



# Shire of Dandaragan: Sandy Cape Road SLK 6.03 to 6.90 – Flora, Vegetation and Fauna Desktop Study

Version 1



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## SUMMARY

The Shire of Dandaragan (the Shire) plans to widen a section of Sandy Cape Road from straight line kilometre (SLK) 6.03 to SLK 6.90 at Sandy Cape north of Jurien Bay, Western Australia (WA). The works will involve realigning and widening the road at two almost right-angle bends in the northern section and widening the road to the south of the bends in order to be able to carry out the road works. For safety, and emergency vehicle access, the bends area needs to be cleared to a 20 metre (m) width and the southern section to 15 m. The stretch of road is referred to as the Project Area in this report. The Project Area covers approximately 1.20 ha; 0.58 ha will need to be cleared for the proposed upgrade, 0.62 ha is already cleared for the existing road, and approximately 0.11 ha of the already cleared area will be rehabilitated once the bends have been realigned.

Maia Environmental Consultancy Pty Ltd (Maia) and Western Wildlife were engaged to carry out a desktop study for the Sandy Cape Road Project Area. The Project Area is located in the Swan Coastal Plain IBRA bioregion and is mapped as two pre-European vegetation system associations (VSAs) – 129 and 1026.1. Currently more than 92% of the two VSAs remains in the bioregion, subregion and shire and more than 49% of both is protected for conservation in the bioregion, subregion and shire.

The Project Area is not located in any DBCA Legislated Lands and Waters, DBCA Lands of Interest or in an Environmentally Sensitive Area. It is in the Swan Coastal Plain Schedule 1 area and in an EPA Redbook Recommended Conservation Reserves 1976 - 1991 area. There are no Ramsar sites, wetlands listed in the Directory of Important Wetlands in Australia, geomorphic wetlands or any other watercourses or wetlands in or close to the Project Area.

No threatened flora species protected by federal or WA laws have been located within 10 km of the Project Area.

Five priority species could potentially occur in the Project Area based on the habitats in which they have been recorded: *Beyeria cinerea* subsp. *cinerea*, *Calandrinia oraria*, *Stylidium maritimum*, *Thryptomene* sp. Lancelin (M.E. Trudgen 14000) (all P3) and *Grevillea olivacea* (P4). All five species have records in lands protected for conservation and none of them has records restricted to the local area (i.e. within 10 km of the Project Area) or to the Perth subregion of the Swan Coastal Plain. The number of FloraBase records for the five species ranges from 11 (*Calandrinia oraria*) to 51 (*Beyeria cinerea* subsp. *cinerea*) and the number of records in protected areas from 1 (*Grevillea olivacea* P4) to 42 (*Stylidium maritimum* P3). Given the number of records and distribution of these five priority species, the number of records in lands protected for conservation, their Priority 3 or Priority 4 rank and the small and linear area proposed to be cleared along Sandy Cape Road, the vegetation of the Project Area would not be necessary for the continued existence of these species if they were to occur there.

Five threatened fauna species protected by the EPBC Act and BC Act have been located within 10 km of the Project Area - *Calyptorhynchus latirostris* (Carnaby's Black Cockatoo (CBC)), *Leipoa ocellata* (Malleefowl), *Macroderma gigas* (Ghost Bat), *Neophoca cinerea* (Australian Sea-lion) and *Sterna nereis* subsp. *nereis* (Fairy Tern). Based on the pre-European vegetation associations mapped in the Project Area, it is unlikely the Project Area is a significant habitat for these five threatened fauna species.

No Specially Protected Fauna species have been located previously within 10 km of the Project Area. Fourteen migratory fauna (protected under international agreement) have been located within 10 km, and they are largely associated with beaches, lakes and offshore islands, which do not occur within the Project Area. Two priority fauna species have been located within 10 km of the Project Area – *Hemisaga vepreculae* (Thorny Bush Katydid (Moora)) (P2) and *Thinornis rubricollis* (Hooded Plover) (P4). The Thorny Bush Katydid may possibly occur in the Project Area, however, the certainty is low as this species is largely unknown. The Hooded Plover occurs mainly on beaches and inland salt lakes, breeding high on the shore or in adjacent dunes and the Project Area is unlikely to be important habitat for this species.

No threatened ecological communities protected by federal or state law occur in or close to the Project Area and the Project Area does not occur within the boundaries of any currently known priority ecological community.

The Sandy Cape Road Project Area lies in an extensive and largely uncleared remnant of vegetation and approximately 85% of the vegetation cover in the local area remains.

# Shire of Dandaragan: Sandy Cape Road SLK 6.03 to 6.90 – Flora, Vegetation and Fauna Desktop Study

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## 1 INTRODUCTION

The Shire of Dandaragan (the Shire) plans to widen a section of Sandy Cape Road from straight line kilometre (SLK) 6.03 to SLK 6.90 north of Jurien Bay, Western Australia (WA). The works will involve realigning and widening the road at two almost right-angle bends in the northern section and widening the road to the south in order to be able to carry out the works proposed on the northern section. For safety, and emergency vehicle access, the bends area needs to be cleared to a 20 metre (m) width and the southern section needs to be cleared to a 15 m width. The section of road is referred to as the Project Area in this report and it is shown in **Map 1, Section 7**.

Maia Environmental Consultancy Pty Ltd (Maia) and Western Wildlife were engaged to carry out a desktop study for the Sandy Cape Road Project Area. The Project Area covers approximately 1.20 hectares (ha); 0.62 ha is already cleared for the existing road, 0.58 ha will need to be cleared for the proposed works, and approximately 0.11 ha of the old road alignment will be rehabilitated.

This desktop study includes background information relevant to a native vegetation clearing permit (NVCP) application, database search results and a table addressing the 10 clearing principles. It has been compiled using information sourced from readily available databases, literature and mapping files. It provides preliminary information on the conservation significance of the flora and vegetation of the Project Area and surrounds and selected other factors that might affect its significance.

## 2 BACKGROUND INFORMATION

Information on the bioregion, sub-region, soil landscape units, geology, pre-European vegetation associations, protected and significant areas, watercourses and wetlands and *Phytophthora* Dieback is summarised in **Table 1**.

**Table 1: Background Information**

Background information on the Project Area	
IBRA bioregion and subregion  (Map 2A, Section 7)	Swan Coastal Plain bioregion and Perth subregion.  Source: Department of the Environment and Energy (DotEE) (2012).
Geology  (Map 2B, Section 7)	The surface geology of the Project Area is mapped as one unit: <ul style="list-style-type: none"> <li>Beach sand, sand dunes, coastal dunes, beaches, and beach ridges; calcareous and siliceous, locally shelly and/or cemented (beach rock); locally reworked (Qdc).</li> </ul> Source: Stewart <i>et al.</i> (2008).

Background information on the Project Area																																																												
Soil landscape mapping units  (Map 2C, Section 7)	<p>The soil landscapes of the Project Area comprise three Quindalup units:</p> <ul style="list-style-type: none"> <li>• Foredune complex adjacent to coast and beach and parabolic dune system with trailing arms (221Qu_4).</li> <li>• Unstable active dunes (221Qu_5).</li> <li>• Flat coastal plain; shallow grey calcareous sands over calcrete (over sands, shells etc) (221Qu_6).</li> </ul> <p>Source: Department of Agriculture and Food Western Australia (DAFWA) (2014).</p>																																																											
Pre-European vegetation associations and system associations  (Map 2D, Section 7)	<p>The Environmental Protection Authority's (EPA) broad principles for the protection of native terrestrial vegetation and flora indicate that biodiversity should be maintained at sustainable levels. This generally means that ecological communities should be retained at an overall level of at least 30% of the original extent of the ecological community in each region (EPA, 2000). This level is the threshold level below which species loss appears to accelerate exponentially at an ecosystem level. A level of 10% of the original extent is regarded as being a level representing "endangered" (EPA, 2000).</p> <p>The Project Area lies in two pre-European vegetation associations (VA) and vegetation system associations (VSA) mapped in the Swan Coastal Plain (Department of Primary Industries and Rural Development (DPIRD), 2019a):</p> <ul style="list-style-type: none"> <li>• VA 129; VSA 129 (Bare areas; dune sand).</li> <li>• VA 1026; VSA 1026.1 (Mosaic: Shrublands; <i>Acacia rostellifera</i>, <i>A. cyclops</i> (in the south) &amp; <i>Melaleuca cardiophylla</i> (in the north) thicket / Shrublands; <i>Acacia lasiocarpa</i> &amp; <i>Melaleuca acerosa</i> heath).</li> </ul> <p>The pre-European extent of the system associations in the Swan Coastal Plain bioregion, Perth subregion and the Shire of Dandaragan along with the current extent, the percentage remaining, and the current extent protected for conservation in the bioregion, subregion and shire are listed below:</p> <table border="1"> <thead> <tr> <th rowspan="2">VSA</th><th colspan="3">Pre-European Extent (ha) of VSA in:</th><th colspan="3">Current Extent (ha) of VSA in:</th></tr> <tr> <th>SCP</th><th>Perth</th><th>SofD</th><th>SCP</th><th>Perth</th><th>SofD</th></tr> </thead> <tbody> <tr> <td>129</td><td>10,346.37</td><td>10,346.37</td><td>7,929.01</td><td>9,802.98</td><td>9,802.98</td><td>7,782.97</td></tr> <tr> <td>1026.1</td><td>58,393.39</td><td>58,393.39</td><td>52,458.27</td><td>54,795.80</td><td>54,795.80</td><td>48,697.11</td></tr> </tbody> </table> <table border="1"> <thead> <tr> <th rowspan="2">VSA</th><th colspan="3">Remaining (%) of VSA in:</th><th colspan="3">Current Extent of VSA Protected (IUCN 1-4) for Conservation (proportion of pre-European extent) (%) in:</th></tr> <tr> <th>SCP</th><th>Perth</th><th>SofD</th><th>SCP</th><th>Perth</th><th>SofD</th></tr> </thead> <tbody> <tr> <td>129</td><td>94.75</td><td>94.75</td><td>98.16</td><td>49.56</td><td>49.56</td><td>62.8</td></tr> <tr> <td>1026.1</td><td>93.84</td><td>93.84</td><td>92.83</td><td>51.82</td><td>51.82</td><td>51.37</td></tr> </tbody> </table> <p>Note: SCP = Swan Coastal Plain bioregion, Perth = Perth subregion, SofD = Shire of Dandaragan. Data source: Government of Western Australia (GoWA) (2019).</p> <p>Currently, more than 92% of both VSAs remains and more than 49% of their remaining extent is protected for conservation (GoWA, 2019).</p>						VSA	Pre-European Extent (ha) of VSA in:			Current Extent (ha) of VSA in:			SCP	Perth	SofD	SCP	Perth	SofD	129	10,346.37	10,346.37	7,929.01	9,802.98	9,802.98	7,782.97	1026.1	58,393.39	58,393.39	52,458.27	54,795.80	54,795.80	48,697.11	VSA	Remaining (%) of VSA in:			Current Extent of VSA Protected (IUCN 1-4) for Conservation (proportion of pre-European extent) (%) in:			SCP	Perth	SofD	SCP	Perth	SofD	129	94.75	94.75	98.16	49.56	49.56	62.8	1026.1	93.84	93.84	92.83	51.82	51.82	51.37
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Background information on the Project Area	
Protected and significant areas (Map 3, Section 7)	<ul style="list-style-type: none"> <li>The Project Area is not in DBCA Legislated Lands and Waters (Department of Biodiversity, Conservation and Attractions (DBCA), 2019a). The Project Area lies between Jurien Bay Marine Park (approximately 0.1 km west of the Project Area) and Beekeepers Nature Reserve (approximately 0.7 km east of the Project Area).</li> <li>None of the Project Area is located in a DBCA Lands of Interest area (DBCA, 2017a). The closest is Crown Freehold (Department Interest) 2709/953, which is approximately 19.0 km east of the Project Area.</li> <li>None of the Survey Area is in an Environmentally Sensitive Area (Department of Water, Environment and Regulation (DWER), 2017a). The closest is located approximately 2.2 km south of the Project Area.</li> <li>The Project Area lies in a Schedule 1 Area – Swan Coastal Plain (DWER, 2017b).</li> <li>The Project Area lies within an EPA Redbook Recommended Conservation Reserves 1976-1991 area (West Coast, Northern Sandheaths; DBCA, 2017b).</li> </ul>
Watercourses and wetlands (Map 4, Section 7)	<ul style="list-style-type: none"> <li>The Project Area is not in a Ramsar Site (DBCA, 2017c).</li> <li>The Project Area is not in a Directory of Important Wetlands in Australia (DIWA) wetland (DBCA, 2018a).</li> <li>No watercourse areas and lines, lakes, waterholes, water points and springs cross or occur within the Project Area (Geoscience Australia, 2006).</li> <li>No Geomorphic Wetlands are mapped within the Project Area (Cervantes Coastal (DBCA, 2017d) and Cervantes Eneabba (DBCA, 2017e)).</li> </ul>
<i>Phytophthora</i> dieback	<p>Project Dieback has created a publicly available map showing locations of soils samples with a positive reading for <i>Phytophthora cinnamomi</i> in the south-west of WA (Project Dieback, 2014a). None of the vegetation associations of the Project Area are rated as having moderate or high susceptibility. No known positive <i>Phytophthora</i> species points are located within the Project Area (as of 30 June 2018) (Project Dieback, 2014a).</p> <p>Priority Protection Areas (PPAs) are areas representing significant biodiverse ecosystems and communities vulnerable to <i>Phytophthora</i> Dieback in the south-west of WA and identified for state level <i>Phytophthora</i> Dieback management and investment (Project Dieback, 2014b).</p> <p>No PPAs are known to occur in the Project Area (Project Dieback, 2014a).</p>

### 3 DATABASE SEARCH RESULTS

Appendix 2 provides information on conservation significance of flora, fauna and vegetation and references for the relevant literature and current listings.

#### 3.1 Conservation Significant Flora

Searches using the EPBC Act Protected Matters Search Tool (PMST) (DotEE, 2019a) and NatureMap (DBCA, 2007-) were carried out to gather information on conservation significant flora (CSF) species that could potentially occur in the Project Area. A 10 km circle/point search was carried out using the following coordinate - 30° 11' 10" S, 115° 00' 03" E.

## Threatened Flora

The EPBC Act PMST search results listed 12 threatened species for which the species, or species habitat, may, is likely to or is known to occur in the 10 km search area: *Hemiandra gardneri* (known to, Endangered); *Tetratheca nephelioides* (likely to, Critically Endangered); *Paracaleana dixonii* and *Thelymitra stellata* (both likely to, Endangered); *Andersonia gracilis*, *Drakaea elastica*, *Eucalyptus impensa*, *Eucalyptus leprophloia*, *Eucalyptus x balanites*, *Grevillea batrachoides*, *Grevillea humifusa* (all may, Endangered); and, *Anigozanthos viridis* subsp. *terraspectans* (may, Vulnerable) (DotEE, 2019a; search reference PMST 842DBK; **Appendix 1**).

However, none of these threatened flora species have been located within 10 km of the Project Area (DBCA, 2007 ; **Appendix 1**).

Based on habitat information for the 12 species (WAH, 1998-), it is unlikely that they would occur in the Project Area.


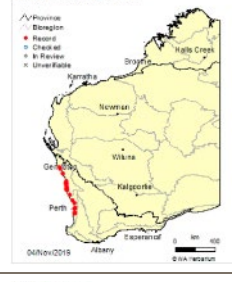
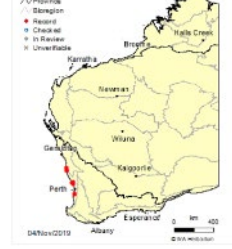
## Priority Flora

Eighteen priority flora species have records within 10 km of the Project Area (DBCA, 2007-; **Appendix 1**): *Eucalyptus angularis*, *Lasiopetalum rutilans*, *Leucopogon plumuliflorus* and *Stenanthemum limitatum* (all P2); *Acacia plicata*, *Beyeria cinerea* subsp. *cinerea*, *Calandrinia oraria*, *Gompholobium gairdnerianum*, *Guichenotia alba*, *Hensmania stoniella*, *Stylidium maritimum* and *Thryptomene* sp. Lancelin (M.E. Trudgen 14000) (all P3); *Banksia tricuspis*, *Diuris recurva*, *Grevillea olivacea*, *Grevillea saccata*, *Thelymitra apiculata* and *Xanthosia tomentosa* (all P4). None of the known locations are in the Project Area.

Seven of these 18 species have records 5 km or less than from the Project Area: *Eucalyptus angularis* (P2), *Beyeria cinerea* subsp. *cinerea* (P3), *Calandrinia oraria* (P3), *Stylidium maritimum* (P3), *Thryptomene* sp. Lancelin (P3), *Grevillea olivacea* (P4) and *Xanthosia tomentosa* (P4) (**Map 5, Section 7**; the closest *Eucalyptus angularis* record, is not shown as no coordinates available). **Table 2** lists the closest record to the Project Area, the furthest record from the Project Area, the typical habitat, a comment on the likelihood of occurrence, the number of FloraBase and NatureMap records and the number of records in conservation estate for each of these seven priority flora species.





Five of the seven species potentially could occur in the Project Area because their typical habitat is sandy dunes over limestone (**Table 2**) and they have records in the three soil landscape units that occur in the Project Area (221Qu\_4, 221Qu\_5 and 221Qu\_6) and also in either VSA 129 or VSA 1026.1. However, each of the five species has records in protected lands and none of them is restricted to the local area (within 10 km of the Project Area) or to the Perth subregion of the Swan Coastal Plain as their records occur up to approximately 107 km (*Thryptomene* sp. Lancelin (M.E. Trudgen 14000)) to 314 km (*Stylidium maritimum*) from the Project Area.

**Table 2: Priority flora species with records within 10 km of the Project Area**

Species	Priority (P)	Closest record to the Project Area (km) (DBCA, 2007-)	Furthest record from Project Area (max distance between records; DBCA, 2007-)	Distribution*** (WAH, 1998-)	Typical habitat (WAH, 1998-)	Likelihood of occurring in Project Area	Number of FloraBase (DBCA, 2007-) (NatureMap; WAH, 1998-) records	Number of records in conservation estate (where they occur) (DBCA, 2007-, WAH, 1998-)
<i>Eucalyptus angularis</i>	P2	5.0 km SSE	25 km (23 km)		Lateritic breakaways.	Unlikely	1 (2)	0
<i>Beyeria cinerea</i> subsp. <i>cinerea</i>	P3	1.2 km SSE	262 km (487 km)		Sand (grey, light yellow, brown sandy loam) over limestone, rocky ridge, dune slopes, flats and depressions.	Possible	51 (63)	22 (records in: Bold Park, Gnangara-Moore River State Forest, Beekeepers NR)
<i>Calandrinia oraria</i>	P3	4.4 km SSE	263 km (284 km)		Sand dunes. Brown, white, grey sand over limestone. Beach ridge plain.	Possible	11 (11)	2 (records in: Port Kennedy Scientific Park, Beekeepers NR)



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Species	Priority (P)	Closest record to the Project Area (km) (DBCA, 2007-)	Furthest record from Project Area (max distance between records; DBCA, 2007-)	Distribution*** (WAH, 1998-)	Typical habitat (WAH, 1998-)	Likelihood of occurring in Project Area	Number of FloraBase (DBCA, 2007-) (NatureMap; WAH, 1998-) records	Number of records in conservation estate (where they occur) (DBCA, 2007-, WAH, 1998-)
<i>Stylidium maritimum</i>	P3	1.2 km SSE	314 km (369 km)		Sand over limestone. Dune slopes and flats. Coastal heath and shrubland, open Banksia woodland.	Possible	43 (89)	42 (records in: Bold Park, Yalgorup NP, Ngarara-Moore River State Forest, Beekeepers NR, Nambung NP, Nilgen NR, Wanagarren NR, Yanchep NP)
<i>Thryptomene</i> sp. Lancelin (M.E. Trudgen 14000)	P3	3.3 km SE	107 km (194 km)		Calcareous sand.	Possible	28 (28)	3 (records in: Nilgen NR, Stockyard Gully Reserve and Beekeepers NR)
<i>Grevillea olivacea</i>	P4	4.4 km SSE	227 km (394 km)		White or grey sand. Coastal dunes.	Possible	34 (46)	1 (record in: Lesueur NP)
<i>Xanthosia tomentosa</i>	P4	3.8 km NE	299 km (324 km)		Lateritic gravelly soils.	Unlikely	49 (85)	30 (records in: Lupton CP, Coomallo NR, Lesueur NP, South Eneabba NR)

Note: P = priority, SSE = south-southeast, SE = southeast, NE = northeast. \* = distances approximated using NatureMap. NR = Nature Reserve, CP = Conservation Park, NP = National Park. \*\* not including corrected records. \*\*\*Images used with the permission of the Western Australian Herbarium, Department of Biodiversity, Conservation and Attractions (<https://florabase.dpaw.wa.gov.au/help/copyright>). Accessed on Wednesday, 6 November 2019.

### 3.2 Conservation Significant Fauna

The EPBC Act Protected Matters Search Tool (DotEE, 2019a) and NatureMap (DBCA, 2007-) were used to gather background information on conservation significant fauna (CSFa) species that could potentially occur in the Project Area. A 10 km circle/point search was carried out using the following central coordinate - 30° 11' 10" S, 115° 00' 03" E. [Note that some of the search area covers the ocean.]

#### Threatened Fauna

Thirty-six threatened fauna species (birds, mammals, reptiles and sharks) protected by the EPBC Act were listed in the PMST search results (**Table 3**). Three of the 36 are listed as Critically Endangered, 11 as Endangered and 22 as Vulnerable. Ten of the 36 species are marine species that would not occur in the Project Area (turtles, sharks and whales; DotEE, 2019a; search reference PMST 842DBK; **Appendix 1**). Fifteen migratory fauna species were also listed in the search results and are included in **Table 3** (migratory marine birds, migratory terrestrial species and migratory wetlands species).

**Table 3: Threatened and Migratory Fauna Species listed in the PMST search results (excluding ocean dwellers)**

Rank	Breeding known to occur within area	Species or species habitat known to occur within area	Species or species habitat likely to occur within area	Species or species habitat may occur within area	Foraging, feeding or related behaviour known to occur within area
CR			<i>Calidris ferruginea</i> (Curlew Sandpiper) <sup>2</sup>	<i>Limosa lapponica menzbieri</i> (Northern Siberian Bar-tailed Godwit), <i>Numenius madagascariensis</i> (Eastern Curlew) <sup>2</sup>	
E		<i>Calidrus canutus</i> (Red Knot) <sup>2</sup>	<i>Calyptorhynchus latirostris</i> (Carnaby's Black Cockatoo), <i>Rostratula australis</i> (Australian Painted Snipe)	<i>Diomedea amsterdamensis</i> (Amsterdam Albatross) <sup>2</sup> , <i>Macronectes giganteus</i> (Southern Giant Petrel) <sup>2</sup> , <i>Parantechinus apicalis</i> (Dibbler)	<i>Diomedea sanfordi</i> (Northern Royal Albatross) <sup>2</sup>
V	<i>Neophoca cinerea</i> (Australian Sea-lion)		<i>Leipoa ocellata</i> (Malleefowl), <i>Dasyurus geoffroyi</i> (Chuditch)	<i>Anous tenuirostris melanops</i> (Australian Lesser Noddy), <i>Limosa lapponica baueri</i> (Bar-tailed Godwit (baueri)), <i>Macronectes halli</i> (Northern Giant Petrel) <sup>2</sup> , <i>Phoebastria fusca</i> (Sooty Albatross) <sup>2</sup> , <i>Pterodroma mollis</i> (Soft-plumaged Petrel), <i>Thalassarche cauta</i> (Shy Albatross) <sup>2</sup> , <i>Thalassarche impavida</i> (Campbell Albatross) <sup>2</sup> , <i>Thalassarche melanophris</i> (Black-browed Albatross) <sup>2</sup>	<i>Diomedea epomophora</i> (Southern Royal Albatross) <sup>2</sup> , <i>Diomedea exulans</i> (Wandering Albatross) <sup>2</sup> , <i>Sternula nereis nereis</i> (Australian Fairy Tern), <i>Thalassarche carteri</i> (Indian Yellow-nosed Albatross) <sup>2</sup> , <i>Thalassarche steadi</i> (White-capped Albatross) <sup>2</sup>
Migratory	<i>Ardenna pacifica</i> (Wedge-tailed Shearwater), <i>Hydroprogone caspia</i> (Caspian Tern), <i>Onychoprion anaethetus</i>	<i>Actitis hypoleucos</i> (Common Sandpiper), <i>Limosa mapponica</i> (Bar-tailed Godwit)	<i>Anous stolidus</i> (Common Noddy), <i>Apus pacificus</i> (Fork-tailed Swift), <i>Tringa nebularia</i> (Common Greenshank)	<i>Motacilla cinerea</i> (Grey Wagtail), <i>Calidris acuminata</i> (Sharp-tailed Shearwater), <i>Calidris melanotos</i> (Pectoral Sandpiper)	<i>Ardenna carneipes</i> (Flesh-footed Shearwater)

Rank	Breeding known to occur within area	Species or species habitat known to occur within area	Species or species habitat likely to occur within area	Species or species habitat may occur within area	Foraging, feeding or related behaviour known to occur within area
	(Bridled Tern), <i>Sterna dougallii</i> (Roseate Tern), <i>Pandion haliaetus</i> (Osprey), <i>Thalasseus bergii</i> (Crested Tern)				

Note: CR = Critically Endangered, E = Endangered, V = Vulnerable. <sup>2</sup> = migratory species that are listed as threatened. Ocean species that would not be located within the Project Area have not been included.

Five threatened fauna species protected by the EPBC Act and BC Act have been located previously within the 10 km radius search area: *Calyptorhynchus latirostris* (Carnaby's Black Cockatoo (CBC)), *Leipoa ocellata* (Malleefowl), *Macroderma gigas* (Ghost Bat), *Neophoca cinerea* (Australian Sea-lion) and *Sterna nereis* subsp. *nereis* (Fairy Tern) (DBCA, 2007-; **Appendix 1**).

#### **Carnaby's Black Cockatoo (*Calyptorhynchus latirostris*)**

CBC nest in large hollows in smooth-barked eucalypts (e.g. Salmon Gum, Wandoo and Marri) in the inland Wheatbelt region and will move to the west and south during non-breeding season (Johnstone and Storr, 1998; DPaW, 2013). No confirmed breeding area for CBC intersects the Project Area (**Map 5, Section 7**) (DBCA, 2018b), and none is likely to occur as tall trees are unlikely to occur in the Project Area.

A section of native vegetation (VSA 1026.1) within the Project Area is identified as requiring investigation for CBC feeding habitat (**Map 6, Section 7**) (DBCA, 2018c). As CBC are attracted to proteaceous heath and woodlands (e.g. *Banksia* species, Jarrah, Marri) and also to pine plantations (DSEWPac, 2012), it is unlikely that CBC foraging areas occur within the area. Should *Banksia sessilis* or similar occur in the area it may provide foraging habitat; however, any impact to this vegetation is not likely to be significant for the species, as the Project Area is far from breeding areas and the total area of vegetation to be impacted is small.

CBC generally roost in tall native or introduced eucalypts or pines in riparian habitats or near permanent water (DSEWPac, 2012) and it is unlikely CBC roosting trees occur within the Project Area.

#### **Malleefowl (*Leipoa ocellata*)**

Malleefowl are largely confined to woodlands of mallee eucalypts on sandy soils (DEC, 2012), shrublands dominated by acacias and woodlands dominated by eucalypts (e.g. Wandoo, Marri, Mallet) (Benshemesh, 2007). Malleefowl may also be found on coastal heath where shrubs produce sufficient leaf litter for use in nest mounds (DEC, 2012). It is thought that Malleefowl were never common in the vicinity of the Project Area, with higher density populations occurring to the east of a line between Kalbarri and Wongan Hills (Abbott, 2008). Since European settlement, this range has contracted further (Abbott 2008, Benshemesh 2007).

While it is possible the Project Area contains habitat suitable for Malleefowl, the nearest known record is 9.6 km north-east of the Project Area (DBCA, 2007-).

### **Ghost Bat (*Macroderma gigas*)**

The Ghost Bat currently occurs across northern Australia, roosting and breeding in caves. Although there is a record 8.6 km south-east of the Project Area (DBCA, 2007-), this is likely to be of subfossil remains. As this species is locally extinct in the region it will not occur in the Project Area.

### **Australian Sea-lion (*Neophoca cinerea*)**

Australian Sea-lions use a wide variety of habitats for breeding sites (Gales *et al.*, 1994) and, during the non-breeding season, for haul-out sites (Campbell, 2005). Onshore habitats used by Australian Sea-lions include exposed islands and reefs, rocky terrain, sandy beaches and vegetated fore dunes and swales. They also use caves and deep cliff overhangs as haul-out sites or breeding habitat (Dennis & Shaughnessy, 1996; 1999). Most colonies occur on islands; however, several small colonies occur on the mainland (DotEE, 2019c).

The closest known record is 7.4 km north-west of the Project Area on Fisherman's Island (DBCA, 2007-). It is unlikely the Project Area is a breeding site or haul-out site for the Australian Sea-lion.

### **Fairy Tern (*Sterna nereis* subsp. *nereis*)**

The Fairy Tern nests on sheltered sandy beaches, spits and banks above the high tide line and below vegetation. The subspecies has been found in embayments of a variety of habitats including offshore, estuarine or lacustrine (lake) islands, wetlands and mainland coastline (Higgins & Davies, 1996; Lindsey, 1986). The bird roosts on beaches at night (Higgins & Davies, 1996).

The Project Area does not lie between the high tide line and vegetation line and no wetlands occur within the Project Area. The nearest known Fairy Tern record is 7.4 km north-west of the Project Area on Fisherman's Island (DBCA, 2007-). It is unlikely that the Project Area would provide a favourable habitat for the Fairy Tern.

## **Migratory Fauna**

Thirty migratory fauna species protected by the EPBC Act and BC Act were listed in the PMST search results for the search area (excluding ocean dwellers) and 15 of the 30 are listed as threatened species (**Table 3**) (DotEE, 2019a; search reference PMST 842DBK, **Appendix 1**).

Fourteen migratory fauna (protected under international agreement) have been located previously within the 10 km search area: *Actitis hypoleucos* (Common Sandpiper), *Arenaria interpres* (Ruddy Turnstone), *Calidris acuminata* (Sharp-tailed Sandpiper), *Calidris alba* (Sanderling), *Calidris ruficollis* (Red-necked Stint), *Hydroprogne caspia* (Caspian Tern), *Limosa lapponica* (Bar-tailed Godwit), *Numenius phaeopus* (Whimbrel), *Pandion cristatus* (Osprey), *Pluvialis squatarola* (Grey Plover), *Sterna anaethetus* subsp. *anaethetus* (Bridled Tern), *Sterna dougallii* subsp. *gracilis* (Roseate Tern), *Thalasseus bergii* (Crested Tern) and *Tringa nebularia* (Common Greenshank, greenshank) (DBCA, 2007-; **Appendix 1**).

Nine of the Migratory fauna listed above are shorebirds such as sandpipers, turnstones, stints, godwits and plovers. Shorebirds may occur as seasonal non-breeding visitors to the sandy beach adjacent to the Project Area. The four species of tern listed may roost on the adjacent beach, foraging in the ocean or in nearby lakes and breeding on offshore islands (Johnstone and Storr 1998). The Osprey forages in the ocean, feeding mainly on fish, and usually nests on offshore islands (Johnstone and Storr 1998). The Project Area is unlikely to be important for any Migratory species.

## **Specially Protected Fauna**

No Specially Protected Fauna species have been located previously within 10 km of the Project Area (DBCA, 2007-; **Appendix 1**).

## Priority Fauna

Two priority fauna species have been located within the 10 km search area – *Hemisaga vepreculae* (Thorny Bush Katydid (Moora)) (P2) and *Thinornis rubricollis* (syn. *Charadrius rubricollis*; Hooded Plover) (P4) (DBCA, 2007-, Appendix 1).

The Thorny Bush Katydid is a green flightless predatory katydid that is endemic to Western Australia (Rentz 2010). Little is known about this species, but as katydids generally occur in shrublands, it possibly occurs in the Project Area. The Hooded Plover forages on beaches and inland salt lakes, nesting on the ground on the upper levels of the beach, or among the adjacent dunes (Garnett *et al.* 2011). As these habitats are absent from the Project Area, the Hooded Plover is not likely to occur.

## 3.3 Ecological Communities

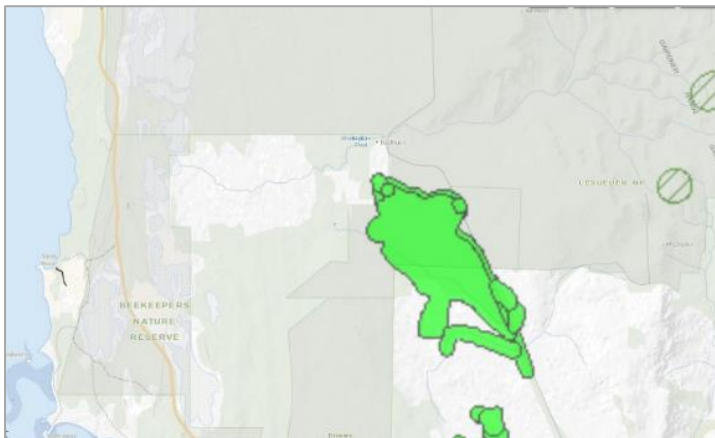
The EPBC Act Protected Matters Search Tool (DotEE, 2019a), Australian Government (2019) and NatureMap (DBCA, 2007-) databases were used to gather information on significant ecological communities that could potentially occur in the Project Area. A 10 km circle/point search was carried out using the following central coordinate - 30° 11' 10" S, 115° 00' 03" E.

### Threatened Ecological Communities

Fifteen threatened ecological communities (TECs) protected by the EPBC Act occur in the SCP bioregion. Two TECs were listed in the PMST search area as 'may occur within the area' – 'Tuart (*Eucalyptus gomphocephala*) Woodlands and Forests of the Swan Coastal Plain ecological community' (Critically Endangered) and 'Banksia Woodlands of the Swan Coastal Plain ecological community' (Endangered) (DotEE, 2019a). However, neither of these TECs are currently known to occur in the Project Area (Australian Government, 2019).

The most recent WA TEC list is correct to June 28, 2018 (DBCA, 2018d); 23 TECs are listed for the Swan Coastal Plain bioregion.

The Project Area (location shown as a black line on **Figure 1**) does not occur in or close to any of the boundaries for currently known TECs (Australian Government, 2019). The closest buffer for a TEC is approximately 10 km east of the Project Area (Australian Government, 2019), and it is around an area of the Banksia Woodlands of the Swan Coastal Plain ecological community that is listed as a TEC federally but as a PEC in WA.



**Figure 1: Current Ecological Community boundaries (green polygons = Threatened, hatched green polygons = Priority) and the Project Area (black line) (Australian Government, 2019)**

### Priority Ecological Communities

The most recent priority ecological communities (PEC) list is dated January 17, 2019 (DBCA, 2019e) and includes 108 PECs listed for the Midwest region.

The Project Area does not occur within the boundaries of a currently known PEC (Australian Government, 2019). The closest PEC to the Project Area is located approximately 19 km to the east of the Project Area (**Figure 1**; Australian Government, 2019).

### Vegetation Condition

Based on aerial imagery vegetation condition in the Project Area is likely to be excellent in the undisturbed areas away from the existing road alignment and very good in areas along the existing road where weeds could be present. The area already cleared for the existing road is Completely Degraded.

## 4 CLEARING PRINCIPLES

Under the *Environmental Protection Act 1986* (EP Act), clearing of native vegetation requires a permit unless its purpose is exempt. Any vegetation clearing requiring a NVCP needs to address 10 clearing principles as part of the permitting process. The 10 clearing principles are addressed with respect to the Project Area in **Table 4**.

**Table 4: Clearing principles and the Project Area**

	Clearing principle	Proposed roadworks – Sandy Cape Road SLK 6.03 km to 6.90 km, Shire of Dandaragan
1	Native vegetation should not be cleared if it comprises a high level of biological diversity.	Not at variance to this principle
		The Project Area does not lie in an area known for its high biological diversity (DBCA, 2007-). The vegetation comprises mixed coastal scrub and/or coastal heath of <i>Melaleuca</i> species and associated species with a mosaic of <i>Acacia</i> species shrubland and associated species (GoWA, 2019).
2	Native vegetation should not be cleared if it comprises the whole or part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.	Unlikely to be at variance to this principle
		<p>Five threatened fauna species have been recorded in the local area (within 10 km of the Project Area): <i>Calyptorhynchus latirostris</i> (Carnaby's Black Cockatoo (CBC)), <i>Leipoa ocellata</i> (Malleefowl), <i>Macroderma gigas</i> (Ghost Bat), <i>Neophoca cinerea</i> (Australian Sea-lion) and <i>Sterna nereis</i> subsp. <i>nereis</i> (Fairy Tern) (DBCA, 2007-).</p> <p>Carnaby's Black Cockatoo (<i>Calyptorhynchus latirostris</i>): No confirmed breeding area for CBC intersects the Project Area (DBCA, 2018b). Patches of native vegetation within and adjacent to the Project Area are identified as requiring investigation for CBC feeding habitat (DBCA, 2018c). <i>Banksia sessilis</i> (or similar) could occur in the Project Area and may be foraging habitat; however, it will not be significant given the small area of disturbance proposed and the lack of breeding habitat nearby. It is unlikely the Project Area contains roosting or breeding trees based on vegetation and habitats.</p> <p>Malleefowl (<i>Leipoa ocellata</i>) – typically the Malleefowl is found in woodlands of mallee eucalypts on sandy soils (DEC, 2012), shrublands dominated by <i>Acacia</i> and woodlands dominated by <i>Eucalypts</i> (Benshemesh, 2007). Malleefowl may also be found on coastal heath where shrubs produce sufficient leaf litter for use in nest mounds (DEC, 2012). It is thought that Malleefowl were never common in the vicinity of the Project Area, with higher density populations occurring to the east of a line between Kalbarri and Wongan Hills (Abbott, 2008). Since European settlement this range has contracted further (Abbott, 2008, Benshemesh, 2007). The nearest known record is 9.6 km north-east of the Project Area (DBCA, 2007-).</p> <p>Ghost Bat (<i>Macroderma gigas</i>): Ghost Bats are locally extinct in the region, and any nearby records are likely to be of subfossil remains.</p> <p>Australian Sea-lion (<i>Neophoca cinerea</i>): The Project Area does not contain habitats suitable for breeding sites and haul-out sites (rocky terrain, sandy</p>



	Clearing principle	Proposed roadworks – Sandy Cape Road SLK 6.03 km to 6.90 km, Shire of Dandaragan
		<p>beaches, vegetated foredunes and swales, caves and deep cliff overhangs) (Campbell, 2005; Dennis &amp; Shaughnessy, 1996; 1999). Most colonies occur on islands; however, several small colonies occur on the mainland (DotEE, 2019c). The nearest known record is 7.4 km north-west of the Project Area on Fisherman's Island (DBCA, 2007-).</p> <p>Fairy Tern (<i>Sterna nereis</i> subsp. <i>Nereis</i>). The Project Area is not between the high tide line and vegetation line and no wetlands occur within the Project Area (Higgins &amp; Davies, 1996; Lindsey, 1986). Therefore it is unlikely the Project Area is a favourable habitat for the Fairy Tern. The nearest known record is on Fisherman's Island 7.4 km north-west of the Project Area (DBCA, 2007-).</p> <p>Fourteen migratory fauna (protected under international agreement) have been located previously within the local area (DBCA, 2007-). These 14 species are largely associated with beaches, lakes and offshore islands, which do not occur within the Project Area.</p> <p>No Specially Protected Fauna species have been located previously in the local area (DBCA, 2007-).</p> <p>Two priority fauna species have been located within 10 km of the Project Area – <i>Hemisaga vepreculae</i> (Thorny Bush Katydid (Moora)) (P2) and <i>Thinornis rubricollis</i> (Hooded Plover) (P4) (DBCA, 2007-). The Thorny Bush Katydid may possibly occur, however, the certainty is low as this species is largely unknown. The Hooded Plover occurs mainly on beaches and inland salt lakes, breeding high on the shore or in adjacent dunes. The Project Area is unlikely to be important habitat for this species.</p> <p>Based on the area of the existing cleared vegetation, the small linear area to be cleared and the habitats and vegetation within the Project Area, which are well represented within the local area, the Project Area is unlikely to impact on significant habitat for fauna species indigenous to Western Australia.</p>
3	<p><b>Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.</b></p>	<p><b>Unlikely to be at variance to this principle</b></p> <p>No threatened flora species have been recorded in the Project Area previously or within 10 km of the Project Area (DBCA, 2007-).</p> <p>No priority flora species have been recorded previously in the Project Area, the closest records are approximately 1.2 km from the Project Area (DBCA, 2007-).</p> <p>Five of the 18 priority species listed in the NatureMap search results have been recorded in similar habitats to those of the Project Area - <i>Beyeria cinerea</i> subsp. <i>cinerea</i>, <i>Calandrinia oraria</i>, <i>Stylidium maritimum</i>, <i>Thryptomene</i> sp. Lancelin (M.E. Trudgen 14000) (all P3) and <i>Grevillea olivacea</i> (P4). They have been recorded in the three soil landscape units mapped within the Project Area (221Qu_4, 221Qu_5 and 221Qu_6) (DAFWA, 2014) and in either of the two vegetation system associations of the Project Area (129 or VSA 1026.1) (DPIRD, 2019a). The number of FloraBase records for the five species ranges from 11 (<i>Calandrinia oraria</i>) to 43 (<i>Stylidium maritimum</i>) and all five species have records in lands protected for conservation (from 1 record (<i>Grevillea olivacea</i> P4) to 42 records (<i>Stylidium maritimum</i> P3)). None of the five species is restricted to the local area (within 10 km of the Project Area) or to the Perth subregion of the Swan Coastal Plain as their records occur from up to 107 km (<i>Thryptomene</i> sp. Lancelin (M.E. Trudgen 14000)) to 314 km (<i>Stylidium maritimum</i>) distant from the Project Area.</p>

	Clearing principle	Proposed roadworks – Sandy Cape Road SLK 6.03 km to 6.90 km, Shire of Dandaragan
		As no threatened flora species have been recorded within 10 km of the Project Area to date, the vegetation of the Project Area is unlikely to be necessary for the continued existence of threatened flora. Given the number of records and distribution of the five priority species that could possibly occur in the Project Area, on the number of records for these five species in lands protected for conservation, their Priority 3 or Priority 4 rank and the small and linear area proposed to be cleared along Sandy Cape Road, the Project Area would not be necessary for the continued existence of these priority flora species.
4	<b>Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a TEC.</b>	<p><b>Not at variance to this principle</b></p> <p>The vegetation of the Project Area does not comprise the whole or part of a TEC.</p> <p>Neither of the vegetation types in the Project Area is similar to any of the currently listed TECs in the bioregion.</p> <p>The nearest occurrence of a conservation significant ecological community is the 'Banksia Woodlands of the Swan Coastal Plain ecological community', located approximately 10 km east of the Project Area. This ecological community is listed as a 'Priority 3(iii)' PEC by DBCA, and as an 'Endangered' TEC under the EPBC Act.</p> <p>Based on the vegetation types occurring within the Project Area, it is unlikely to comprise the whole or a part of, or be necessary for the maintenance of a TEC.</p>
5	<b>Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.</b>	<p><b>Unlikely to be at variance to this principle</b></p> <p>The EPA's broad principles for the protection of native terrestrial vegetation and flora indicate that biodiversity should be maintained at sustainable levels. This generally means that ecological communities should be retained at an overall level of at least 30% of the original extent of the ecological community in each region (EPA, 2000). This level is the threshold level below which species loss appears to accelerate exponentially at an ecosystem level. A level of 10% of the original extent is regarded as being a level representing "endangered" (EPA, 2000).</p> <p>The Project Area is located in the Swan Coastal Plain IBRA bioregion and two pre-European vegetation system associations (VSAs) are mapped in the Project Area – 129 and 1026.1. Currently, more than 92% of these two VSAs remains in the bioregion, subregion and the shire and more than 49% of both is protected for conservation in the bioregion, subregion and shire (GoWA, 2019).</p> <p>The local area retains approximately 85%* native vegetation cover and the Project Area is within an extensive remnant that is largely un-cleared.</p> <p>Based on the information above, the Project Area is unlikely to be significant as a remnant in an area that has been extensively cleared.</p>
6	<b>Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.</b>	<p><b>Not at variance to this principle</b></p> <p>There are no defined watercourses or wetlands in the Project Area. The closest is a palusplain wetland located 0.8 km to the east (DBCA, 2017a). The proposed clearing will not impact on this wetland.</p>



	Clearing principle	Proposed roadworks – Sandy Cape Road SLK 6.03 km to 6.90 km, Shire of Dandaragan
7	<b>Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.</b>	<p><b>Potential to be at variance to this principle</b></p> <p>Three soil landscape units are mapped in the Project Area: Foredune complex adjacent to coast and beach and parabolic dune system with trailing arms (221Qu_4); Unstable active dunes (221Qu_5); and, Flat coastal plain, shallow grey calcareous sands over calcrete (over sands, shells etc) (221Qu_6) (DAFWA, 2014).</p> <p>While the clearing area is small and linear, the chief soil type is calcareous sands and has a high risk of water and wind erosion if left exposed, particularly if subject to strong prevailing winds. The proposed clearing may cause land degradation in the form of soil erosion, although, given the extent of the proposed clearing this impact is expected to be minimal.</p> <p>The Shire of Dandaragan will use a water truck to wet the soil while the road works are being carried out. Once the pavement material has been imported the risk of erosion will be much lower. When the new road alignment has been completed the Shire will rip the old section of the road alignment and will place plant material/brush removed from the new alignment onto the ripped areas of old alignment to minimise the chance of erosion (Pers. Comm., Brad Pepper, Shire of Dandaragan, November 6 2019).</p>
8	<b>Native vegetation should not be cleared if the clearing of vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.</b>	<p><b>Unlikely to be at variance to this principle</b></p> <p>The Project Area is located between Jurien Bay Marine Park (approximately 0.1 km west of the Project Area) and Beekeepers Nature Reserve (approximately 0.7 km east of the Project Area). The Project Area is separated from Beekeepers Nature Reserve by remnant vegetation and the existing road and from the Jurien Bay Marine Park by the existing campground, dunes and remnant vegetation. The proposed road upgrade should not affect the environmental values of either of these conservation areas. The vegetation associations of the Project Area are rated as having moderate or high susceptibility to dieback (Project Dieback, 2014a) but no known positive <i>Phytophthora</i> species points are located within or close to the Project Area (30 June 2018) (Project Dieback, 2014a). The Shire will use weed and dieback management practices to address the risk of the spread of weeds and dieback while carrying out the works.</p>
9	<b>Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.</b>	<p><b>Not at variance to this principle</b></p> <p>Given the soil types of the Project Area, the small and linear area of clearing proposed along the existing Sandy Cape Road, and the absence of wetlands and watercourses in the Project Area, the proposed clearing is not likely to cause long-term deterioration in the quality of surface or underground water.</p>

	Clearing principle	Proposed roadworks – Sandy Cape Road SLK 6.03 km to 6.90 km, Shire of Dandaragan
		Not at variance to this principle
10	<b>Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.</b>	Given the small linear area of clearing proposed along the existing Sandy Cape Road and the sandy soils of the Project Area, the proposed clearing should not cause or exacerbate the incidence or intensity of flooding. The proposed works will also include drainage along the edges of the road.

Note: local area = 10 km buffered search area around central coordinate 30° 11' 10" S, 115° 00' 03" E. \* = local area intersected with IBRA bioregions (DotEE, 2012), and then intersected with Native Vegetation Extent (DPIRD, 2019b).

## 5 CONCLUSIONS

The Project Area is located in the Swan Coastal Plain IBRA bioregion and is mapped as two pre-European VSAs – 129 and 1026.1. Currently, more than 92% of the two VSAs remains in the bioregion, subregion and shire and more than 49% of both is protected for conservation in the bioregion, subregion and shire.

The Project Area is mapped as three soil landscape units - foredune complex adjacent to coast and beach and parabolic dune system with trailing arms; unstable active dunes; and, flat coastal plain; shallow grey calcareous sands over calcrete (over sands, shells etc).

None of the Project Area is located within DBCA Legislated Lands and Waters, DBCA Lands of Interest or an Environmentally Sensitive Area.

The Project Area is located within the Swan Coastal Plain Schedule 1 area and within an EPA Redbook Recommended Conservation Reserves 1976-1991 area (West Coast, Northern Sandheaths).

None of the Project Area occurs within or close to a mapped watercourse or wetland.

None of the vegetation associations of the Project Area are rated as having moderate or high susceptibility to dieback. No known positive *Phytophthora* species points are located within the Project Area.

No threatened flora species protected by federal or WA law have been located within 10 km of the Project Area.

Five priority flora species could potentially occur in the Project Area based on the habitats in which they have been recorded: *Beyeria cinerea* subsp. *cinerea*, *Calandrinia oraria*, *Stylidium maritimum*, *Thryptomene* sp. Lancelin (M.E. Trudgen 14000) (all P3) and *Grevillea olivacea* (P4). All five species have records within lands protected for conservation and none of them are restricted to the local area (i.e. within 10 km of the Project Area) or to the Perth subregion of the Swan Coastal Plain. The number of FloraBase records for the five species ranges from 11 (*Calandrinia oraria*) to 51 (*Beyeria cinerea* subsp. *cinerea*) and the number of records in protected areas from 1 (*Grevillea olivacea* P4) to 42 (*Stylidium maritimum* P3) (DBCA, 2007-; WAH, 1998-). Given the number of records and distribution of these five priority species, the number of records in lands protected for conservation, their Priority 3 or Priority 4 rank and the small and linear area proposed to be cleared along Sandy Cape Road, the Project Area would not be necessary for the continued existence of these priority flora species if they were to occur there.

Five threatened fauna species protected by the EPBC Act and BC Act have been located within 10 km of the Project Area: *Calyptorhynchus latirostris* (Carnaby's Black Cockatoo (CBC)), *Leipoa ocellata* (Malleefowl), *Macroderma gigas* (Ghost Bat), *Neophoca cinerea* (Australian Sea-lion) and *Sterna nereis* subsp. *nereis* (Fairy

Tern). Based on the mapped vegetation associations in the Project Area, it is unlikely the Project Area is a significant habitat for these five threatened fauna species.

Two priority fauna species have been located previously within 10 km of the Project Area: *Hemisaga vepreculae* (Thorny Bush Katydid (Moora)) (P2) and *Thinornis rubricollis* (Hooded Plover) (P4). The Thorny Bush Katydid may possibly occur, however, the certainty is low as this species is largely unknown. The Hooded Plover occurs mainly on beaches and inland salt lakes, breeding high on the shore or in adjacent dunes. The Project Area is unlikely to be important habitat for this species.

No TEC protected by federal or state law occur in or close to the Project Area and it does not occur within the boundaries of a currently known PEC.

The local area retains approximately 85% native vegetation cover and the Project Area is within an extensive area of vegetation that is largely uncleared. Impact to intact native vegetation will be 0.58 ha of the 1.20 ha Project Area, as 0.62 ha of the Project Area is already cleared for Sandy Cape Road. Approximately 0.11 ha of the 0.62 ha that is already cleared will be rehabilitated once the new alignment has been constructed.

## 6 REFERENCES

- Abbot, I. (2008). Historical perspectives of the ecology of some conspicuous vertebrate species in south-west Western Australia. *Conservation Science Western Australia* 6(3): 1 – 214.
- Australian Government (2019). NationalMap. Available: <https://nationalmap.gov.au/>. Accessed: September 2019.
- Benshemesh, J. (2007). National Recovery Plan for Malleefowl. Department for Environment and Heritage, South Australia.
- Campbell, R. (2005). Historical distribution and abundance of the Australian sea lion (*Neophoca cinerea*) on the west coast of Western Australia. Fisheries Research Report no. 148. Department of Fisheries, Western Australia.
- Dennis, T.E. & P.D. Shaughnessy (1996). Status of the Australian sea lion, *Neophoca cinerea*, in the Great Australian Bight. *Wildlife Research*. 23:741-754.
- Dennis, T.E. & P.D. Shaughnessy (1999). Seal survey in the Great Australian Bight region of Western Australia. *Wildlife Research*. 26:383-388.
- Department of Agriculture and Food Western Australia (DAFWA) (2014). Soil-landscape mapping of South-Western Australia [shapefile]. Department of Agriculture and Food, Perth, Western Australia. January 2014.
- Department of Biodiversity, Conservation and Attractions (DBCA) (2007-). NatureMap: Mapping Western Australia's Biodiversity. Department of Parks and Wildlife. Version: 1.8..3.2 Available: <https://naturemap.dpaw.wa.gov.au/default.aspx>. Accessed: September 2019.
- DBCA (2017a). DBCA – Lands of Interest (DBCA-012) [shapefile] (last updated on 30/07/2017). Available: <https://catalogue.data.wa.gov.au/dataset/dbca-lands-of-interest>. Accessed September 2019.
- DBCA (2017b). EPA Redbook Recommended Conservation Reserves 1976-1991 (DBCA-029) [shapefile] (last updated on 03/10/2017). Available: <https://catalogue.data.wa.gov.au/dataset/epa-redbook-recommended-conservation-reserves-1976-1991>. Accessed September 2019.
- DBCA (2017c). Ramsar Sites (DBCA- 010) [shapefile] (last updated on 14/9/2017). Available: <https://catalogue.data.wa.gov.au/dataset/ramsar-sites>. Accessed September 2019.
- DBCA (2017d). Geomorphic Wetlands Cervantes Coastal (DBCA- 014) [shapefile] (last updated on 14/09/2017). Available: <https://catalogue.data.wa.gov.au/dataset/geomorphic-wetlands-cervantes-coastal>. Accessed September 2019.

- DBCA (2017e). Geomorphic Wetlands Cervantes Eneabba (DBCA- 015) [shapefile] (last updated on 14/09/2017). Available: <https://catalogue.data.wa.gov.au/dataset/geomorphic-wetlands-cervantes-eneabba>. Accessed September 2019.
- DBCA (2018a). Directory of Important Wetlands in Australia - Western Australia (DBCA-045) [shapefile] (last updated on 28/04/2018). Available: <https://catalogue.data.wa.gov.au/dataset/directory-of-important-wetlands-in-western-australia>. Accessed September 2019.
- DBCA (2018b). Carnabys Cockatoo Confirmed Breeding Areas within the Swan Coastal Plain and Jarrah Forest IBRA Regions (DBCA-054) [shapefile] (last updated on 27/11/2018). Available: <https://catalogue.data.wa.gov.au/dataset/carnabys-cockatoo-confirmed-breeding-areas>. Accessed: September 2019.
- DBCA (2018c). Carnabys Cockatoo Areas requiring investigation as feeding habitat in the Swan Coastal Plain (SCP) IBRA Region (DBCA-057) [shapefile] (last updated on 27/11/2018). Available: <https://catalogue.data.wa.gov.au/dataset/carnabys-cockatoo-unconfirm-feeding-areas-scp>. Accessed: September 2019.
- DBCA (2018d). List of Threatened Ecological Communities Endorsed by the Minister for the Environment. Department of Biodiversity Conservation and Attractions. 28 June 2018. Available: [https://www.dpaw.wa.gov.au/images/plants-animals/threatened-species/threatened\\_ecological\\_communities\\_endorsed\\_by\\_the\\_minister\\_for\\_the\\_environment\\_june\\_2018.pdf](https://www.dpaw.wa.gov.au/images/plants-animals/threatened-species/threatened_ecological_communities_endorsed_by_the_minister_for_the_environment_june_2018.pdf). Accessed: September 2019.
- DBCA (2019a). DBCA - Legislated Lands and Waters (DBCA-011) [shapefile] (last updated on 31/05/2019). Available: <https://catalogue.data.wa.gov.au/dataset/dbca-legislated-lands-and-waters>. Accessed September 2019.
- DBCA (2019b). Biodiversity Conservation Act and Regulations. Available: <https://www.dpaw.wa.gov.au/plants-and-animals/biodiversity-conservation-act-regulations>. Accessed: September 2019.
- DBCA (2019c). Conservation Codes for Western Australian Flora and Fauna. January 3, 2019. Available: <https://www.dpaw.wa.gov.au/images/documents/plants-animals/threatened-species/Listings/Conservation%20code%20definitions.pdf>. Accessed: September 2019.
- DBCA (2019d). Threatened ecological communities. Available: <https://www.dpaw.wa.gov.au/plants-and-animals/threatened-species-and-communities/wa-s-threatened-ecological-communities>. Accessed: September 2019.
- DBCA (2019e). Priority Ecological Communities for Western Australia, Version 28. Species and Communities Branch, Department of Biodiversity, Conservation and Attractions. 17 January 2019. Accessed: September 2019.
- DEC (2012). Fauna profiles. Malleefowl *Leipoa ocellata* (Gould, 1840). Available: [https://www.dpaw.wa.gov.au/images/documents/conservation-management/pests-diseases/malleefowl\\_2012.pdf](https://www.dpaw.wa.gov.au/images/documents/conservation-management/pests-diseases/malleefowl_2012.pdf). Accessed: September 2019.
- DEC (2013). Definitions, Categories and Criteria for Threatened and Priority Ecological Communities. January 2013. Available: [https://www.dpaw.wa.gov.au/images/plants-animals/threatened-species/definitions\\_categories\\_and\\_criteria\\_for\\_threatened\\_and\\_priority\\_ecological\\_communities.pdf](https://www.dpaw.wa.gov.au/images/plants-animals/threatened-species/definitions_categories_and_criteria_for_threatened_and_priority_ecological_communities.pdf). Accessed: September 2019.
- Department of Parks and Wildlife (DPaW) (2013). Carnaby's Cockatoo (*Calyptorhynchus latirostris*) Recovery Plan. Western Australian Wildlife Management Program No. 52, Perth.
- Department of Primary Industries and Regional Development (DPIRD) (2019a). Pre-European Vegetation (DPIRD-006) [shapefile] (last updated on 24/07/2019). Available: <https://catalogue.data.wa.gov.au/dataset/pre-european-dpird-006>. Accessed September 2019.

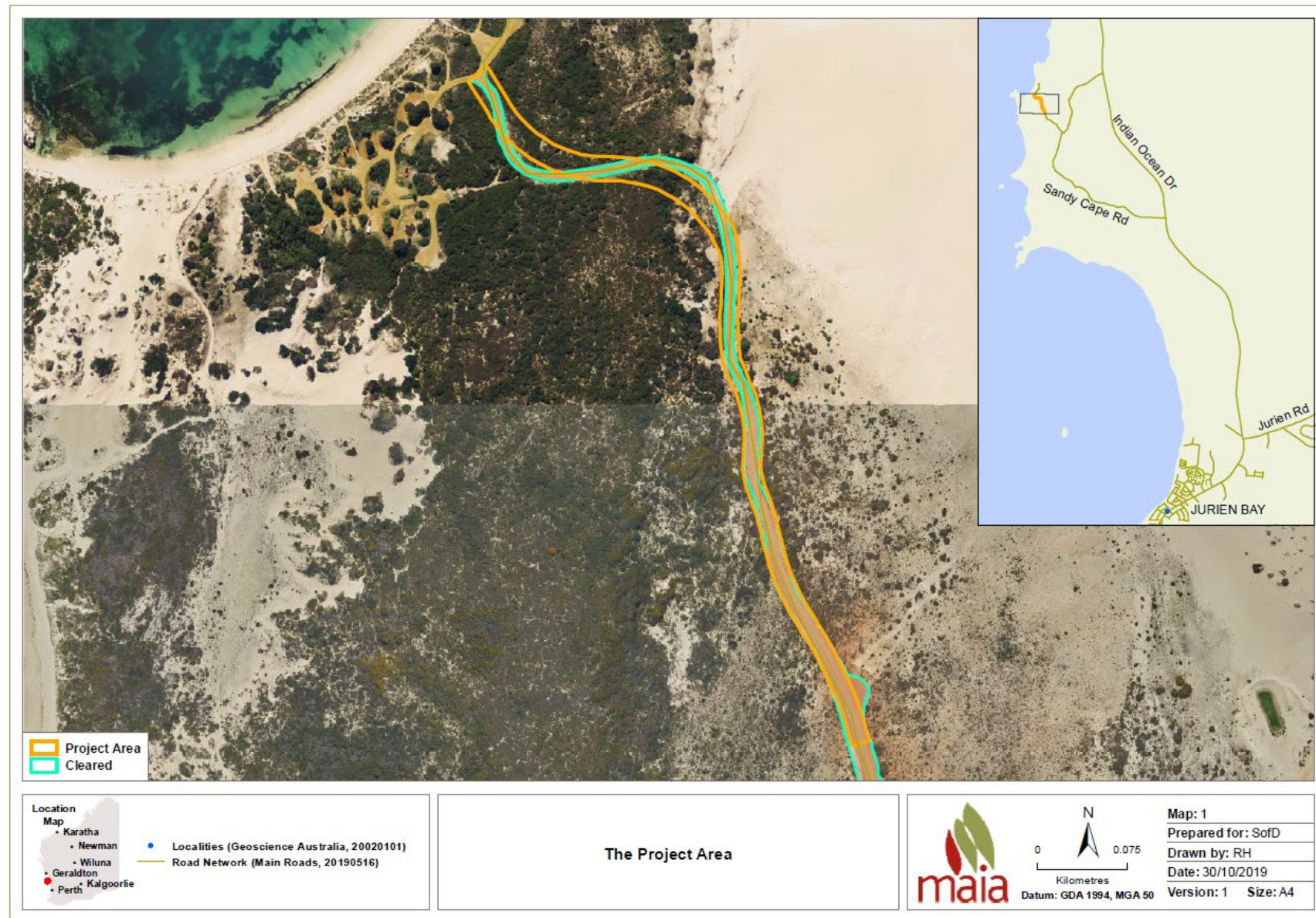
- Department of Primary Industries and Regional Development (DPIRD) (2019b). Native Vegetation Extent (DPIRD-005) [shapefile] (last updated on 16/02/2019). Available: <https://catalogue.data.wa.gov.au/dataset/native-vegetation-extent>. Accessed September 2019.
- Department of the Environment and Energy (DotEE) (2012). Interim Biogeographic Regionalisation for Australia (IBRA), Version 7 (Subregions) - States and Territories [shapefile] (last updated on 18/04/2012). Available: <https://www.environment.gov.au/fed/catalog/search/resource/details.page?uuid=%7B1273FBE2-F266-4F3F-895D-C1E45D77CAF5%7D>. Accessed September 2019.
- DotEE (2019a). Protected Matters Search Tool. Report by Coordinates. Available: <http://www.environment.gov.au/webgis-framework/apps/pmst/pmst-coordinate.jsf>. Accessed: September 2019.
- DotEE (2019b). Threatened species under the EPBC Act. Available: <https://www.environment.gov.au/biodiversity/threatened/species>. Accessed: September 2019.
- DotEE (2019c). *Neophoca cinerea* in Species Profile and Threats Database, Department of the Environment, Canberra. Available: <http://www.environment.gov.au/sprat>. Accessed: September 2019.
- DotEE (2019d). Threatened ecological communities. Available: <https://www.environment.gov.au/biodiversity/threatened/communities>. Accessed: September 2019.
- DotEE (2019e). Threatened ecological communities in Western Australia. Available: <https://www.environment.gov.au/biodiversity/threatened/communities/wa>. Accessed: September 2019.
- Department of Sustainability, Environment, Water, Populations and Communities (DSEWPac) (2012). EPBC Act referral guidelines for three threatened black cockatoo species: Carnaby's cockatoo (endangered) *Calyptorhynchus latirostris* Baudin's cockatoo (vulnerable), *Calyptorhynchus baudinii* Forest red-tailed black cockatoo (vulnerable), *Calyptorhynchus banksii naso*. Available: <http://www.environment.gov.au/system/files/resources/895d4094-af63-4dd3-8dff-ad2b9b943312/files/referral-guidelines-wa-black-cockatoo.pdf>. Accessed: September 2019.
- Department of Water and Environmental Regulation (DWER) (2017a). Clearing Regulations - Environmentally Sensitive Areas (DWER-046) [shapefile] (last updated on 20/12/2017). Available: <https://catalogue.data.wa.gov.au/dataset/clearing-regulations-environmentally-sensitive-areas-dwer-046>. Accessed: September 2019.
- DWER (2017b). Clearing Regulations - Schedule One Areas (DER-057) [shapefile] (last updated on 20/12/2017). Available: <https://catalogue.data.wa.gov.au/dataset/clearing-regulations-schedule-one-areas-dwer-057>. Accessed: September 2019.
- Environmental Protection Authority (EPA) (2000). Environmental Protection of Native Vegetation in Western Australia - Clearing of Native Vegetation, with Particular Reference to the Agriculture Area. Position Statement No. 2. December, 2000.
- Gales, N.J., P.D. Shaughnessy & T.E. Dennis (1994). Distribution, abundance and breeding cycle of the Australian sea lion *Neophoca cinerea* (Mammalia: Pinnipedia). *Journal of Zoology, London*. 234:353-370.
- Garnett, S.T. Szabo, J.K. and Dutson, G. (2011). *The Action Plan for Australian Birds 2010*. CSIRO Publishing, Collingwood, Victoria.
- Geoscience Australia (2006). GEODATA TOPO 250K Series 3 – (Personal Geodatabase format) [Geodatabase] (last updated on 26/06/2006). Available: <https://ecat.ga.gov.au/geonetwork/srv/eng/catalog.search#/metadata/63999>. Accessed: September, 2019.
- Government of Western Australia (GoWA) (2016). Biodiversity Conservation Act 2016. Available: [https://www.legislation.wa.gov.au/legislation/statutes.nsf/asspassed\\_2016.html](https://www.legislation.wa.gov.au/legislation/statutes.nsf/asspassed_2016.html). Accessed: September 2019.

- GoWA (2018). Biodiversity Conservation Amendment Regulations 2018. Western Australian Government Gazette, No. 141, 17 September 2018.
- GoWA (2019). 2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of March 2019. WA Department of Biodiversity, Conservation and Attractions, Perth. Available: <https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics>.
- Higgins, P.J. & S.J.J.F. Davies, eds (1996). Handbook of Australian, New Zealand and Antarctic Birds. Volume Three - Snipe to Pigeons. Melbourne, Victoria: Oxford University Press.
- Johnstone, R.E. & Storr, G.M. (1998). Handbook of Western Australian Birds. Volume 1: Non-passerines (Emu to Dollarbird). Western Australian Museum, Perth.
- Lindsey, T.R. (1986). The Seabirds of Australia. North Ryde, NSW: Angus and Robertson.
- Project Dieback (2014a). Dieback Public Map. Available: <http://www.dieback.net.au/about/dieback-map.html>. Accessed: September 2019.
- Project Dieback (2014b). About Project Dieback. Available: <http://www.dieback.net.au/about/about-project-dieback.html>. Accessed: September 2019.
- Rentz, D. (2010). *A Guide to the Katydidids of Australia*. CSIRO Publishing, Collingwood, Victoria.
- Smith, M.G. & Jones, A. (2018). Threatened and Priority Flora List, 5 December 2018. Department of Biodiversity, Conservation and Attractions. Kensington, WA.
- Stewart, A.J., Sweet, I.P., Needham, R.S., Raymond, O.L., Whitaker, A.J., Liu, S.F., Phillips, D., Retter, A.J., Connolly, D.P., and Stewart, G. (2008). Surface geology of Australia 1:1,000,000 scale, Western Australia [Digital Dataset]. Available: <https://data.gov.au/data/dataset/48fe9c9d-2f10-49d2-bd24-ac546662c4ec>. Accessed September 2019.
- Western Australian Herbarium (WAH) (1998-). FloraBase – the Western Australian Flora. Department of Biodiversity, Conservation and Attractions. Version 2.9.36. Available: <https://florabase.dpaw.wa.gov.au/>. Accessed: September 2019.

## 7 MAPS

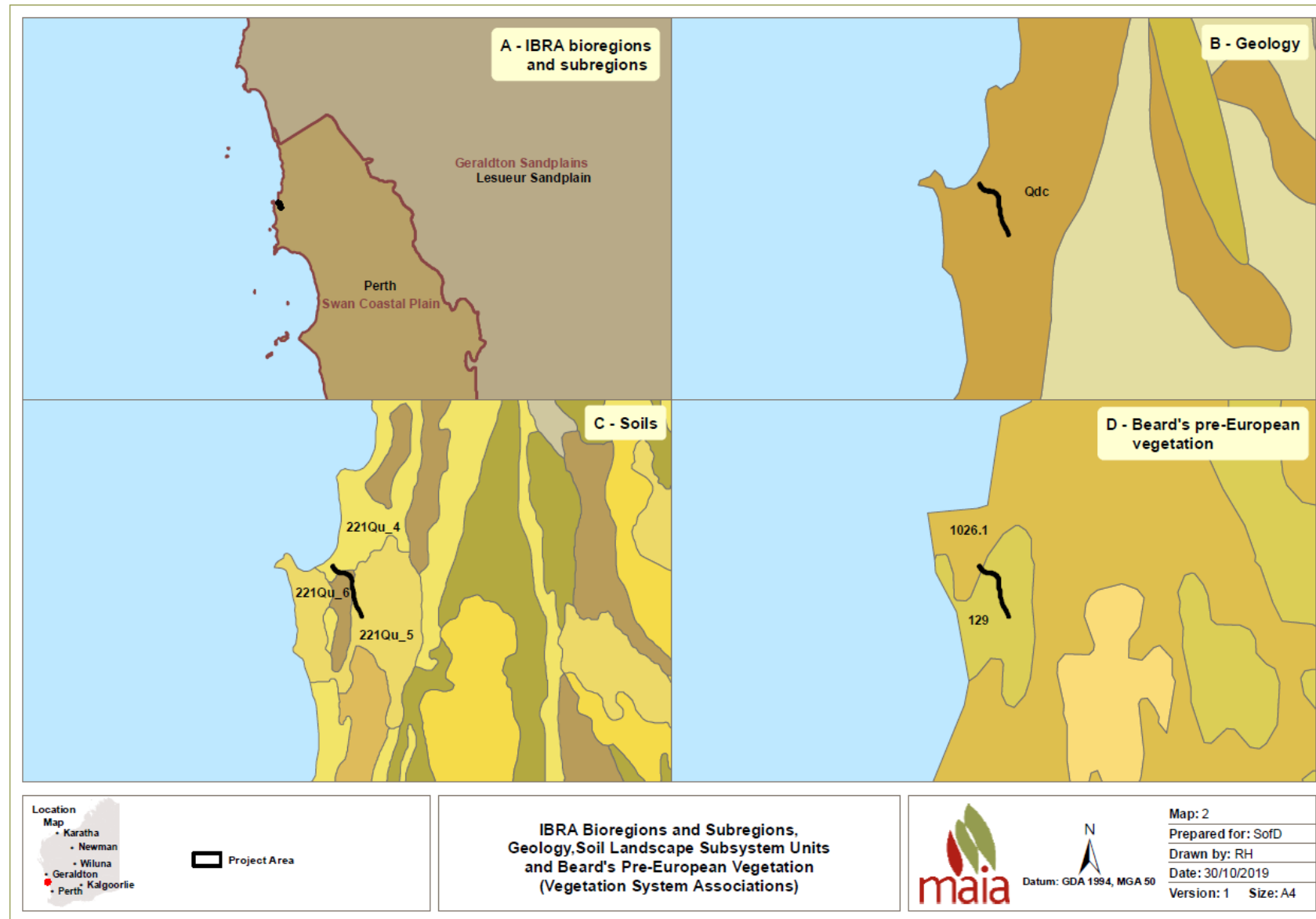


Map 1: The Project Area

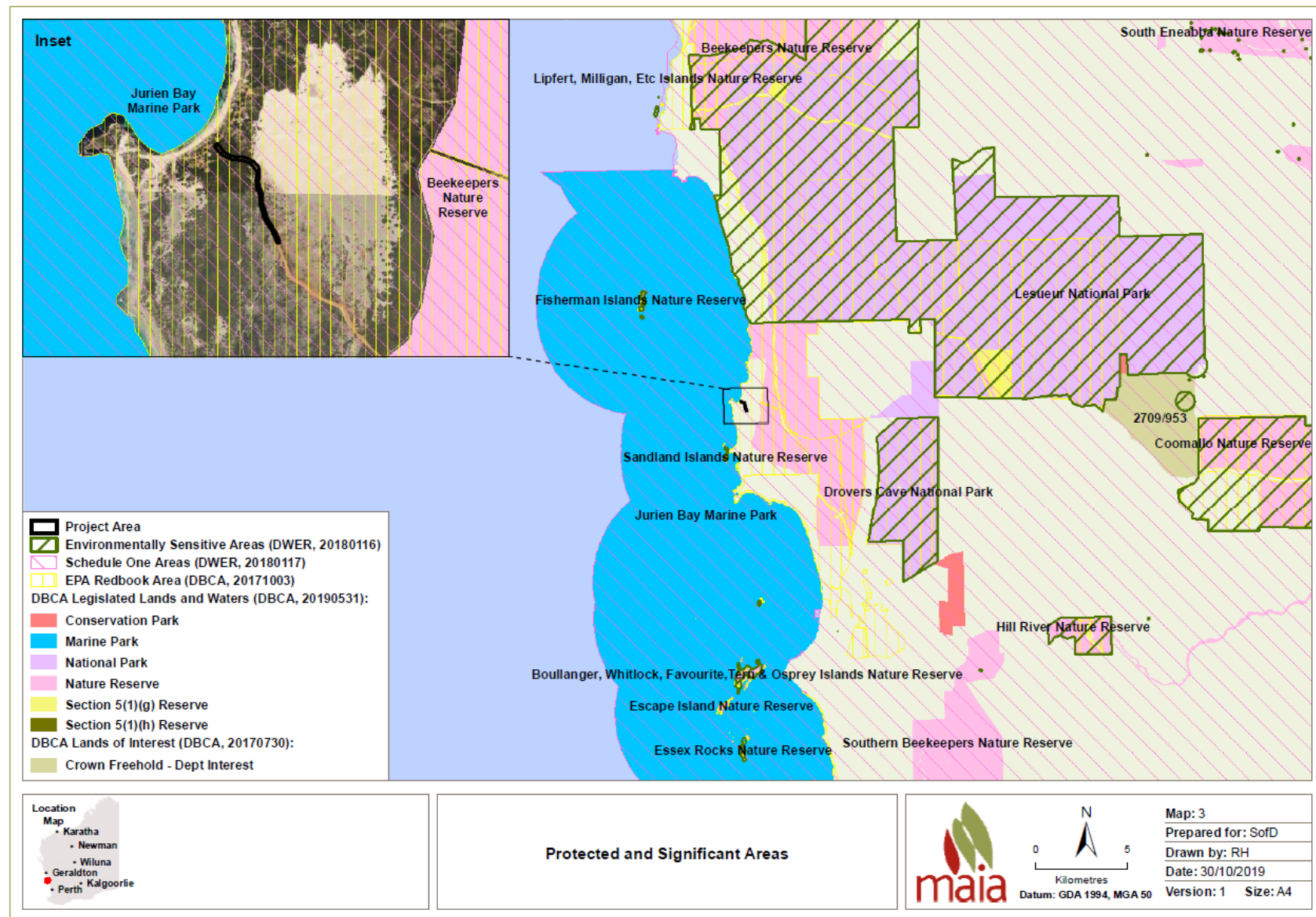




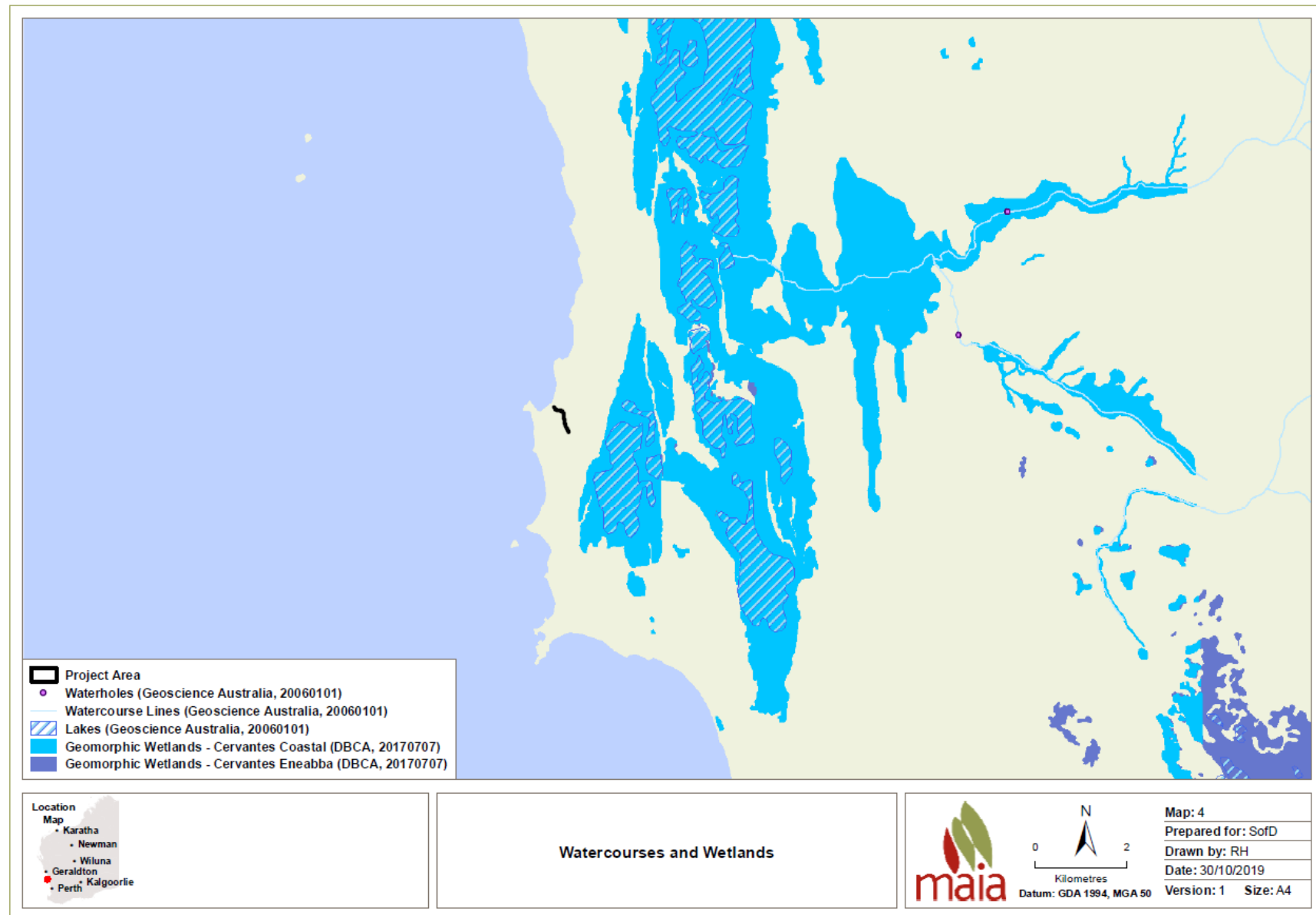
**Map 2: Bioregion, Geology, Soil Landscape Subsystem Units, Pre-European Vegetation**



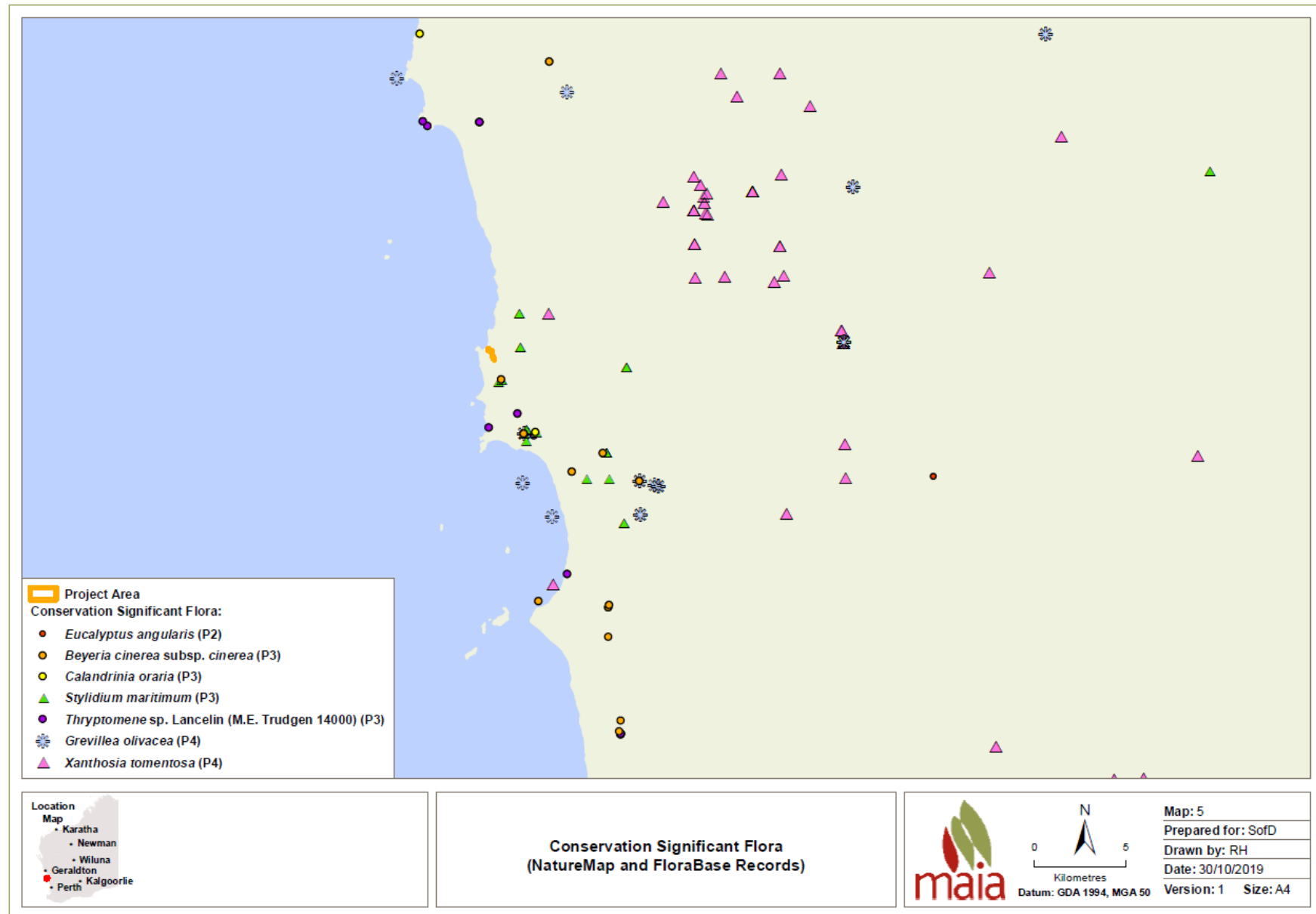
Map 3: Protected and Significant Areas



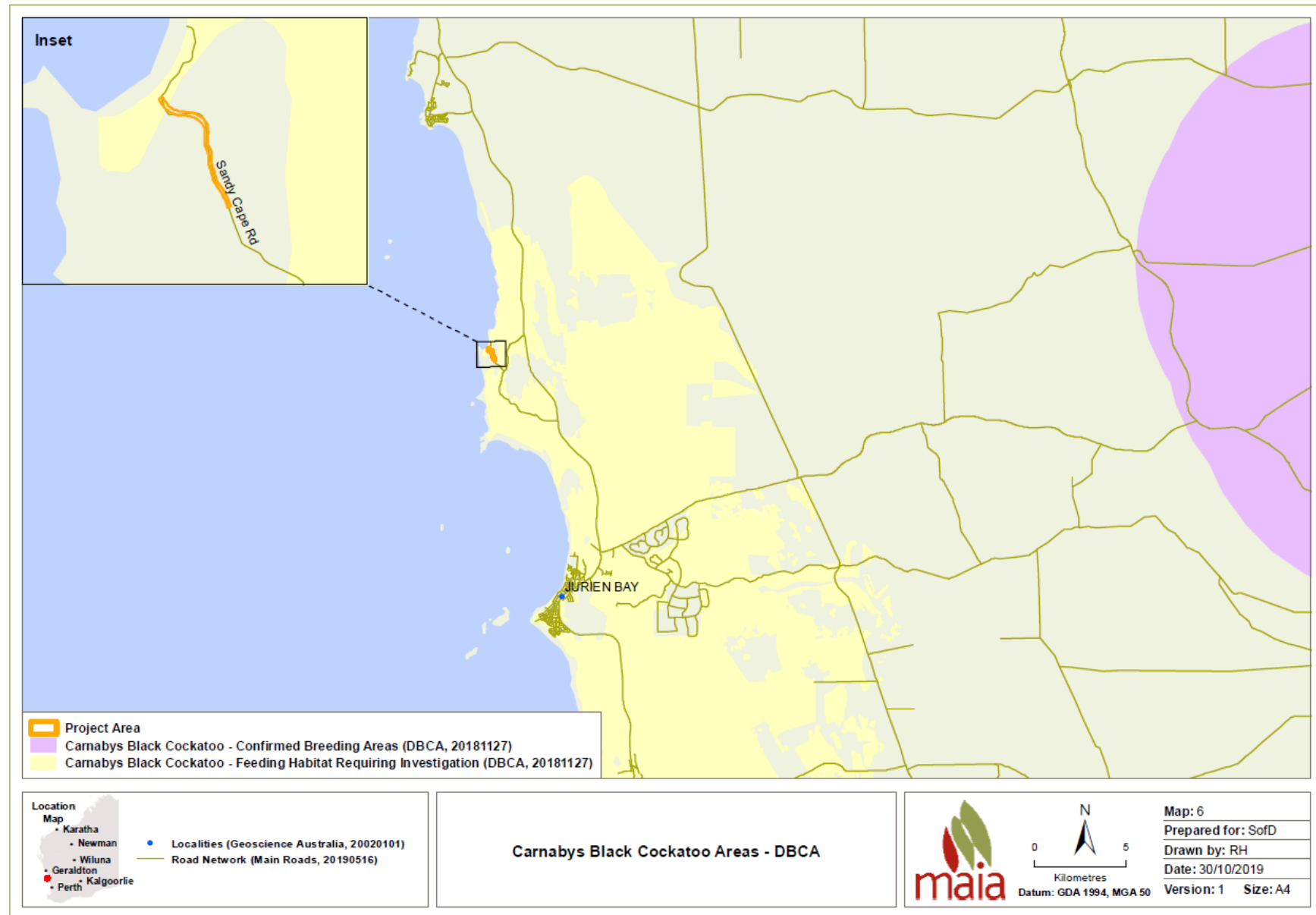
**Map 4: Watercourses and Wetlands**



Map 5: Conservation Significant Flora (NatureMap and FloraBase Records)



Map 6: Carnaby's Black Cockatoo Areas - DBCA



## APPENDIX 1: SEARCH RESULTS

### EPBC PMST search results (PMST 842DBK) – flora and fauna 10 km buffer



Australian Government  
Department of the Environment and Energy

## 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.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 16/09/19 16:01:48

[Summary](#)

[Details](#)

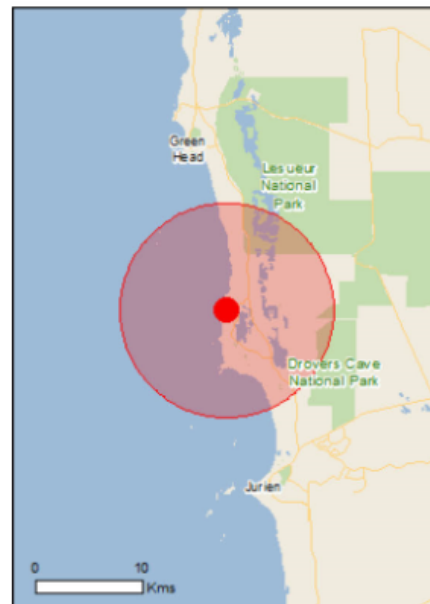
[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

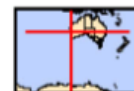
[Acknowledgements](#)



This map may contain data which are  
©Commonwealth of Australia  
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[Coordinates](#)

Buffer: 10.0Km





## Summary

### Matters of National Environmental 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](#).

<a href="#">World Heritage Properties:</a>	None
<a href="#">National Heritage Places:</a>	1
<a href="#">Wetlands of International Importance:</a>	None
<a href="#">Great Barrier Reef Marine Park:</a>	None
<a href="#">Commonwealth Marine Area:</a>	1
<a href="#">Listed Threatened Ecological Communities:</a>	2
<a href="#">Listed Threatened Species:</a>	48
<a href="#">Listed Migratory Species:</a>	44

### 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 environment anywhere.

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.

<a href="#">Commonwealth Land:</a>	None
<a href="#">Commonwealth Heritage Places:</a>	None
<a href="#">Listed Marine Species:</a>	73
<a href="#">Whales and Other Cetaceans:</a>	11
<a href="#">Critical Habitats:</a>	None
<a href="#">Commonwealth Reserves Terrestrial:</a>	None
<a href="#">Australian Marine Parks:</a>	1

### Extra Information

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

<a href="#">State and Territory Reserves:</a>	4
<a href="#">Regional Forest Agreements:</a>	None
<a href="#">Invasive Species:</a>	18
<a href="#">Nationally Important Wetlands:</a>	None
<a href="#">Key Ecological Features (Marine)</a>	1

## Details

### Matters of National Environmental Significance

#### National Heritage Properties [\[ Resource Information \]](#)

Name	State	Status
Natural		
<a href="#">Lesueur National Park</a>	WA	Listed place

#### Commonwealth Marine Area [\[ Resource Information \]](#)

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside the Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area. Generally the Commonwealth Marine Area stretches from three nautical miles to two hundred nautical miles from the coast.

Name  
EEZ and Territorial Sea

#### Marine Regions [\[ Resource Information \]](#)

If you are planning to undertake action in an area in or close to the Commonwealth Marine Area, and a marine bioregional plan has been prepared for the Commonwealth Marine Area in that area, the marine bioregional plan may inform your decision as to whether to refer your proposed action under the EPBC Act.

Name  
[South-west](#)

#### 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.

Name	Status	Type of Presence
<a href="#">Banksia Woodlands of the Swan Coastal Plain ecological community</a>	Endangered	Community may occur within area
<a href="#">Tuart (Eucalyptus gomphocephala) Woodlands and Forests of the Swan Coastal Plain ecological community</a>	Critically Endangered	Community may occur within area

#### Listed Threatened Species [\[ Resource Information \]](#)

Name	Status	Type of Presence
Birds		
<a href="#">Anous tenuirostris melanops</a> Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
<a href="#">Calyptorhynchus latirostris</a> Carnaby's Cockatoo, Short-billed Black-Cockatoo [59523]	Endangered	Species or species habitat likely to occur within area
<a href="#">Diomedea amsterdamensis</a> Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area



Name	Status	Type of Presence
<a href="#"><i>Diomedea epomophora</i></a> Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#"><i>Diomedea exulans</i></a> Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#"><i>Diomedea sanfordi</i></a> Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
<a href="#"><i>Leipoa ocellata</i></a> Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area
<a href="#"><i>Limosa lapponica baueri</i></a> Bar-tailed Godwit (baueri), Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat may occur within area
<a href="#"><i>Limosa lapponica menzbieri</i></a> Northern Siberian Bar-tailed Godwit, Bar-tailed Godwit (menzbieri) [86432]	Critically Endangered	Species or species habitat may occur within area
<a href="#"><i>Macronectes giganteus</i></a> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
<a href="#"><i>Macronectes halli</i></a> Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
<a href="#"><i>Numenius madagascariensis</i></a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
<a href="#"><i>Phoebastria fusca</i></a> Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
<a href="#"><i>Pterodroma mollis</i></a> Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
<a href="#"><i>Rostratula australis</i></a> Australian Painted-snipe, Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
<a href="#"><i>Sternula nereis nereis</i></a> Australian Fairy Tern [82950]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#"><i>Thalassarche carteri</i></a> Indian Yellow-nosed Albatross [64464]	Vulnerable	Foraging, feeding or related behaviour may occur within area
<a href="#"><i>Thalassarche cauta cauta</i></a> Shy Albatross, Tasmanian Shy Albatross [82345]	Vulnerable	Species or species habitat may occur within area
<a href="#"><i>Thalassarche cauta steadi</i></a> White-capped Albatross [82344]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#"><i>Thalassarche impavida</i></a> Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
<a href="#"><i>Thalassarche melanophris</i></a> Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Mammals		

Name	Status	Type of Presence
<a href="#"><u>Balaenoptera musculus</u></a> Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
<a href="#"><u>Dasyurus geoffroii</u></a> Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat likely to occur within area
<a href="#"><u>Eubalaena australis</u></a> Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
<a href="#"><u>Megaptera novaeangliae</u></a> Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
<a href="#"><u>Neophoca cinerea</u></a> Australian Sea-lion, Australian Sea Lion [22]	Vulnerable	Breeding known to occur within area
<a href="#"><u>Parantechinus apicalis</u></a> Dibbler [313]	Endangered	Species or species habitat may occur within area
<b>Plants</b>		
<a href="#"><u>Andersonia gracilis</u></a> Slender Andersonia [14470]	Endangered	Species or species habitat may occur within area
<a href="#"><u>Anigozanthos viridis subsp. terraspectans</u></a> Dwarf Green Kangaroo Paw [3435]	Vulnerable	Species or species habitat may occur within area
<a href="#"><u>Drakaea elastica</u></a> Glossy-leafed Hammer Orchid, Glossy-leaved Hammer Orchid, Warty Hammer Orchid [16753]	Endangered	Species or species habitat may occur within area
<a href="#"><u>Eucalyptus impensa</u></a> Eneabba Mallee [56711]	Endangered	Species or species habitat may occur within area
<a href="#"><u>Eucalyptus leprophloia</u></a> Scaly Butt Mallee, Scaly-butt Mallee [56712]	Endangered	Species or species habitat may occur within area
<a href="#"><u>Eucalyptus x balanites</u></a> Cadda Road Mallee, Cadda Mallee [87816]	Endangered	Species or species habitat may occur within area
<a href="#"><u>Grevillea batrachioides</u></a> Mt Lesueur Grevillea [21735]	Endangered	Species or species habitat may occur within area
<a href="#"><u>Grevillea humifusa</u></a> Spreading Grevillea [61182]	Endangered	Species or species habitat may occur within area
<a href="#"><u>Hemiandra gardneri</u></a> Red Snakebush [7945]	Endangered	Species or species habitat known to occur within area
<a href="#"><u>Paracaleana dixonii</u></a> Sandplain Duck Orchid [86882]	Endangered	Species or species habitat likely to occur within area
<a href="#"><u>Tetradlea nephelioides</u></a> [83217]	Critically Endangered	Species or species habitat likely to occur within area
<a href="#"><u>Thelymitra stellata</u></a> Star Sun-orchid [7060]	Endangered	Species or species habitat likely to occur within area
<b>Reptiles</b>		

Name	Status	Type of Presence
<a href="#"><u>Caretta caretta</u></a> Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
<a href="#"><u>Chelonia mydas</u></a> Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#"><u>Dermochelys coriacea</u></a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
<a href="#"><u>Natator depressus</u></a> Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<b>Sharks</b>		
<a href="#"><u>Carcharias taurus (west coast population)</u></a> Grey Nurse Shark (west coast population) [68752]	Vulnerable	Species or species habitat known to occur within area
<a href="#"><u>Carcharodon carcharias</u></a> White Shark, Great White Shark [64470]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#"><u>Rhincodon typus</u></a> Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
<b>Listed Migratory Species</b>		<b>[ Resource Information ]</b>
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
<b>Migratory Marine Birds</b>		
<a href="#"><u>Anous stolidus</u></a> Common Noddy [825]		Species or species habitat likely to occur within area
<a href="#"><u>Apus pacificus</u></a> Fork-tailed Swift [678]		Species or species habitat likely to occur within area
<a href="#"><u>Ardenna carneipes</u></a> Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area
<a href="#"><u>Ardenna pacifica</u></a> Wedge-tailed Shearwater [84292]		Breeding known to occur within area
<a href="#"><u>Diomedea amsterdamensis</u></a> Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area
<a href="#"><u>Diomedea epomophora</u></a> Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#"><u>Diomedea exulans</u></a> Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#"><u>Diomedea sanfordi</u></a> Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
<a href="#"><u>Hydroprogne caspia</u></a> Caspian Tern [808]		Breeding known to occur within area
<a href="#"><u>Macronectes giganteus</u></a> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area

Name	Threatened	Type of Presence
<a href="#"><u>Macronectes halli</u></a> Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
<a href="#"><u>Onychoprion anaethetus</u></a> Bridled Tern [82845]		Breeding known to occur within area
<a href="#"><u>Phoebastria fusca</u></a> Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
<a href="#"><u>Sterna dougallii</u></a> Roseate Tern [817]		Breeding known to occur within area
<a href="#"><u>Thalassarche carteri</u></a> Indian Yellow-nosed Albatross [64464]	Vulnerable	Foraging, feeding or related behaviour may occur within area
<a href="#"><u>Thalassarche cauta</u></a> Tasmanian Shy Albatross [89224]	Vulnerable*	Species or species habitat may occur within area
<a href="#"><u>Thalassarche impavida</u></a> Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
<a href="#"><u>Thalassarche melanophrys</u></a> Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
<a href="#"><u>Thalassarche steadi</u></a> White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
<b>Migratory Marine Species</b>		
<a href="#"><u>Balaena glacialis australis</u></a> Southern Right Whale [75529]	Endangered*	Species or species habitat likely to occur within area
<a href="#"><u>Balaenoptera edeni</u></a> Bryde's Whale [35]		Species or species habitat may occur within area
<a href="#"><u>Balaenoptera musculus</u></a> Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
<a href="#"><u>Carcharodon carcharias</u></a> White Shark, Great White Shark [64470]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#"><u>Caretta caretta</u></a> Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
<a href="#"><u>Chelonia mydas</u></a> Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#"><u>Dermochelys coriacea</u></a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
<a href="#"><u>Lamna nasus</u></a> Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area
<a href="#"><u>Manta alfredi</u></a> Reef Manta Ray, Coastal Manta Ray, Inshore Manta Ray, Prince Alfred's Ray, Resident Manta Ray [84994]		Species or species habitat known to occur within area
<a href="#"><u>Manta birostris</u></a> Giant Manta Ray, Chevron Manta Ray, Pacific		Species or species



Name	Threatened	Type of Presence
Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995] <a href="#">Megaptera novaeangliae</a>		habitat may occur within area
Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#">Orcinus orca</a> Killer Whale, Orca [46]		Species or species habitat may occur within area
<a href="#">Rhincodon typus</a> Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Migratory Terrestrial Species		
<a href="#">Motacilla cinerea</a> Grey Wagtail [642]		Species or species habitat may occur within area
Migratory Wetlands Species		
<a href="#">Actitis hypoleucos</a> Common Sandpiper [59309]		Species or species habitat known to occur within area
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat may occur within area
<a href="#">Limosa lapponica</a> Bar-tailed Godwit [844]		Species or species habitat known to occur within area
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Pandion haliaetus</a> Osprey [952]		Breeding known to occur within area
<a href="#">Thalasseus bergii</a> Crested Tern [83000]		Breeding known to occur within area
<a href="#">Tringa nebularia</a> Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

## Other Matters Protected by the EPBC Act

Listed Marine Species		[ Resource Information ]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
<b>Birds</b>		
<a href="#">Actitis hypoleucos</a> Common Sandpiper [59309]		Species or species habitat known to occur within area
<a href="#">Anous stolidus</a> Common Noddy [825]		Species or species habitat likely to occur within area
<a href="#">Anous tenuirostris melanops</a> Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area
<a href="#">Apus pacificus</a> Fork-tailed Swift [678]		Species or species habitat likely to occur within area
<a href="#">Ardea alba</a> Great Egret, White Egret [59541]		Species or species habitat likely to occur within area
<a href="#">Ardea ibis</a> Cattle Egret [59542]		Species or species habitat may occur within area
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat may occur within area
<a href="#">Catharacta skua</a> Great Skua [59472]		Species or species habitat may occur within area
<a href="#">Chrysococcyx osculans</a> Black-eared Cuckoo [705]		Species or species habitat likely to occur within area
<a href="#">Diomedea amsterdamensis</a> Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area
<a href="#">Diomedea epomophora</a> Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Diomedea exulans</a> Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Diomedea sanfordi</a> Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely

Name	Threatened	Type of Presence
<a href="#"><i>Haliaeetus leucogaster</i></a> White-bellied Sea-Eagle [943]		to occur within area  Species or species habitat likely to occur within area
<a href="#"><i>Larus novaehollandiae</i></a> Silver Gull [810]		Breeding known to occur within area
<a href="#"><i>Larus pacificus</i></a> Pacific Gull [811]		Foraging, feeding or related behaviour known to occur within area
<a href="#"><i>Limosa lapponica</i></a> Bar-tailed Godwit [844]		Species or species habitat known to occur within area
<a href="#"><i>Macronectes giganteus</i></a> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
<a href="#"><i>Macronectes halli</i></a> Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
<a href="#"><i>Merops ornatus</i></a> Rainbow Bee-eater [670]		Species or species habitat may occur within area
<a href="#"><i>Motacilla cinerea</i></a> Grey Wagtail [642]		Species or species habitat may occur within area
<a href="#"><i>Numenius madagascariensis</i></a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
<a href="#"><i>Pandion haliaetus</i></a> Osprey [952]		Breeding known to occur within area
<a href="#"><i>Pelagodroma marina</i></a> White-faced Storm-Petrel [1016]		Breeding known to occur within area
<a href="#"><i>Phoebastria fusca</i></a> Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
<a href="#"><i>Pterodroma mollis</i></a> Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
<a href="#"><i>Puffinus assimilis</i></a> Little Shearwater [59363]		Breeding known to occur within area
<a href="#"><i>Puffinus carneipes</i></a> Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Foraging, feeding or related behaviour likely to occur within area
<a href="#"><i>Puffinus pacificus</i></a> Wedge-tailed Shearwater [1027]		Breeding known to occur within area
<a href="#"><i>Rostratula benghalensis (sensu lato)</i></a> Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area
<a href="#"><i>Sterna anaethetus</i></a> Bridled Tern [814]		Breeding known to occur within area
<a href="#"><i>Sterna bergii</i></a> Crested Tern [816]		Breeding known to occur within area
<a href="#"><i>Sterna caspia</i></a> Caspian Tern [59467]		Breeding known to occur within area

Name	Threatened	Type of Presence
<a href="#"><u>Sterna dougallii</u></a> Roseate Tern [817]		Breeding known to occur within area
<a href="#"><u>Thalassarche carteri</u></a> Indian Yellow-nosed Albatross [64464]	Vulnerable	Foraging, feeding or related behaviour may occur within area
<a href="#"><u>Thalassarche cauta</u></a> Tasmanian Shy Albatross [89224]	Vulnerable*	Species or species habitat may occur within area
<a href="#"><u>Thalassarche impavida</u></a> Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
<a href="#"><u>Thalassarche melanophris</u></a> Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
<a href="#"><u>Thalassarche steadi</u></a> White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
<a href="#"><u>Thinornis rubricollis</u></a> Hooded Plover [59510]		Species or species habitat may occur within area
<a href="#"><u>Tringa nebularia</u></a> Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area
<b>Fish</b>		
<a href="#"><u>Acentronura australe</u></a> Southern Pygmy Pipehorse [66185]		Species or species habitat may occur within area
<a href="#"><u>Campichthys galei</u></a> Gale's Pipefish [66191]		Species or species habitat may occur within area
<a href="#"><u>Choeroichthys suillus</u></a> Pig-snouted Pipefish [66198]		Species or species habitat may occur within area
<a href="#"><u>Halicampus brocki</u></a> Brock's Pipefish [66219]		Species or species habitat may occur within area
<a href="#"><u>Hippocampus angustus</u></a> Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area
<a href="#"><u>Hippocampus breviceps</u></a> Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area
<a href="#"><u>Hippocampus subelongatus</u></a> West Australian Seahorse [66722]		Species or species habitat may occur within area
<a href="#"><u>Lissocampus fatiloquus</u></a> Prophet's Pipefish [66250]		Species or species habitat may occur within area
<a href="#"><u>Maroubra perserrata</u></a> Sawtooth Pipefish [66252]		Species or species habitat may occur within area
<a href="#"><u>Mitotichthys meraculus</u></a> Western Crested Pipefish [66259]		Species or species habitat may occur within area



Name	Threatened	Type of Presence
<a href="#"><u>Nannocampus subosseus</u></a> Bonyhead Pipefish, Bony-headed Pipefish [66264]		Species or species habitat may occur within area
<a href="#"><u>Phycodurus eques</u></a> Leafy Seadragon [66267]		Species or species habitat may occur within area
<a href="#"><u>Phyllopteryx taeniolatus</u></a> Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area
<a href="#"><u>Pugnaso curtirostris</u></a> Pugnose Pipefish, Pug-nosed Pipefish [66269]		Species or species habitat may occur within area
<a href="#"><u>Solegnathus lettiensis</u></a> Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
<a href="#"><u>Stigmatopora argus</u></a> Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area
<a href="#"><u>Stigmatopora nigra</u></a> Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area
<a href="#"><u>Syngnathoides biaculeatus</u></a> Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
<a href="#"><u>Urocampus carinirostris</u></a> Hairy Pipefish [66282]		Species or species habitat may occur within area
<a href="#"><u>Vanacampus margaritifer</u></a> Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area
<b>Mammals</b>		
<a href="#"><u>Arctocephalus forsteri</u></a> Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area
<a href="#"><u>Neophoca cinerea</u></a> Australian Sea-lion, Australian Sea Lion [22]	Vulnerable	Breeding known to occur within area
<b>Reptiles</b>		
<a href="#"><u>Aipysurus pooleorum</u></a> Shark Bay Seasnake [66061]		Species or species habitat may occur within area
<a href="#"><u>Caretta caretta</u></a> Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
<a href="#"><u>Chelonia mydas</u></a> Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#"><u>Dermochelys coriacea</u></a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
<a href="#"><u>Disteira kingii</u></a> Spectacled Seasnake [1123]		Species or species habitat may occur within area
<a href="#"><u>Natator depressus</u></a> Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area

Name	Threatened	Type of Presence
<a href="#">Pelamis platurus</a> Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area
<b>Whales and other Cetaceans</b>		<b>[ Resource Information ]</b>
Name	Status	Type of Presence
<b>Mammals</b>		
<a href="#">Balaenoptera acutorostrata</a> Minke Whale [33]		Species or species habitat may occur within area
<a href="#">Balaenoptera edeni</a> Bryde's Whale [35]		Species or species habitat may occur within area
<a href="#">Balaenoptera musculus</a> Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
<a href="#">Delphinus delphis</a> Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
<a href="#">Eubalaena australis</a> Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
<a href="#">Grampus griseus</a> Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
<a href="#">Megaptera novaeangliae</a> Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Orcinus orca</a> Killer Whale, Orca [46]		Species or species habitat may occur within area
<a href="#">Stenella attenuata</a> Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
<a href="#">Tursiops aduncus</a> Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
<a href="#">Tursiops truncatus s. str.</a> Bottlenose Dolphin [68417]		Species or species habitat may occur within area
<b>Australian Marine Parks</b>		<b>[ Resource Information ]</b>
Name	Label	
Jurien	Special Purpose Zone (IUCN VI)	

## Extra Information

<b>State and Territory Reserves</b>		<b>[ Resource Information ]</b>
Name	State	
Beekeepers	WA	
Drovers Cave	WA	
Lesueur	WA	
Unnamed WA11883	WA	

**Invasive Species****[ Resource Information ]**

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit, 2001.

Name	Status	Type of Presence
<b>Birds</b>		
<i>Columba livia</i> Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
<i>Streptopelia senegalensis</i> Laughing Turtle-dove, Laughing Dove [781]		Species or species habitat likely to occur within area
<b>Mammals</b>		
<i>Canis lupus familiaris</i> Domestic Dog [82654]		Species or species habitat likely to occur within area
<i>Capra hircus</i> Goat [2]		Species or species habitat likely to occur within area
<i>Felis catus</i> Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
<i>Mus musculus</i> House Mouse [120]		Species or species habitat likely to occur within area
<i>Oryctolagus cuniculus</i> Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
<i>Sus scrofa</i> Pig [6]		Species or species habitat likely to occur within area
<i>Vulpes vulpes</i> Red Fox, Fox [18]		Species or species habitat likely to occur within area
<b>Plants</b>		
<i>Asparagus asparagoides</i> Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
<i>Brachiaria mutica</i> Para Grass [5879]		Species or species habitat may occur within area
<i>Cenchrus ciliaris</i> Buffel-grass, Black Buffel-grass [20213]		Species or species habitat may occur within area
<i>Chrysanthemoides monilifera</i> Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
<i>Genista</i> sp. X <i>Genista monspessulana</i> Broom [67538]		Species or species habitat may occur within area
<i>Olea europaea</i> Olive, Common Olive [9160]		Species or species habitat may occur within

Name	Status	Type of Presence area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Tamarix aphylla Athel Pine, Athel Tree, Tamarisk, Athel Tamarisk, Athel Tamarix, Desert Tamarisk, Flowering Cypress, Salt Cedar [16018]		Species or species habitat likely to occur within area

#### Key Ecological Features (Marine)

#### [ Resource Information ]

Key Ecological Features are the parts of the marine ecosystem that are considered to be important for the biodiversity or ecosystem functioning and integrity of the Commonwealth Marine Area.

Name	Region
<a href="#">Western rock lobster</a>	South-west

## Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

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.

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

Where very little information is available for 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 reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

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

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

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

## Coordinates

-30.18602 115.00075



## 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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**NatureMap search results – flora 10 km buffer**

# Sandy Cape Road 10 km Circle

Created By Scott Hitchcock on 16/09/2019

Kingdom	Plantae
Core Datasets Only	Yes
Method	'By Circle'
Centre	115° 00' 03" E, 30° 11' 10" S
Buffer	10km
Group By	Conservation Status

Conservation Status	Species	Records
Non-conservation taxon	429	736
Priority 2	4	5
Priority 3	8	35
Priority 4	6	8
<b>TOTAL</b>	<b>447</b>	<b>784</b>

Name ID	Species Name	Naturalised	Conservation Code	Endemic To Query Area
<b>Priority 2</b>				
1.	13545 <i>Eucalyptus angularis</i>		P2	
2.	48347 <i>Lasioptetum rutilans</i>		P2	
3.	6432 <i>Leucopogon plumuliflorus</i>		P2	
4.	14236 <i>Stenanthemum limitatum</i>		P2	
<b>Priority 3</b>				
5.	3493 <i>Acacia plicata</i>		P3	
6.	34236 <i>Beyeria cinerea</i> subsp. <i>cinerea</i>		P3	
7.	44226 <i>Calandrinia oraria</i>		P3	
8.	23489 <i>Gompholobium gairdnerianum</i>		P3	
9.	13233 <i>Guichenotia alba</i>		P3	
10.	1292 <i>Hensmania stoniella</i>		P3	
11.	13127 <i>Stylidium maritimum</i>		P3	
12.	17266 <i>Thryptomene</i> sp. <i>Lancelin</i> (M.E. Trudgen 14000)		P3	
<b>Priority 4</b>				
13.	1853 <i>Banksia tricuspis</i> (Pine Banksia)		P4	
14.	12936 <i>Diuris recurva</i>		P4	
15.	2054 <i>Grevillea olivacea</i> (Olive Grevillea)		P4	
16.	2087 <i>Grevillea saccata</i> (Pouched Grevillea)		P4	
17.	11032 <i>Thelymitra apiculata</i>		P4	
18.	6294 <i>Xanthosia tomentosa</i> (Lesueur Southern Cross)		P4	
<b>Non-conservation taxon</b>				
19.	3376 <i>Acacia idiomorpha</i>			
20.	3409 <i>Acacia lasiocarpa</i> (Panjang)			
21.	11611 <i>Acacia lasiocarpa</i> var. <i>lasiocarpa</i>			
22.	11448 <i>Acacia leptospermoides</i> subsp. <i>leptospermoides</i>			
23.	3525 <i>Acacia rostellifera</i> (Summer-scented Wattle)			
24.	<i>Acacia rostellifera</i> x <i>xanthina</i>			
25.	3584 <i>Acacia truncata</i>			
26.	3604 <i>Acacia xanthina</i> (White-stemmed Wattle)			
27.	1208 <i>Acanthocarpus preissii</i>			
28.	26440 <i>Acanthopora dendroides</i>			
29.	26447 <i>Acrothamnion preissii</i>			
30.	48621 <i>Altheia patentifolia</i>			
31.	48620 <i>Altheia preissii</i>			
32.	4905 <i>Alyogyne hakeifolia</i>			
33.	43023 <i>Alyogyne</i> sp. <i>Hutt River</i> (B.J. Lepschi & T.R. Lally 2310)			
34.	26456 <i>Amphiplexia hymenocladoides</i>			
35.	26458 <i>Amphiroa anceps</i>			
36.	26463 <i>Amphiroa gracilis</i>			
37.	13267 <i>Amyema linophylla</i> subsp. <i>linophylla</i>			
38.	13266 <i>Amyema mirabilosa</i> subsp. <i>mirabilosa</i>			

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	Name ID	Species Name	Naturalised	Conservation Code	Endemic To Query Area
39.	35872	<i>Anadyomene plicata</i>			
40.	30312	<i>Aneurina dentata</i>			
41.	7832	<i>Angianthus mlinei</i> (Cone-spike Angianthus)			
42.	7833	<i>Angianthus preissianus</i>			
43.	1409	<i>Anigozanthos humilis</i> (Catspaw)			
44.	11434	<i>Anigozanthos humilis</i> subsp. <i>humilis</i>			
45.	6949	<i>Anthocercis littorea</i> (Yellow Tailflower)			
46.	26471	<i>Antithamnion armatum</i>			
47.	26475	<i>Antithamnion hanovioides</i>			
48.	6210	<i>Apium annuum</i>			
49.	26484	<i>Aeschougia ligulata</i>			
50.	1264	<i>Arnocrinum preissii</i>			
51.	26486	<i>Asparagopsis taxiformis</i>			
52.	7851	<i>Asteridea pulverulenta</i> (Common Bristle Daisy)			
53.	6332	<i>Astroloma microdonta</i> (Sandplain Cranberry)			
54.	2450	<i>Atriplex amnicola</i> (Swamp Saltbush)			
55.	2452	<i>Atriplex cinerea</i> (Grey Saltbush)			
56.	2463	<i>Atriplex isatidea</i> (Coast Saltbush)			
57.		<i>Austrorella salta</i>			Y
58.	17234	<i>Austrostipa compressa</i>			
59.	17240	<i>Austrostipa flavescens</i>			
60.	17245	<i>Austrostipa mollis</i>			
61.	32580	<i>Banksia dallanneyi</i> subsp. <i>dallanneyi</i> var. <i>dallanneyi</i>			
62.	32519	<i>Banksia glaucifolia</i>			
63.	1834	<i>Banksia menziesii</i> (Firewood Banksia)			
64.	32077	<i>Banksia sessilis</i> var. <i>cygnorum</i>			
65.	48503	<i>Betaphycus speciosus</i>			
66.	1417	<i>Blancoa canescens</i> (Winter Bell)			
67.	26511	<i>Boronia binderiana</i>			
68.	11381	<i>Boronia ramosa</i> subsp. <i>anethifolia</i>			
69.	26518	<i>Botryocladia sonderi</i>			
70.	7867	<i>Brachyscome bellidioides</i>			
71.	7878	<i>Brachyscome iberidifolia</i>			
72.	3000	<i>Brassica tournefortii</i> (Mediterranean Turnip)	Y		
73.	244	<i>Briza maxima</i> (Blowfly Grass)	Y		
74.	245	<i>Briza minor</i> (Shivery Grass)	Y		
75.	247	<i>Bromus arenarius</i> (Sand Brome)			
76.	26520	<i>Brongniartella australis</i>			
77.	1385	<i>Burchardia multiflora</i> (Dwarf Burchardia)			
78.	3002	<i>Cakile maritima</i> (Sea Rocket)	Y		
79.	18035	<i>Caladenia bicalliata</i> subsp. <i>bicalliata</i>			
80.	15360	<i>Caladenia longicauda</i> subsp. <i>borealis</i>			
81.		<i>Calliblepharis</i> sp.			Y
82.	36560	<i>Callitris arenaria</i> (Sandplain Cypress)			
83.	26534	<i>Callophycus dorsifer</i>			
84.		<i>Callophycus dorsiferus</i>			
85.	26535	<i>Callophycus harveyanus</i>			
86.	26536	<i>Callophycus oppositifolius</i>			
87.	5426	<i>Calothamnus quadrifidus</i> (One-sided Bottlebrush, Kwoodjard)			
88.		<i>Calothamnus</i> sp.			
89.	5441	<i>Calytrix aurea</i>			
90.	5479	<i>Calytrix strigosa</i>			
91.	26549	<i>Carpodanthus gunniamum</i>			
92.	2957	<i>Cassytha racemosa</i> (Dodder Laurel)			
93.	11799	<i>Cassytha racemosa</i> forma <i>racemosa</i>			
94.	1742	<i>Casuarina obesa</i> (Swamp Sheoak, Kull)			
95.	13685	<i>Catapodium rigidum</i> (Rigid Fescue)	Y		
96.	26556	<i>Caulerpa cactoides</i>			
97.	27380	<i>Caulerpa flexilis</i> var. <i>muelleri</i>			
98.	27382	<i>Caulerpa longifolia</i> forma <i>crispata</i>			
99.	26578	<i>Caulerpa simpliciuscula</i>			
100.	26588	<i>Ceramium australe</i>			Y
101.	26599	<i>Ceramium puberulum</i>			
102.	26601	<i>Ceramium rubrum</i>			
103.	17685	<i>Cheilanthes aristatus</i>			
104.	8788	<i>Chamaecilla versicolor</i>			
105.	5498	<i>Chamaelucium uncinatum</i> (Geraldton Wax)			
106.	26619	<i>Champia stipitata</i>			
107.	26621	<i>Champia zostericola</i>			
108.	26622	<i>Chauvinella coriifolia</i>			

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	Name ID	Species Name	Naturalised	Conservation Code	Endemic To Query Area
109.	26632	<i>Chondria curdieana</i>			
110.	26633	<i>Chondria dangeardii</i>			
111.	29619	<i>Chondrophycus brandenii</i>			
112.		<i>Chondrophycus</i> sp.			
113.	26650	<i>Cladophora coelothrix</i>			
114.	36316	<i>Cladophora herpestica</i>			
115.	26659	<i>Cladophora valonioides</i>			
116.	26663	<i>Cladurus elatus</i>			
117.	26665	<i>Clavicornium ovatum</i>			
118.	10804	<i>Clematis linearifolia</i>			
119.	26666	<i>Cliftonaea pectinata</i>			
120.	26671	<i>Codium duthieae</i>			
121.	26672	<i>Codium galeatum</i>			
122.	26674	<i>Codium harveyi</i>			
123.	26675	<i>Codium laminarioides</i>			
124.	26676	<i>Codium lucasii</i>			
125.	26677	<i>Codium mammosum</i>			
126.	26678	<i>Codium muelleri</i>			
127.	26683	<i>Codium spongiosum</i>			
128.	26688	<i>Coeloclonium tasmanicum</i>			
129.	15041	<i>Conospermum canaliculatum</i>			
130.	1864	<i>Conospermum crassinervium</i> (Summer Smokebush)			
131.	15611	<i>Conospermum stoechadis</i> subsp. <i>stoechadis</i> (Common Smokebush)			
132.	6348	<i>Conostephium pendulum</i> (Pearl Flower)			
133.	11414	<i>Conostylis aculeata</i> subsp. <i>breviflora</i>			
134.		<i>Conostylis aculeata</i> subsp. <i>breviflora</i> x <i>candicans</i>			
135.	1423	<i>Conostylis aurea</i> (Golden Conostylis)			
136.	1427	<i>Conostylis candicans</i> (Grey Cottonhead)			
137.	12027	<i>Conostylis candicans</i> subsp. <i>calcicola</i>			
138.	11438	<i>Conostylis candicans</i> subsp. <i>candicans</i>			
139.	1428	<i>Conostylis canterata</i>			
140.	11870	<i>Conostylis teretifolia</i> subsp. <i>teretifolia</i>			
141.	26701	<i>Craspedocarpus blepharicarpus</i>			
142.		<i>Crassula</i> sp.			
143.	4809	<i>Cryptandra pungens</i>			
144.	4810	<i>Cryptandra scoparia</i>			
145.	26709	<i>Cryptonemia undulata</i>			
146.	26712	<i>Curdiea obesa</i>			
147.	283	<i>Cynodon dactylon</i> (Couch)	Y		
148.		<i>Dampiera</i> sp.			
149.	7482	<i>Dampiera teres</i> (Terete-leaved Dampiera)			
150.	5511	<i>Darwinia helichrysoides</i>			
151.	5522	<i>Darwinia pauciflora</i>			
152.	5528	<i>Darwinia sanguinea</i>			
153.	46833	<i>Dasya anastomosans</i>			
154.	26735	<i>Dasya cliffonii</i>			
155.	26738	<i>Dasya elongata</i>			
156.	26740	<i>Dasya frutescens</i>			
157.	26752	<i>Dasyctionium incisum</i>			
158.		<i>Dasyctionium</i> sp.			
159.	26753	<i>Dasyphila preissii</i>			
160.	1220	<i>Dasyopogon obliquifolius</i>			
161.	18560	<i>Daviesia divaricata</i> subsp. <i>divaricata</i>			
162.	3833	<i>Daviesia podophylla</i>			
163.	26757	<i>Delisea pulchra</i>			
164.	29615	<i>Dichotomaria obtusata</i>			
165.	26758	<i>Dicranema revolutum</i>			
166.	26762	<i>Dictyomenia sonderi</i>			
167.	26763	<i>Dictyomenia tridens</i>			
168.	4453	<i>Diplolaena angustifolia</i> (Yanchep Rose)			
169.	4455	<i>Diplolaena ferruginea</i>			
170.	15273	<i>Diplolaena leemaniana</i>			
171.	15275	<i>Diplolaena obovata</i>			
172.	18541	<i>Diplopeltis huegelii</i> subsp. <i>huegelii</i>			
173.	7054	<i>Dischisma arenarium</i>	Y		
174.	4761	<i>Dodonaea ericoides</i>			
175.	26795	<i>Doxodasya bolbochaete</i>			
176.		<i>Doxodasya</i> sp.			
177.	26797	<i>Drewiana nitella</i>			
178.	48751	<i>Drosera drummondii</i>			

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179.	13201	<i>Drosera eneabba</i>			
180.	29178	<i>Drosera porrecta</i>			
181.	3128	<i>Drosera ramellosa</i> (Branched Sundew)			
182.	13185	<i>Drosera spilos</i>			
183.	5537	<i>Eremaea beaufortioides</i>			
184.	14099	<i>Eremaea beaufortioides</i> var. <i>lachnosanthe</i>			
185.	5540	<i>Eremaea fimbriata</i>			
186.	5543	<i>Eremaea violacea</i> (Violet Eremaea)			
187.	26826	<i>Erythrymenia minuta</i>			
188.	5649	<i>Eucalyptus foecunda</i> (Narrow-leaved Red Mallee)			
189.	5722	<i>Eucalyptus obtusiflora</i> (Dongara Mallee)			
190.	19815	<i>Eucalyptus obtusiflora</i> subsp. <i>dongarraensis</i>			
191.	13541	<i>Eucalyptus petrensis</i>			
192.	5790	<i>Eucalyptus tottiana</i> (Coastal Blackbutt)			
193.	12905	<i>Eucalyptus wandoo</i> subsp. <i>pulverea</i>			
194.	26830	<i>Euphiota articulata</i>			
195.	10765	<i>Exocarpos sparteus</i> (Broom Bailart, Djuk)			
196.	32370	<i>Funaria hygrometrica</i>			
197.	26835	<i>Galaxaura rugosa</i>			
198.	3894	<i>Gastrolobium callistachys</i> (Rock Poison)			
199.	16311	<i>Gazania linearis</i>	Y		
200.	26849	<i>Gelidium pusillum</i>			
201.	26850	<i>Gelinaria ulvoidea</i>			
202.	18404	<i>Georgeantha hexandra</i>			
203.	26854	<i>Gigartina disticha</i>			
204.	26859	<i>Gloiocladia australe</i>			
205.	26860	<i>Gloiocladia halymenioides</i>			
206.	7983	<i>Gnaphalium indutum</i> (Tiny Cudweed)			
207.	3955	<i>Gompholobium preissii</i>			
208.	12516	<i>Goodenia convexa</i>			
209.	19286	<i>Goodenia pulchella</i> subsp. <i>Coastal Plain A (M. Hislop 634)</i>			
210.	26868	<i>Gracilaria cliftonii</i>			
211.	26872	<i>Gracilaria preissiana</i>			
212.	15763	<i>Grevillea biformis</i> subsp. <i>biformis</i>			
213.	15838	<i>Grevillea preissii</i> subsp. <i>glabrilimba</i>			
214.	26883	<i>Griffithsia montis</i>			
215.	5011	<i>Guichenotia ledifolia</i>			
216.	1473	<i>Haemodorum simulans</i>			
217.	1475	<i>Haemodorum spicatum</i> (Mardja)			
218.	2161	<i>Hakea flabellifolia</i> (Fan-leaved Hakea)			
219.	2197	<i>Hakea prostrata</i> (Harsh Hakea)			
220.	26890	<i>Halimeda cuneata</i>			
221.	13141	<i>Halipylon roseum</i>			
222.	26900	<i>Haloplegma preissii</i>			
223.	26903	<i>Haliptichon arachnoideum</i>			
224.	3016	<i>Helioiphia pusilla</i>	Y		
225.	26913	<i>Helminthora australis</i>			
226.	16933	<i>Hemandra glabra</i>			
227.	26915	<i>Hennedya crista</i>			
228.	26919	<i>Herposiphonia rostrata</i>			
229.	26920	<i>Herposiphonia secunda</i>			Y
230.	26925	<i>Heterocladia caudata</i>			
231.	26927	<i>Heterodoxia denticulata</i>			
232.		<i>Heterosiphonia callithamnion</i>			Y
233.	26929	<i>Heterosiphonia callithamnium</i>			
234.	26930	<i>Heterosiphonia crassipes</i>			
235.	26936	<i>Heterosiphonia muelleri</i>			
236.	26939	<i>Heterostroma nereidilis</i>			
237.	45534	<i>Hibbertia hypericoides</i> subsp. <i>hypericoides</i>			
238.	5162	<i>Hibbertia racemosa</i> (Stalked Guinea Flower)			
239.	5171	<i>Hibbertia spicata</i>			
240.	449	<i>Hordeum leporinum</i> (Barley Grass)	Y		
241.	12741	<i>Hyalosperma cotula</i>			
242.	6229	<i>Hydrocotyle diantha</i>			
243.	6234	<i>Hydrocotyle medicaginoides</i> (Trefoil Pennywort)			
244.	6241	<i>Hydrocotyle tetragonocarpa</i>			
245.	26962	<i>Hymenocladia dactyloides</i>			
246.	26964	<i>Hymenocladia filiformis</i>			Y
247.	26965	<i>Hymenocladia usnea</i>			
248.	35898	<i>Hypnea musciformis</i>			

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249.	26973 <i>Hypnea valentiae</i>			
250.	26977 <i>Hypoglossum dendroides</i>			Y
251.	26979 <i>Hypoglossum heterocystideum</i>			
252.	912 <i>Isolepis cyperoides</i>			
253.	917 <i>Isolepis marginata</i> (Coarse Club-rush)			
254.	2232 <i>Isopogon linearis</i>			
255.	7396 <i>Isotoma hypocrateriformis</i> (Woodbridge Poison)			
256.	19700 <i>Isotropis cuneifolia</i> subsp. <i>cuneifolia</i>			
257.	4010 <i>Jacksonia floribunda</i> (Holly Pea)			
258.	19632 <i>Johnsonia pubescens</i> subsp. <i>pubescens</i>			
259.	26994 <i>Kuetzingia angusta</i>			
260.	26995 <i>Kuetzingia canaliculata</i>			
261.	<i>Kuetzingia pectinella</i>			Y
262.	5031 <i>Lasioptalum drummondii</i>			
263.	26997 <i>Laurencia arbuscula</i>			
264.	26998 <i>Laurencia brongniartii</i>			
265.	26999 <i>Laurencia clavata</i>			
266.	27000 <i>Laurencia elata</i>			
267.	27001 <i>Laurencia filiformis</i>			
268.	4955 <i>Lawrencia glomerata</i>			
269.	4958 <i>Lawrencia spicata</i>			
270.	4959 <i>Lawrencia squamata</i>			
271.	1305 <i>Laxmannia omnifertis</i>			
272.	11679 <i>Laxmannia sessiliflora</i> subsp. <i>drummondii</i>			
273.	7586 <i>Lechenaultia stenosepala</i> (Narrow-sepaled Leschenaultia)			
274.	27011 <i>Lenormandia latifolia</i>			
275.	27013 <i>Lenormandia spectabilis</i>			
276.	3027 <i>Lepidium foliosum</i> (Leafy Peppergrass)			
277.	3030 <i>Lepidium lyratogynum</i>			
278.	42742 <i>Lepidosperma calcicola</i>			
279.	15418 <i>Leptoceras menziesii</i>			
280.	2344 <i>Leptomeria empetriflora</i>			
281.	2350 <i>Leptomeria pauciflora</i> (Sparse-flowered Currant Bush)			
282.	2352 <i>Leptomeria preissiana</i>			
283.	17852 <i>Leptorhynchus scaber</i> (Lanky Buttons)			
284.	5857 <i>Leptospermum spinescens</i>			
285.	6434 <i>Leucopogon polymorphus</i>			
286.	36863 <i>Lobelia heterophylla</i> subsp. <i>heterophylla</i>			
287.	16798 <i>Logania littoralis</i>			
288.	1239 <i>Lomandra preissii</i>			
289.	27050 <i>Lophoctadia kuetzingii</i>			
290.	31351 <i>Malva preissiana</i>			
291.	13271 <i>Melaleuca huegelii</i> subsp. <i>huegelii</i>			
292.	5930 <i>Melaleuca leucopyxis</i>			
293.	18112 <i>Melaleuca leucopoma</i>			
294.	5949 <i>Melaleuca platycalyx</i>			
295.	18598 <i>Melaleuca systena</i>			
296.	5983 <i>Melaleuca trichophylla</i>			
297.	5986 <i>Melaleuca urceolaris</i>			
298.	2813 <i>Mesembryanthemum crystallinum</i> (Iceplant)	Y		
299.	27070 <i>Metamastophora flabellata</i>			
300.	<i>Metamastophora</i> sp.			
301.	27074 <i>Microdictyon umbilicatum</i>			
302.	8105 <i>Millotia myosotidifolia</i>			
303.	27078 <i>Mychodea australis</i>			Y
304.	27080 <i>Mychodea disticha</i>			
305.	7289 <i>Myoporum capraroides</i> (Slender Myoporum)			
306.	7291 <i>Myoporum insulare</i> (Blueberry Tree, boobialla)			
307.	27100 <i>Neurymenia fraxinifolia</i>			
308.	11327 <i>Nicotiana occidentalis</i> subsp. <i>hesperis</i>			
309.	27103 <i>Nizymenia conferta</i>			
310.	16390 <i>Oenothera drummondii</i> subsp. <i>drummondii</i>	Y		
311.	2365 <i>Olex benthamiana</i>			
312.	8127 <i>Olearia axillaris</i> (Coastal Daisybush)			
313.	8149 <i>Olearia rudis</i> (Rough Daisybush)			
314.	46254 <i>Orianthera spermocoea</i>			
315.	27108 <i>Osmundaria spiralis</i>			
316.	<i>Palisada thuyoides</i>			Y
317.	516 <i>Parapholis incurva</i> (Coast Barbgrass)	Y		
318.	1762 <i>Parietaria debilis</i> (Pellitory)			

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319.	1550	<i>Paterosnia occidentalis</i> (Purple Flag, Koma)			
320.	43763	<i>Pauridia glabella</i>			
321.	27121	<i>Penicillius nodulosus</i>			
322.	20368	<i>Petrophile axillaris</i>			
323.	2301	<i>Petrophile macrostachya</i>			
324.	27129	<i>Peyssonnetia novae-hollandiae</i>			
325.	27131	<i>Phacelocarpus alatus</i>			
326.	27133	<i>Phacelocarpus labillardieri</i>			
327.	4675	<i>Phyllanthus calycinus</i> (False Boronia)			
328.	5243	<i>Pimelea ferruginea</i>			
329.	5244	<i>Pimelea floribunda</i>			
330.	11402	<i>Pimelea imbricata</i> var. <i>piligera</i>			
331.	5268	<i>Pimelea sulphurea</i> (Yellow Banjine)			
332.	18353	<i>Pithocarpa pulchella</i> var. <i>pulchella</i>			
333.	6262	<i>Platysace xerophila</i>			
334.	27145	<i>Platysiphonia delicata</i>			
335.	27146	<i>Platysiphonia hypneoides</i>			
336.	27156	<i>Placanium mertensii</i>			
337.	27157	<i>Placanium preissianum</i>			
338.	573	<i>Poa drummondiana</i> (Knotted Poa)			
339.	8175	<i>Podolepis gracilis</i> (Slender Podolepis)			
340.	8177	<i>Podolepis lessonii</i>			
341.	27161	<i>Pollexfenia lobata</i>			
342.	27162	<i>Pollexfenia pedicellata</i>			
343.	27168	<i>Polysiphonia amphibolis</i>			
344.	27171	<i>Polysiphonia blandii</i>			
345.	27173	<i>Polysiphonia decipiens</i>			
346.	29621	<i>Polysiphonia forbesi</i>			
347.	125	<i>Posidonia sinuosa</i>			
348.	1672	<i>Prasophyllum fimbria</i> (Fringed Leek Orchid)			
349.	1682	<i>Prasophyllum sargentii</i>			
350.	27190	<i>Protokuetzingia australasica</i>			
351.	27193	<i>Psilothalia siliculosa</i>			
352.		<i>Psilothalia</i> sp.			Y
353.	27194	<i>Psilothalia striata</i>			
354.	27195	<i>Pterocladia lucida</i>			
355.	41982	<i>Pterostylis microglossa</i>			
356.	48602	<i>Ptilotus eremita</i>			
357.	32480	<i>Racopilum cuspidigerum</i> var. <i>convolutaceum</i>			
358.	8197	<i>Reichardia tingitana</i> (False Sowthistle)	Y		
359.	13300	<i>Rhodanthe citrina</i>			
360.		<i>Rhodophyllis</i> sp.			
361.	116	<i>Ruppia polycarpa</i>			
362.	117	<i>Ruppia tuberosa</i>			
363.	30434	<i>Salsola australis</i>			
364.	6484	<i>Samolus repens</i> (Creeping Brookweed)			
365.	14107	<i>Samolus repens</i> var. <i>paucifolius</i>			
366.	2356	<i>Santalum acuminatum</i> (Quandong, Warnga)			
367.	7603	<i>Scaevola canescens</i> (Grey Scaevola)			
368.	7606	<i>Scaevola crassifolia</i> (Thick-leaved Fan-flower)			
369.	7613	<i>Scaevola glandulifera</i> (Viscid Hand-flower)			
370.	7614	<i>Scaevola globulifera</i>			
371.	29356	<i>Scaevola repens</i> subsp. <i>Northern Sandplains</i> (R.J. Cranfield & P.J. Spencer 8445)			
372.	13181	<i>Scaevola repens</i> var. <i>angustifolia</i>			
373.	13152	<i>Scaevola thesioides</i> subsp. <i>thesioides</i>			
374.	994	<i>Schoenus humilis</i>			
375.	997	<i>Schoenus lanatus</i> (Woolly Bog-rush)			
376.	1004	<i>Schoenus nitens</i> (Shiny Bog-rush)			
377.	6034	<i>Scholtzia laxiflora</i>			
378.	6037	<i>Scholtzia parviflora</i>			
379.	6041	<i>Scholtzia umbellifera</i>			
380.	8207	<i>Senecio glossanthus</i> (Slender Groundsel)			
381.	20161	<i>Senecio pinnatifolius</i>			
382.	25884	<i>Senecio pinnatifolius</i> var. <i>latilobus</i>			
383.		<i>Senecio</i> sp.			
384.	3072	<i>Sisymbrium orientale</i> (Indian Hedge Mustard)	Y		
385.	7037	<i>Solanum symonii</i>			
386.	27281	<i>Solieria robusta</i>			
387.		<i>Solieria</i> sp.			
388.	8231	<i>Sonchus oleraceus</i> (Common Sowthistle)	Y		

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	Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
389.	17551	<i>Sphaerolobium drummondii</i>			
390.	625	<i>Spinifex longifolius</i> (Beach Spinifex)			
391.	48643	<i>Spongoclonium caribaeum</i>			Y
392.	27301	<i>Spongoclonium conspicuum</i>			
393.	635	<i>Sporobolus virginicus</i> (Marine Couch)			
394.	27310	<i>Spyridia filamentosa</i>			
395.	4828	<i>Spyridium globulosum</i> (Basket Bush)			
396.	9070	<i>Stackhousia pubescens</i> (Downy Stackhousia)			
397.	27314	<i>Stictosporum nitophylloides</i>			
398.		<i>Stictosporum</i> sp.			Y
399.	12856	<i>Stirlingia abrotanoides</i>			
400.	2319	<i>Strangia cynanchicarpa</i> (Heath Strangia)			
401.	27318	<i>Struvea plumosa</i>			
402.	7709	<i>Styidium crossocephalum</i> (Posy Triggerplant)			
403.	7710	<i>Styidium cygnorum</i>			
404.	7720	<i>Styidium elongatum</i> (Tall Triggerplant)			
405.	25801	<i>Styidium hesperium</i>			
406.	2639	<i>Suaeda australis</i> (Seablite)			
407.	15532	<i>Synaphea spinulosa</i> subsp. <i>spinulosa</i>			
408.	33236	<i>Tecticornia halconemoides</i> (Shrubby Samphire)			
409.	33297	<i>Tecticornia pergranulata</i> subsp. <i>pergranulata</i> (Blackseed Samphire)			
410.	31716	<i>Tecticornia syncarpa</i>			
411.	2791	<i>Tersonia cyathiflora</i> (Button Creeper)			
412.	2820	<i>Tetragonia decumbens</i> (Sea Spinach)	Y		
413.	35582	<i>Tetralia</i> sp. Mt Madden (C.D. Turley 40 BP/897)			
414.	5080	<i>Thomasia foliosa</i>			
415.	5084	<i>Thomasia grandiflora</i> (Large Flowered Thomasia)			
416.	2644	<i>Threlkeldia diffusa</i> (Coast Bonefruit)			
417.	27331	<i>Thurella quercifolia</i>			
418.	1319	<i>Thysanotus arenarius</i>			
419.	1343	<i>Thysanotus patersonii</i>			
420.	1358	<i>Thysanotus triandrus</i>			
421.	27336	<i>Tolypocladia glomerulata</i>			
422.		<i>Trachymene coerulea</i> subsp. <i>coerulea</i> / <i>leucopetala</i>			Y
423.	1361	<i>Tricoryne elatior</i> (Yellow Autumn Lily)			
424.	14738	<i>Trifolium resupinatum</i> var. <i>resupinatum</i>	Y		
425.	151	<i>Triglochin striata</i>			
426.	152	<i>Triglochin trichophora</i>			
427.	4737	<i>Tripterococcus brunonis</i> (Winged Stackhousia)			
428.	7665	<i>Velleia trinervis</i>			
429.	7666	<i>Verreauxia reinwardtii</i> (Common Verreauxia)			
430.	12411	<i>Verticordia densiflora</i> var. <i>cespitosa</i>			
431.	15432	<i>Verticordia densiflora</i> var. <i>densiflora</i>			
432.	12437	<i>Verticordia laciniata</i>			
433.	10822	<i>Verticordia nobilis</i>			
434.	6103	<i>Verticordia ovalifolia</i>			
435.	27360	<i>Vidalia spiralis</i>			
436.	11137	<i>Vulpia fasciculata</i>	Y		
437.	8275	<i>Weitzia acuminata</i> (Orange Immortelle)			
438.	13330	<i>Weitzia acuminata</i> var. <i>albicans</i>			
439.	13328	<i>Weitzia nitida</i>			
440.	13333	<i>Weitzia suaveolens</i> var. <i>suaveolens</i>			
441.	6939	<i>Westringia dampieri</i>			
442.	6659	<i>Wilsonia humilis</i> (Silky Wilsonia)			
443.	27364	<i>Willastonella myriophylloides</i>			
444.	1398	<i>Wurmbea monantha</i>			
445.	44861	<i>Xerochrysium macranthum</i>			
446.	4387	<i>Zygophyllum billardierei</i> (Coast Twinleaf)			
447.	4390	<i>Zygophyllum fruticulosum</i> (Shrubby Twinleaf)			

**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

<sup>1</sup> 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.

**NatureMap search results – fauna 10 km buffer**

# Sandy Cape Road Fauna 10 km Circle

Created By Scott Hitchcock on 16/09/2019

Kingdom Animalia  
Core Datasets Only Yes  
Method 'By Circle'  
Centre 115° 00' 03" E, 30° 11' 10" S  
Buffer 10km  
Group By Conservation Status

Conservation Status	Species	Records
Non-conservation taxon	249	903
Priority 2	1	1
Priority 4	2	10
Protected under international agreement	14	87
Rare or likely to become extinct	5	20
<b>TOTAL</b>	<b>271</b>	<b>1021</b>

Name ID	Species Name	Naturalised	Conservation Code	Endemic To Query Area
<b>Rare or likely to become extinct</b>				
1.	24734 <i>Calyptorhynchus latrostris</i> (Carnaby's Cockatoo, White-tailed Short-billed Black Cockatoo)		T	
2.	24557 <i>Leipoa ocellata</i> (Malleefowl)		T	
3.	24180 <i>Macroderma gigas</i> (Ghost Bat)		T	
4.	24210 <i>Necphoca cinerea</i> (Australian Sea-lion)		T	
5.	24530 <i>Sterna nereis subsp. nereis</i> (Fairy Tern)		T	
<b>Protected under international agreement</b>				
6.	41323 <i>Actitis hypoleucos</i> (Common Sandpiper)		IA	
7.	25736 <i>Arenaria interpres</i> (Ruddy Turnstone)		IA	
8.	24779 <i>Calidris acuminata</i> (Sharp-tailed Sandpiper)		IA	
9.	24780 <i>Calidris alba</i> (Sanderling)		IA	
10.	24788 <i>Calidris ruficollis</i> (Red-necked Stint)		IA	
11.	48587 <i>Hydroprogne caspia</i> (Caspiian Tern)		IA	
12.	30932 <i>Limosa lapponica</i> (Bar-tailed Godwit)		IA	
13.	25742 <i>Numenius phaeopus</i> (Whimbrel)		IA	
14.	48591 <i>Pandion cristatus</i> (Osprey, Eastern Osprey)		IA	
15.	24383 <i>Pluvialis squatarola</i> (Grey Plover)		IA	
16.	24520 <i>Sterna anaethetus subsp. anaethetus</i> (Bridled Tern)		IA	
17.	24524 <i>Sterna dougalli subsp. gracilis</i> (Roseate Tern)		IA	
18.	48597 <i>Thalasseus bergii</i> (Crested Tern)		IA	
19.	24808 <i>Tringa nebularia</i> (Common Greenshank, greenshank)		IA	
<b>Priority 2</b>				
20.	33976 <i>Hemisaga vepreculae</i> (thorny bush katydid (Moora), bush cricket (Moora))		P2	
<b>Priority 4</b>				
21.	24376 <i>Charadrius rubricollis</i> (Hooded Plover)		P4	
22.	48135 <i>Thinornis rubricollis</i> (Hooded Plover, Hooded Dotterel)		P4	
<b>Non-conservation taxon</b>				
23.	24559 <i>Acanthagenys rufogularis</i> (Spiny-cheeked Honeyeater)			
24.	<i>Acanthaluteres spilomelanurus</i>			
25.	24260 <i>Acanthiza apicalis</i> (Broad-tailed Thornbill, Inland Thornbill)			
26.	24261 <i>Acanthiza chrysorrhoa</i> (Yellow-rumped Thornbill)			
27.	<i>Acarina 001</i>			Y
28.	25536 <i>Accipiter fasciatus</i> (Brown Goshawk)			
29.	<i>Adversaeschna brevistyla</i>			
30.	<i>Aedes alboannulatus</i>			
31.	<i>Aedes camptorhynchus</i>			
32.	<i>Aedes sp.</i>			
33.	<i>Aeolosoma sp. 1</i> (PSS)			
34.	<i>Aeshnidae sp.</i>			
35.	<i>Alboa worroo</i>			

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	Name ID	Species Name	Naturalised	Conservation Code	Endemic To Query Area
36.	24312	<i>Anas gracilis</i> (Grey Teal)			
37.	24316	<i>Anas superciliosa</i> (Pacific Black Duck)			
38.	47414	<i>Anhinga novaehollandiae</i> (Australasian Darter)			
39.		<i>Anisops</i> sp.			
40.		<i>Anopheles annulipes</i> s.l.			
41.		<i>Anopheles</i> sp.			
42.	24561	<i>Anthochaera carunculata</i> (Red Wattlebird)			
43.		<i>Apocyclops dengizicus</i>			
44.	41324	<i>Ardea modesta</i> (great egret, white egret)			
45.	24610	<i>Ardeotis australis</i> (Australian Bustard)			
46.	24353	<i>Artamus cyanopterus</i> (Dusky Woodswallow)			
47.		<i>Australocypris insularis</i>			
48.		<i>Austrochilonia subtenuis</i>			
49.		<i>Austrolestes annulosus</i>			
50.		<i>Barnardius zonarius</i>			
51.		<i>Bennelongia</i> sp.			
52.		<i>Berosus discolor</i>			
53.		<i>Berosus</i> sp.			
54.		<i>Boeckella triarticulata</i>			
55.	42380	<i>Brachyurophis fasciolatus</i> subsp. <i>fasciolatus</i> (Narrow-banded Shovel-nosed Snake)			
56.		<i>Caboncypris kondinirensis</i>			
57.	25598	<i>Cacomantis flabelliformis</i> (Fan-tailed Cuckoo)			
58.	24269	<i>Calamanthus campestris</i> (Rufous Fieldwren)			
59.		<i>Calamoccia citellata</i>			
60.		<i>Calamoccia clittellata</i>			Y
61.	24377	<i>Charadrius ruficapillus</i> (Red-capped Plover)			
62.	47909	<i>Cheramoeca leucosterna</i> (White-backed Swallow)			
63.		<i>Cherax quinquecarinatus</i>			
64.		<i>Chironomus</i> aff. <i>alternans</i> (V24) (CB)			
65.		<i>Chironomus tepperi</i>			
66.		<i>Chondria</i> sp.			
67.	24980	<i>Christinus marmoratus</i> (Marbled Gecko)			
68.		<i>Chroicocephalus novaehollandiae</i>			
69.	24774	<i>Cladorhynchus leucocephalus</i> (Banded Stilt)			
70.		<i>Cletocamptus dietersi</i>			
71.	25675	<i>Colluricincla harmonica</i> (Grey Shrike-thrush)			
72.	25668	<i>Coracina novaehollandiae</i> (Black-faced Cuckoo-shrike)			
73.		<i>Corixidae</i> sp.			
74.	25592	<i>Corvus coronoides</i> (Australian Raven)			
75.		<i>Corynoneura</i> sp. (V49) (SAP)			
76.		<i>Coxiella</i> sp.			
77.	25596	<i>Cracticus torquatus</i> (Grey Butcherbird)			
78.	24918	<i>Crenadactylus ocellatus</i> subsp. <i>ocellatus</i> (Clawless Gecko)			
79.	30893	<i>Cryptoblepharus buechananii</i>			
80.	30899	<i>Ctenophorus adalaidensis</i> (Southern Heath Dragon, Western Heath Dragon)			
81.	24881	<i>Ctenophorus maculatus</i> subsp. <i>maculatus</i> (Spotted Military Dragon)			
82.	25027	<i>Ctenotus australis</i>			
83.	25039	<i>Ctenotus fallens</i>			
84.	25065	<i>Ctenotus pantherinus</i> subsp. <i>pantherinus</i> (Leopard Ctenotus)			
85.		<i>Culex (Culex) australicus</i>			
86.		<i>Culex globocoxitus</i>			
87.		<i>Culex</i> sp.			
88.		<i>Culicoides</i> sp.			
89.		<i>Curculionidae</i> sp.			
90.	25087	<i>Cyclodomorphus celatus</i> (Western Slender Blue-tongue)			
91.	24322	<i>Cygnus atratus</i> (Black Swan)			
92.		<i>Cyprideis australiensis</i>			
93.		<i>Cyprinotus cingalensis</i> (ex edwardi)			
94.		<i>Daphnia cf. carinata</i> (SAP)			
95.		<i>Daphnia truncata</i>			
96.		<i>Daphnia wardi</i>			
97.		<i>Dasya</i> sp.			
98.	30905	<i>Deima concinna</i> subsp. <i>concinna</i> (Javelin Legless Lizard)			
99.	25766	<i>Deima fraseri</i> (Fraser's Legless Lizard)			
100.	24999	<i>Deima grayii</i>			
101.	25296	<i>Demansia psammophis</i> subsp. <i>reticulata</i> (Yellow-faced Whipsnake)			
102.		<i>Diacypis compacta</i>			
103.		<i>Diacypis spinosa</i>			
104.	25607	<i>Dicaeum hirundinaceum</i> (Mistletoebird)			
105.		<i>Dicrotenidipes pseudoconjunctus</i>			

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106.	<i>Dictyota</i> sp.			
107.	24938 <i>Diplodactylus ornatus</i>			
108.	24939 <i>Diplodactylus polyophthalmus</i>			
109.	<i>Diplodactylus</i> sp.			
110.	<i>Doilichopodidae</i> sp.			
111.	24470 <i>Dromaius novaehollandiae</i> (Emu)			
112.	25251 <i>Echiopsis curta</i> (Bardick)			
113.	25100 <i>Egernia napoleonis</i>			
114.	<i>Egretta novaehollandiae</i>			
115.	41336 <i>Egretta sacra</i> (Eastern Reef Egret, Eastern Reef Heron)			
116.	<i>Enchytraeidae jcs1</i>			
117.	<i>Enchytraeidae jcs2</i>			
118.	<i>Enchytraeidae jcs4</i>			Y
119.	24652 <i>Eopsaltria georgiana</i> (White-breasted Robin)			
120.	<i>Eopsaltria griseogularis</i>			
121.	<i>Ephydriidae</i> sp. 3 (SAP)			
122.	<i>Ephydriidae</i> sp. 6 (SAP)			
123.	24567 <i>Ephianura albifrons</i> (White-fronted Chat)			
124.	<i>Eulimnadia</i> sp.			
125.	25622 <i>Falco cenchroides</i> (Australian Kestrel, Nankeen Kestrel)			
126.	24959 <i>Gehyra variegata</i>			
127.	<i>Gelidiopsis</i> sp.			
128.	47962 <i>Glyciphila melanops</i> (Tawny-crowned Honeyeater)			
129.	<i>Gonorynchus greyi</i>			
130.	24443 <i>Grallina cyanoleuca</i> (Magpie-lark)			
131.	25627 <i>Haematopus fuliginosus</i> (Sooty Oystercatcher)			
132.	24487 <i>Haematopus longirostris</i> (Pied Oystercatcher)			
133.	24293 <i>Haliaeetus leucogaster</i> (White-bellied Sea-Eagle)			
134.	<i>Halicyclops</i> sp. 1 (nr <i>ambiguus</i> ) (SAP)			
135.	<i>Halipidae</i> sp.			
136.	<i>Halipus fuscatus</i>			
137.	<i>Haloniscus searkei</i>			
138.	25410 <i>Heleioporus eyrei</i> (Moaning Frog)			
139.	<i>Heleioporus</i> sp.			
140.	25119 <i>Hemiergis quadrilineata</i>			
141.	25734 <i>Himantopus himantopus</i> (Black-winged Stilt)			
142.	24491 <i>Hirundo neoxena</i> (Welcome Swallow)			
143.	<i>Hyderodes</i> sp.			
144.	<i>Hydrophilidae</i> sp.			
145.	<i>Hypnea</i> sp.			
146.	<i>Isometroides vascus</i>			
147.	<i>Kennethia cristata</i>			
148.	<i>Kennethia</i> sp.			
149.	<i>Kiefferulus interinctus</i>			
150.	24511 <i>Larus novaehollandiae</i> subsp. <i>novaehollandiae</i> (Silver Gull)			
151.	25638 <i>Larus pacificus</i> (Pacific Gull)			
152.	<i>Laurencia</i> sp.			
153.	<i>Lenormandia</i> sp.			
154.	<i>Leptocaris</i> nr <i>brevicornis</i>			
155.	25133 <i>Lerista elegans</i>			
156.	25160 <i>Lerista planiventris</i> subsp. <i>decora</i>			
157.	25165 <i>Lerista praepedita</i>			
158.	25005 <i>Lialis burtonis</i>			
159.	24581 <i>Lichenostomus virescens</i> (Singing Honeyeater)			
160.	25661 <i>Lichmera indistincta</i> (Brown Honeyeater)			
161.	<i>Limbodessus inornatus</i>			
162.	<i>Limbodessus shuckhardi</i>			
163.	<i>Limnocythere</i> sp.			
164.	25415 <i>Limnodynastes dorsalis</i> (Western Banjo Frog)			
165.	<i>Limnoxenus</i> sp.			
166.	<i>Limnoxenus zelandicus</i>			
167.	41413 <i>Liopholis multiscutata</i> (Bull Skink)			
168.	25388 <i>Litoria moorei</i> (Motorbike Frog)			
169.	42414 <i>Lucasium alboguttatum</i>			
170.	<i>Lynceus fateri</i>			
171.	24132 <i>Macropus fuliginosus</i> (Western Grey Kangaroo)			
172.	<i>Macrothrix</i> sp.			
173.	25651 <i>Malurus lamberti</i> (Variegated Fairy-wren)			
174.	25652 <i>Malurus leucopterus</i> (White-winged Fairy-wren)			
175.	24551 <i>Malurus pulcherrimus</i> (Blue-breasted Fairy-wren)			

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	Name ID	Species Name	Naturalised	Conservation Code	Endemic To Query Area
176.	25654	<i>Malurus splendens</i> (Splendid Fairy-wren)			
177.	25184	<i>Menetia greyii</i>			
178.		<i>Meridalecylops baylyi</i>			
179.		<i>Mesochra baylyi</i>			
180.		<i>Mesocyclops brooksi</i>			
181.		<i>Mesostigmata</i> sp.			
182.		<i>Microcarbo melanoleucos</i>			
183.		<i>Microvelia</i> ( <i>Pacificovelia</i> ) <i>oceanica</i>			
184.		<i>Microvelia</i> sp.			
185.	25191	<i>Morethia lineocellata</i>			
186.	25192	<i>Morethia obscura</i>			
187.	24223	<i>Mus musculus</i> (House Mouse)	Y		
188.		<i>Mytilocypris ambiguosa</i>			
189.		<i>Mytilocypris mytiloides</i>			
190.		<i>Necterosoma penicillatus</i>			
191.		<i>Necterosoma</i> sp.			
192.		<i>Nematoda</i> sp.			
193.	25426	<i>Neobatrachus pelobatooides</i> (Humming Frog)			
194.	24739	<i>Neophema petrophila</i> (Rock Parrot)			
195.		<i>Nitocra</i> sp. 5 ( <i>nr reducta</i> ) (SAF)			
196.		<i>Notonectidae</i> sp.			
197.	24495	<i>Oceanites marinus</i> subsp. <i>dulciae</i> (White-faced Storm Petrel)			
198.	24407	<i>Ocyphaps lophotes</i> (Crested Pigeon)			
199.		<i>Onychodrysdus</i> sp.			
200.		<i>Oribatida</i> sp.			
201.		<i>Oribatida</i> sp. JCS1			Y
202.		<i>Orthetrum caledonicum</i>			
203.	25679	<i>Pachycephala pectoralis</i> (Golden Whistler)			
204.	25680	<i>Pachycephala rufiventris</i> (Rufous Whistler)			
205.		<i>Paramerina levidensis</i>			
206.		<i>Parartemia extracta</i>			
207.	25682	<i>Pardalotus striatus</i> (Striated Pardalote)			
208.		<i>Paroster niger</i>			
209.		<i>Paroster</i> sp.			
210.	48080	<i>Petrochelidon ariel</i> (Fairy Martin)			
211.	25697	<i>Phalacrocorax carbo</i> (Great Cormorant)			
212.	24667	<i>Phalacrocorax sulcirostris</i> (Little Black Cormorant)			
213.	25698	<i>Phalacrocorax varius</i> (Pied Cormorant)			
214.		<i>Pliatycypris baueri</i>			
215.	25007	<i>Pletholax gracilis</i> subsp. <i>gracilis</i> (Keeled Legless Lizard)			
216.		<i>Plocamium</i> sp.			
217.	24907	<i>Pogona minor</i> subsp. <i>minor</i> (Dwarf Bearded Dragon)			
218.		<i>Polypedium nubifer</i>			
219.		<i>Polysiphonia</i> sp.			
220.	30854	<i>Polytelis anthopeplus</i> subsp. <i>westralis</i> (Regent Parrot)			
221.	34013	<i>Pomatostomus superciliosus</i> subsp. <i>ashbyi</i> (White-browed Babbler (western wheatbelt))			
222.	24769	<i>Porzana fluminea</i> (Australian Spotted Crake)			
223.		<i>Procladius paludicola</i>			
224.	24230	<i>Pseudomys albocinereus</i> (Ash-grey Mouse)			
225.	42416	<i>Pseudonaja mengdeni</i> (Western Brown Snake)			
226.	25433	<i>Pseudophryne guentheri</i> (Crawling Toadlet)			
227.	25008	<i>Pygopus lepidopodus</i> (Common Scaly Foot)			
228.	25271	<i>Ramphotyphlops australis</i>			
229.	24243	<i>Rattus fuscipes</i> (Western Bush Rat)			
230.	24776	<i>Recurvirostra novaehollandiae</i> (Red-necked Avocet)			
231.		<i>Reticocypris clava</i>			
232.		<i>Reticocypris</i> sp.			
233.		<i>Rhantus suturalis</i>			
234.	48096	<i>Rhipidura albiscapa</i> (Grey Fantail)			
235.	25614	<i>Rhipidura leucophrys</i> (Willie Wagtail)			
236.		<i>Sargassum</i> sp.			
237.		<i>Sarscyridopsis aculeata</i>			
238.		<i>Scirtidae</i> sp.			
239.	25534	<i>Sericornis frontalis</i> (White-browed Scrubwren)			
240.		<i>Sillago ingenua</i>			
241.	25267	<i>Simoselepis littoralis</i> (West Coast Banded Snake)			
242.	24108	<i>Sminthopsis crassicaudata</i> (Fat-tailed Dunnart)			
243.	24109	<i>Sminthopsis dolichura</i> (Little long-tailed Dunnart)			
244.	24112	<i>Sminthopsis granitipes</i> (White-tailed Dunnart)			

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Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
245.	<i>Sminthopsis griseoventer subsp. boullangerensis</i>			
246.	<i>Staphylinidae sp.</i>			
247.	24522 <i>Sterna bergii</i> (Crested Tern)			
248.	24525 <i>Sterna fuscata subsp. nubilosa</i> (Sooty Tern)			
249.	48594 <i>Sterna nereis</i> (Fairy Tern)			
250.	<i>Stratiomyidae sp.</i>			
251.	24942 <i>Strophurus spinigerus subsp. spinigerus</i>			
252.	<i>Tabanidae sp.</i>			
253.	24331 <i>Tadorna tadornoides</i> (Australian Shelduck, Mountain Duck)			
254.	<i>Tanytarsus barbittarsis</i>			
255.	<i>Tanytarsus fuscithorax/semibarbitarsus</i>			
256.	24167 <i>Tarsipes rostratus</i> (Honey Possum, Noolbenger)			
257.	<i>Thalassoma lunare</i>			
258.	25203 <i>Tiliqua occipitalis</i> (Western Bluetongue)			
259.	48141 <i>Tribonyx ventralis</i> (Black-tailed Native-hen)			
260.	25218 <i>Varanus gouldii</i> (Bungarra or Sand Monitor)			
261.	25526 <i>Varanus tristis</i> (Racehorse Monitor)			
262.	<i>Velidae sp.</i>			
263.	<i>Wrangellia sp.</i>			
264.	25765 <i>Zosterops lateralis</i> (Grey-breasted White-eye, Silvereye)			
265.	<i>fly 001</i>			Y
266.	<i>fly 004</i>			
267.	<i>fly 005</i>			
268.	<i>fly 006</i>			Y
269.	<i>fly 007</i>			Y
270.	<i>fly sp.</i>			
271.	<i>springtail 003</i>			Y

**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

<sup>1</sup> 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 2: CONSERVATION SIGNIFICANCE FLORA, FAUNA, ECOLOGICAL COMMUNITIES**

### **Threatened Flora**

Some flora species can be protected by Australian Government legislation (*Environment Protection and Biodiversity Conservation Act 1999*, EPBC Act) or by WA legislation (*Biodiversity Conservation Act 2016*, BC Act) (DotEE, 2019b; GoWA, 2016). Species specially protected by these acts are referred to as threatened species and can be listed as critically endangered, endangered or vulnerable.

On 1 January 2019, the BC Act and *Biodiversity Conservation Regulations 2018* replaced both the *Wildlife Conservation Act 1950* and the *Sandalwood Act 1929* and their associated regulations (DBCA, 2019b; GoWA, 2016 and 2018). The new BC Act and regulations provide greater protection for threatened species and ecological communities.

### **Priority Flora**

Possible threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Flora List under Priorities (P) 1, 2, 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened flora. Species that are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been recently removed from the threatened species list for other than taxonomic reasons, are placed in Priority 4 and require regular monitoring (DBCA, 2019c; Smith & Jones, 2018).

### **Threatened Fauna**

Threatened Fauna are those listed as such under the EPBC Act or BC Act and can be listed as critically endangered, endangered or vulnerable.

### **Migratory Fauna**

Migratory Fauna are those listed as such under the EPBC Act or the BC Act.

### **Specially Protected Fauna**

Specially Protected Fauna are those listed as such under the BC Act and may be either other specially protected fauna (OS) or conservation dependent fauna (CD).

### **Priority Fauna**

Possible threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Fauna List under Priorities (P) 1, 2, 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened fauna. Species that are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been recently removed from the threatened species list for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring (DBCA, 2019b).

### **Threatened Ecological Communities**

Some ecological communities are protected by Australian Government legislation (the EPBC Act) based on the perceived levels of threat to the community or species population at a national level. They are listed as threatened ecological communities – TECs – and can be listed as Critically Endangered, Endangered or Vulnerable (DotEE, 2019d). The communities are listed by state on the DotEE website (DotEE, 2019e).

In WA the Minister for Environment previously listed ecological communities as threatened through a non-statutory process if the community was presumed to be totally destroyed or at risk of becoming totally destroyed. The BC Act provides for the statutory listing of TECs by the Minister. The new legislation also describes statutory processes for preparing recovery plans for TECs, the registration of their critical habitat, and penalties for unauthorised modification of TECs. These TECs are listed as presumed totally destroyed, critically endangered, endangered or vulnerable (DBCA, 2019c).

### **Priority Ecological Communities**

Ecological communities with insufficient information available to be considered a TEC, or which are rare but not currently threatened are placed on a priority list and are referred to as priority ecological communities (PECs; DBCA, 2019d). Definitions, categories and criteria for threatened and priority ecological communities can be found on the DBCA's website (DEC, 2013).

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