

# TECHNICAL MEMORANDUM

## Likelihood of occurrence

### EPBC Act Referral

#### Lot 200 Skeet Road, Harrisdale

PROJECT NUMBER	EP23-017(01)	DOC. NO.	EP23-017(01)—004 DVB
PROJECT NAME	Residential Development of Lot 200 Skeet Road, Harrisdale	CLIENT	Aboriginal Christian Church Teaching Centre of WA Inc.
AUTHOR	DVB	REVIEWER	CSR
VERSION	1	DATE	30/10/2024

## 1. INTRODUCTION

Aboriginal Christian Church Teaching Centre of WA Inc. (the Proponent) proposes urban development within Lot 200 Skeet Road in Harrisdale, in the city of Armadale, (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 14 October 2020. Updated MNES searches using the PMST were conducted on 27<sup>th</sup> of February and the 28<sup>th</sup> of May 2024, with the most recent search occurring on the 1<sup>st</sup> of October 2024 (as a part of EPBC act referral portal uploads) to ensure all MNES relevant to the Proposed Action were able to be addressed as part of the referral. The most recent PMST report has been included as **Attachment A**.

The information contained within the terrestrial flora and fauna studies completed within the Project Area have informed this updated likelihood of occurrence:

- *Detailed Flora and Vegetation Assessment: Lot 600 – 606 Balannup Road and 200 – 202 Skeet Road, Harrisdale, Version A* (Emerge Associates 2022).
- *Basic Fauna and Targeted Fauna Assessment: Lot 600 – 606 Balannup Road and 200 – 202 Skeet Road, Harrisdale, Version A* (Emerge Associates 2021).

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 of 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 are outlined in **Table 1** below.

Table 1: Summary of Matters of National Environmental Significance 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)	Forestdale lake is identified to occur approximately 3.3 km to the south and Thomsons lake approximately 10 km to the west of the Project Area. The Peel-Yalgorup system occurs approximately 52km south of the Project Area.	Based on the separation between the identified wetlands of international importance and the Project Area and the intended residential land use proposed for the Project Area, no Wetlands of International importance are anticipated to be directly or indirectly impacted as a result of the proposed urban development and therefore no further consideration of this matter is required.
Listed threatened species and ecological communities	<ul style="list-style-type: none"> <li>• Four (4) listed Threatened Ecological Communities (TEC) are identified within a 10 km buffer surrounding the Project Area. These include: <ul style="list-style-type: none"> <li>○ <i>Corymbia calophylla</i> - <i>Kingia australis</i> (Endangered).</li> <li>○ Empodisma peatlands of southwestern Australia (Endangered).</li> <li>○ <i>Corymbia calophylla</i> – <i>Xanthorrhoea. preissii</i> woodlands and shrublands of the Swan Coastal Plain (Endangered).</li> <li>○ Subtropical and Temperate Coastal Saltmarsh (Vulnerable).</li> </ul> </li> <li>• Three (3) listed TEC are suggested to occur within the Project Area, including: <ul style="list-style-type: none"> <li>○ Banksia Woodlands of the Swan Coastal Plain ecological community (Endangered).</li> <li>○ Clay Pans of the Swan Coastal Plain (Critically Endangered).</li> <li>○ Tuart (Eucalyptus gomphocephala) Woodlands and Forests of the Swan Coastal Plain Ecological community (Critically Endangered).</li> </ul> </li> <li>• 72 conservation significant flora and fauna species were identified by the PMST within 10 km of the Project area.</li> </ul>	<ul style="list-style-type: none"> <li>• One (1) TEC, Banksia Woodlands of the Swan Coastal Plain ecological community was identified during the ecological surveys to occur within the Project Area.</li> <li>• The Project Area is not located in an area and/or contains suitable habitat which might suggest the remaining TECs identified during the desktop searches would occur. Likelihood of occurrence for TEC's are considered further in <b>Table 2</b>.</li> <li>• Three (3) Threatened fauna species pertinent to the EPBC Act are considered likely to occur within the Project Area. A further five (5) threatened fauna species are considered possible to occur, but significant impacts are not likely.</li> <li>• No conservation significant flora pertinent to the EPBC Act were considered likely or possible to occur based on the habitat and results recorded during the ecological surveys.</li> <li>• The assessment of likelihood of occurrence for all species identified in the PMST search is included below in <b>Table 2</b>.</li> </ul>

Table 1: Summary of Matters of National Environmental Significance 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)	37 migratory species were identified by the PMST within 10 km of the Project Area.	<ul style="list-style-type: none"> <li>Two (2) migratory bird species may possibly occur in the vicinity of the Project Area, significant impacts are unlikely.</li> <li>The assessment of likelihood of occurrence for all species identified in the PMST search is included below in <b>Table 2</b>.</li> </ul>
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 recent literature records occur 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 have been highlighted in green.

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

Scientific Name	Common Name	EPBC status	Habitat	Likelihood to occur within the Project area	Reason
<b>Birds</b>					
<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).	Possible	Small numbers of occasional transient individuals may utilise the portion of the Project Area containing the wetland feature when seasonal water is present.
<i>Apus pacificus</i>	Fork-tailed Swift, Pacific Swift	Migratory	The Fork-tailed Swift is almost exclusively aerial and is not known to breed in Australia. They are seen over inland plains and sometimes above open areas, foothills or in coastal areas. They often occur over cliffs and beaches and also over islands and sometimes well out to sea. They also occur over settled areas, including towns, urban areas and cities. <i>Apus pacificus subsp. pacificus</i> is the only subspecies to migrate to Australia (Johnstone and Storr 1998).	Possible	The Fork-tailed Swift is an aerial forager and unlikely to be dependent on any of the habitats present within the Project Area. The species has not been recorded during previous surveys but given its large range it is considered possible to opportunistically forage in the air above the Project Area or fly over on commute in search for prey.
<i>Botaurus poiciloptilus</i>	Australasian Bittern	Endangered	In or over water, in tall reedbeds, sedges, rushes, cumbungi, lignum. Also occurs in rice fields, drains in tussocky paddocks and occasionally in saltmarshes and brackish wetlands.	Unlikely	The Project Area is not nearby a coastal or sub-coastal region. No suitable habitat is present and therefore, the Australasian bittern is unlikely to occur.
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	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	The Project Area is not within or nearby any coastal marine areas. The minor enclosed freshwater feature within the Project Area is not preferred habitat for this species.
<i>Calidris canutus</i>	Red Knot, Knot	Endangered	Mud and sand flats in estuaries and on sheltered coasts. Habitat also includes areas near-coastal salt lakes, including saltwork ponds.	Unlikely	The Project Area is not within or nearby any coastal marine areas. The minor enclosed freshwater feature within the Project Area is not preferred habitat for this species.
<i>Calidris ferruginea</i>	Curlew Sandpiper	Critically Endangered	Curlew Sandpipers mainly occur on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets, lagoons, around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms.	Unlikely	The Project Area is not within or nearby any coastal marine areas. The minor enclosed freshwater feature within the Project Area is not preferred habitat for this species.
<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 and Storr 1998).	Unlikely	The Project Area is not within or nearby the any coastal marine areas. The minor enclosed freshwater feature within the Project Area is not preferred habitat for this species.
<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	Preferred habitat is not present and therefore, the Red-necked Stint is unlikely to occur within the Project 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.	Unlikely	The Project Area is not within or nearby any claypans, lagoons, or river pools or similar. The minor enclosed freshwater feature within the Project Area is not preferred habitat for this species.
<i>Calyptorhynchus banksii naso</i>	Forest Red-tailed Black-Cockatoo, Karrak	Vulnerable	Eucalypt and Corymbia forests, often in hilly interior. More recently also observed in open agricultural and suburban areas including Perth metropolitan area. Attracted to seeding <i>Corymbia calophylla</i> , <i>Eucalyptus marginata</i> , introduced <i>Melia azdarach</i> and <i>Eucalyptus spp.</i> trees (Johnstone and Storr 1998).	Likely	There is limited foraging habitat value within the Project Area, however given the species is known to occur nearby with several records of the species in close proximity (<2km) to the Project Area it is considered likely to occur.
<i>Charadrius dubius</i>	Little Ringed Plover	Migratory	Open, muddy or sandy shores of lakes, swamps, tidal areas, sewage ponds or farm dams. Rare but regular summer migrant to Australia (Pizzey & Knight 2012).	Unlikely	Preferred habitat is not present and therefore, the Red-necked Stint is unlikely to occur within the Project Area.

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

Scientific Name	Common Name	EPBC Status	Habitat	Likelihood to occur within the Project area	Reason
<b>Birds (continued)</b>					
<i>Charadrius leschenaultii</i>	Greater Sand Plover, Large Sand Plover	Vulnerable	The species inhabits coastal, littoral and estuarine areas mainly on sheltered sandy, shelly or muddy beaches with large intertidal mudflats or sandbanks, sandy estuarine lagoons and inshore reefs, rock platforms, small rocky islands or sand cays on coral reef. This species feed from the surface of wet sand or mud on open intertidal flats of sheltered embayments, lagoons or estuaries.	Unlikely	The species does not breed in Australia. The Project Area is not within or near coastal marine areas and does not contain habitat suitable for this species.
<i>Charadrius ruficapillus</i>	Red-capped Plover	Migratory	The red-capped plover is found in wetlands, especially in arid areas, and prefers saline and brackish waters.	Unlikely	The Project Area is not within the arid region of Western Australia, nor are preferred habitat for the species present within the Project Area and therefore, the Red-capped Plover is unlikely to occur.
<i>Diomedea amsterdamensis</i>	Amsterdam Albatross	Endangered	The Amsterdam albatross is a marine, pelagic seabird. It breeds in open patchy vegetation (among tussocks, ferns or shrubs) near exposed ridges or hillocks on Amsterdam Island (territory of France), in the southern Indian Ocean (Weimerskirch et al. 1985). It sleeps and rests on ocean waters when not breeding (Marchant and Higgins 1990).	Unlikely	The Amsterdam Albatross is considered unlikely to occur given the species forage in open water concentrated over shelves near Amsterdam Island.
<i>Diomedea epomophora</i>	Southern Royal Albatross	Vulnerable	A rare visitor to Western Australian seas; it breeds on subantarctic islands south of New Zealand (Johnstone and Storr 1998).	Unlikely	The Southern Royal Albatross is considered unlikely to occur given it is a rare visitor to WA and preferred habitat is not present within the Project area.
<i>Diomedea exulans</i>	Wandering Albatross	Vulnerable	Marine, pelagic and aerial species. It breeds on Macquarie Island and feeds in Australian portions of the Southern Ocean (DoE 2018).	Unlikely	Rarely occurs onshore given birds remain near Macquarie Island throughout the year for breeding. Preferred habitat is not present within the Project area.
<i>Diomedea sanfordi</i>	Northern Royal Albatross	Endangered	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	The Northern Royal Albatross is considered unlikely to occur given it is a rare visitor to WA and forages on open waters which do not occur within the Project area.
<i>Leipoa ocellata</i>	Malleefowl	Vulnerable	Scrubs and thickets of Eucalyptus spp., <i>Melaleuca lanceolata</i> and <i>Acacia linophylla</i> ; also other dense litter-forming shrublands. Attracted to fallen wheat in stubbles and along roads (Johnstone and Storr 1998).	Unlikely	The Malleefowl is considered unlikely to occur in the project given it is locally extinct in the area.
<i>Limosa limosa</i>	Black-tailed Godwit	Endangered	Tidal mudflats, estuaries, sewage ponds, shallow river margins, brackish or saline inland lakes, flooded pastures, airfields (Pizzey & Knight 2012).	Unlikely	The Project area does not contain estuarine mudflats, beaches or mangroves suitable for Bar-tailed Godwit foraging. Given breeding takes place each year in Scandinavia, northern Asia and Alaska, the Project area is does not provide suitable habitat for the Bar-tailed Godwit.
<i>Macronectes giganteus</i>	Southern Giant-Petrel,	Endangered	Breeds on southern subantarctic and Antarctic islands (Woehler et al. 2001). May visit water Western Australian waters from February to December (Johnstone and Storr 1998).	Unlikely	The Project area does not contain preferred habitat for the species as it is not associated with any marine environments and is outside of the species know distribution.
<i>Macronectes halli</i>	Northern Giant Petrel	Vulnerable	Breeds on subantarctic islands. May visit Western Australian water from February to September (Johnstone and Storr 1998).	Unlikely	The Project area does not contain preferred habitat for the species as it is not associated with any marine environments and is outside of the species know distribution.
<i>Motacilla cinerea</i>	Grey Wagtail	Migratory	The Grey Wagtail is mostly recorded in coastal areas in Western Australia associated with water, however, the species is widespread. There is only nonbreeding habitat in Australia. The species has a strong association with water in disused quarries, sandy and rocky streams in escarpments and rainforests, sewage ponds, ploughed fields and airfields.	Unlikely	The Grey Wagtail unlikely to occur within the Project area, given it is only a rare visitor to Western Australia and the Project area is does not contain suitable habitat.
<i>Numenius madagascariensis</i>	Eastern Curlew, Far Eastern Curlew	Critically Endangered	The Eastern Curlew is most associated with sheltered coasts, especially estuaries, bays, harbours, inlets and coastal lagoons, with large intertidal mudflats or sandflats, often with beds of seagrass. Occasionally, the species occurs on ocean beaches (often near estuaries), and coral reefs, rock platforms, or rocky islets.	Unlikely	The Project area does not contain soft sheltered intertidal sandflats or mudflats. No suitable habitat is present and therefore, the Eastern Curlew is unlikely to occur within the Project area.

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

Scientific Name	Common Name	EPBC Status	Habitat	Likelihood to occur within the Project area	Reason
<b>Birds (continued)</b>					
<i>Pachyptila turtur subantarctica</i>	Fairy Prion (southern)	Vulnerable	Breeds on subantarctic islands and is presumed to frequent subtropical waters during non-breeding period (TSSC 2015).	Unlikely	The Fairy Prion (southern) is considered unlikely to occur given the species forage and rest in open water which does not occur within the Project area.
<i>Pandion haliaetus</i>	Osprey	Migratory	Coasts, estuaries, bays, inlets, islands, and surrounding waters; coral atolls, reefs, lagoons, rock cliffs, stacks (Pizze & Knight 2012).	Unlikely	The Project area is not associated with any marine environments and contains no habitat suitable for the species.
<i>Philomachus pugnax</i>	Ruff (Reeve)	Migratory	Fresh, brackish and saline wetlands; tidal mudflats, saltfields, sewage ponds (Pizze & Knight 2012).	Unlikely	The Project area is not associated with any brackish or saline wetland environments and contains no habitat suitable for the species.
<i>Rostratula australis</i>	Australian Painted Snipe	Endangered	This species is also listed as marine. It mainly occurs in shallow terrestrial freshwater (occasionally brackish) wetlands, including temporary and permanent lakes, swamps and claypans (Marchant and Higgins 1993).	Unlikely	The Project area contains limited habitat values suitable for the species and therefore the Australian Painted Snipe is unlikely to occur in the Project area.
<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	The Australian Fairy Tern breeds at two areas: on Maatsuyker Island off Tasmania (Wiltshire et al., 2004) and on Macquarie Island (Way et al., 2009). Given the species confined distribution, the Australian Fairy Tern is unlikely to occur within the Project area.
<i>Thalassarche impavida</i>	Campbell Albatross, Campbell Black-browed Albatross	Vulnerable	Scarce visitor to southwestern and western seas. Breeds on Campbell Island.	Unlikely	The Campbell Albatross/Campbell Black-browed Albatross is unlikely to occur within the Project area, given it is a rare visitor to Western Australian waters and forages in open waters for crustaceans and fish.
<i>Thalassarche melanophris</i>	Black-browed albatross	Vulnerable	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	During both the breeding and non-breeding seasons, the species occurs widely over pelagic waters. The Project area does not provide suitable pelagic waters for the Black-browed Albatross and is considered unlikely to occur.
<i>Thalassarche steadi</i>	White-capped albatross	Vulnerable	Marine species that occurs in subantarctic and subtropical waters. It reaches tropical areas associated with the cool Humboldt Current off South America (Marchant & Higgins 1990). The species has been sighted in shelf-waters around breeding islands and over adjacent rises. During the non-breeding season, birds have been observed over continental shelves around continents. The species occurs both inshore and offshore (Marchant 1977) and enters harbours and bays (Jehl 1973). Birds gather to scavenge at commercial fishing grounds.	Unlikely	The White-capped Albatross is unlikely to occur within the Project area, given it is a marine species and forages in open waters for crustaceans and fish.
<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 (Pizze & Knight 2012).	Unlikely	Given the limited extent of shallow open water within the Project area and that the species breeds in subarctic areas of Europe the species is unlikely to visit the Project area.
<i>Tringa nebularia</i>	Common greenshank, greenshank	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	The Project area is not on or near habitat suitable for this species. Therefore, the Common Greenshank is unlikely to occur within the Project 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	Given the limited extent of shallow open water within the Project area and that the species breeds in subarctic areas of Europe the species is unlikely to visit the Project area.



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

Scientific Name	Common Name	EPBC Status	Habitat	Likelihood to occur within the Project area	Reason
<b>Birds (continued)</b>					
<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</i> spp., <i>Hakea</i> spp., and to fruiting apples and pears (Johnstone and Storr 1998).	Likely	The species is known to occur within the broader area. Limited foraging habitat ( <i>Banksia</i> spp.) were identified during the ecological survey and are associated with foraging habitat for the species.
<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</i> spp. Attracted to seeding <i>Banksia</i> spp., <i>Dryandra</i> spp., <i>Hakea</i> spp., <i>Eucalyptus</i> spp., <i>Corymbia calophylla</i> , <i>Grevillea</i> spp., and <i>Allocasuarina</i> spp. (Johnstone and Storr 1998).	Likely	Historical records indicated that the species is known to occur within and adjacent to the Project Area. Suitable foraging habitat were identified during the ecological survey as occurring within the Project area.
<b>Insects</b>					
<i>Leiproctus douglasiellus</i>	Short-tongued bee	Critically Endangered	Life history and habits are poorly documented/ unknown. It has been recorded only on flowers of <i>Goodeniaceae</i> and possibly <i>Lechenaultia stenosepala</i> (Bamford 2003).	Unlikely	Historical records indicated that the species is known to occur nearby to the Project Area including Forestdale Lake reserve. The species is known to be associated with flowers of <i>Goodeniaceae</i> and <i>Lechenaultia stenosepala</i> which were not identified within the Project Area or broader survey area. Invertebrate specialists have undertaken transects for MNES native bees and despite moderate value habitat being present in areas of banksia woodlands, no bees were encountered.
<i>Neopasiphae simplicior</i>	A native bee	Critically Endangered	This species of native bee has been collected on flowers of <i>Goodenia filiformis</i> , <i>Lobelia tenuior</i> , <i>Angianthus preissianus</i> and <i>Velleia</i> sp. (Houston 2000).	Unlikely	Historical records indicated that the species is known to occur at Forestdale Lake reserve, which is approximately 3.2 km from the Project Area. Suitable habitat including flowers of annual <i>Lobelia tenuior</i> , have previously been identified within and surrounding the Project Area. The plant community BaBm was identified as supporting <i>Lobelia tenuior</i> , of which there is some impact to but large areas being retained within and outside of the Project Area. Invertebrate specialists have undertaken a targeted survey for <i>Neopasiphae simplicior</i> within the Project Area and confirmed moderate value habitat within the Project Area but did not confirm any individuals of <i>Neopasiphae simplicior</i> within the Project Area. Given the limited range associated with this species, given the habitat quality and the absence of individuals means that the likelihood of occurrence is unlikely and likelihood of significant impacts on this species is low.
<b>Crustacean</b>					
<i>Westralunia 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 <i>et al.</i> 2011).	Unlikely	The Project Area does not contain slow flowing streams of fresh water (swamps, lagoons, river pools, irrigation channels and sewage ponds) or where runoff from the Proposed Action could impact these features, therefore the Carter's Freshwater Mussel/Freshwater Mussel is considered unlikely to occur.
<b>Mammals</b>					
<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	The species is locally extinct. Its distribution is now limited to four naturally occurring subpopulations within Dryandra Woodland National Park and Tutanning, Perup and Kingston Nature Reserves and a number of translocation areas.
<i>Dasyurus geoffroii</i>	Chuditch, Western Quoll	Vulnerable	The Chuditch are known to occupy a wide range of habitats including woodlands, dry sclerophyll forests, riparian vegetation, beaches and deserts, though are largely restricted to Jarrah forest or scattered through the southern and eastern wheatbelt. They are opportunistic feeders, and forage on the ground at night, feeding on invertebrates, small mammals, birds and reptiles. Chuditch require large areas of intact habitat for survival and are rarely found in areas of habitat fragmented by clearing (DEC 2012).	Unlikely	The species is thought to be locally extinct and is typically not associated with banksia woodlands or wetland environments within or surrounding the project area. It is considered unlikely Chuditch would occur as preferred habitat is not present within the Project Area and no recent records are identified in the nearby 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	The species is considered locally extinct. It is considered unlikely to occur.

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

Scientific Name	Common Name	EPBC Status	Habitat	Likelihood to occur within the Project area	Reason
<b>Mammals (continued)</b>					
<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	The Project Area is outside of the current known species range. The species is only known to occur south of the Mandurah area and therefore it is considered unlikely to occur.
<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	The species is considered locally extinct. Seven quokka subpopulations are currently known: Rottnest island, Bald Island, in the northern, central and southern jarrah forests, on the south coast and in the Stirling Range. A small population of quokka is also known from Muddy Lakes near Bunbury (DEC 2013).  There are no recent confirmed records of the quokka within areas nearby the Project Area. There is a lack of suitable habitat and no recent confirmed records in the wider area. It is considered unlikely that quokka would occur in the Project area.
<i>Acacia aphylla</i>	Leafless Rock Wattle	Endangered	Glaucous shrub, 0.9 to 2.5 m in height. Flowers are yellow in colour flowering from August to October. Occurs on loam, clay loam in areas with granite outcrops and hills (Western Australian Herbarium 2024).	Unlikely	No individuals of <i>Anthocercis gracilis</i> were found during the flora and vegetation surveys, during the species known flowering period. The species is known to flower between August to October, with initial surveys undertaken on 16 October 2020 and 4 December 2020 and follow-up target searches on 6 August 2021, 6 September 2021, 5 October 2021 and 3 November 2021.  The species is considered unlikely to occur within the Project Area due to the lack of suitable habitat and because it was not recorded during the field survey.
<i>Anthocercis gracilis</i>	Slender Tailflower	Vulnerable	Seasonally damp, black sandy clay flats near or on the margins of swamps, often on duplex soils supporting low open heath vegetation (Western Australian Herbarium 2024).	Unlikely	No individuals of <i>Anthocercis gracilis</i> were found during the flora and vegetation surveys, during the species known flowering period. The species is known to flower between September to October, with initial surveys undertaken on 16 October 2020 and 4 December 2020 and follow-up target searches on 6 August 2021, 6 September 2021, 5 October 2021 and 3 November 2021.  The species is considered unlikely to occur within the Project Area due to the lack of suitable habitat and because it was not recorded during the field survey.
<i>Austrostipa bronweniae</i> listed as <i>Austrostipa bronwenae</i>		Endangered	A perennial grass reaching up to 60 cm tall with green flowers that flower from October through to November. Habitat for this species occurs within wetlands consisting of muddy sand that are seasonally waterlogged (Western Australian Herbarium 2024).	Unlikely	No individuals of <i>Austrostipa bronweniae</i> listed as <i>Austrostipa bronwenae</i> were found during the flora and vegetation surveys, during the species known flowering period. The species is known to flower between October to November, with initial surveys undertaken on 16 October 2020 and 4 December 2020 and follow-up target searches on 6 August 2021, 6 September 2021, 5 October 2021 and 3 November 2021.  The species is considered unlikely to occur within the Project Area due to the lack of suitable habitat and because it was not recorded during the field survey.
<i>Austrostipa jacobiana</i>		Critically Endangered	Perennial rhizomatous grass to 1.2 metres tall (with flower spikes). Leaves to 45 cm long, folded and swollen giving a terete appearance, abaxial surface strongly ribbed. Inflorescence 10-20 cm long. Flowering in October through November. Occurs on grey sandy clay (Western Australian Herbarium 2024).	Unlikely	No individuals of <i>Austrostipa jacobiana</i> were found during the flora and vegetation surveys, during the species known flowering period. The species is known to flower between October to November, with initial surveys undertaken on 16 October 2020 and 4 December 2020 and follow-up target searches on 6 August 2021, 6 September 2021, 5 October 2021 and 3 November 2021.  The species is considered unlikely to occur within the Project Area due to the lack of suitable habitat and because it was not recorded during the field survey.



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

Scientific Name	Common Name	EPBC Status	Habitat	Likelihood to occur within the Project area	Reason
<b>Plants</b>					
<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	No individuals of <i>Andersonia gracilis</i> were found during the flora and vegetation surveys, during the species known flowering period. The species is known to flower between September and November, with initial surveys undertaken on 16 October 2020 and 4 December 2020 and follow-up target searches on 6 August 2021, 6 September 2021, 5 October 2021 and 3 November 2021.  The species is considered unlikely to occur within the Project Area due to the lack of suitable habitat and because it was not recorded during the field survey.
<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	No individuals of <i>Banksia mimica</i> were found during the flora and vegetation surveys, during the species known flowering period. The species is known to flower from December to January or February, with initial surveys undertaken on 16 October 2020 and 4 December 2020 and follow-up target searches on 6 August 2021, 6 September 2021, 5 October 2021 and 3 November 2021.  The species is considered unlikely to occur within the Project Area due to the lack of suitable habitat and because it was not recorded during the field survey.
<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	<i>Caladenia huegelii</i> occurs in woodland habitats on deep sandy soils associated with the Bassendean dunes and rarely Spearwood dunes. These dune systems are associated with the Project Area. No individuals of <i>Caladenia huegelii</i> were found during the flora and vegetation surveys, during the species known flowering period. The species is known to flower between late September and early November, with initial surveys undertaken on 16 October 2020 and 4 December 2020 and follow-up target searches on 6 August 2021, 6 September 2021, 5 October 2021 and 3 November 2021.  The species is considered unlikely to occur within the Project Area due to the lack of suitable habitat and because it was not recorded during the field survey.
<i>Calytrix breviseta subsp. breviseta</i>	Swamp Starflower	Endangered	Shrub, 0.2 to 1 m in height. Flowers are purple to blue flowering from August to October. Associated with White or yellow sand and sandy loam (Western Australian Herbarium 2024).	Unlikely	No individuals of <i>Calytrix breviseta subsp. breviseta</i> were found during the flora and vegetation surveys, during the species known flowering period. The species is known to flower between late August to October, with initial surveys undertaken on 16 October 2020 and 4 December 2020 and follow-up target searches on 6 August 2021, 6 September 2021, 5 October 2021 and 3 November 2021.  The species is considered unlikely to occur within the Project Area due to the lack of suitable habitat and because it was not recorded during the field survey.
<i>Conospermum undulatum</i>	Wavy-leaved Smokebush	Vulnerable	Compact shrub, 0.6 to 2m in height. Flowers are white in colour with flowering occurring between May to October. Occurs on grey or yellow orange clayey sand (Western Australian Herbarium 2024).	Unlikely	No individuals of <i>Conospermum undulatum</i> were found during the flora and vegetation surveys, during the species known flowering period. The species is known to flower between May to October, with initial surveys undertaken on 16 October 2020 and 4 December 2020 and follow-up target searches on 6 August 2021, 6 September 2021, 5 October 2021 and 3 November 2021.  The species is considered unlikely to occur within the Project Area due to the lack of suitable habitat and because it was not recorded during the field survey.

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

Scientific Name	Common Name	EPBC status	Habitat	Likelihood to occur within the Project area	Reason
<b>Plants (continued)</b>					
<i>Darwinia apiculata</i>	Scarp darwinia	Endangered	Densley branched shrub up to 0.5 m in height. Flowers green and yellow to red in colour. Associated with lateritic soils. Flowering occurs in October to November (Western Australian Herbarium 2024).	Unlikely	No individuals of <i>Darwinia apiculata</i> were found during the flora and vegetation surveys, during the species known flowering period. The species is known to flower from October to November, with initial surveys undertaken on 16 October 2020 and 4 December 2020 and follow-up target searches on 6 August 2021, 6 September 2021, 5 October 2021 and 3 November 2021.  The species is considered unlikely to occur within the Project Area due to the lack of suitable habitat and because it was not recorded during the field survey.
<i>Diplolaena andrewsii</i>		Endangered	Erect shrub, 0.5m to 1 m in height. Flowers red and yellow in colour. Occurs on loam and clay type soils and is associated with Granite outcrops and hillsides. Flowers July to October (Western Australian Herbarium 2024).	Unlikely	No individuals of <i>Diplolaena andrewsii</i> were found during the flora and vegetation surveys, during the species known flowering period. The species is known to flower from July to October, with initial surveys undertaken on 16 October 2020 and 4 December 2020 and follow-up target searches on 6 August 2021, 6 September 2021, 5 October 2021 and 3 November 2021.  The species is considered unlikely to occur within the Project Area due to the lack of suitable habitat and because it was not recorded during the field survey.
<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	No individuals of <i>Diuris drummondii</i> were found during the flora and vegetation surveys, during the species known flowering period. The species is known to flower between November to December or January, with initial surveys undertaken on 16 October 2020 and 4 December 2020 and additional target searches on 6 August 2021, 6 September 2021, 5 October 2021 and 3 November 2021.  The species is considered unlikely to occur within the Project Area due to the lack of suitable habitat and because it was not recorded during the field survey.
<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	No individuals of <i>Diuris micrantha</i> were found during the flora and vegetation surveys, during the species known flowering period. The species is known to flower between September to October, with initial surveys undertaken on 16 October 2020 and 4 December 2020 and additional target searches on 6 August 2021, 6 September 2021, 5 October 2021 and 3 November 2021.  The species is considered unlikely to occur within the Project Area due to the lack of suitable habitat and because it was not recorded during the field survey.
<i>Diuris purdiei</i>	Purdie's Donkey-orchid	Endangered	Tuberous perennial herb 0.15 to 0.35 m in height. Flowers are yellow and flowers from September to October but only after a summer or early autumn fire. Occurs on Sand to sandy clay soils in areas subject to winter inundation. (Western Australian Herbarium 2024).	Unlikely	No individuals of <i>Diuris purdiei</i> were found during the flora and vegetation surveys, during the species known flowering period. The species is known to flower from September to October, with initial surveys undertaken on 16 October 2020 and 4 December 2020 and additional target searches on 6 August 2021, 6 September 2021, 5 October 2021 and 3 November 2021.  The species is considered unlikely to occur within the Project Area due to the lack of suitable habitat and because it was not recorded during the field survey.
<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	No individuals of <i>Drakaea elastica</i> were found during the flora and vegetation surveys, during the species known flowering period. The species is known to flower between October to November, with initial surveys undertaken on 16 October 2020 and 4 December 2020 and additional target searches on 6 August 2021, 6 September 2021, 5 October 2021 and 3 November 2021.  The species is considered unlikely to occur within the Project Area due to the lack of suitable habitat and because it was not recorded during the field survey.

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

Scientific Name	Common Name	EPBC status	Habitat	Likelihood to occur within the Project area	Reason
<b>Plants (continued)</b>					
<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 (Western Australian Herbarium 2024).	Unlikely	<i>Drakaea micrantha</i> is usually found in cleared fire breaks or open sandy patches that have been disturbed, and where competition from other plants has been removed. No obvious recent disturbance is known to occur within the Project area.  <i>Drakaea micrantha</i> was not found during the flora and vegetation surveys, despite searches during its known flowering period. The species is known to flower between September and November, with surveys undertaken on 16 October 2020 and 4 December 2020 and additional target searches on 6 August 2021, 6 September 2021, 5 October 2021 and 3 November 2021. <i>Drakaea micrantha</i> is considered unlikely to occur within the Project Area due to the lack of suitable habitat and because it was not recorded during the field survey.
<i>Eremppila glabra subsp. chlorella</i>		Endangered	Prostrate and spreading shrub growing to 0.2m to 1 m in height. Flowers are green to yellow in colour and occurs on sandy clay in winter wet pressions. Flowering occurs from July to November (Western Australian Herbarium 2024).	Unlikely	<i>Eremppila glabra subsp. chlorella</i> was not found during the flora and vegetation surveys, despite searches during its known flowering period. The species is known to flower between July and November, with surveys undertaken on 16 October 2020 and 4 December 2020 and additional target searches on 6 August 2021, 6 September 2021, 5 October 2021 and 3 November 2021.  The species is considered unlikely to occur within the Project Area due to the lack of suitable habitat and because it was not recorded during the field survey.
<i>Eucalyptus x balanites</i>	Cadda Road Mallee	Endangered	Malle to 5m in height. Light coloured sandy soils over laterite. Habitat consists of gently sloping heathlands; open mallee woodland over shrubland (Population 2) or heathland with emergent mallees (Population 1) (Western Australian Herbarium 2024).	Unlikely	<i>Eucalyptus x balanites</i> was not found during the flora and vegetation surveys. The species is known to flower between October to December or January to February and would have been visible (if present) during surveys undertaken on 16 October 2020 and 4 December 2020 and additional target searches on 6 August 2021, 6 September 2021, 5 October 2021 and 3 November 2021.  The species is considered unlikely to occur within the Project Area due to the lack of suitable habitat and because it was not recorded during the field survey.
<i>Goodenia arthrotricha</i>		Endangered	This species is an erect perennial herb with a blue and white corolla typically growing to 0.4 m in height and can occur in dense stands. This species occurs in association with granite and gneiss geology and is most likely a long-lived fire responsive reseeded. Flowering occurs October to November (Western Australian Herbarium 2024).	Unlikely	<i>Goodenia arthrotricha</i> was not found during the flora and vegetation surveys, despite searches during its known flowering period. The species is known to flower between October to November with surveys undertaken on 16 October 2020 and 4 December 2020 and additional target searches on 6 August 2021, 6 September 2021, 5 October 2021 and 3 November 2021.  The species is considered unlikely to occur within the Project Area due to the lack of suitable habitat and because it was not recorded during the field survey.
<i>Grevillea curviloba subsp. incurva</i>	Narrow curved—lead Grevillea	Endangered	<i>Grevillea curviloba subsp. incurva</i> grows as a vigorous, sprawling shrub to 2.5 metres high and wide, with greyish-green leaves. Occurs on sand and sandy loam over limestone or ironstone in winter-wet heath (Western Australian Herbarium 2024).	Unlikely	<i>Grevillea curviloba subsp. incurva</i> was not found during the flora and vegetation surveys, despite searches during its known flowering period. The species is known to flower between August to October with surveys undertaken on 16 October 2020 and 4 December 2020 and additional target searches on 6 August 2021, 6 September 2021, 5 October 2021 and 3 November 2021.  The species is considered unlikely to occur within the Project Area due to the lack of suitable habitat and because it was not recorded during the field survey.

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

Scientific Name	Common Name	EPBC Status	Habitat	Likelihood to occur within the Project area	Reason
<b>Plants (continued)</b>					
<i>Grevillea thelemanniana</i>	Spider Net Grevillea	Critically Endangered	Spreading, lignotuberous shrub, between 0.3-1.5 m in height. Flowering are pink to red, and flower between May to November. Typically occurs on sand, sandy clay in winter-wet low-lying flats (Western Australian Herbarium 2024).	Unlikely	<i>Grevillea thelemanniana</i> was not found during the flora and vegetation surveys, despite searches during its known flowering period. The species is known to flower between May to November with surveys undertaken on 16 October 2020 and 4 December 2020 and additional target searches on 6 August 2021, 6 September 2021, 5 October 2021 and 3 November 2021.  The species is considered unlikely to occur within the Project Area due to the lack of suitable habitat and because it was not recorded during the field survey.
<i>Lepidosperma rostratum</i>	Beaked Lepidosperma	Endangered	Rhizomatous, tufted perennial grasslike herb. 0.5m in height. Occurs on peaty sand and clay amongst low heath, in winter-wet swamps. Fruit are observed between June to August (Western Australian Herbarium 2024).	Unlikely	<i>Lepidosperma rostratum</i> was not found during the flora and vegetation surveys, despite searches during its known flowering period. The species is known to flower between June to August with surveys undertaken on 16 October 2020 and 4 December 2020 and additional target searches on 6 August 2021, 6 September 2021, 5 October 2021 and 3 November 2021.  The species is considered unlikely to occur within the Project Area due to the lack of suitable habitat and because it was not recorded during the field survey.
<i>Macarthuria keigheryi</i>	Keighery's Macarthuria	Endangered	Erect or spreading perennial, herb or shrub, between 0.2-0.4 m in height and 0.3-0.6 m wide. Flowers from September to December or February to March. Typically occurs on white or grey sand (Western Australian Herbarium 2024).	Unlikely	<i>Macarthuria keigheryi</i> was not found during the flora and vegetation surveys, despite searches during its known flowering period. The species is known to flower in September to December or February to March with surveys undertaken on 16 October 2020 and 4 December 2020 and additional target searches on 6 August 2021, 6 September 2021, 5 October 2021 and 3 November 2021.  The species is considered unlikely to occur within the Project Area due to the lack of suitable habitat and because it was not recorded during the field survey.
<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	<i>Morelotia australiensis</i> was not found during the flora and vegetation surveys, despite searches during its known flowering period. The species is known to flower in November to December with surveys undertaken on 16 October 2020 and 4 December 2020 and additional target searches on 6 August 2021, 6 September 2021, 5 October 2021 and 3 November 2021.  The species is considered unlikely to occur within the Project Area due to the lack of suitable habitat and because it was not recorded during the field survey.
<i>Ptilotus pyramidtus</i>	Pyramid Mulla-mulla	Critically Endangered	Small herbaceous, likely perennial plant growing to approximately 8cm. The stem is tufted, unbranched and finely striated. Flowers are white in colour. Flowering occurs in early October. Known to occur in sand to sandy-mud alluvium of the Pinjarra Plain (Western Australian Herbarium 2024).	Unlikely	<i>Ptilotus pyramidtus</i> was not found during the flora and vegetation surveys, despite searches during its known flowering period. The species is known to flower in early October with surveys undertaken on 16 October 2020 and 4 December 2020 and additional target searches on 6 August 2021, 6 September 2021, 5 October 2021 and 3 November 2021.  The species is considered unlikely to occur within the Project Area due to the lack of suitable habitat and because it was not recorded during the field survey.
<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	<i>Synaphea sp. Fairbridge Farm (D.Papenfus 696)</i> was not found during the flora and vegetation surveys, despite searches during its known flowering period. The species is known to flower between September to November with surveys undertaken on 16 October 2020 and 4 December 2020 and additional target searches on 6 August 2021, 6 September 2021, 5 October 2021 and 3 November 2021.  The species is considered unlikely to occur within the Project Area due to the lack of suitable habitat and because it was not recorded during the field survey.

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

Scientific Name	Common Name	EPBC Status	Habitat	Likelihood to occur within the Project area	Reason
<b>Plants (continued)</b>					
<i>Synaphea sp. Pinjarra Plain</i> (A.S.George 17182)		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).	<b>Unlikely</b>	<i>Synaphea sp. Pinjarra Plain</i> (A.S.George 17182) was not found during the flora and vegetation surveys, despite searches during its known flowering period. The species is known to flower between September to November with surveys undertaken on 16 October 2020 and 4 December 2020 and additional target searches on 6 August 2021, 6 September 2021, 5 October 2021 and 3 November 2021.  The species is considered unlikely to occur within the Project Area due to the lack of suitable habitat and because it was not recorded during the field survey.
<i>Synaphea sp. Serpentine</i> (G.R.Brand 103)		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).	<b>Unlikely</b>	<i>Synaphea sp. Serpentine</i> (G.R.Brand 103) was not found during the flora and vegetation surveys, despite searches during its known flowering period. The species is known to flower between August to November with surveys undertaken on 16 October 2020 and 4 December 2020 and additional target searches on 6 August 2021, 6 September 2021, 5 October 2021 and 3 November 2021.  The species is considered unlikely to occur within the Project Area due to the lack of suitable habitat and because it was not recorded during the field survey.
<i>Thelymitra stellata</i>	Star Sun-orchid	Endangered	Tuberous perennial herb to 0.25m in height. Flowers are yellow and brown flowering from October to November. Occurs on sandy loam, clay or gravel over laterite or gravel (Western Australian Herbarium 2024).	<b>Unlikely</b>	<i>Thelymitra stellata</i> was not found during the flora and vegetation surveys, despite searches during its known flowering period. The species is known to flower between October to November with surveys undertaken on 16 October 2020 and 4 December 2020 and additional target searches on 6 August 2021, 6 September 2021, 5 October 2021 and 3 November 2021.  The species is considered unlikely to occur within the Project Area due to the lack of suitable habitat and because it was not recorded during the field survey.



Table 3: Threatened Ecological Communities and likelihood of occurrence

Community Name	EPBC Status	Habitat/Description	Likelihood to occur within the Project area	Reason
<b>Ecological communities</b>				
Banksia Woodlands of the Swan Coastal Plain ecological community	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 2016a).	<b>Recorded</b>	A 3.60 ha area of vegetation located within the Project Area was identified to represent Banksia Woodland TEC and forms part of a larger 7.65 ha patch which was identified during the Detailed Flora and Vegetation Assessment (Emerge Associates 2022).
Clay Pans of the Swan Coastal Plain	Critically Endangered	The Clay Pans of the Swan Coastal Plain ecological community occurs in Western Australia where clay soils form an impermeable layer close to the landscape surface, and wetlands form that rely solely on rainfall to fill and then dry to impervious pans in summer. The ecological community generally occurs as a shrubland (less commonly as a low, open woodland) over a ground layer of geophytes, herbs and sedges which are characteristic of the wetter parts of the sites. There are no dominant species which characterise the entire ecological community. The ecological community, however, shows similar landform and vegetation structural features across its range (DoEE 2016b).	<b>Does not occur</b>	No vegetation or indicator species that meets the description of this TEC was identified to occur within the Project area as part of the Detailed Flora and Vegetation Assessment (Emerge Associates 2022).
<i>Corymbia calophylla</i> - <i>Kingia australis</i> woodlands on heavy soils of the Swan Coastal Plain	Endangered	The community occurs on heavy soils of the eastern side of the southern Swan Coastal Plain largely between Capel and Chittering. Typical native taxa in the community are: the tree <i>Corymbia calophylla</i> (marri), the shrubs <i>Banksia dallanneyi</i> (couch honeypot), <i>Philotheca spicata</i> (pepper and salt), <i>Kingia australis</i> (kingia) and <i>Xanthorrhoea preissii</i> (balga), and the herbs, rushes and sedges <i>Cyathochaeta avenacea</i> , <i>Dampiera linearis</i> (common dampiera), <i>Haemodorum laxum</i> , <i>Desmocladus fasciculatus</i> , <i>Mesomelaena tetragona</i> (semaphore sedge) and <i>Morelotia octandra</i> (DoEE 2017).	<b>Does not occur</b>	No vegetation or indicator species that meets the description of this TEC was identified to occur within the Project area as part of the Detailed Flora and Vegetation Assessment (Emerge Associates 2022).
<i>Corymbia calophylla</i> – <i>Xanthorrhoea preissii</i> woodlands and shrublands of the Swan Coastal Plain	Endangered	The <i>Corymbia calophylla</i> - <i>Xanthorrhoea preissii</i> woodlands and shrublands of the Swan Coastal Plain ecological community occur on heavy soils on the eastern side of the Swan Coastal Plain between Bullsbrook to Waterloo-Bunbury. The floristic composition of these communities varies with water regime, with this driest type dominated by <i>Corymbia calophylla</i> and <i>Xanthorrhoea preissii</i> . Other dominant species can include: <i>Acacia pulchella</i> , <i>Banksia nivea</i> , <i>Gompholobium marginatum</i> , <i>Hypocalymma angustifolia</i> ; <i>Burchardia umbellata</i> , <i>Cyathochaeta avenacea</i> , <i>Neurachne allopecuroidea</i> (Gibson <i>et al.</i> 1994)	<b>Does not occur</b>	No vegetation or indicator species that meets the description of this TEC was identified to occur within the Project area as part of the Detailed Flora and Vegetation Assessment (Emerge Associates 2022).
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 <i>Emodisma gracillimum</i> , whilst other sedge species are also typically present. Other associated plant species include <i>Acacia hastulata</i> , <i>Callistemon glaucus</i> , <i>Gymnoschoenus anceps</i> , <i>Leptocarpus tenax</i> and <i>Schoenus multiglumis</i> (Department of Climate Change 2023).	<b>Does not occur</b>	No vegetation or indicator species that meets the description of this TEC was identified to occur within the Project area as part of the Detailed Flora and Vegetation Assessment (Emerge Associates 2022).
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	The ecological community consists of organisms including and associated with saltmarsh 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. It is typically restricted to the upper intertidal environment, often between the elevation of the mean high tide and the mean spring tide (Saintilan N 2009)	<b>Does not occur</b>	No vegetation or indicator species that meets the description of this TEC was identified to occur within the Project area as part of the Detailed Flora and Vegetation Assessment (Emerge Associates 2022).
Tuart (Eucalyptus gomphocephala) Woodlands and Forests of the Swan Coastal Plain ecological community	Critically Endangered	Tuart (Eucalyptus gomphocephala) 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)	<b>Does not occur</b>	No vegetation or indicator species that meets the description of this TEC was identified to occur within the Project area as part of the Detailed Flora and Vegetation Assessment (Emerge Associates 2022).

## 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 (TECs) 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 68 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.
- *Zanda baudinii* (Baudin's black cockatoo) - Suitable foraging habitat was surveyed within the Project Area.
- Forest red-tailed black cockatoo (*Calyptorhynchus banksia nasa*) – Suitable foraging habitat was surveyed within the Project Area.

A further four 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.
- *Falco peregrinus* (peregrine falcon) - May opportunistically fly over the Project Area on commute or in search of prey.
- *Actitis hypoleucos* (Common sandpiper) – Small numbers of transient individuals may utilise a portion of the Project Area when the wetland feature contains water.

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*.

Department of Environment and Conservation (DEC) 2013, *Quokka (Setonix brachyurus) Recovery Plan*, Perth, WA.

Department of Climate Change, E., the Environment and Water, 2023, *Approved Conservation Advice for the Empodisma peatlands of southwestern Australia*, Canberra.

Department of Environment and Energy (DoEE) 2016a, *Approved Conservation Advice (incorporating listing advice) for the Banksia Woodlands of the Swan Coastal Plain ecological community*, Canberra.

Department of the environment and Energy (DoEE) 2016b, *Clay Pans of the Swan Coastal Plain in Community and Species Profile and Threats Database*, Canberra.

Department of Environment and Energy (DoEE) 2017, *Approved Conservation Advice for Corymbia calophylla - Kingia australis woodlands on heavy soils of the Swan Coastal Plain*, Delegate of the Minister (for Environment and Energy). 13 July 2017.

Department of Environment and Energy (DoEE) 2019, *Approved Conservation Advice (incorporating listing advice) for the Tuart (Eucalyptus gomphocephala) woodlands and forests of the Swan Coastal Plain ecological community*, Canberra.

Department of Parks and Wildlife (DPaW) 2017, *Western Ringtail Possum (Pseudocheirus occidentalis) Recovery Plan. Wildlife Management Program No. 58*, Perth, WA.

Emerge Associates 2021, *Basic Fauna and Targeted Black Cockatoo Assessment - Lots 600 - 606 Balannup Road and 200 - 202 Skeet Road, Harrisdale*, EP20-127(03)--006A MS, Version A.

Emerge Associates 2022, *Detailed Flora and Vegetation Assessment - Lots 600 - 606 Balannup Road and 200 - 202 Skeet Road, Harrisdale* EP20-127(02)--003B SKP, Version B.

Gibson, N., Keighery, B., Keighery, G., Burbidge, A. and Lyons, M. 1994, *A Floristic survey of the southern Swan Coastal Plain*, Department of Conservation and Land Management and the Conservation Council of Western Australia, Perth.

Houston, T. F. 2000, *Native Bees on Wildflowers in Western Australia: A Synopsis of Native Bee Visitation of Wildflowers in Western Australia Based on the Bee Collection of the Western Australian Museum Front Cover*, Western Australian Insect Study Society, Special publication no. 2.

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Morgan, D. L., Beatty, S. J., Klunzinger, M. W., Allen, M. G. and Burnham, Q. E. 2011, *Field Guide to the Freshwater Fishes, Crayfishes and Mussels of South Western Australia*, SERCUL, Perth, Western Australia.

Saintilan N, R. K., and Howe A. 2009, *Chapter 3: Geomorphology and habitat dynamics. In: Australian Saltmarsh Ecology*, CSIRO Publishing Victoria.

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

28<sup>th</sup> May 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-May-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](#).

<a href="#">World Heritage Properties:</a>	None
<a href="#">National Heritage Places:</a>	None
<a href="#">Wetlands of International Importance (Ramsar</a>	2
<a href="#">Great Barrier Reef Marine Park:</a>	None
<a href="#">Commonwealth Marine Area:</a>	None
<a href="#">Listed Threatened Ecological Communities:</a>	7
<a href="#">Listed Threatened Species:</a>	69
<a href="#">Listed Migratory Species:</a>	37

## 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.

<a href="#">Commonwealth Lands:</a>	65
<a href="#">Commonwealth Heritage Places:</a>	None
<a href="#">Listed Marine Species:</a>	43
<a href="#">Whales and Other Cetaceans:</a>	None
<a href="#">Critical Habitats:</a>	None
<a href="#">Commonwealth Reserves Terrestrial:</a>	None
<a href="#">Australian Marine Parks:</a>	None
<a href="#">Habitat Critical to the Survival of Marine Turtles:</a>	None

## Extra Information

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

<a href="#">State and Territory Reserves:</a>	16
<a href="#">Regional Forest Agreements:</a>	1
<a href="#">Nationally Important Wetlands:</a>	4
<a href="#">EPBC Act Referrals:</a>	73
<a href="#">Key Ecological Features (Marine):</a>	None
<a href="#">Biologically Important Areas:</a>	None
<a href="#">Bioregional Assessments:</a>	None
<a href="#">Geological and Bioregional Assessments:</a>	None

# Details

## Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands)		[ Resource Information ]
Ramsar Site Name	Proximity	Buffer Status
<a href="#">Forrestdale and thomsons lakes</a>	Within Ramsar site	In feature area
<a href="#">Peel-yalgorup system</a>	30 - 40km upstream from Ramsar site	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
<a href="#">Banksia Woodlands of the Swan Coastal Plain ecological community</a>	Endangered	Community likely to occur within area	In feature area
<a href="#">Clay Pans of the Swan Coastal Plain</a>	Critically Endangered	Community likely to occur within area	In feature area
<a href="#">Corymbia calophylla - Kingia australis woodlands on heavy soils of the Swan Coastal Plain</a>	Endangered	Community known to occur within area	In buffer area only
<a href="#">Corymbia calophylla - Xanthorrhoea preissii woodlands and shrublands of the Swan Coastal Plain</a>	Endangered	Community known to occur within area	In buffer area only
<a href="#">Empodisma peatlands of southwestern Australia</a>	Endangered	Community may occur within area	In buffer area only
<a href="#">Subtropical and Temperate Coastal Saltmarsh</a>	Vulnerable	Community likely to occur within area	In buffer area only
<a href="#">Tuart (Eucalyptus gomphocephala) Woodlands and Forests of the Swan Coastal Plain ecological community</a>	Critically Endangered	Community likely to occur within area	In feature area

Listed Threatened Species			[ <u>Resource Information</u> ]
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			

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Botaurus poiciloptilus</a> Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area	In feature area
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area	In feature area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
<a href="#">Calyptorhynchus banksii naso</a> Forest Red-tailed Black-Cockatoo, Karrak [67034]	Vulnerable	Species or species habitat known to occur within area	In feature area
<a href="#">Charadrius leschenaultii</a> Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
<a href="#">Diomedea amsterdamensis</a> Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area	In buffer area only
<a href="#">Diomedea epomophora</a> Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area	In buffer area only
<a href="#">Diomedea exulans</a> Wandering Albatross [89223]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
<a href="#">Diomedea sanfordi</a> Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In buffer area only
<a href="#">Leipoa ocellata</a> Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area	In feature area
<a href="#">Limosa limosa</a> Black-tailed Godwit [845]	Endangered	Roosting known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Macronectes giganteus</a> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
<a href="#">Macronectes halli</a> Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
<a href="#">Pachyptila turtur subantarctica</a> Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
<a href="#">Phaethon rubricauda westralis</a> Red-tailed Tropicbird (Indian Ocean), Indian Ocean Red-tailed Tropicbird [91824]	Endangered	Species or species habitat may occur within area	In buffer area only
<a href="#">Rostratula australis</a> Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area	In feature area
<a href="#">Sternula nereis nereis</a> Australian Fairy Tern [82950]	Vulnerable	Species or species habitat known to occur within area	In feature area
<a href="#">Thalassarche impavida</a> Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
<a href="#">Thalassarche melanophris</a> Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
<a href="#">Thalassarche steadi</a> White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In buffer area only
<a href="#">Tringa nebularia</a> Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area	In feature area



Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Zanda baudinii listed as Calyptorhynchus baudinii</a>			
Baudin's Cockatoo, Baudin's Black-Cockatoo, Long-billed Black-cockatoo [87736]	Endangered	Roosting known to occur within area	In feature area
<a href="#">Zanda latirostris listed as Calyptorhynchus latirostris</a>			
Carnaby's Black Cockatoo, Short-billed Black-cockatoo [87737]	Endangered	Breeding known to occur within area	In feature area
INSECT			
<a href="#">Leioproctus douglasiellus</a>			
a short-tongued bee [66756]	Critically Endangered	Species or species habitat known to occur within area	In feature area
<a href="#">Neopasiphae simplicior</a>			
A native bee [66821]	Critically Endangered	Species or species habitat known to occur within area	In buffer area only
MAMMAL			
<a href="#">Bettongia penicillata ogilbyi</a>			
Woylie [66844]	Endangered	Species or species habitat likely to occur within area	In buffer area only
<a href="#">Dasyurus geoffroii</a>			
Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat known to occur within area	In feature area
<a href="#">Myrmecobius fasciatus</a>			
Numbat [294]	Endangered	Species or species habitat may occur within area	In buffer area only
<a href="#">Pseudocheirus occidentalis</a>			
Western Ringtail Possum, Ngwayir, Womp, Woder, Ngoor, Ngoolangit [25911]	Critically Endangered	Species or species habitat may occur within area	In feature area
<a href="#">Setonix brachyurus</a>			
Quokka [229]	Vulnerable	Species or species habitat known to occur within area	In feature area
OTHER			
<a href="#">Westralunio carteri</a>			
Carter's Freshwater Mussel, Freshwater Mussel [86266]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
PLANT			
<a href="#">Acacia aphylla</a>			
Leafless Rock Wattle [13553]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Andersonia gracilis</a> Slender Andersonia [14470]	Endangered	Species or species habitat known to occur within area	In feature area
<a href="#">Anthocercis gracilis</a> Slender Tailflower [11103]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
<a href="#">Austrostipa bronweniae listed as Austrostipa bronwenae</a> [92773]	Endangered	Species or species habitat may occur within area	In buffer area only
<a href="#">Austrostipa jacobiana</a> [87809]	Critically Endangered	Species or species habitat known to occur within area	In feature area
<a href="#">Banksia mimica</a> Summer Honey-pot [82765]	Endangered	Species or species habitat likely to occur within area	In feature area
<a href="#">Caladenia huegelii</a> King Spider-orchid, Grand Spider-orchid, Rusty Spider-orchid [7309]	Endangered	Species or species habitat known to occur within area	In feature area
<a href="#">Calytrix breviseta subsp. breviseta</a> Swamp Starflower [23879]	Endangered	Species or species habitat known to occur within area	In buffer area only
<a href="#">Conospermum undulatum</a> Wavy-leaved Smokebush [24435]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
<a href="#">Darwinia apiculata</a> Scarp Darwinia [8763]	Endangered	Species or species habitat known to occur within area	In buffer area only
<a href="#">Diplolaena andrewsii</a> [6601]	Endangered	Species or species habitat may occur within area	In buffer area only
<a href="#">Diuris drummondii</a> Tall Donkey Orchid [4365]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Diuris micrantha</a> Dwarf Bee-orchid [55082]	Vulnerable	Species or species habitat known to occur within area	In feature area
<a href="#">Diuris purdiei</a> Purdie's Donkey-orchid [12950]	Endangered	Species or species habitat known to occur within area	In feature area
<a href="#">Drakaea elastica</a> Glossy-leafed Hammer Orchid, Glossy-leafed Hammer Orchid, Warty Hammer Orchid [16753]	Endangered	Species or species habitat known to occur within area	In feature area
<a href="#">Drakaea micrantha</a> Dwarf Hammer-orchid [56755]	Vulnerable	Species or species habitat known to occur within area	In feature area
<a href="#">Eleocharis keigheryi</a> Keighery's Eleocharis [64893]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
<a href="#">Eremophila glabra subsp. chlorella</a> [84927]	Endangered	Species or species habitat known to occur within area	In buffer area only
<a href="#">Eucalyptus x balanites</a> Cadda Road Mallee, Cadda Mallee [87816]	Endangered	Species or species habitat known to occur within area	In buffer area only
<a href="#">Goodenia arthrotricha</a> [12448]	Endangered	Species or species habitat likely to occur within area	In buffer area only
<a href="#">Grevillea curviloba subsp. incurva</a> Narrow curved-leaf Grevillea [64909]	Endangered	Species or species habitat may occur within area	In feature area
<a href="#">Grevillea thelemanniana</a> Spider Net Grevillea [32835]	Critically Endangered	Species or species habitat known to occur within area	In buffer area only
<a href="#">Lepidosperma rostratum</a> Beaked Lepidosperma [14152]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Macarthuria keigheryi</a> Keighery's Macarthuria [64930]	Endangered	Species or species habitat may occur within area	In buffer area only
<a href="#">Morelotia australiensis listed as Tetraria australiensis</a> Southern Tetraria [92784]	Vulnerable	Species or species habitat known to occur within area	In feature area
<a href="#">Ptilotus pyramidatus</a> Pyramid Mulla-mulla [18216]	Critically Endangered	Species or species habitat known to occur within area	In buffer area only
<a href="#">Synaphea sp. Fairbridge Farm (D.Papenfus 696)</a> Selena's Synaphea [82881]	Critically Endangered	Species or species habitat known to occur within area	In feature area
<a href="#">Synaphea sp. Pinjarra Plain (A.S.George 17182)</a> [86878]	Endangered	Species or species habitat likely to occur within area	In buffer area only
<a href="#">Synaphea sp. Serpentine (G.R.Brand 103)</a> [86879]	Critically Endangered	Species or species habitat known to occur within area	In feature area
<a href="#">Thelymitra stellata</a> Star Sun-orchid [7060]	Endangered	Species or species habitat known to occur within area	In buffer area only
REPTILE			
<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In buffer area only
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In buffer area only
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
SHARK			

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Pristis pristis</a> Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area	In buffer area only
<a href="#">Sphyrna lewini</a> 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			
<a href="#">Apus pacificus</a> Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
<a href="#">Diomedea amsterdamensis</a> Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area	In buffer area only
<a href="#">Diomedea epomophora</a> Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area	In buffer area only
<a href="#">Diomedea exulans</a> Wandering Albatross [89223]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
<a href="#">Diomedea sanfordi</a> Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In buffer area only
<a href="#">Macronectes giganteus</a> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
<a href="#">Macronectes halli</a> Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
<a href="#">Thalassarche impavida</a> Campbell Albatross, Campbell Black- browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only



Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Thalassarche melanophris</a> Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
<a href="#">Thalassarche steadi</a> White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Migratory Marine Species			
<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In buffer area only
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In buffer area only
<a href="#">Mobula alfredi as Manta alfredi</a> Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat may occur within area	In buffer area only
<a href="#">Mobula birostris as Manta birostris</a> Giant Manta Ray [90034]		Species or species habitat may occur within area	In buffer area only
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
<a href="#">Pristis pristis</a> Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Migratory Terrestrial Species			
<a href="#">Motacilla cinerea</a> Grey Wagtail [642]		Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Actitis hypoleucos</a> Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area	In feature area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat known to occur within area	In feature area
<a href="#">Calidris pugnax as Philomachus pugnax</a> Ruff [91256]		Roosting known to occur within area	In buffer area only
<a href="#">Calidris ruficollis</a> Red-necked Stint [860]		Roosting known to occur within area	In buffer area only
<a href="#">Calidris subminuta</a> Long-toed Stint [861]		Roosting known to occur within area	In buffer area only
<a href="#">Charadrius dubius</a> Little Ringed Plover [896]		Roosting known to occur within area	In buffer area only
<a href="#">Charadrius leschenaultii</a> Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
<a href="#">Gallinago megala</a> Swinhoe's Snipe [864]		Roosting likely to occur within area	In buffer area only
<a href="#">Gallinago stenura</a> Pin-tailed Snipe [841]		Roosting likely to occur within area	In buffer area only
<a href="#">Limosa limosa</a> Black-tailed Godwit [845]	Endangered	Roosting known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
<a href="#">Numenius minutus</a> Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area	In buffer area only
<a href="#">Pandion haliaetus</a> Osprey [952]		Breeding known to occur within area	In buffer area only
<a href="#">Tringa glareola</a> Wood Sandpiper [829]		Roosting known to occur within area	In buffer area only
<a href="#">Tringa nebularia</a> Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area	In feature area
<a href="#">Tringa stagnatilis</a> Marsh Sandpiper, Little Greenshank [833]		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
Defence		
Defence - AIRTC CANNINGTON [50229]	WA	In buffer area only
Defence - AIRTC CANNINGTON [50232]	WA	In buffer area only
Defence - AIRTC CANNINGTON [50233]	WA	In buffer area only
Defence - AIRTC CANNINGTON [50230]	WA	In buffer area only
Defence - AIRTC CANNINGTON [50231]	WA	In buffer area only
Unknown		
Commonwealth Land - [50756]	WA	In buffer area only
Commonwealth Land - [50755]	WA	In buffer area only
Commonwealth Land - [50751]	WA	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - [50761]	WA	In buffer area only
Commonwealth Land - [51160]	WA	In buffer area only
Commonwealth Land - [51901]	WA	In buffer area only
Commonwealth Land - [51514]	WA	In buffer area only
Commonwealth Land - [50833]	WA	In buffer area only
Commonwealth Land - [51518]	WA	In buffer area only
Commonwealth Land - [50882]	WA	In buffer area only
Commonwealth Land - [50881]	WA	In buffer area only
Commonwealth Land - [50883]	WA	In buffer area only
Commonwealth Land - [50865]	WA	In buffer area only
Commonwealth Land - [50864]	WA	In buffer area only
Commonwealth Land - [50867]	WA	In buffer area only
Commonwealth Land - [50866]	WA	In buffer area only
Commonwealth Land - [50272]	WA	In buffer area only
Commonwealth Land - [50790]	WA	In buffer area only
Commonwealth Land - [51376]	WA	In buffer area only
Commonwealth Land - [51287]	WA	In buffer area only
Commonwealth Land - [51149]	WA	In buffer area only
Commonwealth Land - [50763]	WA	In buffer area only
Commonwealth Land - [51975]	WA	In buffer area only
Commonwealth Land - [50848]	WA	In buffer area only
Commonwealth Land - [50779]	WA	In buffer area only
Commonwealth Land - [51143]	WA	In buffer area only
Commonwealth Land - [50782]	WA	In buffer area only
Commonwealth Land - [50788]	WA	In buffer area only
Commonwealth Land - [50789]	WA	In buffer area only
Commonwealth Land - [50781]	WA	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - [50786]	WA	In buffer area only
Commonwealth Land - [51899]	WA	In buffer area only
Commonwealth Land - [50780]	WA	In buffer area only
Commonwealth Land - [51146]	WA	In buffer area only
Commonwealth Land - [51147]	WA	In buffer area only
Commonwealth Land - [50870]	WA	In buffer area only
Commonwealth Land - [50872]	WA	In buffer area only
Commonwealth Land - [51900]	WA	In buffer area only
Commonwealth Land - [50784]	WA	In buffer area only
Commonwealth Land - [51148]	WA	In buffer area only
Commonwealth Land - [51144]	WA	In buffer area only
Commonwealth Land - [50749]	WA	In buffer area only
Commonwealth Land - [50787]	WA	In buffer area only
Commonwealth Land - [50785]	WA	In buffer area only
Commonwealth Land - [50832]	WA	In buffer area only
Commonwealth Land - [51382]	WA	In buffer area only
Commonwealth Land - [50792]	WA	In buffer area only
Commonwealth Land - [50793]	WA	In buffer area only
Commonwealth Land - [50844]	WA	In buffer area only
Commonwealth Land - [50809]	WA	In buffer area only
Commonwealth Land - [50796]	WA	In buffer area only
Commonwealth Land - [50843]	WA	In buffer area only
Commonwealth Land - [51152]	WA	In buffer area only
Commonwealth Land - [50794]	WA	In buffer area only
Commonwealth Land - [50795]	WA	In buffer area only
Commonwealth Land - [51153]	WA	In buffer area only
Commonwealth Land - [51151]	WA	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - [51150]	WA	In buffer area only
Commonwealth Land - [51155]	WA	In buffer area only
Commonwealth Land - [50762]	WA	In buffer area only

Listed Marine Species			[ Resource Information ]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
<a href="#">Actitis hypoleucos</a> Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
<a href="#">Apus pacificus</a> Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
<a href="#">Bubulcus ibis as Ardea ibis</a> Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area	In feature area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In buffer area only
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat known to occur within area overfly marine area	In feature area
<a href="#">Calidris pugnax as Philomachus pugnax</a> Ruff [91256]		Roosting known to occur within area overfly marine area	In buffer area only



Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Calidris ruficollis</a> Red-necked Stint [860]		Roosting known to occur within area overfly marine area	In buffer area only
<a href="#">Calidris subminuta</a> Long-toed Stint [861]		Roosting known to occur within area overfly marine area	In buffer area only
<a href="#">Charadrius dubius</a> Little Ringed Plover [896]		Roosting known to occur within area overfly marine area	In buffer area only
<a href="#">Charadrius leschenaultii</a> Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
<a href="#">Charadrius ruficapillus</a> Red-capped Plover [881]		Roosting known to occur within area overfly marine area	In buffer area only
<a href="#">Diomedea amsterdamensis</a> Amsterdam Albatross [64405]	Endangered	Species or species habitat may occur within area	In buffer area only
<a href="#">Diomedea epomophora</a> Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area	In buffer area only
<a href="#">Diomedea exulans</a> Wandering Albatross [89223]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
<a href="#">Diomedea sanfordi</a> Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In buffer area only
<a href="#">Gallinago megala</a> Swinhoe's Snipe [864]		Roosting likely to occur within area overfly marine area	In buffer area only
<a href="#">Gallinago stenura</a> Pin-tailed Snipe [841]		Roosting likely to occur within area overfly marine area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Haliaeetus leucogaster</a> White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
<a href="#">Himantopus himantopus</a> Pied Stilt, Black-winged Stilt [870]		Roosting known to occur within area overfly marine area	In buffer area only
<a href="#">Limosa limosa</a> Black-tailed Godwit [845]	Endangered	Roosting known to occur within area overfly marine area	In buffer area only
<a href="#">Macronectes giganteus</a> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
<a href="#">Macronectes halli</a> Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
<a href="#">Merops ornatus</a> Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
<a href="#">Motacilla cinerea</a> Grey Wagtail [642]		Species or species habitat may occur within area overfly marine area	In feature area
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
<a href="#">Numenius minutus</a> Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area overfly marine area	In buffer area only
<a href="#">Pachyptila turtur</a> Fairy Prion [1066]		Species or species habitat likely to occur within area	In buffer area only
<a href="#">Pandion haliaetus</a> Osprey [952]		Breeding known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Recurvirostra novaehollandiae</a> Red-necked Avocet [871]		Roosting known to occur within area overfly marine area	In buffer area only
<a href="#">Rostratula australis as Rostratula benghalensis (sensu lato)</a> Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
<a href="#">Thalassarche impavida</a> Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
<a href="#">Thalassarche melanophris</a> Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
<a href="#">Thalassarche steadi</a> White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In buffer area only
<a href="#">Thinornis cucullatus as Thinornis rubricollis</a> Hooded Plover, Hooded Dotterel [87735]		Species or species habitat likely to occur within area overfly marine area	In buffer area only
<a href="#">Tringa glareola</a> Wood Sandpiper [829]		Roosting known to occur within area overfly marine area	In buffer area only
<a href="#">Tringa nebularia</a> Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
<a href="#">Tringa stagnatilis</a> Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area overfly marine area	In buffer area only
Reptile			
<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In buffer area only
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area	In buffer area only

### Extra Information

State and Territory Reserves			[ <a href="#">Resource Information</a> ]
Protected Area Name	Reserve Type	State	Buffer Status
Balannup Lake	Nature Reserve	WA	In feature area
Canning River	Management Area	WA	In buffer area only
Forrestdale Lake	Nature Reserve	WA	In buffer area only
Gibbs Road	Nature Reserve	WA	In buffer area only
Kenwick Wetlands	Nature Reserve	WA	In buffer area only
Modong	Nature Reserve	WA	In buffer area only
Piara	Nature Reserve	WA	In buffer area only
Thomsons Lake	Nature Reserve	WA	In buffer area only
Unnamed WA42044	Nature Reserve	WA	In buffer area only
Unnamed WA49299	Nature Reserve	WA	In buffer area only
Unnamed WA49362	Nature Reserve	WA	In buffer area only
Unnamed WA49363	Conservation Park	WA	In buffer area only
Unnamed WA49561	Conservation Park	WA	In buffer area only
Unnamed WA53313	Conservation Park	WA	In buffer area only
Unnamed WA53649	Nature Reserve	WA	In buffer area only
Wandi	Nature Reserve	WA	In buffer area only

Regional Forest Agreements

[ Resource Information ]

Note that all areas with completed RFAs have been included. Please see the associated resource information for specific caveats and use limitations associated with RFA boundary information.

RFA Name	State	Buffer Status
<a href="#">South West WA RFA</a>	Western Australia	In buffer area only

Nationally Important Wetlands

[ Resource Information ]

Wetland Name	State	Buffer Status
<a href="#">Brixton Street Swamps</a>	WA	In buffer area only
<a href="#">Forrestdale Lake</a>	WA	In buffer area only
<a href="#">Gibbs Road Swamp System</a>	WA	In feature area
<a href="#">Swan-Canning Estuary</a>	WA	In buffer area only

EPBC Act Referrals

[ Resource Information ]

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
<a href="#">119 Hammond Road Residential Development</a>	2023/09541		Completed	In buffer area only
<a href="#">Cockburn Surf Park</a>	2022/09267		Completed	In buffer area only
<a href="#">Jandakot Airport Expansion, Commercial Development and Clearing of Vegetation</a>	2009/4796		Approval	In buffer area only
<a href="#">JANDAKOT EASTERN LINK ROAD</a>	2022/09401		Completed	In buffer area only
<a href="#">Jandakot Horse Agistment</a>	2022/09280		Assessment	In buffer area only
<a href="#">Kargotich Road Widening Project</a>	2023/09716		Referral Decision	In buffer area only
<a href="#">Lot 16 Barfield Road: Residential Development</a>	2023/09450		Approval	In buffer area only
<a href="#">Southern Link Road Stage 3 City of Canning</a>	2020/8809		Assessment	In buffer area only
<a href="#">Tree removal for Nerrigen Brook culvert repair, Armadale.</a>	2023/09464		Completed	In buffer area only
<a href="#">Tree removal for road widening - Eighth Road, Armadale, WA</a>	2023/09563		Completed	In buffer area only
<a href="#">Vegetation clearing (Cwlth land), Jandakot Airport, Cockburn, WA</a>	2013/7032		Post-Approval	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
<a href="#">Byford Rail Extension, Byford, WA</a>	2020/8764	Controlled Action	Post-Approval	In buffer area only
<a href="#">Garden Street road extension, Huntingdale, city of Gosnells, WA</a>	2016/7735	Controlled Action	Post-Approval	In buffer area only
<a href="#">Hammond Park Secondary School development, WA</a>	2016/7741	Controlled Action	Post-Approval	In buffer area only
<a href="#">Honeywood Estate Development</a>	2010/5476	Controlled Action	Post-Approval	In buffer area only
<a href="#">Keane Road Strategic Link, proposed construction central portion of Keane Road</a>	2009/5035	Controlled Action	Completed	In buffer area only
<a href="#">Lots 13, 14 &amp; 18 Barfield Rd &amp; Lots 48-51 Rowley Rd, Hammond Park</a>	2012/6524	Controlled Action	Post-Approval	In buffer area only
<a href="#">Natural Gas Pipeline Expansion</a>	2006/2813	Controlled Action	Post-Approval	In buffer area only
<a href="#">Ranford Road Residential Development</a>	2002/549	Controlled Action	Post-Approval	In buffer area only
<a href="#">Residential development and bushfire protection within part Lot 9006 Reilly Road, Harrisdale, WA</a>	2016/7846	Controlled Action	Post-Approval	In buffer area only
<a href="#">Residential Development Lot 131 Jandakot Road, Treeby WA</a>	2018/8205	Controlled Action	Further Information Request	In buffer area only
<a href="#">Residential developmnt, Lots 11 and 74 Beenyup Road, Banjup, WA</a>	2017/7923	Controlled Action	Post-Approval	In buffer area only
<a href="#">Residential Estate at Lot 1580 Warton Road, Southern River</a>	2004/1471	Controlled Action	Post-Approval	In buffer area only
<a href="#">Roe Highway extension, Kwinana Freeway to Stock Road, WA</a>	2009/5031	Controlled Action	Post-Approval	In buffer area only
<a href="#">Roe Hwy Extension</a>	2003/972	Controlled Action	Post-Approval	In buffer area only
<a href="#">Thornlie-Cockburn Link Project, WA</a>	2018/8188	Controlled Action	Post-Approval	In buffer area only
<a href="#">Tonkin Highway Extension ??? Thomas Road to South Western Highway</a>	2019/8608	Controlled Action	Post-Approval	In buffer area only
Not controlled action				
<a href="#">'Looping 10' gas transmission pipeline from Kwinana to Hopelands</a>	2005/2212	Not Controlled Action	Completed	In buffer area only



Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
<a href="#">Abernethy Road upgrade (Kardan, Tourmaline &amp; Soldiers) Byford, WA</a>	2015/7441	Not Controlled Action	Completed	In buffer area only
<a href="#">Armadale Road Duplication - Tapper to Anstey Road</a>	2017/7972	Not Controlled Action	Completed	In buffer area only
<a href="#">Armadale Road to North Lake Road Bridge development, Jandakot, WA</a>	2018/8284	Not Controlled Action	Completed	In buffer area only
<a href="#">Burslem Drive Bridge Duplication Over Canning River, Maddington, WA</a>	2014/7115	Not Controlled Action	Completed	In buffer area only
<a href="#">Bushfire hazard reduction, Lot 37 Barfield Road, Hammond Park, WA</a>	2018/8204	Not Controlled Action	Completed	In buffer area only
<a href="#">Calleya Residential Development, Banjup, WA</a>	2016/7708	Not Controlled Action	Completed	In buffer area only
<a href="#">Commercial development of Lot 106 Wright Road, Forrestdale WA</a>	2003/1255	Not Controlled Action	Completed	In feature area
<a href="#">Construction of international rowing course and commercial/residential areas</a>	2003/1034	Not Controlled Action	Completed	In feature area
<a href="#">Denny Avenue Level Crossing Removal, Kelmscott WA</a>	2018/8377	Not Controlled Action	Completed	In buffer area only
<a href="#">Eighth Road and Forrest Road Upgrade, Armadale, WA</a>	2019/8538	Not Controlled Action	Completed	In buffer area only
<a href="#">Eradication of the European House Borer, Perth metropolitan area, WA</a>	2009/5027	Not Controlled Action	Completed	In feature area
<a href="#">Gas-fired Power Station</a>	2005/2213	Not Controlled Action	Completed	In buffer area only
<a href="#">Grazing of stock and associated works on Lot 1790 Passmore Street, Southern River Western Australia</a>	2018/8176	Not Controlled Action	Completed	In buffer area only
<a href="#">Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia</a>	2015/7522	Not Controlled Action	Completed	In feature area
<a href="#">INDIGO Central Submarine Telecommunications Cable</a>	2017/8127	Not Controlled Action	Completed	In feature area
<a href="#">Jandakot Road Widening, Solomon Road to Berrigan Drive, Jandakot, WA</a>	2020/8728	Not Controlled Action	Completed	In buffer area only
<a href="#">Kwinana Fwy southbound widening Roe Hwy to Armadale Rd and construction of farrington Rd</a>	2013/7062	Not Controlled Action	Completed	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
<a href="#">off-ramp</a>				
<a href="#">Kwinana Gas-Fired Power Station</a>	2005/2101	Not Controlled Action	Completed	In buffer area only
<a href="#">Lot 28 157 Barfield Road, Hammond Park - Proposed Residential Development</a>	2021/9063	Not Controlled Action	Completed	In buffer area only
<a href="#">Lot 29 Barfield Road, Hammond Park</a>	2017/7948	Not Controlled Action	Completed	In buffer area only
<a href="#">Lot 2 Nicholson Road, Forrestdale</a>	2012/6561	Not Controlled Action	Completed	In buffer area only
<a href="#">Lots 12, 13 and 18 Hammond Road, Lot 80 Beeliar Drive and Lot 500 Hird Road</a>	2012/6576	Not Controlled Action	Completed	In buffer area only
<a href="#">Oakford Village development, Shire of Serpentine-Jarrahdale, WA</a>	2018/8157	Not Controlled Action	Completed	In buffer area only
<a href="#">Perth Seawater Desalination Project: Thomsons Lake to Kogolup Pipeline</a>	2005/1971	Not Controlled Action	Completed	In buffer area only
<a href="#">Residential Development, Hilbert</a>	2020/8675	Not Controlled Action	Completed	In buffer area only
<a href="#">Residential Development, Lot 12 Lyon Road, Aubin Grove, WA</a>	2013/6852	Not Controlled Action	Completed	In buffer area only
<a href="#">Residential development, Lot 13 Lyon Road, Aubin Grove, WA</a>	2014/7151	Not Controlled Action	Completed	In buffer area only
<a href="#">Residential development, Lot 33 Barfield Road, Hammond Park, WA</a>	2015/7548	Not Controlled Action	Completed	In buffer area only
<a href="#">Road widening - Eighth Road Armadale between Gribble Avenue and Armadale Road</a>	2021/8964	Not Controlled Action	Completed	In buffer area only
<a href="#">Roe Highway - Karel Avenue to Hope Road Bridge Project</a>	2005/2061	Not Controlled Action	Completed	In buffer area only
<a href="#">Southern River Mixed Business Precinct F, City of Gosnells, WA</a>	2013/6813	Not Controlled Action	Completed	In buffer area only
<a href="#">Southern River Precinct 3E</a>	2017/7900	Not Controlled Action	Completed	In buffer area only
<a href="#">Tonkin Highway Extension</a>	2001/470	Not Controlled Action	Completed	In buffer area only
<a href="#">Translocation of orchids (Caladenia huegelii) from Roe Hway Reserve</a>	2002/781	Not Controlled Action	Completed	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
<a href="#">Urban developmnet &amp; associated infrastructure, Lot 4 Armadale Road, Banjup WA</a>	2013/7049	Not Controlled Action	Completed	In buffer area only
<a href="#">Wentworth West residential development, Bartram Road, Success, WA</a>	2014/7245	Not Controlled Action	Completed	In buffer area only
<a href="#">Wungong Transfer Mains Project</a>	2007/3532	Not Controlled Action	Completed	In buffer area only
<a href="#">Yule Brook Main Drain Flood Mitigation Works</a>	2019/8572	Not Controlled Action	Completed	In buffer area only
Not controlled action (particular manner)				
<a href="#">City of Cockburn Sporting Facilities</a>	2005/2139	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
<a href="#">INDIGO Marine Cable Route Survey (INDIGO)</a>	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
<a href="#">Residential Subdivision on Abernethy Road, Byford</a>	2009/4767	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
<a href="#">South West Metropolitan Railway Project</a>	2003/1175	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Referral decision				
<a href="#">AIC Forrestdale Campus, Educational Establishment</a>	2021/9134	Referral Decision	Referral Publication	In buffer area only
<a href="#">Commercial development of Lot 414 Grove Road, Kenwick</a>	2021/9022	Referral Decision	Referral Publication	In buffer area only
<a href="#">Rezoning of Crown Reserve 39181 to facilitate future residential development</a>	2005/2096	Referral Decision	Completed	In buffer area only

# Caveat

## 1 PURPOSE

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

The report contains the mapped locations of:

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

## 2 DISCLAIMER

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

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

## 3 DATA SOURCES

Threatened ecological communities

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

Threatened, migratory and marine species

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

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

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

## 4 LIMITATIONS

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

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

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

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

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

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

# Acknowledgements

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

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

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

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

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