			
Cyperaceae				
213.	743 <i>Baumea juncea</i> (Bare Twigrush)			
214.	43241 <i>Carex thecata</i>			
215.	20216 <i>Ficinia nodosa</i> (Knotted Club Rush)			
216.	907 <i>Gahnia trifida</i> (Coast Saw-sedge)			
217.	20200 <i>Isolepis cernua</i> var. <i>setiformis</i>			
218.	917 <i>Isolepis marginata</i> (Coarse Club-rush)			
219.	42742 <i>Lepidosperma calcicola</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
220.	933 <i>Lepidosperma gladiatum</i> (Coast Sword-sedge, Kerbin)			
221.	940 <i>Lepidosperma pubisquamum</i>			
222.	945 <i>Lepidosperma squamatum</i>			
223.	994 <i>Schoenus humilis</i>			
224.	1004 <i>Schoenus nitens</i> (Shiny Bog-rush)			
Cystocloniaceae				
225.	26966 <i>Hypnea charoides</i>			
226.	35922 <i>Hypnea cornuta</i>			
227.	35898 <i>Hypnea musciformis</i>			
228.	26971 <i>Hypnea ramentacea</i>			
229.	26973 <i>Hypnea valentiae</i>			
Dasyaceae				
230.	26738 <i>Dasya elongata</i>			
231.	26749 <i>Dasya villosa</i>			
232.	26929 <i>Heterosiphonia callithamnium</i>			
233.	26930 <i>Heterosiphonia crassipes</i>			
234.	26938 <i>Heterosiphonia wrangelioides</i>			
Delesseriaceae				
235.	26622 <i>Chauvinella coriifolia</i>			
236.	26911 <i>Haraldiophyllum erosum</i>			
237.	26914 <i>Hemineura frondosa</i>			
238.	26927 <i>Heterodoxia denticulata</i>			
239.	26981 <i>Hypoglossum revolutum</i>			
240.	27055 <i>Martensia australis</i>			
241.	48414 <i>Martensia denticulata</i>			
242.	36360 <i>Platyclinia ramosa</i>			Y
243.	27146 <i>Platysiphonia hypneoides</i>			
Derbesiaceae				
244.	27120 <i>Pedobesia clavaeformis</i>			
Dichotomosiphonaceae				
245.	26497 <i>Avrainvillea clavatiramea</i>			
Dicranemataceae				
246.	26758 <i>Dicranema revolutum</i>			
247.	27347 <i>Tylotus obtusatus</i>			
Dilleniaceae				
248.	5162 <i>Hibbertia racemosa</i> (Stalked Guinea Flower)			
Droseraceae				
249.	3128 <i>Drosera ramellosa</i> (Branched Sundew)			
Ericaceae				
250.	6295 <i>Acrotriche cordata</i> (Coast Ground Berry)			
251.	6405 <i>Leucopogon insularis</i>			
252.	6427 <i>Leucopogon parviflorus</i> (Coast Beard-heath)			
Euphorbiaceae				
253.	4601 <i>Beyeria viscosa</i> (Pinkwood)			
254.	4636 <i>Euphorbia paralias</i> (Sea Spurge)	Y		
255.	4638 <i>Euphorbia peplus</i> (Petty Spurge)	Y		
256.	4705 <i>Ricinus communis</i> (Castor Oil Plant)	Y		
Fabaceae				
257.	3282 <i>Acacia cyclops</i> (Coastal Wattle)			
258.	3424 <i>Acacia littorea</i>			
259.	3525 <i>Acacia rostellifera</i> (Summer-scented Wattle)			
260.	3584 <i>Acacia truncata</i>			
261.	48860 <i>Erythrostemon gilliesii</i>	Y		
262.	4079 <i>Medicago polymorpha</i> (Burr Medic)	Y		
263.	4080 <i>Medicago sativa</i> (Alfalfa)	Y		
264.	4085 <i>Melilotus indicus</i>	Y		
265.	4256 <i>Templetonia retusa</i> (Cockies Tongues)			
266.	4314 <i>Trifolium suffocatum</i> (Suffocated Clover)	Y		
267.	4315 <i>Trifolium tomentosum</i> (Woolly Clover)	Y		
268.	15509 <i>Trifolium tomentosum</i> var. <i>tomentosum</i>	Y		
Faucheaceae				
269.	26860 <i>Gloiocladia halymenioides</i>			
270.	27361 <i>Webervanbossea kaliformis</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
Francoaceae				
271.	4785 <i>Melianthus major</i>	Y		
Frankeniaceae				
272.	5209 <i>Frankenia pauciflora</i> (Seaheath)			
Galaxauraceae				
273.	29616 <i>Dichotomaria marginata</i>			
274.	29615 <i>Dichotomaria obtusata</i>			
275.	34959 <i>Dichotomaria spathulata</i>			
276.	26835 <i>Galaxaura rugosa</i>			
277.	27340 <i>Tricleocarpa cylindrica</i>			
Gelidiaceae				
278.	26847 <i>Gelidium australe</i>			Y
279.	26849 <i>Gelidium pusillum</i>			
280.	27195 <i>Pterocladia lucida</i>			
281.	27206 <i>Ptilophora prolifera</i>			
Gentianaceae				
282.	6539 <i>Centaurium erythraea</i> (Common Centaury)	Y		
283.	17800 <i>Centaurium pulchellum</i>	Y		
284.	6542 <i>Centaurium tenuiflorum</i>	Y		
285.	41660 <i>Schenkia australis</i>			
Geraniaceae				
286.	4333 <i>Erodium cicutarium</i> (Common Storksbill)	Y		
287.	4339 <i>Geranium molle</i> (Dove's Foot Cranesbill)	Y		
288.	4343 <i>Pelargonium capitatum</i> (Rose Pelargonium)	Y		
289.	4346 <i>Pelargonium littorale</i>			
Goodeniaceae				
290.	7606 <i>Scaevola crassifolia</i> (Thick-leaved Fan-flower)			
Gracilariaceae				
291.	48979 <i>Crassa secundata</i>			
292.	26712 <i>Curdiea obesa</i>			
293.	26867 <i>Gracilaria blodgettii</i>			
294.	26872 <i>Gracilaria preissiana</i>			
295.	26873 <i>Gracilaria salicornia</i>			
Haemodoraceae				
296.	1427 <i>Conostylis candicans</i> (Grey Cottonhead)			
297.	12027 <i>Conostylis candicans</i> subsp. <i>calcicola</i>			
Halimedeaceae				
298.	47213 <i>Halimeda versatilis</i>			
Haloragaceae				
299.	6161 <i>Gonocarpus pithyoides</i>			
Halymeniaceae				
300.	26546 <i>Carpopeltis elata</i>			
301.	26547 <i>Carpopeltis phyllophora</i>			
302.	26548 <i>Carpopeltis spongeaplexus</i>			
303.	26667 <i>Codiophyllum flabelliforme</i>			
304.	26708 <i>Cryptonemia kallymenioides</i>			
305.	26818 <i>Epiphloea bullosa</i>			
306.	26850 <i>Gelinaria ulvoidea</i>			
307.	36701 <i>Grateloupia subpectinata</i>			
308.	37640 <i>Halymenia floresii</i>			
309.	48666 <i>Halymenia harveyana</i>			
Hemerocallidaceae				
310.	19632 <i>Johnsonia pubescens</i> subsp. <i>pubescens</i>			
311.	43506 <i>Phormium tenax</i>	Y		
Hydrocharitaceae				
312.	164 <i>Halophila ovalis</i> (Sea Wrack)			
313.	166 <i>Hydrilla verticillata</i> (Water Thyme)			
Hymenocladaceae				
314.	26826 <i>Erythrymenia minuta</i>			
315.	26961 <i>Hymenocladia conspersa</i>			
Hypoxidaceae				
316.	43763 <i>Pauridia glabella</i>			

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Iridaceae				
317.	1515 <i>Ferraria crispa</i> (Black Flag)	Y		
318.	11445 <i>Ferraria crispa</i> subsp. <i>crispa</i>	Y		
319.	1531 <i>Iris germanica</i> (Flag Iris)	Y		
320.	19179 <i>Moraea flaccida</i> (One-leaf Cape Tulip)	Y		
321.	19180 <i>Moraea miniata</i> (Two-leaf Cape Tulip)	Y		
322.	11544 <i>Romulea rosea</i> var. <i>australis</i> (Guildford Grass)	Y		
Juncaceae				
323.	1178 <i>Juncus bufonius</i> (Toad Rush)	Y		
324.	11922 <i>Juncus kraussii</i> subsp. <i>australiensis</i>			
Juncaginaceae				
325.	146 <i>Triglochin minutissima</i>			
326.	147 <i>Triglochin mucronata</i>			
327.	151 <i>Triglochin striata</i>			
328.	152 <i>Triglochin trichophora</i>			
Kallymeniaceae				
329.	48417 <i>Austrokallymenia roensis</i>			Y
330.	26858 <i>Glaphyrymenia pustulosa</i>			
331.	26991 <i>Kallymenia spinosa</i>			Y
332.	48419 <i>Leiomenia cribrosa</i>			
333.	48423 <i>Stauromenia lacerata</i>			
Lamiaceae				
334.	6939 <i>Westringia dampieri</i>			
Liagoraceae				
335.	26794 <i>Dotyophycus abbottiae</i>			
336.	26837 <i>Ganonema farinosum</i>			
337.	26912 <i>Helminthocladia australis</i>			
338.	26913 <i>Helminthora australis</i>			
339.	27020 <i>Liagora australasica</i>			
340.	27024 <i>Liagora izziae</i>			Y
341.	27030 <i>Liagora wilsoniana</i>			
342.	44525 <i>Neoizziella divaricata</i>			
343.	29601 <i>Titanophycus validus</i>			
344.	27370 <i>Yamadaella caenomyce</i>			
Loganiaceae				
345.	16825 <i>Phyllangium divergens</i>			
Lomentariaceae				
346.	35913 <i>Gelidiopsis scoparia</i>			
347.	27277 <i>Semnocarpa minuta</i>			
Loranthaceae				
348.	2396 <i>Lysiana casuarinae</i>			
Malvaceae				
349.	5011 <i>Guichenotia ledifolia</i>			
350.	14646 <i>Lagunaria patersonia</i>	Y		
351.	36480 <i>Malva arborea</i> (Tree Mallow)	Y		
352.	4961 <i>Malva parviflora</i> (Marshmallow)	Y		
353.	31351 <i>Malva preissiana</i>			
354.	5077 <i>Thomasia cognata</i>			
Meliaceae				
355.	4516 <i>Melia azedarach</i> (White Cedar)			
Montiaceae				
356.	2845 <i>Calandrinia brevipedata</i> (Short-stalked Purslane)			
357.	40827 <i>Calandrinia tholiformis</i>			
Moraceae				
358.	1747 <i>Ficus carica</i> (Common Fig)	Y		
359.	<i>Ficus elastica</i>			
360.	<i>Ficus macrophylla</i>			
361.	<i>Ficus microcarpa</i> subsp. <i>hillii</i>			Y
362.	47095 <i>Ficus rubiginosa</i>	Y		Y
Mychodeaceae				
363.	27079 <i>Mychodea carnosa</i>			
364.	27083 <i>Mychodea pusilla</i>			
Myrtaceae				

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365.	17202 <i>Agonis flexuosa</i> var. <i>flexuosa</i>			
366.	5580 <i>Eucalyptus camaldulensis</i> (River Gum, Yabalyinyba)			
367.	35345 <i>Eucalyptus camaldulensis</i> subsp. <i>obtusa</i> (Blunt-budded River Red Gum)			
368.	5615 <i>Eucalyptus decipiens</i> (Limestone Marlock, Moit)			
369.	5638 <i>Eucalyptus erythrocorys</i> (Illyarrie)			
370.	5659 <i>Eucalyptus gomphocephala</i> (Tuart, Duart)			
371.	5775 <i>Eucalyptus spathulata</i> (Swamp Mallet)			
372.	18085 <i>Eucalyptus utilis</i>			
373.	19721 <i>Melaleuca armillaris</i>	Y		
374.	5920 <i>Melaleuca huegelii</i> (Chenille Honeymyrtle)			
375.	5922 <i>Melaleuca lanceolata</i> (Rottnest Teatree, Moonah)			
376.	5943 <i>Melaleuca nesophila</i> (Mindiyed)			
Nitrariaceae				
377.	4366 <i>Nitraria billardierei</i> (Nitre Bush)			
Nizyeniaceae				
378.	27103 <i>Nizyenia conferta</i>			
379.	27104 <i>Nizyenia furcata</i>			
Oleaceae				
380.	6503 <i>Olea europaea</i> (Olive)	Y		
Orchidaceae				
381.	1599 <i>Caladenia latifolia</i> (Pink Fairy Orchid)			
382.	10916 <i>Cyrtostylis huegelii</i>			
383.	1674 <i>Prasophyllum giganteum</i> (Bronze Leek Orchid)			
Orobanchaceae				
384.	7122 <i>Orobanche minor</i> (Lesser Broomrape)	Y		
385.	7089 <i>Parentucellia latifolia</i> (Common Bartsia)	Y		
Oxalidaceae				
386.	4349 <i>Oxalis corniculata</i> (Yellow Wood Sorrel)	Y		
387.	30375 <i>Oxalis exilis</i>			
388.	4356 <i>Oxalis pes-caprae</i> (Soursob)	Y		
Peyssonneliaceae				
389.	27128 <i>Peyssonnelia inamoena</i>			
390.	27129 <i>Peyssonnelia novae-hollandiae</i>			
391.	44731 <i>Sonderophycus capensis</i>			
Phacelocarpaceae				
392.	27133 <i>Phacelocarpus labillardieri</i>			
393.	27134 <i>Phacelocarpus peperocarpus</i>			
Phyllanthaceae				
394.	4675 <i>Phyllanthus calycinus</i> (False Boronia)			
395.	4688 <i>Poranthera drummondii</i>			
Pinaceae				
396.	17671 <i>Pinus halepensis</i>	Y		
397.	88 <i>Pinus radiata</i> (Radiata Pine)	Y		
Pittosporaceae				
398.	19745 <i>Pittosporum ligustrifolium</i>			
Plantaginaceae				
399.	4717 <i>Callitriche stagnalis</i> (Common Starwort)	Y		
400.	7053 <i>Cymbalaria muralis</i> (Ivyleaf Toadflax)	Y		
401.	7299 <i>Plantago debilis</i>			
402.	7303 <i>Plantago lanceolata</i> (Ribwort Plantain)	Y		
Plocamiaceae				
403.	27154 <i>Plocamium angustum</i>			
404.	27155 <i>Plocamium cartilagineum</i>			
405.	27156 <i>Plocamium mertensii</i>			
406.	27157 <i>Plocamium preissianum</i>			
Poaceae				
407.	185 <i>Aira cupaniana</i> (Silvery Hairgrass)	Y		
408.	17237 <i>Austrostipa elegantissima</i>			
409.	17240 <i>Austrostipa flavescens</i>			
410.	<i>Austrostipa</i> sp.			
411.	231 <i>Avellinia michelii</i>	Y		
412.	233 <i>Avena barbata</i> (Bearded Oat)	Y		
413.	8661 <i>Brachypodium distachyon</i> (False Brome)	Y		

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
414.	245 <i>Briza minor</i> (Shivery Grass)	Y		
415.	247 <i>Bromus arenarius</i> (Sand Brome)			
416.	249 <i>Bromus diandrus</i> (Great Brome)	Y		
417.	250 <i>Bromus hordeaceus</i> (Soft Brome)	Y		
418.	252 <i>Bromus madritensis</i> (Madrid Brome)	Y		
419.	253 <i>Bromus rubens</i> (Red Brome)	Y		
420.	13685 <i>Catapodium rigidum</i> (Rigid Fescue)	Y		
421.	41564 <i>Cenchrus clandestinus</i> (Kikuyu Grass)	Y		
422.	277 <i>Cortaderia selloana</i> (Pampas Grass)	Y		
423.	283 <i>Cynodon dactylon</i> (Couch)	Y		
424.	346 <i>Ehrharta brevifolia</i> (Annual Veldt Grass)	Y		
425.	11485 <i>Ehrharta brevifolia</i> var. <i>cuspidata</i>	Y		
426.	349 <i>Ehrharta longiflora</i> (Annual Veldt Grass)	Y		
427.	376 <i>Eragrostis curvula</i> (African Lovegrass)	Y		
428.	449 <i>Hordeum leporinum</i> (Barley Grass)	Y		
429.	30331 <i>Lachnagrostis nesomytica</i>			Y
430.	30332 <i>Lachnagrostis nesomytica</i> subsp. <i>nesomytica</i>		P1	Y
431.	30333 <i>Lachnagrostis nesomytica</i> subsp. <i>pseudofiliformis</i>		P1	Y
432.	467 <i>Lagurus ovatus</i> (Hare's Tail Grass)	Y		
433.	478 <i>Lolium rigidum</i> (Wimmera Ryegrass)	Y		
434.	485 <i>Microlaena stipoides</i> (Weeping Grass)			
435.	516 <i>Parapholis incurva</i> (Coast Barbgrass)	Y		
436.	571 <i>Poa annua</i> (Winter Grass)	Y		
437.	577 <i>Poa poliformis</i> (Coastal Poa)			
438.	581 <i>Polypogon maritimus</i> (Coast Beardgrass)	Y		
439.	35157 <i>Polypogon maritimus</i> var. <i>subspatheaceus</i>	Y		
440.	582 <i>Polypogon monspeliensis</i> (Annual Beardgrass)	Y		
441.	583 <i>Polypogon tenellus</i>			
442.	10970 <i>Rostraria cristata</i>	Y		
443.	40426 <i>Rytidosperma occidentale</i>			
444.	616 <i>Sorghum bicolor</i> (Grain Sorghum)	Y		
445.	624 <i>Spinifex hirsutus</i> (Hairy Spinifex)			
446.	625 <i>Spinifex longifolius</i> (Beach Spinifex)			
447.	635 <i>Sporobolus virginicus</i> (Marine Couch)			
448.	636 <i>Stenotaphrum secundatum</i> (Buffalo Grass)	Y		
449.	11137 <i>Vulpia fasciculata</i>	Y		
450.	11018 <i>Vulpia muralis</i>	Y		
451.	724 <i>Vulpia myuros</i> (Rat's Tail Fescue)	Y		
452.	12052 <i>Vulpia myuros</i> forma <i>megalura</i>	Y		

Polygalaceae

453.	4552 <i>Comesperma confertum</i>			
454.	4555 <i>Comesperma integerrimum</i>			

Polydaceae

455.	27220 <i>Rhodopeltis australis</i>			
456.	27221 <i>Rhodopeltis borealis</i>			

Polyphysaceae

457.	48409 <i>Acetabularia caliculus</i>			
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Portulacaceae

458.	2884 <i>Portulaca oleracea</i> (Purslane, Wakati)			
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Posidoniaceae

459.	123 <i>Posidonia australis</i> (Fibreball Weed)			
460.	105 <i>Posidonia coriacea</i>			

Potamogetonaceae

461.	48620 <i>Althenia preissii</i>			
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Pottiaceae

462.	36219 <i>Pseudocrossidium hornschurchianum</i>			
463.	32438 <i>Syntrichia pagorum</i>			
464.	32455 <i>Weissia controversa</i>			

Primulaceae

465.	36375 <i>Lysimachia arvensis</i> (Pimpernel)	Y		
466.	6484 <i>Samolus repens</i> (Creeping Brookweed)			

Ranunculaceae

467.	10804 <i>Clematis linearifolia</i>			
468.	2935 <i>Ranunculus pumilio</i> (Smallflower Buttercup)			
469.	11831 <i>Ranunculus pumilio</i> var. <i>politus</i>			

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Resedaceae				
470.	3083 <i>Reseda alba</i> (White Mingnonette)	Y		
471.	3085 <i>Reseda luteola</i> (Wild Mingnonette)	Y		
Rhamnaceae				
472.	4822 <i>Rhamnus alaternus</i> (Buckthorn)	Y		
473.	4828 <i>Spyridium globulosum</i> (Basket Bush)			
Rhodomelaceae				
474.	26440 <i>Acanthophora dendroides</i>			
475.	26454 <i>Amansia serrata</i>			
476.	26762 <i>Dictyomenia sonderi</i>			
477.	26793 <i>Ditria expleta</i>			
478.	26811 <i>Endosiphonia spinulosa</i>			
479.	26922 <i>Herposiphonia versicolor</i>			
480.	26945 <i>Holotrichia comosa</i>			
481.	26995 <i>Kuetzingia canaliculata</i>			
482.	26998 <i>Laurencia brongniartii</i>			
483.	48408 <i>Laurencia dendroidea</i>			
484.	27000 <i>Laurencia elata</i>			
485.	27001 <i>Laurencia filiformis</i>			
486.	27002 <i>Laurencia forsteri</i>			
487.	27018 <i>Leveillea jungermannioides</i>			
488.	27100 <i>Neurymenia fraxinifolia</i>			
489.	27162 <i>Pollexfenia pedicellata</i>			
490.	27170 <i>Polysiphonia australiensis</i>			
491.	29621 <i>Polysiphonia forfex</i>			
492.	27179 <i>Polysiphonia sertularioides</i>			
493.	27190 <i>Protokuetzingia australasica</i>			
494.	27335 <i>Tolypocladia calodictyon</i>			
495.	27336 <i>Tolypocladia glomerulata</i>			
496.	27360 <i>Vidalia spiralis</i>			
Rhodymeniaceae				
497.	26516 <i>Botryocladia leptopoda</i>			
498.	26518 <i>Botryocladia sonderi</i>			
499.	26614 <i>Chamaebotrys boergeresii</i>			Y
500.	26685 <i>Coelarthrum cliftonii</i>			
501.	26686 <i>Coelarthrum opuntia</i>			
502.	26864 <i>Gloiosaccion brownii</i>			
503.	48568 <i>Halopeltis australis</i>			
Rubiaceae				
504.	7323 <i>Galium murale</i> (Small Goosegrass)	Y		
Ruppiaceae				
505.	116 <i>Ruppia polycarpa</i>			
506.	117 <i>Ruppia tuberosa</i>			
Rutaceae				
507.	4403 <i>Boronia alata</i> (Winged Boronia)			
508.	4454 <i>Diplolaena dampieri</i> (Southern Diplolaena)			
Sapindaceae				
509.	4754 <i>Dodonaea aptera</i> (Coast Hop-bush)			
Sarcomeniaceae				
510.	27229 <i>Sarcomenia delesserioides</i>			
Schizymeniaceae				
511.	27144 <i>Platoma cyclocolpum</i>			
Scinaiaceae				
512.	27269 <i>Scinaia borealis</i>			
513.	27270 <i>Scinaia tsinglanensis</i>			
Scrophulariaceae				
514.	7054 <i>Dischisma arenarium</i>	Y		
515.	7215 <i>Eremophila glabra</i> (Tar Bush)			
516.	17175 <i>Eremophila glabra</i> subsp. <i>albicans</i>			
517.	7289 <i>Myoporum caprarioides</i> (Slender Myoporum)			
518.	7291 <i>Myoporum insulare</i> (Blueberry Tree, boobialla)			
Sebdeniaceae				
519.	27274 <i>Sebdenia flabellata</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
Siphonocladaceae				
520.	26769 <i>Dictyosphaeria cavernosa</i>			
521.	26770 <i>Dictyosphaeria sericea</i>			
522.	26771 <i>Dictyosphaeria versluysii</i>			
523.	27280 <i>Siphonocladus tropicus</i>			
Solanaceae				
524.	6968 <i>Lycium ferocissimum (African Boxthorn)</i>	Y		
525.	6974 <i>Nicotiana glauca (Tree Tobacco)</i>	Y		
526.	47173 <i>Solanum lycopersicum (Tomato)</i>	Y		
527.	7022 <i>Solanum nigrum (Black Berry Nightshade)</i>	Y		
528.	7037 <i>Solanum symonii</i>			
Solieriaceae				
529.	48503 <i>Betaphycus speciosus</i>			
530.	27281 <i>Soliera robusta</i>			
Spongitaceae				
531.	27098 <i>Neogoniolithon brassica-florida</i>			
Stylidiaceae				
532.	30278 <i>Stylidium androsaceum</i>			
Tamaricaceae				
533.	15741 <i>Tamarix aphylla (Athel Tree)</i>	Y		
Typhaceae				
534.	99 <i>Typha orientalis (Bulrush, Cumbungi)</i>			
Udoteaceae				
535.	26528 <i>Callipsygma wilsonis</i>			Y
536.	26626 <i>Chlorodesmis baculifera</i>			Y
537.	27214 <i>Rhipiliopsis multiplex</i>			Y
538.	27215 <i>Rhipiliopsis peltata</i>			
Ulvaceae				
539.	35260 <i>Ulva compressa</i>			
540.	27352 <i>Ulva lactuca</i>			
541.	27354 <i>Ulva rigida</i>			
Urticaceae				
542.	12670 <i>Parietaria cardiostegia</i>			
543.	1762 <i>Parietaria debilis (Pellitory)</i>			
544.	1767 <i>Urtica urens (Small Nettle)</i>	Y		
Valoniaceae				
545.	27356 <i>Valonia macrophysa</i>			
Wrangeliaceae				
546.	26886 <i>Griffithsia teges</i>			
547.	35863 <i>Haloplegma duperreyi</i>			
548.	26900 <i>Haloplegma preissii</i>			
549.	27326 <i>Tanakaella itonoi</i>			
550.	27368 <i>Wrangelia plumosa</i>			
Zygophyllaceae				
551.	48887 <i>Roepera billardierei</i>			
552.	48901 <i>Roepera similis</i>			

Conservation Codes
T - 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

¹ For NatureMap's purposes, species flagged as endemic are those whose records are wholly contained within the search area. Note that only those records complying with the search criterion are included in the calculation. For example, if you limit records to those from a specific datasource, only records from that datasource are used to determine if a species is restricted to the query area.

Appendix B

PMST



EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 29-Mar-2022

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar)	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	1
Listed Threatened Species:	43
Listed Migratory Species:	67

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <http://www.environment.gov.au/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	101
Whales and Other Cetaceans:	12
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	1
Regional Forest Agreements:	None
Nationally Important Wetlands:	1
EPBC Act Referrals:	4
Key Ecological Features (Marine):	None
Biologically Important Areas:	14
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Listed Threatened Ecological Communities

[\[Resource Information \]](#)

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Banksia Woodlands of the Swan Coastal Plain ecological community	Endangered	Community may occur within area	In feature area

Listed Threatened Species

[\[Resource Information \]](#)

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.

Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Anous tenuirostris melanops			
Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area	In feature area
Calidris canutus			
Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area	In feature area
Calidris ferruginea			
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Calidris tenuirostris			
Great Knot [862]	Critically Endangered	Roosting known to occur within area	In feature area
Charadrius leschenaultii			
Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
Charadrius mongolus			
Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area	In feature area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat may occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit [86432]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In feature area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area	In feature area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
FISH			
Thunnus maccoyii Southern Bluefin Tuna [69402]	Conservation Dependent	Species or species habitat likely to occur within area	In feature area
INSECT			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Hesperocolletes douglasi Douglas' Broad-headed Bee, Rottnest Bee [66734]	Critically Endangered	Species or species habitat may occur within area	In feature area
MAMMAL			
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known	In feature area to occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Breeding known to occur within area	In feature area
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat likely to occur within area	In feature area
Setonix brachyurus Quokka [229]	Vulnerable	Species or species habitat known to occur within area	In feature area
PLANT			
Diuris micrantha Dwarf Bee-orchid [55082]	Vulnerable	Species or species habitat may occur within area	In feature area
REPTILE			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In feature area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
SHARK			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Carcharias taurus (west coast population) Grey Nurse Shark (west coast population) [68752]	Vulnerable	Species or species habitat known to occur within area	In feature area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In feature area
Galeorhinus galeus School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453]	Conservation Dependent	Species or species habitat may occur within area	In buffer area only
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area	In feature area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In feature area
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area	In feature area

Listed Migratory Species [[Resource Information](#)]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area	In feature area
Ardeenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat likely to occur within area	In feature area
Ardeenna pacifica Wedge-tailed Shearwater [84292]		Breeding known to occur within area	In feature area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area	In feature area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Hydroprogne caspia Caspian Tern [808]		Breeding known to occur within area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In feature area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area	In feature area
Onychoprion anaethetus Bridled Tern [82845]		Breeding known to occur within area	In feature area
Phaethon rubricauda Red-tailed Tropicbird [994]		Breeding known to occur within area	In feature area
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Sterna dougallii Roseate Tern [817]		Breeding known to occur within area	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Migratory Marine Species			
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area	In feature area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known	In feature area to occur within area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area	In feature area
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area	In feature area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In feature area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In feature area
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Breeding known to occur within area	In feature area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area	In feature area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area	In feature area
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat known to occur within area	In feature area
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat likely to occur within area	In feature area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area	In feature area
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area	In feature area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In feature area

Migratory Terrestrial Species

Scientific Name	Threatened Category	Presence Text	Buffer Status
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Arenaria interpres Ruddy Turnstone [872]		Roosting known to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Roosting known to occur within area	In feature area
Calidris alba Sanderling [875]		Roosting known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area	In feature area
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area	In feature area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area	In feature area
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area	In feature area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area	In feature area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area	In feature area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area
Limosa limosa Black-tailed Godwit [845]		Roosting known to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area	In feature area
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area	In feature area
Pandion haliaetus Osprey [952]		Breeding known to occur within area	In feature area
Phalaropus lobatus Red-necked Phalarope [838]		Roosting known to occur within area	In feature area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area	In feature area
Pluvialis squatarola Grey Plover [865]		Roosting known to occur within area	In feature area
Thalasseus bergii Greater Crested Tern [83000]		Breeding known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Tringa brevipes Grey-tailed Tattler [851]		Roosting known to occur within area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area	In feature area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area	In feature area
Tringa totanus Common Redshank, Redshank [835]		Roosting known to occur within area	In feature area
Xenus cinereus Terek Sandpiper [59300]		Roosting known to occur within area	In feature area

Other Matters Protected by the EPBC Act

Listed Marine Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area	In feature area
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area	In feature area
Ardenna carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat likely to occur within area	In feature area
Ardenna pacifica as Puffinus pacificus Wedge-tailed Shearwater [84292]		Breeding known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Arenaria interpres Ruddy Turnstone [872]		Roosting known to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Roosting known to occur within area	In feature area
Calidris alba Sanderling [875]		Roosting known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area overfly marine area	In feature area
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area overfly marine area	In feature area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area overfly marine area	In feature area
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area overfly marine area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Charadrius ruficapillus Red-capped Plover [881]		Roosting known to occur within area overfly marine area	In feature area
Chroicocephalus novaehollandiae as Larus novaehollandiae Silver Gull [82326]		Breeding known to occur within area	In feature area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area	In feature area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat may occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area overfly marine area	In feature area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat may occur within area	In feature area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Roosting known to occur within area overfly marine area	In feature area
Hydroprogne caspia as Sterna caspia Caspian Tern [808]		Breeding known to occur within area	In feature area
Larus pacificus Pacific Gull [811]		Breeding known to occur within area	In feature area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area
Limosa limosa Black-tailed Godwit [845]		Roosting known to occur within area overfly marine area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In feature area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area	In feature area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area overfly marine area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area overfly marine area	In feature area
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area	In feature area
Onychoprion anaethetus as Sterna anaethetus Bridled Tern [82845]		Breeding known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Onychoprion fuscatus as Sterna fuscata Sooty Tern [90682]		Breeding known to occur within area	In feature area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area	In feature area
Pandion haliaetus Osprey [952]		Breeding known to occur within area	In feature area
Phaethon rubricauda Red-tailed Tropicbird [994]		Breeding known to occur within area	In feature area
Phalaropus lobatus Red-necked Phalarope [838]		Roosting known to occur within area	In feature area
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area	In feature area
Pluvialis squatarola Grey Plover [865]		Roosting known to occur within area overfly marine area	In feature area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Puffinus assimilis Little Shearwater [59363]		Breeding known to occur within area	In feature area
Recurvirostra novaehollandiae Red-necked Avocet [871]		Roosting known to occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Stercorarius skua as Catharacta skua Great Skua [823]		Species or species habitat may occur within area	In buffer area only
Sterna dougallii Roseate Tern [817]		Breeding known to occur within area	In feature area
Sternula nereis as Sterna nereis Fairy Tern [82949]		Breeding known to occur within area	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalasseus bergii as Sterna bergii Greater Crested Tern [83000]		Breeding known to occur within area	In feature area
Thinornis cucullatus as Thinornis rubricollis Hooded Dotterel, Hooded Plover [87735]		Species or species habitat known to occur within area overfly marine area	In feature area
Tringa brevipes as Heteroscelus brevipes Grey-tailed Tattler [851]		Roosting known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area overfly marine area	In feature area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area overfly marine area	In feature area
Tringa totanus Common Redshank, Redshank [835]		Roosting known to occur within area overfly marine area	In feature area
Xenus cinereus Terek Sandpiper [59300]		Roosting known to occur within area overfly marine area	In feature area
Fish			
Acentronura australe Southern Pygmy Pipehorse [66185]		Species or species habitat may occur within area	In feature area
Campichthys galei Gale's Pipefish [66191]		Species or species habitat may occur within area	In feature area
Choeroichthys suillus Pig-snouted Pipefish [66198]		Species or species habitat may occur within area	In buffer area only
Halicampus brocki Brock's Pipefish [66219]		Species or species habitat may occur within area	In buffer area only
Heraldia nocturna Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area	In feature area
Hippocampus angustus Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area	In feature area
Hippocampus breviceps Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Hippocampus subelongatus West Australian Seahorse [66722]		Species or species habitat may occur within area	In feature area
Histiogamphelus cristatus Rhino Pipefish, Macleay's Crested Pipefish, Ring-back Pipefish [66243]		Species or species habitat may occur within area	In feature area
Lissocampus caudalis Australian Smooth Pipefish, Smooth Pipefish [66249]		Species or species habitat may occur within area	In feature area
Lissocampus fatiloquus Prophet's Pipefish [66250]		Species or species habitat may occur within area	In feature area
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area	In feature area
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area	In feature area
Mitotichthys meraculus Western Crested Pipefish [66259]		Species or species habitat may occur within area	In feature area
Nannocampus subosseus Bonyhead Pipefish, Bony-headed Pipefish [66264]		Species or species habitat may occur within area	In feature area
Phycodurus eques Leafy Seadragon [66267]		Species or species habitat may occur within area	In feature area
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area	In feature area
Pugnaso curtirostris Pugnose Pipefish, Pug-nosed Pipefish [66269]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area	In feature area
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area	In feature area
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area	In feature area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area	In buffer area only
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area	In feature area
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area	In feature area
Vanacampus phillipi Port Phillip Pipefish [66284]		Species or species habitat may occur within area	In feature area
Vanacampus poecilolaemus Longsnout Pipefish, Australian Longsnout Pipefish, Long-snouted Pipefish [66285]		Species or species habitat may occur within area	In feature area
Mammal			
Arctocephalus forsteri Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area	In feature area
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat likely to occur within area	In feature area
Reptile			
Aipysurus pooleorum Shark Bay Seasnake [66061]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In feature area
Disteira kingii Spectacled Seasnake [1123]		Species or species habitat may occur within area	In feature area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Pelamis platurus Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area	In feature area

Whales and Other Cetaceans [[Resource Information](#)]

Current Scientific Name	Status	Type of Presence	Buffer Status
Mammal			
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area	In feature area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area	In feature area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area	In feature area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area	In feature area

Current Scientific Name	Status	Type of Presence	Buffer Status
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area	In feature area
Eubalaena australis Southern Right Whale [40]	Endangered	Breeding known to occur within area	In feature area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area	In feature area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area	In feature area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area	In feature area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area	In feature area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area	In feature area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area	In feature area

Extra Information

State and Territory Reserves			[Resource Information]
Protected Area Name	Reserve Type	State	Buffer Status
Rottnest Island	State Reserve	WA	In feature area

Nationally Important Wetlands			[Resource Information]
Wetland Name	State	Buffer Status	
Rottnest Island Lakes	WA	In feature area	

EPBC Act Referrals					[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status	
Not controlled action					

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed	In feature area
Rottnest Lodge Redevelopment	2019/8565	Not Controlled Action	Completed	In buffer area only
Seismic Survey, Bremer Basin, Mentelle Basin and Zeewyck Sub-basin	2004/1700	Not Controlled Action	Completed	In feature area
Not controlled action (particular manner)				
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only

Biologically Important Areas

Scientific Name	Behaviour	Presence	Buffer Status
Seabirds			
Ardenna carneipes Flesh-footed Shearwater [82404]	Aggregation	Known to occur	In feature area
Ardenna pacifica Wedge-tailed Shearwater [84292]	Foraging (in high numbers)	Known to occur	In feature area
Eudyptula minor Little Penguin [1085]	Foraging (provisioning young)	Known to occur	In feature area
Hydroprogne caspia Caspian Tern [808]	Foraging (provisioning young)	Known to occur	In feature area
Larus pacificus Pacific Gull [811]	Foraging (in high numbers)	Former Range	In feature area
Onychoprion anaethetus Bridled Tern [82845]	Foraging (in high numbers)	Known to occur	In feature area
Puffinus assimilis tunneyi Little Shearwater [59363]	Foraging (in high numbers)	Known to occur	In feature area

Scientific Name	Behaviour	Presence	Buffer Status
Sterna dougalli Roseate Tern [817]	Foraging	Known to occur	In feature area
Sternula nereis Fairy Tern [82949]	Foraging (in high numbers)	Known to occur	In feature area
Seals			
Neophoca cinerea Australian Sea Lion [22]	Foraging (male)	Likely to occur	In feature area
Whales			
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Distribution	Known to occur	In feature area
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Migration	Known to occur	In buffer area only
Eubalaena australis Southern Right Whale [40]	Calving buffer	Known to occur	In feature area
Megaptera novaeangliae Humpback Whale [38]	Migration (north and south)	Known to occur	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact Us](#) page.

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