

TECHNICAL MEMO

From: [REDACTED] Astrebla Ecological Services
To: [REDACTED], Project Sea Dragon
Date: 12 October, 2022
Subject: Ecology survey of proposed access track clearing footprint, lot 296 DP37003, Exmouth, WA

Marine Farms Pty Ltd currently operate a Founder Stock Centre (a prawn breeding stock facility) on lot 296 Deposited Plant 37003, located on the outskirts of the township of Exmouth in WA. The existing access track to the facility is partially located on Crown land, and Seafarms are required to relocate to so that it is entirely situated within lot 296.

Construction of the 320 m length required to provide access between Minilya-Exmouth Rd and an existing track on lot 296 will require clearing of approximately 3200 m² of native vegetation (400 m² of which is located on the Minilya-Exmouth road reserve – lot 299 Deposited Plan 37003). This clearing is expected to have a very low environmental impact. Consequently, a Native vegetation clearing referral will be made to the Department of Water and Environmental Regulation, and this memo addresses the requirements of the *Guideline: Native vegetation clearing referrals*.

The survey was conducted on 21 September, 2022 by Simon Danielsen, Principal Ecologist at Astrebla Ecological Services (CV attached to this Memo). The objective of the survey was:

- To confirm the existing native vegetation community mapping for the site (as mapped in the layer Pre-European Vegetation DPIRD-006),
- To assess the condition of vegetation present on the proposed access track footprint against the Trugden vegetation condition scale,
- To determine the presence or likely absence of threatened flora species, and suitable habitat for threatened flora or fauna species, within the proposed access track footprint
- To collect information required to address criterion 1 and 2 of the Native vegetation clearing guideline.

This memo will outline the results of the survey, and address ecological elements of criterion 1 and 2 of the Native vegetation clearing guideline.

Site survey

Initially, a desktop survey was conducted of the Pre-European Vegetation vegetation community mapping layer (DPIRD-006), and for records of significant flora and fauna species from the locale held by the WA government. In addition, a search was conducted using the Commonwealth government Protected Matters Database Search Tool.

The site survey of the proposed access track on lot 296 was conducted on 22 September, 2022. All survey activities were observational only - no plant material was removed from site, and trapping methods were not used.

Desktop survey results are outlined in the individual sections below addressing ecological values against criterion 2.

Site description

Lot 296 is situated on a depositional landform formed of sediments derived from residual or erosional Cretaceous limestone landforms (Geological Survey of Western Australia, 2020a and 2020b), comprising a level to gently undulating karst coastal plain. Essentially, the lot is located on an extensive alluvial outwash karst plain formed from limestone cobble and finer sediments that originated in the adjacent Cape Range. Soils are a sandy loam and emergent limestone bedrock is present in places. Drainage patterns on this karst plain are generally non-tributary, uni-directional, and only the larger watercourses are continuous. A number of discontinuous, shallow depressions that approximate gullies are located across the proposed access track site.

Vegetation in the proposed access track footprint and its vicinity is comprised of sparse to open shrubland to 2 m tall dominated by a range of native shrub species, primarily *Exocarpos aphyllus*, *Acacia bivenosa*, *A. stellaticeps*, *A. pyrifolia* and *A. tetragonophylla* but also frequently including *Gossypium robinsonii*, *Eremophila longifolia*, *Senna artemisioides* subsp. *oliophylla*, *S. glutinosa* subsp. *glutinosa*, *Melaleuca cardiophylla* and *Scaevola pulchella*. There is an emergent layer to 4-5 m tall comprised of *Corymbia hamersleyana*, *Eucalyptus xerothermica* and *A. coriacea*. The ground layer is dominated by a mix of exotic *Cenchrus ciliaris** and *Triodia* spp.. Plates 1-3 provide images of this shrubland.

The discontinuous, shallow depressions mentioned above were characterised by a low woodland canopy dominated by *C. hamersleyana*, *E. xerothermica* and *A. sericophylla*. The ground layer in these depressions was generally dominated by tussock grasses, primarily the exotic *C. ciliaris** with *Themeda triandra* and *Eulalia aurea* (see Plate 4).

Vegetation community mapping

The land on and adjacent to lot 296 is mapped in the Pre-European Vegetation mapping layer (DPIRD-006) as system association code 663-1, which is described as 'hummock grassland, shrub steppe; waterwood over soft spinifex' (note, it is believed 'waterwood' should be 'wirewood', which is the common name for *A. coriacea*). At the sub-association level, this vegetation is described as (for the purpose of this memo, the NVIS codes have been deciphered): sparse shrubland to 2 m tall dominated by *A. bivenosa* with *A. coriacea* and *A. tetragonophylla*, over open hummock grassland to 1 m tall dominated by *Triodia pungens* with *T. sp. aff. angusta*.

The vegetation observed on site and described in the section above generally corresponds with the system association code 663-1 description, and the Pre-European Vegetation mapping layer is considered to have been correctly attributed.



Plate 1: Proposed access track entrance to Minilya-Exmouth Rd

Looking east toward the proposed access track entrance to the main Minilya-Exmouth Rd, from the opposite side of that road – vegetation is sparse to open shrubland, with a maximum canopy height of approximately 4 m, interspersed with areas of open hummock grassland.



Plate 2: Vegetation near the centre of the proposed access track

Sparse shrubland dominated by *Acacia bivenosa* and *A. inaequilatera* with emergent *Corymbia hammersleyana* and *Eucalyptus xerothermica*, and patches of *Triodia epactica* open hummock grassland.



Plate 3: Looking west at the most easterly end of the proposed access track (where it joins an existing track)

This picture shows a section of a low open woodland associated with a number of closed depressions in the vicinity of the proposed access track. This low open woodland is dominated by *E. xerothermica* and *C. hammersleyana* with *Acacia sericophylla*.



Plate 4: Closed depression forming a discontinuous line across the proposed track access

Closed depressions such as these are common in karst landscapes – this one is approximately 3-4 m deep and vegetated with low open woodland dominated by *E. xerothermica*, *C. hammersleyana* and *A. sericophylla*.



Plate 5: A view from the south-east looking north-west toward the proposed access track footprint

Criterion 1 – Thresholds and criteria used to determine if a permit is required

The sections below address the thresholds and criteria outlined in Table 1 of the Guideline-Native vegetation clearing referrals.

Extent of proposed clearing

Marine Farms Pty Ltd propose to clear approximately 3200 m², of which 400 m² is located in a road reserve (note – these figures are based on a total length of clearing of 320 m (40 m in the road reserve) and a maximum clearing width of 10 m).

Lot 296 is located at latitude 21°. Therefore, the clearing threshold for this site is 10 ha, which has not been met.

Threshold for remaining extent of that native vegetation association/complex in the bioregion

Lot 296 is located in the Cape Range IBRA bioregion (CAR01). The vegetation association proposed to be cleared is coded '663'. In 2018 (the latest date for which clearing statistics are publicly available), there was 88.98% of vegetation association 663 remaining in the bioregion. Consequently, the 30% threshold has not been met.

Threshold for remaining native vegetation surrounding the boundary of the proposed clearing

The total area of land (excluding beach and ocean) within a 10 km of radius of the proposed clearing site is 16,950 ha. The Native Vegetation Extent mapping layer (DPIRD-005) indicates that within a 10 km radius of the proposed clearing site, remaining native vegetation extent is 14,654 ha, which is 86% of the total area of vegetation that could be retained. Consequently the 30% threshold has not been met.

Criterion 2: Known or likely significant environmental values in project area

The sections below discuss the vegetation, fauna, mapped ecological community, flora, wetland and watercourse elements of criterion 2 of the Guideline-Native vegetation clearing referrals.

Vegetation condition

The Technical Guidance document for Flora and Vegetation Surveys for Environmental Impact Assessment (Environmental Protection Authority, 2016) provides a vegetation condition scale adapted from Keighery 1994 and Trudgen 1988 (Table 2 of the Technical Guidance document). Using this scale, the proposed access track clearing footprint was determined to be 'good', primarily due to the widespread dominance of the exotic pasture grass *C. ciliaris** in the ground layer. No other obvious signs of damage caused by human activities were observed.

However, it should be noted that 50 m to the south of the eastern-most end of the proposed access track clearing footprint, ground has been heavily disturbed in the past (apparently it was a gravel 'borrow pit' used by local council – Robert Grott, Marine Farms site manager, personal communication). The condition of vegetation within this borrow pit is poor – previous activities have removed much of the native shrub and tree cover, and the site is now primarily grassed by *C. ciliaris** and dissected by numerous tracks and cleared areas.

Significant fauna

A database search was commissioned for the proposed access track footprint with a 40 km buffer. The results indicate that within this search area, a total of 92 significant fauna species have been recorded (see fauna species list at end of document). These species can be summarised as follows:

- 58 clearly do not have habitat requirements met on the site (for instance, albatross and other oceanic/pelagic birds, wading birds, whales, sharks, whale shark, dugong, terns, tropicbirds, shearwaters, marine turtles etc).
- 10 are troglobite invertebrates and one species is a blind cave-eel, all of which are restricted to subterranean habitats in caves and fissures.
 - Of these, three species have been recorded from locations inside Cameron's Cave that are within 300 m of the proposed clearing footprint Range (Department of Biodiversity, Conservation and Attractions, 2022),
 - Another three species have been recorded from Cameron's Cave approximately 1.5 km north of the proposed clearing footprint (Department of Biodiversity, Conservation and Attractions, 2022),
 - The remaining five species have been recorded from cave systems or boreholes in the Cape Range (Department of Biodiversity, Conservation and Attractions, 2022). Consequently, they do not have habitat requirements met on the proposed clearing footprint.
- Two species are whip-scorpions (invertebrates) recorded from a limestone quarry 4.8 km south-west of the proposed clearing footprint. This species has also been recorded from a cave system in the Cape Range (Department of Biodiversity, Conservation and Attractions, 2022). No information about their habitat requirements could be obtained and it is assumed they are restricted to cave systems and other subterranean habitats.

Consequently, they do not have habitat requirements met on the proposed clearing footprint.

- One bird species may utilise the area as an overfly species, but will not breed in this habitat type – *Falco peregrinus* (peregrine falcon).
- Three bird species recorded from the 40 km radius search area are migratory species that breed in the northern hemisphere, but that may possibly forage in habitat on the proposed clearing footprint occasionally, although their presence is considered to be unlikely:
 - *Gallinago stenura* (pin-tailed snipe),
 - *Glareola maldivarum* (Oriental pratincole),
 - *Numenius minutus* (little curlew).
- 10 species of terrestrial mammal have been recorded within the 40 km search area (the three species listed as extinct have not been considered):
 - *Dasyurus hallucatus* (northern quoll = endangered in W.A. and under the EPBC Act) – all records for this species from the Cape Range area are from fossilised remains (Department of Biodiversity, Conservation and Attractions, 2022). The range of this species has contracted significantly, although it is known from the Pilbara - it occupies rocky escarpments, open forest and open woodland (Threatened Species Scientific Committee, 2005). Suitable habitat is present in the proposed clearing footprint.
 - *Isodon auratus auratus* (golden bandicoot – vulnerable in W.A. and under the EPBC Act) – all records for this species from the Cape Range area are from fossilised remains (Department of Biodiversity, Conservation and Attractions, 2022), and the species is now considered to be present only in the north-west Kimberley (Threatened Species Scientific Committee, 2015). It occupies rainforest margins, vine thicket and eucalypt woodland, often on rugged landscapes, and has been associated with hummock grassland and open woodland (Office of Environment and Heritage, 2022). Suitable habitat is likely to be present in the proposed clearing footprint.
 - *Mesembriomys macrurus* (golden-backed tree-rat – endangered in W.A. and under the EPBC Act) – all records for this species from the Cape Range area are from fossilised remains (Department of Biodiversity, Conservation and Attractions, 2022), and the species is now restricted to the north-west Kimberley (Threatened Species Scientific Committee, 2019). It occupies a wide variety of habitats and suitable habitat may potentially be present in the proposed clearing footprint.
 - *Petrogale lateralis lateralis* (black-flanked rock-wallaby – endangered in W.A. and under the EPBC Act) – this species has been recorded throughout the Cape Range (Department of Biodiversity, Conservation and Attractions, 2022), where it occupies caves, cliffs, screes and rockpiles, emerging at dusk to feed (they will move up to several hundreds of metres from their shelter to feed) (Threatened Species Scientific Committee, 2016). Consequently, it is considered unlikely to have suitable habitat present in the proposed clearing footprint, which is located at least 2.5 km from the nearest suitable shelter.

- *Phascogale calura* (red-tailed phascogale – conservation dependent in W.A., vulnerable under the EPBC Act) - known on Exmouth peninsula from a fossil record in the Cape Range (Department of Biodiversity, Conservation and Attractions, 2022). This species generally occupies woodlands with old-growth hollow-producing eucalypts, but may also occur in shrubland and mosaic of woodland/shrubland/heath (Threatened Species Scientific Committee, 2016). Consequently, it is considered unlikely that suitable habitat is present in the proposed clearing footprint.
- *Pseudomys chapmani* (western pebble-mound mouse – P4 in W.A.) – one record for this species occurs 40 km south of the proposed access track site (Department of Biodiversity, Conservation and Attractions, 2022). Its preferred habitat is hummock grassland with wattles and small pebbles (Kitchener, 1980), and suitable habitat may be present at the proposed access track site.
- *Pseudomys fieldii* (Shark Bay mouse – vulnerable in WA and under the EPBC Act) – known on Exmouth peninsula from a fossil record in the Cape Range (Department of Biodiversity, Conservation and Attractions, 2022). It is now considered extinct on the mainland – on the islands on which it occurs, it occupies similar habitat to that present in the proposed clearing footprint – heath dominated by *Acacia* spp. and *Triodia* spp. (Threatened Species Scientific Committee, 2016).
- *Rhinonictes aurantia* (Pilbara leaf-nosed bat - vulnerable in W.A. and under the EPBC Act) – this species has been recorded from the Cape Range (Department of Biodiversity, Conservation and Attractions, 2022). It roosts in caves and abandoned mines, and is known to forage over open grassland and woodland dominated by *Triodia* spp. on lowland plains (Threatened Species Scientific Committee, 2016). Consequently, suitable habitat is present at the proposed clearing footprint.
- *Sminthopsis longicaudata* (long-tailed dunnart – P4 in W.A.) – recorded only as fossils from caves in the Cape Range, although it is known from the Pilbara. The species occupies habitat described as exposed rock and stony soils with hummock grasses and shrubs (W.A. Museum, 2022). Consequently, although it is unlikely to be present, suitable habitat is present in the proposed clearing footprint.
- *Zygomys pedunculatus* (central rock-rat – critically endangered in WA and under the EPBC Act) - all records for this species from the Cape Range area are from fossilised remains (Department of Biodiversity, Conservation and Attractions, 2022), and the species is now restricted to the Northern Territory (Threatened Species Scientific Committee, 2018). Within its current range, it is only known from elevated ridgetops, and consequently suitable habitat for the species is not present in the proposed clearing footprint.
- Four species are small reptiles with habitat requirements that at least partially match the vegetation and abiotic features of the site:
 - *Anilius splendidus* (splendid blind snake – P2 in W.A.) -this species has been recorded from the western side of the Exmouth peninsula (Department of the Environment, 2022), from a location having similar habitat to that of the eastern coast (personal observation). Therefore, in the absence of recorded habitat preferences for this species, it is assumed that suitable habitat may be present in the proposed clearing footprint.

- *Aprasia rostrata* (Ningaloo worm-lizard – P3 in W.A.) – has been recorded in hummock grassland dominated by *Triodia* spp. with shrubs to 1.2 m (Department of the Environment, 2022), on calcareous sandstone, on the western side of the Cape Range (Department of Biodiversity, Conservation and Attractions, 2022). Therefore, suitable habitat may be present in the proposed clearing footprint.
- *Diplodactylus capensis* (Cape Range stone gecko – P2 in W.A.) – this species has been recorded from the Cape Range and the eastern coastal plain, nearly 5 km from the proposed clearing footprint (Department of the Environment, 2022). Habitat for the species could not be confirmed, although the record from the eastern coastal plain suggests suitable habitat may be present in the proposed clearing footprint.
- *Lerista allochira* (Cape Range slider, P3 in W.A.) – recorded from Vlamingh Head in low shrubland among leaf litter, on limestone (Department of Biodiversity, Conservation and Attractions, 2022).

Although these species have not been found on the eastern coastal plain of Exmouth Peninsula, suitable habitat is present within the proposed clearing footprint.

Mapped ecological community

One threatened ecological community is mapped within 60 km of the proposed clearing footprint. Cameron's Cave troglobitic community is mapped 1 km to the north. It is a subterranean ecological community.

Significant flora

A database search was commissioned for the proposed access track footprint with a 40 km buffer, however this was extended to 100 km on the advice of the Department of Biodiversity, Conservation and Attractions. The results indicate that within this search area, a total of 12 significant flora species have been recorded. Of these, eight are listed as priority 2 and four are listed as priority 3 (none are listed under the EPBC Act). No flora species listed under the EPBC Act was nominated in the search area for the Protected Matters Database Search Tool.

These species can be summarised as follows:

- One priority species was recorded at the site, *Corchorus congener* (P3). This species was a relatively common component of the ground layer in the western half of the proposed clearing area.
- Three species not observed at the site have habitat requirements that may be substantially met at the proposed clearing site (note that habitat present at the proposed clearing site is ubiquitous across coastal plains on the Exmouth peninsula, and the presence of suitable habitat is, in itself, no indication that the species may be present):
 - *Acacia alexandri* (P3) - within the 100 km search radius, this species has been recorded 10 times with three records within 5.5 km of the proposed clearing site. Its habitat is recorded as pink loam on rock limestone slopes in mallee shrubland (WorldWideWattle, 2022). Collection notes indicate it has been collected from sand and loam soils, and associate it with species present at the proposed clearing site, including *A. bivenosa*, *A. pyrifolia* and *Triodia pungens* (Department of Biodiversity, Conservation and Attractions, 2022). Although not present within the proposed clearing area or immediate vicinity, suitable habitat is present.

- *Acacia startii* (P3) – the closest records to the proposed clearing site are located 60 km to the south, and are from loamy sand and loam over limestone. These records are associated with two species that are relatively common at the proposed clearing site, *A. bivenosa* and *A. tetragonophylla* (Department of Biodiversity, Conservation and Attractions, 2022). The species is elsewhere recorded as occurring on plains and hills in loam in low shrub and open shrubland (WorldWideWattle, 2022). Habitat meeting this description is present at the proposed clearing site.
- *Acanthocarpus rupestris* (P2) – one record is located 1.7 km to the south of the proposed clearing site, from sand over limestone in association with a creek (Department of Biodiversity, Conservation and Attractions, 2022). Vegetation across this section of the coastal plain is generally similar to that present at the proposed clearing site (although this species was not observed during the site inspection).
- Species whose habitat requirements are not met (or met only marginally) at the proposed clearing site are:
 - *Acacia ryaniana* (P2) – within the 100 km search radius, this species has only been recorded from Sandy Bay camp, 42 km to the south-west of the proposed clearing site on the western side of the Exmouth peninsula. Its habitat is recorded as sand over clay or limestone, on dunes and associated flats in scrub or heath, commonly with *Triodia* spp. (WorldWideWattle, 2022). The single collection record states it was collected from coastal dunes (Department of Biodiversity, Conservation and Attractions, 2022). The proposed clearing site and near vicinity lacks dunes and the soil is loamy.
 - *Crinum flaccidum* (P2) – all records for this species are from at least 35 km south of the proposed clearing site, where it has been recorded from the western coastal plain of Exmouth Peninsula, and further inland on the mainland, from hummock grassland (*T. pungens*) (Department of Biodiversity, Conservation and Attractions, 2022). Florabase (Western Australian Herbarium, 2022) lists this species as occurring on loam, clay and sandstone in swamps and creeks, which are not present in the proposed clearing area or immediate vicinity.
 - *Daviesia pleurophylla* (P2) – the closest record for this species is 13 km north of the proposed clearing site, and from 55 km south, from shrubland with hummock grassland on sand dunes (Department of Biodiversity, Conservation and Attractions, 2022). Florabase (Western Australian Herbarium, 2022) lists this species as occurring on sand dunes, which are not present in the proposed clearing area or immediate vicinity.
 - *Eremophila occidentalis* (P2) – this species has been recorded once, 19 km south-west of the proposed clearing site from a ridge in the Cape Range (Department of Biodiversity, Conservation and Attractions, 2022). Florabase (Western Australian Herbarium, 2022) lists this species as occurring on limestone ranges and dunes, which are not present in the proposed clearing area or immediate vicinity.
 - *Grevillea calcicola* (P3) – the closest record is 19 km to the north of the proposed clearing site, and 15 km to the south-west, in each case from hills in the Cape Range (Department of Biodiversity, Conservation and Attractions, 2022). Florabase (Western Australian Herbarium, 2022) lists this species as occurring on limestone hilltops, which are not present in the proposed clearing area or immediate vicinity.

- *Harnieria kempeana* subsp. *rhadinophylla* (P2) – recorded from a creek in the Cape Range 6 km to the south-west of the proposed clearing site, and from a gorge 30 km to the south west on the western side of Exmouth peninsula (Department of Biodiversity, Conservation and Attractions, 2022). Florabase (Western Australian Herbarium, 2022) lists this species as occurring amongst limestone rocks on creek banks, which are not present in the proposed clearing area or immediate vicinity.
- *Tinospora esiangkara* (P2) – recorded twice in the search area, from within a 5 km radius to the south of the proposed clearing area, where it was described as occurring on a ridge and a limestone outcrop (Department of Biodiversity, Conservation and Attractions, 2022). Florabase (Western Australian Herbarium, 2022) lists this species as occurring on limestone outcrops or ridges near creek banks, which are not present in the proposed clearing area or immediate vicinity.
- *Verticordia serotina* (P2) – recorded once on the Exmouth peninsula, from 50 km to the south-west of the proposed clearing site in Yardie Creek gorge growing in red sand and associated with heath dominated by *Banksia ashbyi* (Department of Biodiversity, Conservation and Attractions, 2022). Florabase (Western Australian Herbarium, 2022) lists this species as growing in red sand and sand dunes, which are not present in the proposed clearing area or immediate vicinity.

Mapped wetland

The proposed clearing site is located within the mapped extent of the Cape Range Subterranean Waterways wetland, which is listed in the Directory of Important Wetlands in Australia (DBCA-045). This subterranean wetland is mapped over 90, 022 ha of the Exmouth peninsula.

Mapped watercourse

The proposed clearing footprint is located approximately 300 m to the south of the nearest mapped watercourse in the Hydrography Linear (Hierarchy) mapping layer (DWER-031). The proposed clearing will not impact on the structural stability or water quality of that waterway.

EPBC Act

All terrestrial species nominated under the Protected Matters Database Search Tool results (a 20 km search radius was used) have been discussed above (search results are provided at the end of this memo). Consequently, it is considered highly unlikely that the proposed clearing is likely to have a significant impact on any matter of national environmental significance.

Conclusion

In conclusion, although the proposed clearing does not trigger criterion 1, a number of elements of criterion 2 are likely to be triggered:

- Significant fauna - seven species of mammal and four species of reptile are likely to have habitat requirements met on the proposed clearing site. However, the northern quoll, golden bandicoot, golden-back tree-rat, Shark Bay mouse and central rock-rat are all now considered by the scientific community to be absent from the Exmouth peninsula.
- Mapped ecological community - Cameron's Cave troglobitic community is mapped 1 km to the north of the proposed clearing site.

- Significant flora – one P3 species (*Corchorus congener*) is present and relatively abundant within the proposed clearing site. Two P3 species (*Acacia alexandri* and *A. startii*) and one P2 species (*Acanthocarpus rupestris*) have habitat requirements likely to be met within the proposed clearing site.
- Mapped wetland - the proposed clearing site is located within the mapped extent of the Cape Range Subterranean Waterways wetland, which is listed in the Directory of Important Wetlands in Australia (DBCA-045).

However, it is noted in relation to these issues that:

- The proposed clearing is very small (3200 m²), located on a level land surface and required to access an existing facility.
- The entire property owned by the proponent is constituted by the same vegetation community, and consequently there is no option to avoid impacting it if an access track is to be constructed.
- The majority of mammals whose habitat are potentially present within the proposed clearing area are now generally accepted to be absent from the Exmouth peninsula and will not be directly impacted.
- The Cameron's Cave community and the Cape Range Subterranean Waterways wetland will not be impacted by this clearing provided it is restricted to its proposed extent, and conducted according to standard W.A. clearing conditions.
- Although one P3 flora species will be removed as a result of this proposal (*C. congener*), P3 species are known from several or widespread locations and are not considered to be under imminent threat. There are large swathes of habitat identical to that located within the proposed clearing area present across the coastal plain of the Exmouth peninsula (14, 654 ha are present within a 10 km radius of the site). The removal of a maximum of 3200 m² of this habitat type is considered highly unlikely to constitute a significant impact to the species.

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Fauna species list

SCI_NAME	COM_NAME	CLASS	WA_LISTING	WA_ EPB statu s Csta tus	
Actitis hypoleucos	Common Sandpiper	BIRD	Specially Protected - migratory	MI	MI
Aipysurus apraefrontalis	Short-nosed seasnake	REPTILE	Threatened - Critically endangered	CR	CR
Anilius splendidus	splendid blind snake (North West Cape)	REPTILE	Priority	P2	
Anous stolidus	common noddy	BIRD	Specially Protected - migratory	MI	MI
Aprasia rostrata	Ningaloo worm-lizard, Monte Bello Worm-lizard	REPTILE	Priority	P3	
Ardenna pacifica	Wedge-tailed Shearwater	BIRD	Specially Protected - migratory	MI	MI
Arenaria interpres	Ruddy turnstone	BIRD	Specially Protected - migratory	MI	MI
Bamazomus subsolanus	eastern Cape Range bamazomus	INVERTEBRATE	Threatened - Endangered	EN	
Bamazomus vespertinus	Western Cape Range bamazomus	INVERTEBRATE	Threatened - Endangered	EN	
Bettongia lesueur graii	boodie (inland), burrowing bettong (inland)	MAMMAL	Extinct	EX	EX
Calidris acuminata	Sharp-tailed sandpiper	BIRD	Specially Protected - migratory	MI	MI
Calidris alba	sanderling	BIRD	Specially Protected - migratory	MI	MI
Calidris canutus	Red knot	BIRD	Threatened - Endangered	EN	EN
Calidris ferruginea	curlew sandpiper	BIRD	Threatened - Critically endangered	CR	MI
Calidris ruficollis	Red-necked stint	BIRD	Specially Protected - migratory	MI	MI
Calidris subminuta	Long-toed Stint	BIRD	Specially Protected - migratory	MI	MI
Calidris tenuirostris	Great knot	BIRD	Threatened - Critically endangered	CR	MI
Carcharias taurus	grey nurse shark	FISH	Threatened - Vulnerable	VU	VU

<i>Carcharodon carcharias</i>	great white shark	FISH	Threatened - Vulnerable	VU	VU
<i>Caretta caretta</i>	loggerhead turtle	REPTILE	Threatened - Endangered	EN	EN
<i>Charadrius leschenaultii</i>	Greater sand plover, large sand plover	BIRD	Threatened - Vulnerable	VU	MI
<i>Charadrius mongolus</i>	Lesser Sand Plover	BIRD	Threatened - Endangered	EN	MI
<i>Charadrius veredus</i>	Oriental Plover	BIRD	Specially Protected - migratory	MI	MI
<i>Chelonia mydas</i>	Green turtle	REPTILE	Threatened - Vulnerable	VU	VU
<i>Chlidonias leucopterus</i>	White-winged black tern, white-winged tern	BIRD	Specially Protected - migratory	MI	MI
<i>Dasyurus hallucatus</i>	Northern quoll	MAMMAL	Threatened - Endangered	EN	EN
<i>Dermochelys coriacea</i>	leatherback turtle	REPTILE	Threatened - Vulnerable	VU	EN
<i>Diplodactylus capensis</i>	Cape Range stone gecko	REPTILE	Priority	P2	
		INVERTEBRA			
<i>Draculoides brooksi</i>	northern Cape Range draculoides	TE	Threatened - Endangered	EN	
		INVERTEBRA			
<i>Draculoides julianneae</i>	Western Cape Range draculoides	TE	Threatened - Endangered	EN	
			Specially Protected - other		
<i>Dugong dugon</i>	Dugong	MAMMAL	specially protected	OS	
<i>Eretmochelys imbricata</i>	Hawksbill turtle	REPTILE	Threatened - Vulnerable	VU	VU
<i>Eubalaena australis</i>	Southern right whale	MAMMAL	Threatened - Vulnerable	VU	EN
			Specially Protected - other		
<i>Falco peregrinus</i>	Peregrine falcon	BIRD	specially protected	OS	
<i>Gallinago stenura</i>	Pin-tailed snipe	BIRD	Specially Protected - migratory	MI	MI
<i>Gelochelidon nilotica</i>	Gull-billed tern	BIRD	Specially Protected - migratory	MI	MI
<i>Glareola maldivarum</i>	Oriental pratincole	BIRD	Specially Protected - migratory	MI	MI
<i>Hydroprogne caspia</i>	Caspian Tern	BIRD	Specially Protected - migratory	MI	MI
		INVERTEBRA	Threatened - Critically		
<i>Indohya damocles</i>	Cameron's Cave pseudoscorpion	TE	endangered	CR	
<i>Isoodon auratus auratus</i>	Golden bandicoot (mainland), wintarru	MAMMAL	Threatened - Vulnerable	VU	VU
Leporillus apicalis	Lesser stick-nest rat	MAMMAL	Extinct	EX	EX

Lerista allochira	Cape Range slider	REPTILE	Priority	P3	
Limicola falcinellus	Broad-billed sandpiper	BIRD	Specially Protected - migratory	MI	MI
Limosa lapponica	Bar-tailed godwit	BIRD	Specially Protected - migratory	MI	MI
Limosa limosa	Black-tailed godwit	BIRD	Specially Protected - migratory	MI	MI
Megaptera novaeangliae	humpback whale	MAMMAL	Specially Protected - conservation dependent	CD	VU
Mesembriomys macrurus	Golden-backed tree-rat	MAMMAL	Priority	P4	
Milyeringa veritas	Cave gudgeon, blind gudgeon	FISH	Threatened - Vulnerable	VU	VU
Natator depressus	Flatback turtle	REPTILE	Threatened - Vulnerable	VU	VU
Nocticola flabella	Cape Range blind cockroach, Cape Range delicate cockroach	INVERTEBRA			
		TE	Priority	P4	
			Threatened - Critically endangered		
Numenius madagascariensis	Eastern curlew	BIRD		CR	CR
Numenius minutus	Little curlew, little whimbrel	BIRD	Specially Protected - migratory	MI	MI
Numenius phaeopus	Whimbrel	BIRD	Specially Protected - migratory	MI	MI
Oceanites oceanicus	Wilson's storm-petrel	BIRD	Specially Protected - migratory	MI	MI
Onychoprion anaethetus	Bridled tern	BIRD	Specially Protected - migratory	MI	MI
Ophisternon candidum	Blind cave eel	FISH	Threatened - Vulnerable	VU	VU
Orcaella heinsohni	Australian snubfin dolphin	MAMMAL	Priority	P4	MI
Pandion cristatus	Osprey, eastern osprey	BIRD	Specially Protected - migratory	MI	MI
Petrogale lateralis lateralis	Black-flanked rock-wallaby, black-footed rock-wallaby	MAMMAL	Threatened - Endangered	EN	EN
Phaethon lepturus	White-tailed tropicbird	BIRD	Specially Protected - migratory	MI	MI
Phaethon rubricauda	Red-tailed tropicbird	BIRD	Priority	P4	MI
			Specially Protected - conservation dependent		
Phascogale calura	red-tailed phascogale, kenngoor	MAMMAL		CD	VU

Plegadis falcinellus	Glossy ibis	BIRD	Specially Protected - migratory	MI	MI
Pluvialis fulva	Pacific golden plover	BIRD	Specially Protected - migratory	MI	MI
Pluvialis squatarola	Grey plover	BIRD	Specially Protected - migratory	MI	MI
Potorous platyops	broad-faced potoroo	MAMMAL	Extinct	EX	EX
Pristis zijsron	green sawfish	FISH	Threatened - Vulnerable	VU	VU
Pseudomys chapmani	Western pebble-mound mouse, ngadji	MAMMAL	Priority	P4	
Pseudomys fieldi	Shark Bay mouse, djoongari	MAMMAL	Threatened - Vulnerable	VU	VU
Puffinus huttoni	Hutton's shearwater	BIRD	Threatened - Endangered	EN	
			Specially Protected - other		
Rhincodon typus	Whale shark	FISH	specially protected	OS	VU
Rhinonictis aurantia (Pilbara)	Pilbara leaf-nosed bat	MAMMAL	Threatened - Vulnerable	VU	VU
Sminthopsis longicaudata	long-tailed dunnart	MAMMAL	Priority	P4	
Sousa sahalensis	Australian humpback dolphin	MAMMAL	Priority	P4	MI
Stenella longirostris	Spinner dolphin	MAMMAL	Priority	P4	MI
Sterna dougallii	Roseate tern	BIRD	Specially Protected - migratory	MI	MI
Sterna hirundo	Common tern	BIRD	Specially Protected - migratory	MI	MI
Sternula albifrons	Little tern	BIRD	Specially Protected - migratory	MI	MI
Sternula nereis nereis	Fairy tern	BIRD	Threatened - Vulnerable	VU	VU
		INVERTEBRA			
Stygiocaris lancifera	lance-beaked cave shrimp	TE	Threatened - Vulnerable	VU	
		INVERTEBRA			
Stygiocaris stylifera	spear-beaked cave shrimp	TE	Priority	P4	
		INVERTEBRA			
Stygiochiropus isolatus	a stygiochiropus millipede (Cape Range)	TE	Threatened - Vulnerable	VU	
		INVERTEBRA	Threatened - Critically		
Stygiochiropus peculiaris	Cameron's Cave millipede	TE	endangered	CR	

		INVERTEBRA			
Stygiochiropus sympatricus	a stygiochiropus millipede (Cape Range)	TE	Threatened - Vulnerable	VU	
Thalassarche chlororhynchos	Atlantic yellow-nosed albatross	BIRD	Specially Protected - migratory	MI	MI
Thalasseus bergii	Crested tern	BIRD	Specially Protected - migratory	MI	MI
Tringa brevipes	Grey-tailed tattler	BIRD	Priority	P4	MI
Tringa glareola	Wood sandpiper	BIRD	Specially Protected - migratory	MI	MI
Tringa nebularia	Common greenshank, greenshank	BIRD	Specially Protected - migratory	MI	MI
Tringa stagnatilis	Marsh sandpiper, little greenshank	BIRD	Specially Protected - migratory	MI	MI
Xenus cinereus	Terek sandpiper	BIRD	Specially Protected - migratory	MI	MI
Zyzomys pedunculatus	central rock-rat, antina	MAMMAL	Threatened - Critically endangered	CR	CR

EPBC Protected Matters Search Tool results



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: 25/08/22 16:28:30

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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](#).

World Heritage Properties:	1
National Heritage Places:	1
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	33
Listed Migratory Species:	46

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.

Commonwealth Land:	5
Commonwealth Heritage Places:	None
Listed Marine Species:	81
Whales and Other Cetaceans:	13
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

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

State and Territory Reserves:	3
Regional Forest Agreements:	None
Invasive Species:	11
Nationally Important Wetlands:	1
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

World Heritage Properties		[Resource Information]
Name	State	Status
The Ningaloo Coast	WA	Declared property

National Heritage Properties		[Resource Information]
Name	State	Status
Natural		
The Ningaloo Coast	WA	Listed place

Listed Threatened Species		[Resource Information]
Name	Status	Type of Presence
Birds		
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit [86432]	Critically Endangered	Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pezoporus occidentalis Night Parrot [59350]	Endangered	Species or species habitat may occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Breeding known to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area

Name	Status	Type of Presence
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Fish		
Milyeringa veritas Cape Range Cave Gudgeon, Blind Gudgeon [66676]	Vulnerable	Species or species habitat known to occur within area
Ophisternon candidum Blind Cave Eel [66678]	Vulnerable	Species or species habitat known to occur within area
Mammals		
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
Macroderma gigas Ghost Bat [174]	Vulnerable	Species or species habitat likely to occur within area
Petrogale lateralis lateralis Black-flanked Rock-wallaby, Moororong, Black-footed Rock Wallaby [66647]	Endangered	Species or species habitat known to occur within area
Rhinonictoris aurantia (Pilbara form) Pilbara Leaf-nosed Bat [82790]	Vulnerable	Species or species habitat may occur within area
Reptiles		
Aipysurus apraefrontalis Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat known to occur within area
Aipysurus foliosquama Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
Sharks		
Carcharias taurus (west coast population) Grey Nurse Shark (west coast population) [68752]	Vulnerable	Species or species habitat known to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area

Name	Status	Type of Presence
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Species or species habitat known to occur within area
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area

Listed Migratory Species

[Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat may occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat may occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area
Sternula albifrons Little Tern [82849]		Species or species habitat may occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Migratory Marine Species		
Anoxypristis cuspidata Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat likely to occur within area
Balaena glacialis australis Southern Right Whale [75529]	Endangered*	Species or species habitat likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within

Name	Threatened	Type of Presence area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Dugong dugon Dugong [28]		Breeding known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area
Manta alfredi 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
Manta birostris Giant Manta Ray, Chevron Manta Ray, Pacific Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995]		Species or species habitat known to occur within area
Megaptera novaeangliae Humpback Whale [38]		Breeding known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Species or species habitat known to occur within area
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Sousa chinensis Indo-Pacific Humpback Dolphin [50]		Species or species habitat known to occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat known to occur within area
Migratory Terrestrial Species		

Name	Threatened	Type of Presence
Hirundo rustica Barn Swallow [662]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat may occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land	[Resource Information]
The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.	
Name	
Commonwealth Land -	
Defence - EXMOUTH ADMIN & HF TRANSMITTING	
Defence - EXMOUTH VLF TRANSMITTER STATION	
Defence - LEARMONTH RADAR SITE - TWIN TANKS EXMOUTH	
Defence - LEARMONTH RADAR SITE - VLAMING HEAD EXMOUTH	

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
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat may occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
Chrysococcyx osculans Black-eared Cuckoo [705]		Species or species habitat known to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Hirundo rustica Barn Swallow [662]		Species or species habitat may occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area

Name	Threatened	Type of Presence
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Species or species habitat may occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area
Sterna albifrons Little Tern [813]		Species or species habitat may occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area
Fish		
Acentronura larsonae Helen's Pygmy Pipehorse [66186]		Species or species habitat may occur within area
Bulbonaricus brauni Braun's Pughead Pipefish, Pug-headed Pipefish [66189]		Species or species habitat may occur within area
Campichthys tricarinatus Three-keel Pipefish [66192]		Species or species habitat may occur within area
Choeroichthys brachysoma Pacific Short-bodied Pipefish, Short-bodied Pipefish [66194]		Species or species habitat may occur within area
Choeroichthys latispinosus Muiron Island Pipefish [66196]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Choeroichthys suillus Pig-snouted Pipefish [66198]		Species or species habitat may occur within area
Doryrhamphus dactyliophorus Banded Pipefish, Ringed Pipefish [66210]		Species or species habitat may occur within area
Doryrhamphus janssi Cleaner Pipefish, Janss' Pipefish [66212]		Species or species habitat may occur within area
Doryrhamphus multiannulatus Many-banded Pipefish [66717]		Species or species habitat may occur within area
Doryrhamphus negrosensis Flagtail Pipefish, Masthead Island Pipefish [66213]		Species or species habitat may occur within area
Festucalex scalaris Ladder Pipefish [66216]		Species or species habitat may occur within area
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area
Halicampus brocki Brock's Pipefish [66219]		Species or species habitat may occur within area
Halicampus grayi Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area
Halicampus nitidus Glittering Pipefish [66224]		Species or species habitat may occur within area
Halicampus spinirostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area
Haliichthys taeniophorus Ribboned Pipehorse, Ribboned Seadragon [66226]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippocampus angustus Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area
Hippocampus trimaculatus Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Micrognathus micronotopterus Tidepool Pipefish [66255]		Species or species habitat may occur within area
Phoxocampus belcheri Black Rock Pipefish [66719]		Species or species habitat may occur within area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
Trachyrhamphus longirostris Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area
Mammals		
Dugong dugon Dugong [28]		Breeding known to occur within area
Reptiles		
Acalyptophis peronii Horned Seasnake [1114]		Species or species habitat may occur within area
Aipysurus apraefrontalis Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat known to occur within area
Aipysurus duboisii Dubois' Seasnake [1116]		Species or species habitat may occur within area
Aipysurus eydouxii Spine-tailed Seasnake [1117]		Species or species habitat may occur within area
Aipysurus foliosquama Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat known to occur within area
Aipysurus laevis Olive Seasnake [1120]		Species or species habitat may occur within area
Astrotia stokesii Stokes' Seasnake [1122]		Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or

Name	Threatened	Type of Presence
Disteira kingii Spectacled Seasnake [1123]		related behaviour known to occur within area
Disteira major Olive-headed Seasnake [1124]		Species or species habitat may occur within area
Emydocephalus annulatus Turtle-headed Seasnake [1125]		Species or species habitat may occur within area
Ephalophis greyi North-western Mangrove Seasnake [1127]		Species or species habitat may occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]		Breeding known to occur within area
Hydrophis elegans Elegant Seasnake [1104]	Vulnerable	Species or species habitat may occur within area
Hydrophis ornatus Spotted Seasnake, Ornate Reef Seasnake [1111]		Species or species habitat may occur within area
Natator depressus Flatback Turtle [59257]		Breeding known to occur within area
Pelamis platurus Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area

Whales and other Cetaceans		[Resource Information]
Name	Status	Type of Presence
Mammals		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]		Species or species habitat likely to occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]		Species or species habitat likely to occur within area
Grampus griseus Risso's Dolphin, Grampus [64]	Endangered	Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Breeding known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Sousa chinensis Indo-Pacific Humpback Dolphin [50]		Species or species

Name	Status	Type of Presence
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		habitat known to occur within area Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat known to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Extra Information

State and Territory Reserves	[Resource Information]
Name	State
Bundegi Coastal Park	WA
Cape Range	WA
Jurabi Coastal Park	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 Resouces Audit, 2001.	

Name	Status	Type of Presence
Birds		
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Mammals		
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Capra hircus Goat [2]		Species or species habitat likely to occur within area
Equus caballus Horse [5]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur

Name	Status	Type of Presence
		within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area

Plants		
Cenchrus ciliaris Buffel-grass, Black Buffel-grass [20213]		Species or species habitat likely to occur within area

Reptiles		
Hemidactylus frenatus Asian House Gecko [1708]		Species or species habitat likely to occur within area

Nationally Important Wetlands	[Resource Information]
Name	State
Cape Range Subterranean Waterways	WA

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

-21.97938 114.12534

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](#)

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

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