

TECHNICAL MEMORANDUM

Likelihood of occurrence

EPBC Act Referral

New Youth Detention Facility

PROJECT NUMBER	EP24-094(05)	DOC. NO.	EP24-094(05)--007 SPL
PROJECT NAME	Peel Health Campus	CLIENT	Department of Finance
AUTHOR	SPL	REVIEWER	JDH
VERSION	1	DATE	12/11/2024

1. INTRODUCTION

The Department of Finance (the Proponent) proposes to progress development of the Peel Health Campus (referred to herein as the Proposed Action). The proponent is referring the Proposed Action to the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) pursuant to the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

This technical memorandum provides a summary of the Matters of National Environmental Significance (MNES) relevant to the Proposed Action through a likelihood of occurrence assessment.

2. METHODS

As part of preparations for the ecological surveys completed over the Project Area, a search was conducted for MNES that may occur within a 10 km radius using the Protected Matters Search Tool (PMST) on 28 October 2024. The most recent PMST report has been included as **Attachment A**.

The information contained within the following terrestrial flora and vegetation and fauna assessments completed within the Project Area have informed this likelihood of occurrence:

- *Detailed Flora and Vegetation Assessment Peel Health Campus, Greenfields* (Emerge Associates 2024b)
- *Basic Fauna and Targeted Black Cockatoo Assessment - Peel Health Campus, Greenfields* (Emerge Associates 2024a)

To determine likelihood of occurrence, information relating to the MNES identified using the most recent PMST was reviewed. This has included consideration of the species profiles, characteristics/habitat preferences, management plans, recovery plans as well as historic and the recent biological surveys indicated above. Species information was compared to existing environmental data available for the Project Area, from various public datasets and the ecological surveys undertaken within the Project Area. This included consideration of factors such as geomorphology, soils, vegetation types, and historic land use, to understand the potential for MNES to occur.

3. MNES RELEVANCE

The MNES relevance assessment is based on a search of the Commonwealth's EPBC PMST which identified MNES that could occur within a 10 km radius of the Project Area. A summary of the MNES

relevant to the Project Area is provided based on the most recent likelihood of occurrence outcomes are outlined in **Table 1** below.

Table 1: Summary of MNES relevant to the Project Area.

Matters of National Environmental Significance	MNES identified within 10 km of the Project Area based on PMST	Relevance to the Project Area
World Heritage areas	There are no World Heritage areas in the vicinity of the Project Area.	Not relevant.
National Heritage Places	There are no National Heritage places in the vicinity of the Project Area.	Not relevant.
Wetlands of international importance (listed under the Ramsar convention)	No Ramsar wetlands were identified within the project area. The nearest Ramsar wetland is located approximately 3.5km southwest of the project area associated with the Peel-Yalgorup System.	Not relevant.
Listed Threatened species	<ul style="list-style-type: none"> Sixty-nine (69) listed Threatened Species are identified within a 10 km buffer surrounding the Proposal area Sixty-eight (68) listed Threatened Migratory Species are identified within a 10 km buffer surrounding the Project Area. 	<ul style="list-style-type: none"> Three (3) Threatened fauna species pertinent to the EPBC Act were deemed likely to occur within the Project Area No threatened flora species pertinent to the EPBC Act were considered 'possible' or 'likely' to occur based on the habitat and results recorded during the ecological surveys. The assessment of likelihood of occurrence for all species identified in the PMST search is included below in Table 2.
Listed Threatened Ecological Communities	<ul style="list-style-type: none"> Six (6) listed TEC are suggested to occur within the feature area, including: <ul style="list-style-type: none"> Banksia Woodlands of the Swan Coastal Plain ecological community (Endangered). Clay Pans of the Swan Coastal Plain (Critically Endangered) <i>Empodisma</i> peatlands of southwestern Australia (Endangered). Honeymyrtle shrubland on limestone ridges of the Swan Coastal Plain Bioregion (Critically Endangered) Subtropical and Temperate Coastal Saltmarsh (Vulnerable) Tuart (<i>Eucalyptus gomphocephala</i>) Woodlands and Forests of the Swan Coastal Plain Ecological community (Critically Endangered). 	<ul style="list-style-type: none"> Two TECs were identified during the ecological surveys to occur within the Project Area. These include <i>Banksia Woodlands</i> TEC and <i>Tuart Woodlands</i> TEC. Likelihood of occurrence for TEC's are considered further in Table 3.

Table 1: Summary of MNES relevant to the Project Area.

Matters of National Environmental Significance	MNES identified within 10 km of the Project Area based on PMST	Relevance to the Project Area
Listed migratory species (protected under international agreements)	<ul style="list-style-type: none"> Sixty-eight (68) listed Migratory Species are identified within a 10 km buffer surrounding the Project Area. 	<ul style="list-style-type: none"> One (1) migratory bird species may possibly occur in the vicinity of the Project Area, significant impacts are unlikely. <ul style="list-style-type: none"> <i>Apus pacificus</i> – Pacific swift The assessment of likelihood of occurrence for all species identified in the PMST search is included below in Table 2.
Commonwealth marine areas	The Project Area is not located in a Commonwealth marine area.	Not relevant.
Great Barrier Reef Marine Park	The Project Area is not located in the Great Barrier Reef Marine Park.	Not relevant.
Nuclear actions (including uranium mines)	The Project Area is not likely to represent a significant impact to the environment resulting from a Nuclear Action.	Not relevant.
Water resources (that relate to coal seam gas development and large coal mining development)	The Project Area is not a coal seam gas or coal mining development.	Not relevant.

4. THREATENED SPECIES AND ECOLOGICAL COMMUNITIES

An assessment of the likelihood of occurrence for the listed threatened species and communities within the Project Area was undertaken for each species identified in the PMST search. Each species was assigned to one of the following categories:

- Recorded: the species has been previously recorded in the Project Area or was recorded during a field survey.
- Likely: suitable habitat for the species or community occurs and it is likely the species may occur based on recent a historical record within or nearby the Project Area.
- Possible: the Project Area contains marginal habitat and/or extent for the species and is located within the known distribution range for the species but there is no other information to suggest the species may occur within or nearby the Project Area.
- Unlikely: no suitable habitat for the species and/or no recent literature records occur (within a 10km radius) near the Project Area.

Table 2 outlines the threatened species and the potential to occur based on results from ecological surveys with consideration to relevant literature to factor habitat preference, sightings and historical records of the species. It should be noted that marine bird, marine mammal and migratory marine birds identified by the PMST were disregarded as part of this assessment given the distance of the Project Area from marine areas. MNES considered likely to occur or possible to occur have been highlighted in **green**. Additional threatened state listed species have also been noted in the table, but are not applicable with regards to the EPBC act.

Table 2: Threatened flora and fauna species and likelihood of occurrence

Scientific Name	Common Name	EPBC status	Habitat	Likelihood of occurrence	Justification
Birds					
<i>Actitis hypoleucos</i>	Common Sandpiper	Migratory	Edge of sheltered waters salt or fresh, e.g. estuaries, mangrove creeks, rocky coasts, near-coastal salt lakes (including saltwater ponds), river pools, lagoons, claypans, drying swamps, flood waters, dams and sewage ponds. Preferring situations where low perches are available (Johnstone and Storr 1998).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Anous stolidus</i>	Common noddy	Migratory	Tropical and subtropical seas, cayes, reefs, buoys and piles (Pizzey and Knight 2012).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Anous tenuirostris melanops</i>	Australian Lesser Noddy	Vulnerable	Very common in blue-water seas around the Abrolhos (endemic to this area, accidental occurrences on lower west coast of Australia) (Johnstone and Storr 1998).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Apus pacificus</i>	Pacific swift	Migratory	Aerial, migratory species that is most often seen over inland plains and sometimes above open areas, foothills or in coastal areas. Sometimes occurs over settled areas, including towns, urban areas and cities (Pizzey and Knight 2012).	Possible	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is likely to occur within 10 km of the proposal area. Highly mobile and may opportunistically fly over or forage in the site for short periods of time as part of a much larger home range Would not breed within the site Any occurrence of pacific swift in the site would likely be in the air space and largely independent from terrestrial habitat.
<i>Arenaria interpres</i>	Ruddy Turnstone	Vulnerable (Migratory)	Tidal mud and reef flats, sheltered rocky coasts, stony and seaweedy beaches and sandpits, dry coral ridges (Abrolhos) and pebbly shores of near-coastal saltlakes (including saltwork ponds) (Johnstone and Storr 1998).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat within the proposal area.
<i>Ardenna grisea</i>	Sooty Shearwater	Vulnerable (Migratory)	Common in open ocean, sub-tropical, sub-Antarctic waters for foraging. Breeds mainly on subtropical and sub-Antarctic islands, as well as on the mainland of New Zealand. Birds nest in burrows or rock crevices on coastal slopes, ridges and cliff tops, in herbfields, tussock grassland or forest.	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Ardenna carneipes</i>	Flesh-footed Shearwater, Fleshy-footed Shearwater	Migratory	Marine species that breeds on islands off south coast from near Cape Leeuwin (Johnstone and Storr 1998).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat within the proposal area.
<i>Botaurus poiciloptilus</i>	Australasian bittern	Endangered	In or over water, in tall reedbeds, sedges, rushes, cumbungi, lignum. Also occurs in ricefields, drains in tussocky paddocks and occasionally in saltmarshes and brackish wetlands (TSSC 2019).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.

Table 2: Threatened flora and fauna species and likelihood of occurrence

Scientific Name	Common Name	EPBC status	Habitat	Likelihood of occurrence	Justification
Birds (continued)					
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	Vulnerable (Migratory)	Habits tidal mudflats, saltmarshes and mangroves, plus shallow fresh, brackish or saline inland wetlands. Also recorded in floodwater areas, irrigated pastures and crops, sewage ponds, salt fields.	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat within the proposal area.
<i>Calidris alba</i>	Sanderling	Migratory	Mainly steeply shelving sandy beaches exposed to ocean swell. Also sandy inlets, estuarine sandbanks and near-coastal saltlakes (including saltwork ponds) (Johnstone & Storr 1998).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat within the proposal area.
<i>Calidris canutus</i>	Red knot	Vulnerable (Migratory)	Mud and sand flats in estuaries and on sheltered coasts. Also near-coastal saltlakes, including saltwork ponds (Pizzey and Knight 2012).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Calidris ferruginea</i>	Curlew Sandpiper	Critically Endangered (Migratory)	Mainly shallows of estuaries and near-coastal saltlakes (including saltwork ponds) and drying near-coastal freshwater lakes and swamps. Also beaches and near-coastal sewage ponds (Johnstone and Storr 1998).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat within the proposal area.
<i>Calidris melanotos</i>	Pectoral sandpiper	Migratory	Mainly fresh waters (swamps, lagoons, river pools, irrigation channels and sewage ponds); also samphire flats around estuaries and saltlakes (Johnstone & Storr 1998).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat within the proposal area.
<i>Calidris pugnax</i>	Ruff	Migratory (as <i>Philomachus pugnax</i>)	Fresh, brackish and saline wetlands; tidal mudflats, saltfields, sewage ponds (Pizzey & Knight 2012).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Calyptorhynchus banksii naso</i>	Forest red-tailed black cockatoo	Vulnerable	Eucalypt and Corymbia forests, often in hilly interior. More recently also observed in more open agricultural and suburban areas including Perth metropolitan area. Attracted to seeding <i>Corymbia calophylla</i> , <i>Eucalyptus marginata</i> , introduced <i>Melia azedarach</i> and <i>Eucalyptus spp.</i> trees (Johnstone <i>et al.</i> 2013).	Likely	<ul style="list-style-type: none"> The site occurs within the modelled distribution of forest red-tailed black cockatoo Suitable habitat is present within the site. FRTBC do not have defined breeding areas therefore the site has potential to support breeding of this species, with 114 potential nesting trees and one suitable nesting tree present.
<i>Charadrius leschenaultii</i>	Great sand plover	Vulnerable (Migratory)	Wide sandy or shelly beaches, sandpits, tidal mudflats, reefs, sand cays, mangroves, saltmarsh, dune wilderness, bare paddocks, seldom far inland (Pizzey and Knight 2012).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.

Table 2: Threatened flora and fauna species and likelihood of occurrence (continued)

Scientific Name	Common Name	EPBC Status	Habitat	Likelihood of occurrence	Justification
Birds (continued)					
<i>Calidris ruficollis</i>	Red-necked Stint	Migratory	Tidal mudflats, saltmarshes, sandy or shelly beaches, saline and freshwater wetlands (coastal and inland), saltfields, sewage ponds (Pizzey and Knight 2012).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat within the proposal area.
<i>Calidris subminuta</i>	Long-toed stint	Migratory	Mainly freshwater swamps (especially when drying and where vegetation is short), river pools, lagoons and claypans; also brackish pools, sewage ponds and samphire flats around estuaries and saltlakes (Johnstone and Storr 1998).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat within the proposal area.
<i>Calidris tenuirostris</i>	Great Knot	Vulnerable (Migratory)	Mud or sand flats in estuaries and on sheltered coasts. Also near-coastal saltlakes, including saltwork ponds (Johnstone & Storr 1988).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat within the proposal area.
<i>Diomedea amsterdamensis</i>	Amsterdam Island albatross	Endangered (Migratory)	The Amsterdam albatross is a marine, pelagic seabird. It nests in open patchy vegetation (among tussocks, ferns or shrubs) near exposed ridges or hillocks (Weimerskirch et al. 1985). It sleeps and rests on ocean waters when not breeding (Marchant and Higgins 1990).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Diomedea dabbenena</i>	Tristan Albatross	Endangered (Migratory)	The Tristan albatross is a marine, pelagic seabird. It forages in open water in the Atlantic Ocean near the Cape of Good Hope, South Africa. It sleeps and rests on ocean waters when not breeding (Marchant and Higgins 1990).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Diomedea epomophora</i>	Southern royal albatross	Vulnerable (Migratory)	Rare visitor to Western Australian seas; it breeds on subantarctic islands south of New Zealand (Johnstone and Storr 1998).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Diomedea exulans</i>	Wandering albatross	Vulnerable (Migratory)	Marine, pelagic and aerial species. It breeds on Macquarie Island and feeds in Australian portions of the Southern Ocean (DoE 2018).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Diomedea sanfordi</i>	Northern Royal Albatross	Endangered (Migratory)	Species is marine, pelagic and aerial. Habitat includes subantarctic, subtropical, and occasionally Antarctic waters (Marchant & Higgins 1990). A rare visitor to south Western Australian waters.	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.

Table 2: Threatened flora and fauna species and likelihood of occurrence (continued)

Scientific Name	Common Name	EPBC Status	Habitat	Likelihood of occurrence	Justification
Birds (continued)					
<i>Falco hypoleucos</i>	Grey Falcon	Vulnerable	Species occurs in arid and semi-arid Australia, where it inhabits timbered lowland plains. In particular Acacia shrublands and that are crossed by tree-lined water courses. Species has also been observed hunting in treeless areas and frequenting tussock grassland and open woodlands (TSSC 2020).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Gallinago megala</i>	Swinhoe's Snipe	Migratory	Wet, grassy ground; edges of reedy swamps (Pizzey & Knight 2012).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Gallinago stenura</i>	Pin-tailed Snipe	Migratory	Boggy edges of vegetated wetlands; sewage and other ponds; stubbles, grasslands with shrubs, pastures (Pizzey & Knight 2012).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Halobaena caerulea</i>	Blue Petrel	Vulnerable	Marine species that breeds on southern subantarctic and northern arctic islands. Only an accidental or uncommon visitor to Western Australian waters (Johnstone & Storr 1998).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Hydroprogne caspia</i>	Caspian Tern	Migratory	Mainly sheltered areas, estuaries (when not laden with silt) and tidal creeks; occasionally near-coastal saltlakes (including saltwork ponds) and brackish pools in lower courses of rivers; rarely fresh waters (DCCEEW 2023).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat within the proposal area.
<i>Leipoa ocellata</i>	Malleefowl	Vulnerable	Scrubs and thickets of Eucalyptus spp., Melaleuca lanceolata and Acacia linophylla; also other dense litter-forming shrublands. Attracted to fallen wheat in stubbles and along roads (Johnstone and Storr 1998).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Limosa lapponica menzbieri</i>	Bar-tailed godwit	Critically Endangered	Mainly coastal habitats such as large intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons and bays. Has also been recorded in coastal sewage farms and saltworks, saltlakes and brackish wetlands near coasts, sandy ocean beaches, rock platforms, and coral reef-flats (Higgins and Davies 1996).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat within the proposal area.
<i>Limosa limosa</i>	Black-tailed Godwit	Endangered (Migratory)	Tidal mudflats, estuaries, sewage ponds, shallow river margins, brackish or saline inland lakes, flooded pastures, airfields (Pizzey & Knight 2012).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat within the proposal area.

Table 2: Threatened flora and fauna species and likelihood of occurrence (continued)

Scientific Name	Common Name	EPBC Status	Habitat	Likelihood of occurrence	Justification
Birds (continued)					
<i>Limicola falcinellus</i>	Broad-billed Sandpiper	Migratory	Parts of the coast between Onslow and Broome, in estuarine mudflats, saltmarshes, shallow freshwater lagoons, saltworks and sewage farms, and in areas with large soft intertidal mudflats. They have also been recorded in creeks, swamps and lakes near the coast, particularly those with bare mudflats or sand exposed by receding water. Have been record in Augusta (DCCEEW 2023).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Macronectes giganteus</i>	Southern giant-petrel	Endangered (Migratory)	Breeds on southern subantarctic and antarctic islands. May visit Western Australian waters from February to December (mostly June to September) (Johnstone and Storr 1998).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Macronectes halli</i>	Northern giant petrel	Vulnerable (Migratory)	Breeds on subantarctic islands. May visit Western Australian water from February to September (Johnstone and Storr 1998).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Motacilla cinerea</i>	Grey wagtail	Migratory	In Australia mostly near running water in disused quarries, sandy and rocky streams in escarpments and rainforests, sewage ponds, ploughed fields and airfields (Pizzey and Knight 2012).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Numenius madagascariensis</i>	Eastern curlew	Critically Endangered (Migratory)	Mainly tidal mudflats; also reef flats, sandy beaches and rarely near-coastal lakes (including saltwork ponds) (Johnstone and Storr 1998).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat within the proposal area.
<i>Numenius minutus</i>	Little Curlew, Little Whimbrel	Migratory	Dry grasslands, floodplains, margins of drying swamps; tidal mudflats, airfields, playing fields, crops, commercial saltfields, sewage ponds (Pizzey & Knight 2012).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Numenius phaeopus</i>	Whimbrel	Migratory	Estuaries, mangroves, tidal flats, coral cays, exposed reefs, flooded paddocks, sewage ponds, bare grasslands, sportsgrounds and lawns (Pizzey & Knight 2012).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat within the proposal area.
<i>Onychoprion anaethetus</i>	Bridled Tern	Migratory	Tropical and subtropical seas, offshore islands, rarely coasts (Pizzey & Knight 2012).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat within the proposal area.

Table 2: Threatened flora and fauna species and likelihood of occurrence (continued)

Scientific Name	Common Name	EPBC Status	Habitat	Likelihood of occurrence	Justification
Birds (continued)					
<i>Pachyptila turtur subantarctica</i>	Fairy prion	Vulnerable	Breeds on subantarctic islands and is presumed to frequent subtropical waters during non-breeding period (TSSC 2015).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Pandion haliaetus</i>	Osprey	Migratory	Coasts, estuaries, bays, inlets, islands, and surrounding waters; coral atolls, reefs, lagoons, rock cliffs, stacks (Pizzey and Knight 2012).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat within the proposal area.
<i>Phaethon rubricauda westralis</i>	Red-tailed tropicbird	Endangered	Spend most of their lives at sea and rarely venture near land. This bird is normally found in tropical and subtropical seas around northern Australia. Though rarely seen in colder areas, a few pairs breed on Sugarloaf Rock, south of Cape Naturaliste (DPAW 2017b). Are known to breed on Rottneest Island (DCCEEW 2023).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Phoebastria fusca</i>	Sooty Albatross	Vulnerable (Migratory)	Marine, pelagic species that tolerates a wide range of sea surface temperatures and salinities. breeds on subtropical and subantarctic islands in the Indian and Atlantic Oceans, on vegetated cliffs and steep slopes that are sheltered from prevailing winds, often amongst tussock grass (Pizzey & Knight 2012).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Pterodroma mollis</i>	Soft-plumaged Petrel	Vulnerable	Marine species that breeds on temperate and subantarctic islands in south Atlantic and south Indian Ocean. Visitor to West Australian waters from March to September. Rarely observed inshore (Johnstone & Storr 1998).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Pluvialis fulva</i>	Pacific Golden Plover	Migratory	Estuaries, mudflats, saltmarshes, mangroves; rocky reefs and stranded seaweed on ocean shores; margins of shallow open inland swamps; sewage ponds, short-grass paddocks, sportsgrounds, airfields, ploughed land (Pizzey & Knight 2012).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Rostratula australis</i>	Australian painted snipe	Endangered	Mainly shallow terrestrial freshwater (occasionally brackish) wetlands, including temporary and permanent lakes, swamps and claypans (Marchant and Higgins 1993).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Sterna dougallii</i>	Roseate Tern	Migratory	Offshore waters, islands, coral reefs, sand cays, beaches, tidal inlets (Pizzey & Knight 2012).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.

Table 2: Threatened flora and fauna species and likelihood of occurrence (continued)

Scientific Name	Common Name	EPBC Status	Habitat	Likelihood of occurrence	Justification
Birds (continued)					
<i>Sternula nereis nereis</i>	Australian fairy tern	Vulnerable	Sheltered blue-water seas close to land, estuaries (when free of silt) and near-coastal lakes (Johnstone and Storr 1998).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Sternula albifrons</i>	Little Tern	Migratory	Species is mainly coastal, being found on beaches, sheltered inlets, estuaries, lakes, sewage farms, lagoons, river mouths and deltas (Pizze & Knight 2012).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat within the proposal area.
<i>Thalassarche impavida</i>	Campbell albatross	Vulnerable (Migratory)	Scarce visitor to south-western and western Australian seas. Breeds on Campbell Island (Pizze & Knight 2012).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Thalassarche melanophris</i>	Black-browed albatross	Vulnerable (Migratory)	Seas of south and west coasts. Visitor to Western Australian mainland from January to early November (mostly May to September). Breeds on southern subantarctic and Antarctic islands (Johnstone and Storr 1998).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Thalassarche cauta</i>	Shy Albatross	Endangered (Migratory)	Scarce visitor (late May to mid-October) to southwestern and western seas. Breeds on islands off Tasmania and south New Zealand (Johnstone and Storr 1998).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Thalassarche carteri</i>	Indian Yellow-nosed Albatross	Vulnerable (Migratory)	Marine species that inhabits seas of south and west coast of Western Australia and breeds on islands in the south Indian Ocean and in the south Atlantic (Johnstone & Storr 1998).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Tringa brevipes</i>	Grey-tailed Tattler	Migratory	Tidal mud and reef flats, sheltered rocky coasts, stony and seaweedy beaches and sandpits, dry coral ridges (Abrolhos) and pebbly shores of near-coastal saltlakes (including saltwork ponds) (Johnstone and Storr 1998).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Tringa nebularia</i>	Common greenshank, greenshank	Endangered (Migratory)	Found in a wide variety of inland wetlands and sheltered coastal habitats of varying salinity. It occurs in sheltered coastal habitats, typically with large mudflats and saltmarsh, mangroves or seagrass. Habitats include embayments, harbours, river estuaries, deltas and lagoons and are recorded less often in round tidal pools, rock-flats and rock platforms (Higgins & Davies 1996)	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.

Table 2: Threatened flora and fauna species and likelihood of occurrence (continued)

Scientific Name	Common Name	EPBC Status	Habitat	Likelihood of occurrence	Justification
Birds (continued)					
<i>Thalassarche steadi</i>	White-capped albatross	Vulnerable (Migratory)	Scarce visitor (late May to mid-October) to southwestern and western seas. Breeds on islands off Tasmania and south New Zealand (Johnstone and Storr 1998).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Tringa glareola</i>	Wood sandpiper	Migratory	Mainly shallow fresh waters (lagoons, swamps, claypans, river pools, dams, bore overflows and sewage ponds); occasionally brackish swamps, rarely saltlakes and estuaries (Pizzezy and Knight 2012).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat within the proposal area.
<i>Tringa stagnatilis</i>	Marsh sandpiper	Migratory	Mainly shallow fresh or brackish waters: swamps, lakes, river pools, soaks, sewage ponds and bore overflows. Occasionally estuaries and salt ponds, and rarely coasts.	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat within the proposal area.
<i>Tringa totanus</i>	Common Redshank, Redshank	Migratory	Sheltered coastal wetlands such as bays, river estuaries, lagoons, inlets and saltmarsh (with bare open flats and banks of mud or sand). Also found around saltlakes, freshwater lagoons, artificial wetlands and saltworks and sewage farms (Higgins & Davies 1999).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Zanda latirostris</i>	Carnaby's Black cockatoo, Short-billed Black-cockatoo	Endangered	Mainly proteaceous scrubs and heaths and adjacent eucalypt woodlands and forests; and plantations of <i>Pinus spp.</i> Attracted to seeding <i>Banksia spp.</i> , <i>Dryandra spp.</i> , <i>Hakea spp.</i> , <i>Eucalyptus spp.</i> , <i>Corymbia calophylla</i> , <i>Grevillea spp.</i> , and <i>Allocasuarina spp.</i> (Johnstone and Storr 1998).	Likely	<ul style="list-style-type: none"> The site occurs within the modelled distribution of Carnaby's black cockatoo Suitable habitat is present within the site Carnaby's black cockatoo would not be expected to breed in the site as it occurs outside of their modelled breeding area.
<i>Zanda baudinii</i>	Baudin's Black-Cockatoo, Long-billed Black-cockatoo	Endangered	Mainly eucalypt forests. Attracted to seeding <i>Corymbia calophylla</i> , <i>Banksia spp.</i> , <i>Hakea spp.</i> , and to fruiting apples and pears (Johnstone and Storr 1998).	Likely	<ul style="list-style-type: none"> The site occurs within the modelled distribution of Baudin's black cockatoo Suitable habitat is present in the site. Baudin's Black-Cockatoo is not expected to breed in the site as it occurs outside of their modelled breeding area.

Table 2: Threatened flora and fauna species and likelihood of occurrence (continued)

Scientific Name	Common Name	EPBC Status	Habitat	Likelihood of occurrence	Justification
Invertebrates					
<i>Cherax tenuimanus</i>	Margaret River marron	Critically Endangered	Occurs primarily in the upper reaches of the Margaret River. Prefers sandy areas, particularly where detritus (organic matter) accumulates, and requires in-stream structural diversity for protection (DoE 2013)	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
Other					
<i>Westralunio carteri</i>	Carter's Freshwater Mussel, Freshwater Mussel	Vulnerable	Occurs in greatest abundance in slower flowing streams with stable sediments that are soft enough for burrowing amongst woody debris and exposed tree roots. Also occupies lentic systems including large water supply dams and even on-stream farm dams. Salinity tolerance quite low (Morgan et al. 2011).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
Mammals					
<i>Bettongia penicillata ogilbyi</i>	Woylie	Endangered	Woodlands and adjacent heaths with a dense understorey of shrubs, particularly <i>Gastrolobium</i> spp. (TSSC 2018).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Dasyurus geoffroii</i>	Chuditch	Vulnerable	Wide range of habitats from woodlands, dry sclerophyll forests, riparian vegetation, beaches and deserts. Appears to utilise native vegetation along roadsides in the wheatbelt (DEC 2012).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Pseudocheirus occidentalis</i>	Western Ringtail Possum, Ngwayir, Womp, Woder, Ngoor, Ngoolangit	Critically Endangered	Swan Coastal Plain <i>Agonis flexuosa</i> woodlands and <i>Agonis flexuosa</i> / <i>Eucalyptus gomphocephala</i> forests. Also <i>Eucalyptus marginata</i> forests (DPaW 2017).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat within the proposal area.
<i>Setonix brachyurus</i>	Quokka	Vulnerable	On the WA mainland this species requires dense, wet ground cover vegetation in forests or swampy flats (Menkhorst and Knight 2011). The understorey needs to be sufficiently thick and complex to provide a predation refuge (DEC 2013). On the south coast of Western Australia quokka may also utilise dense coastal heath of <i>Eucalyptus staeri</i> , <i>Allocasuarina fraseriana</i> , <i>Hakea elliptica</i> with <i>Melaleuca striatum</i> and <i>Anarthria scabrum</i> (DEC 2013).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Myrmecobius fasciatus</i>	Numbat	Endangered	Generally dominated by <i>Eucalyptus</i> spp. that provide hollow logs and branches for shelter and termites for food (van Dyck & Strahan 2008).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.

Table 2: Threatened flora and fauna species and likelihood of occurrence (continued)

Scientific Name	Common Name	EPBC Status	Habitat	Likelihood of occurrence	Justification
Plants					
<i>Caladenia huegelii</i>	King Spider-orchid, Grand Spider-orchid, Rusty Spider-orchid	Endangered	The King Spider-orchid grows in well-drained, deep sandy soils in low mixed woodlands of <i>Banksia attenuata</i> , <i>B. menziesii</i> , <i>B. ilicifolia</i> , <i>Allocasuarina fraseriana</i> (western sheoak) and <i>Eucalyptus marginata</i> (jarrah). It tends to favour areas of lush undergrowth. Soil is usually deep grey-white sand usually associated with the Bassendean sand-dune system. However, rare plants have been known to extend into the Spearwood system (in which calcareous yellow sands dominate) (Western Australian Herbarium 2024).	Unlikely	<ul style="list-style-type: none"> Detailed flora and vegetation assessment conducted extensive targeted searches for <i>C. huegelii</i> but no individuals were located within the site. Therefore, it is considered that the species does not occur. The species is considered 'unlikely' to occur within the proposal area.
<i>Diuris drummondii</i>	Tall Donkey Orchid	Vulnerable	Terrestrial orchid and is Western Australia's tallest Donkey Orchid. It grows up to 105 cm tall and produces between three and eight widely spaced pale-yellow flowers. Found in low-lying winter depressions in peaty and sandy clay swamps. Flower between November to December or January (Western Australian Herbarium 2024).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat within the proposal area.
<i>Diuris micrantha</i>	Dwarf Bee-orchid	Vulnerable	Tuberous perennial herb 0.3 to 0.6 m in height. Flowers are yellow and brown in colour and flowers from September to October. Occurs on brown loamy clay in winter wet swamps in shallow water (Western Australian Herbarium 2024).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat within the proposal area.
<i>Drakaea elastica</i>	Glossy-leafed Hammer Orchid	Endangered	A slender flower stem up to 30 cm high with a single glossy green heart shaped leaf. Found in bare patches of sand within otherwise dense vegetation in low lying areas alongside winterwet swamps. Typically, in banksia woodland or thickets of <i>Kunzea glabrescens</i> . Flowers late September to October to November (Western Australian Herbarium 2024).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat within the proposal area.
<i>Andersonia gracilis</i>	Slender Andersonia	Endangered	A Slender erect or open straggly shrub, 0.1-0.5(-1) m high. Flowers are white-pink-purple with flowering occurring between September and November. Found in seasonally damp, black sandy clay flats near or on the margins of swamps, often on duplex soils supporting low open heath vegetation with species such as <i>Calothamnus hirsutus</i> , <i>Verticordia densiflora</i> and <i>Kunzea recurva</i> over sedges (Western Australian Herbarium 2024).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Banksia mimica</i>	Summer Honeypot	Endangered	Grows on flat to gentle slopes in grey and white sand in open woodlands. In the Whicher Range this species grows in closed shrubland with a <i>Banksia attenuata</i> overstorey. Associated vegetation includes <i>Andersonia sp.</i> , <i>Stirlingia latifolia</i> , <i>Xanthorrhoea preisii</i> , <i>Leucopogon sp.</i> , <i>Melaleuca thymoides</i> and <i>Petrophile sp.</i> (Kelly et al., 1999; Williams et al., 2001). In the Darling Range and Mogumber, it occurs in mixed low heath with a <i>Banksia attenuata/B. menziesii</i> open low woodland overstorey (Western Australian Herbarium 2024).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
<i>Drakaea micrantha</i>	Dwarf Hammer-orchid	Vulnerable	Typically found in open sandy patches often where disturbance has recently occurred and where competition from other plants has been removed. It grows in association with Jarrah (<i>Eucalyptus marginata</i>) and Common Sheoak (<i>Allocasuarina fraseriana</i>) woodland or forest associated with Banksia species on infertile grey sands, typically associated with wetlands and low lying areas (Western Australian Herbarium 2024).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.

Table 2: Threatened flora and fauna species and likelihood of occurrence (continued)

Scientific Name	Common Name	EPBC Status	Habitat	Likelihood of occurrence	Justification
Plants (continued)					
<i>Morelotia australiensis</i>	Southern Tetraria	Vulnerable	Perennial herb/sedge growing to 1m. The species flowers in early summer during November and December. Typically occurs on sand over clay, winter wet depressions and drainage lines. (Western Australian Herbarium 2024)	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat within the proposal area.
<i>Synaphea sp. Fairbridge Farm (D.Papenfus 696)</i>	Selena's Synaphea	Critically Endangered	A sub-shrub ranging from 0.25m to 0.65 m tall. Flowers are yellow in colour, narrow, hairy and are openly spaced. Flowering occurs from September to November. Found in low woodland on grey, clayey sand with lateritic pebbles (Pinjarra Plain) near winter wet flats (Western Australian Herbarium 2024).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat within the proposal area.
<i>Synaphea sp. Pinjarra Plain (A.S.George 17182)</i>	null	Endangered	A clumped shrub (sub-shrub), to 0.8 m high. Flowers are yellow in colour and flowering occurs September to November. Associated with grey sandy loam or clay, grey-brown clayey sand, brown clayey loam, laterite and flats, seasonally wet areas, railroad reserves often with wet depressions or drains (Western Australian Herbarium 2024).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat within the proposal area.
<i>Synaphea stenoloba</i>	Dwellingup Synaphea	Endangered	Sandy or sandy clay soils. Winter-wet flats, granite.	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat within the proposal area.
<i>Synaphea sp. Serpentine (G.R.Brand 103)</i>	null	Critically Endangered	A clumping shrub reaching a height of up to 0.6 m. Flowers are yellow in colour, narrow and are openly spaces. Flowering occurs from August to November. Habitat includes seasonally damp areas with loam-sand to clay soils (Western Australian Herbarium 2024).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No recent and reliable records within 10 km of the site. No suitable habitat is present in the site. The species is considered 'unlikely' to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.

Table 3: Threatened Ecological Communities and likelihood of occurrence

Community Name	EPBC Status	Habitat/Description	Likelihood of occurrence	Reason
Ecological communities				
Banksia Woodlands of the Swan Coastal Plain	Endangered	The Conservation Advice (Threatened Species Scientific Committee 2016) states that Banksia Woodland TEC “typically occurs on well drained, low nutrient soil on sandplain landforms, particularly deep Bassendean and Spearwood sands and occasionally on Quindalup sands”, and that the community “is also common on sandy colluvium and aeolian sands of the Ridge Hill Shelf, Whicher Scarp and Dandaragan Plateau; and may also occur in other limited scenarios” (DoEE 2016).	Recorded	<ul style="list-style-type: none"> Banksia woodlands TEC occurs within the project area The disturbance footprint encroaches on 1.56 ha of Banksia woodlands TEC
Clay Pans of the Swan Coastal Plain	Critically Endangered	Occur where clay substrate is low in the landscape and forms an impermeable layer close to the surface. These wetlands that rely on rainfall and local surface drainage to fill are considered unlikely to be connected to groundwater. The clay pans then dry out to form a relatively impervious substrate in summer. A suite of perennial plants that propagate by underground bulbs, tubers or corms (geophytes), and annual herbs flower sequentially as the clay pans dry out. The clay pans are the most diverse of the Swan Coastal Plain wetlands and contain a number of local endemic flora.	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No suitable habitat is present in the site. The species is considered ‘unlikely’ to occur within the proposal area given the absence of suitable habitat within the proposal area.
Honeymyrtle shrubland on limestone ridges of the Swan Coastal Plain Bioregion	Critically Endangered	The assemblage of plants, animals and other organisms associated with a type of warm temperate shrubland or heath, dominated by <i>Melaleuca huegelii</i> (chenille honeymyrtle), <i>M. systema</i> (coastal honeymyrtle), and/or <i>Banksia sessilis</i> (parrot bush) (Department of Climate Change 2023a). Occurs only in the southwest of Australia and is known from a small number of locations within slopes and tops of limestone ridges of the Swan Coastal Plain IBRA Bioregion. It is an ecological community dominated by shrubs, with sclerophyll shrubs forming thickets or heaths, above a typically diverse ground layer of herbs, including sedges, Restionaceae and occasional grasses (Department of Climate Change 2023a).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No suitable habitat is present in the site. The species is considered ‘unlikely’ to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
Empodisma peatlands of southwestern Australia	Endangered	Occurs on an organosol within the southwest of western Australia that are typically saturated for at least a month during the year. The Empodisma peatlands of southwestern Australia mainly occur within the Warren IBRA bioregion and Southern Jarrah Forest subregion of the Jarrah Forest IBRA bioregion. Discrete occurrences may also be present in the Perth (SWA02) (Swan Coastal Plain), Northern Jarrah Forest (JAF01) (Jarrah Forest) and Fitzgerald (ESP01) (Esperance) IBRA subregions. Empodisma peatlands has a ground layer containing Emodisma gracillimum, whilst other sedge species are also typically present. Other associated plant species include Acacia hastulata, Callistemon glaucus, Gymnoschoenus anceps, Leptocarpus tenax and Schoenus multiglumis (Department of Climate Change 2023b).	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No suitable habitat is present in the site. The species is considered ‘unlikely’ to occur within the proposal area given the absence of suitable habitat and lack of recent and reliable records available within the proximity of the proposal area.
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Occurs in coastal areas under regular or intermittent tidal influence. In southern latitudes saltmarsh is often the main vegetation-type in the intertidal zone and commonly occurs in association with estuaries (Adam, 2002; Fairweather, 2011; Sainty et al., 2012). It is typically restricted to the upper intertidal environment, occurring in areas within the astronomical tidal limit, often between the elevation of the mean high tide and the mean spring tide (Saintilan et al., 2009)	Unlikely	<ul style="list-style-type: none"> PMST suggests the species or suitable habitat for the species is known to occur within 10 km of the proposal area. No suitable habitat is present in the site. The species is considered ‘unlikely’ to occur within the proposal area given the absence of suitable habitat within the proposal area.
Tuart (<i>Eucalyptus gomphocephala</i>) Woodlands and Forests of the Swan Coastal Plain	Critically Endangered	Tuart (<i>Eucalyptus gomphocephala</i>) woodland and forests of the Swan Coastal Plan TEC, listed in July 2019 as a Critically Endangered TEC under the EPBC Act and Priority 3 listed by DBCA. Mostly confined to Quindalup Dunes and Spearwood Dunes from Jurien Bay to the Sabina River, with outliers along some rivers and the Bassendean dunes and Pinjarra Plain. Tuart is the key dominant canopy species however Tuart communities comprise a variety of flora and fauna assemblages. Trees commonly co-occurring with Tuart include <i>Agonis flexuosa</i> (peppermint), <i>Banksia grandis</i> , <i>Banksia attenuata</i> , <i>Eucalyptus marginata</i> ; and less commonly, <i>Corymbia calophylla</i> , <i>Banksia menziesii</i> and <i>Banksia prionotes</i> . An understorey of native plants is typically present, which may include grasses, herbs and shrubs. (DoEE 2019)	Recorded	<ul style="list-style-type: none"> Tuart woodland TEC confirmed to occur in the Project Area

5. CONCLUSIONS

Information from available databases and recent comprehensive flora and fauna surveys were used to assess the likelihood of occurrence of each identified MNES.

None of the conservation significant flora species identified within the PMST database search were considered 'likely' or 'possible' to occur within the Project Area based on the lack of preferred habitat, historic and current disturbance and/or because they were not identified during the ecological surveys.

Banksia Woodland TEC and Tuart Woodland TEC was recorded within the Project Area however none of the other TECs identified in the MNES search are considered likely to occur within the Project Area.

Of the 69 fauna species identified in the PMST search, three threatened species were considered 'Likely' to occur within the Project Area:

- *Zanda latirostris* (Carnaby's black cockatoo) – Suitable foraging habitat was surveyed within the Project Area.
- *Calyptorhynchus banksia nasa* (Forest red-tailed black cockatoo) – Suitable foraging habitat was surveyed within the Project Area.
- *Zanda baudinii* (Baudin's black cockatoo) - Suitable foraging habitat was surveyed within the Project Area.

One fauna species were considered 'possible' to occur based on suitable habitat identified within the Project Area, and included:

- *Apus pacificus* (Pacific swift) – May opportunistically fly over the Project Area on commute or in search of prey.

The remainder of the conservation significant fauna species identified in the PMST were considered 'unlikely' to occur in the Project Area due to a lack of suitable or preferred habitat, because the Project Area lies outside of the species known distribution, or it has been confirmed through targeted survey that they do not occur within the Project Area.

6. References

The references listed below have been considered as part of preparing this document.

Department of Environment and Conservation (DEC) 2012, *Chuditch (Dasyurus geoffroii) National Recovery Plan - Wildlife Management Program No. 54*.

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Marchant, S. and Higgins, P. J. 1993, *Handbook of Australian, New Zealand and Antarctic Birds. Volume two - Raptors to Lapwings*, Oxford University Press, Melbourne, Victoria.

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Threatened Species Scientific Committee (TSSC) 2015, *Conservation Advice for Pachyptila tutur subantarctica (fairy prion, southern)*, Department of the Environment, Canberra.

Threatened Species Scientific Committee (TSSC) 2018, *Conservation advice for Bettongia penicillata (woylie)*, Department of the Environment, Canberra.

Threatened Species Scientific Committee (TSSC) 2019, *Conservation Advice: Botaurus poiciloptilus, Australasian bittern*, Department of the Environment and Energy, Canberra.

Western Australian Herbarium 2024, *Florabase-the Western Australian Flora*, Department of Biodiversity, Conservation and Attractions <<https://florabase.dbca.wa.gov.au/>>.

Attachment A: PMST Report 2024





Australian Government

Department of Climate Change, Energy,
the Environment and Water

EPBC Act Protected Matters Report

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

Report created: 28-Oct-2024

[Summary](#)

[Details](#)

[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar)	2
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	1
Listed Threatened Ecological Communities:	6
Listed Threatened Species:	69
Listed Migratory Species:	68

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 <https://www.dcceew.gov.au/parks-heritage/heritage>

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

Commonwealth Lands:	10
Commonwealth Heritage Places:	None
Listed Marine Species:	94
Whales and Other Cetaceans:	12
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

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

State and Territory Reserves:	15
Regional Forest Agreements:	None
Nationally Important Wetlands:	2
EPBC Act Referrals:	35
Key Ecological Features (Marine):	2
Biologically Important Areas:	9
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands) [\[Resource Information \]](#)

Ramsar Site Name	Proximity	Buffer Status
Becher point wetlands	Within 10km of Ramsar site	In buffer area only
Peel-yalgorup system	Within Ramsar site	In feature area

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 a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name	Buffer Status
Commonwealth Marine Areas (EPBC Act)	In buffer area only

Listed Threatened Ecological Communities [\[Resource Information \]](#)

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

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

Community Name	Threatened Category	Presence Text	Buffer Status
Banksia Woodlands of the Swan Coastal Plain ecological community	Endangered	Community likely to occur within area	In feature area
Clay Pans of the Swan Coastal Plain	Critically Endangered	Community likely to occur within area	In buffer area only
Empodisma peatlands of southwestern Australia	Endangered	Community may occur within area	In buffer area only
Honeymyrtle shrubland on limestone ridges of the Swan Coastal Plain Bioregion	Critically Endangered	Community may occur within area	In buffer area only
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area	In buffer area only
Tuart (Eucalyptus gomphocephala) Woodlands and Forests of the Swan Coastal Plain ecological community	Critically Endangered	Community likely to occur within area	In feature area

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

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

Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Roosting known to occur within area	In buffer area only
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting known to occur within area	In buffer area only
Calyptorhynchus banksii naso Forest Red-tailed Black-Cockatoo, Karrak [67034]	Vulnerable	Species or species habitat known to occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area	In buffer area only
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat may occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit [86432]	Endangered	Species or species habitat known to occur within area	In feature area
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting known to occur within area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Phaethon rubricauda westralis Red-tailed Tropicbird (Indian Ocean), Indian Ocean Red-tailed Tropicbird [91824]	Endangered	Species or species habitat may occur within area	In buffer area only
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area	In feature area
Zanda baudinii listed as Calyptorhynchus baudinii Baudin's Cockatoo, Baudin's Black-Cockatoo, Long-billed Black-cockatoo [87736]	Endangered	Species or species habitat known to occur within area	In feature area
Zanda latirostris listed as Calyptorhynchus latirostris Carnaby's Black Cockatoo, Short-billed Black-cockatoo [87737]	Endangered	Species or species habitat known to occur within area	In feature area
MAMMAL			
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Bettongia penicillata ogilbyi Woylie [66844]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Dasyurus geoffroii Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat known to occur within area	In feature area
Eubalaena australis Southern Right Whale [40]	Endangered	Breeding known to occur within area	In buffer area only
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat may occur within area	In buffer area only
Pseudocheirus occidentalis Western Ringtail Possum, Ngwayir, Womp, Woder, Ngoor, Ngoolangit [25911]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Setonix brachyurus Quokka [229]	Vulnerable	Species or species habitat may occur within area	In buffer area only

OTHER

Scientific Name	Threatened Category	Presence Text	Buffer Status
Westralunio carteri Carter's Freshwater Mussel, Freshwater Mussel [86266]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
PLANT			
Andersonia gracilis Slender Andersonia [14470]	Endangered	Species or species habitat may occur within area	In feature area
Banksia mimica Summer Honey-pot [82765]	Endangered	Species or species habitat may occur within area	In buffer area only
Caladenia huegelii King Spider-orchid, Grand Spider-orchid, Rusty Spider-orchid [7309]	Endangered	Species or species habitat may occur within area	In feature area
Diuris drummondii Tall Donkey Orchid [4365]	Vulnerable	Species or species habitat known to occur within area	In feature area
Diuris micrantha Dwarf Bee-orchid [55082]	Vulnerable	Species or species habitat known to occur within area	In feature area
Diuris purdiei Purdie's Donkey-orchid [12950]	Endangered	Species or species habitat likely to occur within area	In feature area
Drakaea elastica Glossy-leaved Hammer Orchid, Glossy-leaved Hammer Orchid, Warty Hammer Orchid [16753]	Endangered	Species or species habitat known to occur within area	In feature area
Drakaea micrantha Dwarf Hammer-orchid [56755]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Morelotia australiensis listed as Tetraria australiensis Southern Tetraria [92784]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Synaphea sp. Fairbridge Farm (D.Papenfus 696) Selena's Synaphea [82881]	Critically Endangered	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Synaphea sp. Pinjarra Plain (A.S.George 17182) [86878]	Endangered	Species or species habitat may occur within area	In buffer area only
Synaphea sp. Serpentine (G.R.Brand 103) [86879]	Critically Endangered	Species or species habitat may occur within area	In feature area
Synaphea stenoloba Dwellingup Synaphea [66311]	Endangered	Species or species habitat known to occur within area	In buffer area only
REPTILE			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
SHARK			
Carcharias taurus (west coast population) Grey Nurse Shark (west coast population) [68752]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Galeorhinus galeus School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453]	Conservation Dependent	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area	In feature area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area	In buffer area only

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

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Anous stolidus Common Noddy [825]		Species or species habitat may occur within area	In buffer area only
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area	In buffer area only
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat may occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In feature area
Hydroprogne caspia Caspian Tern [808]		Foraging, feeding or related behaviour known to occur within area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Onychoprion anaethetus Bridled Tern [82845]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Sterna dougallii Roseate Tern [817]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Sternula albifrons Little Tern [82849]		Species or species habitat may occur within area	In buffer area only
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Migratory Marine Species			
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area	In buffer area only
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Caperea marginata Pygmy Right Whale [39]		Species or species habitat may occur within area	In buffer area only
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area	In buffer area only
Carcharias taurus Grey Nurse Shark [64469]		Species or species habitat likely to occur within area	In buffer area only
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Breeding known to occur within area	In buffer area only
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area	In buffer area only
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area	In buffer area only
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat likely to occur within area	In buffer area only
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat likely to occur within area	In buffer area only
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area	In buffer area only
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Migratory Terrestrial Species			
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Roosting known to occur within area	In buffer area only
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area	In feature area
Calidris alba Sanderling [875]		Roosting known to occur within area	In buffer area only
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area	In feature area
Calidris pugnax as Philomachus pugnax Ruff [91256]		Roosting known to occur within area	In buffer area only
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area	In buffer area only
Calidris subminuta Long-toed Stint [861]		Roosting known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting known to occur within area	In buffer area only
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area	In buffer area only
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area	In buffer area only
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area	In buffer area only
Limicola falcinellus Broad-billed Sandpiper [842]		Roosting known to occur within area	In buffer area only
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting known to occur within area	In buffer area only
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area	In buffer area only
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area	In buffer area only
Pandion haliaetus Osprey [952]		Breeding known to occur within area	In feature area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Tringa brevipes Grey-tailed Tattler [851]		Roosting known to occur within area	In buffer area only
Tringa glareola Wood Sandpiper [829]		Roosting known to occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area	In feature area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area	In buffer area only
Tringa totanus Common Redshank, Redshank [835]		Roosting known to occur within area	In buffer area only

Other Matters Protected by the EPBC Act

Commonwealth Lands

[\[Resource Information \]](#)

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.

Commonwealth Land Name	State	Buffer Status
Unknown		
Commonwealth Land - [50429]	WA	In buffer area only
Commonwealth Land - [50644]	WA	In buffer area only
Commonwealth Land - [50681]	WA	In buffer area only
Commonwealth Land - [50414]	WA	In buffer area only
Commonwealth Land - [50408]	WA	In buffer area only
Commonwealth Land - [51112]	WA	In buffer area only
Commonwealth Land - [51114]	WA	In buffer area only
Commonwealth Land - [51109]	WA	In buffer area only
Commonwealth Land - [51492]	WA	In feature area
Commonwealth Land - [50426]	WA	In buffer area only

Listed Marine Species

[\[Resource Information \]](#)

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Anous stolidus Common Noddy [825]		Species or species habitat may occur within area	In buffer area only
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Ardenna carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Ardenna grisea as Puffinus griseus Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Roosting known to occur within area	In buffer area only
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area	In feature area
Calidris alba Sanderling [875]		Roosting known to occur within area	In buffer area only
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area overfly marine area	In feature area
Calidris pugnax as Philomachus pugnax Ruff [91256]		Roosting known to occur within area overfly marine area	In buffer area only
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area overfly marine area	In buffer area only
Calidris subminuta Long-toed Stint [861]		Roosting known to occur within area overfly marine area	In buffer area only
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting known to occur within area overfly marine area	In buffer area only
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area	In buffer area only
Charadrius ruficapillus Red-capped Plover [881]		Roosting known to occur within area overfly marine area	In buffer area only
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area	In buffer area only
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In feature area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area overfly marine area	In buffer area only
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area overfly marine area	In buffer area only
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Roosting known to occur within area overfly marine area	In buffer area only
Hydroprogne caspia as Sterna caspia Caspian Tern [808]		Foraging, feeding or related behaviour known to occur within area	In buffer area only
Limicola falcinellus Broad-billed Sandpiper [842]		Roosting known to occur within area overfly marine area	In buffer area only
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting known to occur within area overfly marine area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area overfly marine area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area overfly marine area	In buffer area only
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area	In buffer area only
Onychoprion anaethetus as Sterna anaethetus Bridled Tern [82845]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Pachyptila turtur Fairy Prion [1066]		Species or species habitat likely to occur within area	In feature area
Pandion haliaetus Osprey [952]		Breeding known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area	In buffer area only
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Puffinus assimilis Little Shearwater [59363]		Foraging, feeding or related behaviour known to occur within area	In buffer area only
Recurvirostra novaehollandiae Red-necked Avocet [871]		Roosting known to occur within area overfly marine area	In buffer area only
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Stercorarius antarcticus as Catharacta skua Brown Skua [85039]		Species or species habitat may occur within area	In buffer area only
Sterna dougallii Roseate Tern [817]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Sternula albifrons as Sterna albifrons Little Tern [82849]		Species or species habitat may occur within area	In buffer area only
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thinornis cucullatus as Thinornis rubricollis Hooded Plover, Hooded Dotterel [87735]		Species or species habitat known to occur within area overfly marine area	In buffer area only
Tringa brevipes as Heteroscelus brevipes Grey-tailed Tattler [851]		Roosting known to occur within area	In buffer area only
Tringa glareola Wood Sandpiper [829]		Roosting known to occur within area overfly marine area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area overfly marine area	In buffer area only
Tringa totanus Common Redshank, Redshank [835]		Roosting known to occur within area overfly marine area	In buffer area only
Fish			
Acentronura australe Southern Pygmy Pipehorse [66185]		Species or species habitat may occur within area	In buffer area only
Campichthys galei Gale's Pipefish [66191]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Heraldia nocturna Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area	In buffer area only
Hippocampus angustus Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area	In buffer area only
Hippocampus breviceps Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area	In buffer area only
Hippocampus subelongatus West Australian Seahorse [66722]		Species or species habitat may occur within area	In buffer area only
Histiogamphelus cristatus Rhino Pipefish, Macleay's Crested Pipefish, Ring-back Pipefish [66243]		Species or species habitat may occur within area	In buffer area only
Lissocampus caudalis Australian Smooth Pipefish, Smooth Pipefish [66249]		Species or species habitat may occur within area	In buffer area only
Lissocampus fatiloquus Prophet's Pipefish [66250]		Species or species habitat may occur within area	In buffer area only
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area	In buffer area only
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area	In buffer area only
Mitotichthys meraculus Western Crested Pipefish [66259]		Species or species habitat may occur within area	In buffer area only
Nannocampus subosseus Bonyhead Pipefish, Bony-headed Pipefish [66264]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Phycodurus eques Leafy Seadragon [66267]		Species or species habitat may occur within area	In buffer area only
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area	In buffer area only
Pugnaso curtirostris Pugnose Pipefish, Pug-nosed Pipefish [66269]		Species or species habitat may occur within area	In buffer area only
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area	In buffer area only
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area	In buffer area only
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area	In buffer area only
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area	In buffer area only
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area	In buffer area only
Vanacampus phillipi Port Phillip Pipefish [66284]		Species or species habitat may occur within area	In buffer area only
Vanacampus poecilolaemus Longsnout Pipefish, Australian Longsnout Pipefish, Long-snouted Pipefish [66285]		Species or species habitat may occur within area	In buffer area only
Mammal			
Arctocephalus forsteri Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat may occur within area	In buffer area only
Reptile			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Hydrophis kingii as Disteira kingii Spectacled Sea Snake [93511]		Species or species habitat may occur within area	In buffer area only
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Whales and Other Cetaceans [Resource Information]			
Current Scientific Name	Status	Type of Presence	Buffer Status
Mammal			
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area	In buffer area only
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area	In buffer area only
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area	In buffer area only

Current Scientific Name	Status	Type of Presence	Buffer Status
Caperea marginata Pygmy Right Whale [39]		Species or species habitat may occur within area	In buffer area only
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area	In buffer area only
Eubalaena australis Southern Right Whale [40]	Endangered	Breeding known to occur within area	In buffer area only
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area	In buffer area only
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area	In buffer area only
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area	In buffer area only
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area	In buffer area only
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area	In buffer area only
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area	In buffer area only

Extra Information

State and Territory Reserves			[Resource Information]
Protected Area Name	Reserve Type	State	Buffer Status
Austin Bay	Nature Reserve	WA	In buffer area only
Boodalan	Nature Reserve	WA	In buffer area only
Creery Island	Nature Reserve	WA	In buffer area only

Protected Area Name	Reserve Type	State	Buffer Status
Goegrup Lake	Nature Reserve	WA	In buffer area only
Len Howard	Conservation Park	WA	In buffer area only
NTWA Bushland covenant (0014)	Conservation Covenant	WA	In buffer area only
Unnamed WA35283	Nature Reserve	WA	In buffer area only
Unnamed WA38749	Conservation Park	WA	In buffer area only
Unnamed WA41102	5(1)(h) Reserve	WA	In buffer area only
Unnamed WA44986	Nature Reserve	WA	In buffer area only
Unnamed WA45089	Nature Reserve	WA	In buffer area only
Unnamed WA46661	Nature Reserve	WA	In buffer area only
Unnamed WA50750	Nature Reserve	WA	In buffer area only
Unnamed WA51945	5(1)(h) Reserve	WA	In buffer area only
Unnamed WA51946	5(1)(h) Reserve	WA	In buffer area only

Nationally Important Wetlands [\[Resource Information \]](#)

Wetland Name	State	Buffer Status
Barraghup Swamp	WA	In buffer area only
Peel-Harvey Estuary	WA	In buffer area only

EPBC Act Referrals [\[Resource Information \]](#)

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Marina Quay Residential Development	2023/09673		Completed	In buffer area only
Marine Route Survey for Subsea Fibre Optic Data Cable System - Australia West	2024/09826		Completed	In buffer area only

Controlled action

'Lakelands East' residential development, Mandurah, WA	2013/7048	Controlled Action	Post-Approval	In buffer area only
Austin Cove Estate Phase II Residential Development	2007/3885	Controlled Action	Post-Approval	In buffer area only
Construction of New Perth Bunbury Highway project	2005/2193	Controlled Action	Post-Approval	In feature area
Halls Head Shopping Centre stages 2 & 3 expansion	2010/5636	Controlled Action	Post-Approval	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
Lot 505 Hungerford Avenue, Halls Head, WA Residential Development	2009/4789	Controlled Action	Post-Approval	In buffer area only
Mandurah Junction Commercial and Residential Development	2010/5410	Controlled Action	Completed	In buffer area only
Mixed Use Residential and Commercial Development	2009/4919	Controlled Action	Post-Approval	In buffer area only
Parklands West Estate Development	2010/5693	Controlled Action	Post-Approval	In buffer area only
Proposed Urban Development	2008/3984	Controlled Action	Post-Approval	In buffer area only
Residential Development Lot 518 Stock Road, Stakehill, WA	2019/8483	Controlled Action	Assessment Approach	In buffer area only
Residential development of Lot 105 Stock Road, Lakelands, WA	2017/8041	Controlled Action	Post-Approval	In buffer area only
Urban Development Ravendale Drive, Coodanup Drive & Wanjeep Street	2011/5928	Controlled Action	Post-Approval	In buffer area only
Not controlled action				
'Looping 10' gas transmission pipeline from Kwinana to Hopelands	2005/2212	Not Controlled Action	Completed	In buffer area only
Bushfire Mitigation Works - City of Mandurah	2020/8674	Not Controlled Action	Completed	In buffer area only
Construction of Secret Harbour High School	2004/1489	Not Controlled Action	Completed	In buffer area only
Demolish and replace Old Mandurah Traffic Bridge, Mandurah, WA	2015/7415	Not Controlled Action	Completed	In buffer area only
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed	In feature area
Kennedy Park Estate Residential Development	2003/1044	Not Controlled Action	Completed	In buffer area only
Lot 101 Mandurah Road, Madora Bay, WA	2012/6466	Not Controlled Action	Completed	In buffer area only
Mandurah Quay Residential Development	2010/5754	Not Controlled Action	Completed	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Residential development, Lot 179 and part Lot 180 Riverside Dr, and Lot 198 Ronlyn Rd, Furnissdale,	2016/7799	Not Controlled Action	Completed	In buffer area only
Residential Subdivision, Lot 90 Leisure Way, Halls Head, WA	2018/8175	Not Controlled Action	Completed	In buffer area only
Urban development, Lot 805 Mandurah Road, Karnup, WA	2015/7481	Not Controlled Action	Completed	In buffer area only
urban residential development	2006/2924	Not Controlled Action	Completed	In buffer area only
Not controlled action (particular manner)				
Construction of Mandurah Entrance Road	2009/4692	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Coodanup residential development	2006/3073	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Dredging of the Yunderup Approach Channel	2007/3415	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Maintenance Channel Dredging	2010/5528	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Multipurpose development stage 1 within 340ha	2004/1913	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
South West Metropolitan Railway Project	2003/1175	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Referral decision				
Lakelands Station	2020/8718	Referral Decision	Completed	In buffer area only

Key Ecological Features

[[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	Buffer Status
Commonwealth marine environment within and adjacent to the west coast inshore lagoons	South-west	In buffer area only
Western rock lobster	South-west	In buffer area only

Biologically Important Areas

[[Resource Information](#)]

Scientific Name	Behaviour	Presence	Buffer Status
Seabirds			
Ardena pacifica Wedge-tailed Shearwater [84292]	Foraging (in high numbers)	Known to occur	In buffer area only
Eudyptula minor Little Penguin [1085]	Foraging (provisioning young)	Known to occur	In buffer area only
Hydroprogne caspia Caspian Tern [808]	Foraging (provisioning young)	Known to occur	In buffer area only
Onychoprion anaethetus Bridled Tern [82845]	Foraging (in high numbers)	Known to occur	In buffer area only
Puffinus assimilis tunneyi Little Shearwater [59363]	Foraging (in high numbers)	Known to occur	In buffer area only
Sterna dougallii Roseate Tern [817]	Foraging	Known to occur	In buffer area only
Sternula nereis Fairy Tern [82949]	Foraging (in high numbers)	Known to occur	In buffer area only
Whales			
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Migration	Known to occur	In buffer area only
Megaptera novaeangliae Humpback Whale [38]	Migration (north and south)	Known to occur	In buffer area only

Scientific Name

Behaviour

Presence

Buffer Status

Caveat

1 PURPOSE

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

The report contains the mapped locations of:

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

2 DISCLAIMER

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

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

3 DATA SOURCES

Threatened ecological communities

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

Threatened, migratory and marine species

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

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

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

4 LIMITATIONS

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

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

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

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

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

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

Acknowledgements

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

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

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

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

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