

Port of Mackay

▶ Appendix B

Matters of National Environmental Significance
Likelihood Assessment

APPENDIX B: MNES LIKELIHOOD ASSESSMENT

A list of MNES with the potential to occur within the project area was generated through database search using DAWE's online Protected Matters Search Tool (PMST, see Appendix D). The MNES included in this list were then assessed to determine their likelihood of occurrence within the project area. This assessment took into account:

- Results of studies undertaken within the vicinity of the Port of Mackay (as summarised in Jacobs 2016 and 2rog 2021) and any existing data for the region more broadly;
- The habitat requirements and known distribution of the species;
- Professional judgement from this assessment's authors.

The likelihood of occurrence assessment categorised MNES into five categories as follows:

- Known: the species or ecological community was or has been observed within the project area
- Likely: a medium to high probability that a species or ecological community occurs within the project area
- Potential: suitable habitat for a species or ecological community occurs within the project area, but there is insufficient information to categorise the species or ecological community as likely to occur, or unlikely to occur
- Unlikely to occur: a very low to low probability that a species or ecological community occurs within the project area
- Not occurring: habitat within the area and in the vicinity is unsuitable for the species or ecological community

The results of this assessment are presented below.

Likelihood of occurrence – threatened ecological communities and species

Scientific name	Common name	EPBC Act Status	Likelihood of Occurrence	Comment / justification
THREATENED ECOLOGICAL COMMUNITY				
Broad leaf tea-tree (<i>Melaleuca viridiflora</i>) woodlands in high rainfall coastal north Queensland		E	No	Terrestrial ecosystem.
Littoral Rainforest and Coastal Vine Thickets of Eastern Australia		CE	No	Terrestrial ecosystem.
BIRDS				
<i>Calidris canutus</i>	Red Knot	E M	Known	The species inhabits mudflats, sandflats and sandy beaches of sheltered coasts, in estuaries, bays, inlets, lagoons and harbours. The Mackay region is known to supports this species this species and there are a number of significant shorebird feeding and roosting sites located in the project area.
<i>Calidris ferruginea</i>	Curlew Sandpiper	CE M	Known	This species is frequently encountered along the coastline from Mackay Harbour to Armstrong Beach and inhabits mudflats, sandflats and sandy beaches of sheltered coasts, in estuaries, bays, inlets, lagoons and harbours. The Mackay region is known to supports this species this species and there are a number of significant shorebird feeding and roosting sites located in the project area.
<i>Calidris tenuirostris</i>	Great Knot	CE M	Known	The species prefers sheltered coastal habitat with large intertidal mudflats or sandflats, including inlets, bays, harbours, estuaries and lagoons. The Mackay region is known to supports this species this species and there are a number of significant shorebird feeding and roosting sites located in the project area.
<i>Charadrius mongolus</i>	Lesser Sand Plover	E M	Known	The species occurs in coastal littoral and estuarine environments where it inhabits large intertidal sandflats or mudflats in sheltered bays, harbours and estuaries. The Mackay region is known to supports this species this species and there are a number of significant shorebird feeding and roosting sites located in the project area.
<i>Erythrotriochis radiatus</i>	Red Goshawk	V	No	Terrestrial species.
<i>Falco hypoleucos</i>	Grey Falcon	V	No	Terrestrial species.
<i>Fregetta grallaria grallaria</i>	White-bellied Storm Petrel	V	Unlikely	This species distribution including the Coral Sea, Tasman Sea and around its breeding islands (Lord Howe Island group). Individuals have been recorded foraging over nearshore waters off the Queensland coast but it is primarily a pelagic species.
<i>Geophaps scripta scripta</i>	Squatter Pigeon	V	No	Terrestrial species.
<i>Hirundapus caudacutus</i>	White-throated Needletail	V	Unlikely	Aerial species – fly over only.

Scientific name	Common name	EPBC Act Status	Likelihood of Occurrence	Comment / justification
		M		
<i>Limosa lapponica baueri</i>	Bar-tailed Godwit (western Alaskan)	V	Potential	This is a sub-species of the Bar-tailed Godwit and is known to occur in northern Australia. There are no current records of its occurrence in the project area or region, however there are many records of the Bar-tailed Godwit and therefore there is also potential for the western Alaskan sub-species to occur.
<i>Macronectes giganteus</i>	Southern Giant-Petrel	E M	Unlikely	This is a pelagic species that occurs primarily in Antarctic waters where it breeds on the Antarctic Continent and sub-Antarctic islands. It may occur in sub-tropical areas.
<i>Neochmia ruficauda ruficauda</i>	Star Finch	E	No	Terrestrial species.
<i>Numenius madagascariensis</i>	Eastern Curlew	CE M	Known	This species is frequently encountered along the coastline from Mackay Harbour to Armstrong Beach and is known to forage in intertidal mudflats, often with beds of seagrass, on sheltered coasts, especially estuaries, mangrove swamps, bays, harbours and lagoons. The Mackay region is known to support this species and there are a number of significant shorebird feeding and roosting sites located in the project area.
<i>Poephila cincta cincta</i>	Southern Black-throated Finch	E	No	Terrestrial species.
<i>Pterodroma neglecta neglecta</i>	Kermadec Petrel	V	Unlikely	This species is pelagic with the distribution thought to be in subtropical and tropical waters from 20°S to 35° S. It breeds around Lord Howe and Norfolk Islands.
<i>Rostratula australis</i>	Australian Painted Snipe	E	Unlikely	The species has been recorded in West Mackay, however it occupies freshwater wetland habitats which are not present in the project area.
<i>Turnix olivii</i>	Buff-breasted Button Quail	E	No	Terrestrial species.
<i>Tyto novaehollandiae kimberli</i>	Masked Owl	V	No	Terrestrial species.
MAMMALS				
<i>Balaenoptera musculus</i>	Blue Whale	E M	Unlikely	The species is wide ranging and widely distributed, however there are no known feeding or aggregations areas for the Blue Whale within offshore water of Queensland. It is unlikely that the species would regularly pass through the offshore area adjacent to the Port of Mackay.
<i>Dasyurus hallucatus</i>	Northern Quoll	E	No	Terrestrial species.
<i>Macroderma gigas</i>	Ghost Bat	V	No	Terrestrial species.

Scientific name	Common name	EPBC Act Status	Likelihood of Occurrence	Comment / justification
<i>Megaptera novaeangliae</i>	Humpback Whale	V M	Known	Humpback whales migrate through the project area using the offshore waters from June to October peaking in August. Females with calves have been observed within the port limits of Hay Point, which is in close proximity to the Port of Mackay.
<i>Petauroides volans</i>	Greater Glider	V	No	Terrestrial species.
<i>Phascolarctos cinereus</i>	Koala	V	No	Terrestrial species.
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	V	No	Terrestrial species.
<i>Xeromys myoides</i>	Water Mouse	V	Known	The Mackay region is considered a stronghold for this species. It inhabits the mangrove communities lining creeks and estuaries.
REPTILES				
<i>Caretta caretta</i>	Loggerhead Turtle	E M	Known	The species has been recorded in the Mackay region. Species has been observed foraging at Hay Point and is likely to be transient in the waters adjacent to Port of Mackay as it forages in the surrounding reef systems or seagrass meadows. There are occasional records of the species nesting in the region.
<i>Chelonia mydas</i>	Green Turtle	V M	Known	The species has been recorded in the Mackay region. There is a small resident population at Hay Point and the species is likely to be transient in the water adjacent to Port of Mackay as it forages on algae covered reef systems and seagrass meadows. Low density nesting has been observed in the region between November and April.
<i>Denisonia maculate</i>	Ornamental Snake	V	No	Terrestrial species.
<i>Dermochelys coriacea</i>	Leatherback Turtle	E M	Known	The species has been recorded in the Mackay region and may be a transient visitor in the water adjacent to the Port of Mackay as it forages in the surrounding reef systems.
<i>Egernia rugosa</i>	Yakka Skink	V	No	Terrestrial species.
<i>Eretmochelys imbricata</i>	Hawksbill Turtle	V M	Known	The species has been recorded in the Mackay region and may be a transient visitor in the water adjacent to the Port of Mackay as it forages in the surrounding reef systems.
<i>Lepidochelys olivacea</i>	Olive Ridley Turtle	E M	Known	The species has been recorded in the Mackay region and may be a transient visitor in the water adjacent to the Port of Mackay as it forages in the surrounding reef systems.
<i>Natator depressus</i>	Flatback Turtle	V M	Known	The species has been recorded in the Mackay region. Species has been observed foraging at Hay Point and is likely to be transient in the waters adjacent to Port of Mackay as it forages in the surrounding reef systems or seagrass meadows. Hay Point Beach and Salonika Beach

Scientific name	Common name	EPBC Act Status	Likelihood of Occurrence	Comment / justification
				are known to be the most heavily used nesting beaches, with the region supporting between 30-100 turtles annually.
SHARK				
<i>Carcharodon carcharias</i>	Great White Shark	V M	Unlikely	The species occurs from central Queensland around the south coast to north-west Western Australia. Mackay is the most northern record of the species in Queensland, however this is a historical sighting (1990) and there have been no recent sightings.
<i>Pristis zijsron</i>	Green Sawfish	V M	Unlikely	There is suitable habitat for the species in the project area, however there have been no records of the species south of Cairns since 1960. It is considered unlikely that the species would occur in the nearshore waters of the Port of Mackay.
<i>Rhincodon typus</i>	Whale Shark	V M	Unlikely	The species has not previous been recorded in the offshore waters of the Port of Mackay. It is most commonly seen in waters off northern Western Australia, Northern Territory and Queensland with the main aggregation area at Ningaloo Reef.
PLANTS				
<i>Dichanthium setosum</i>	Bluegrass	V	No	Terrestrial species.
<i>Eucalyptus raveretiana</i>	Black Ironbox	V	No	Terrestrial species.
<i>Graptophyllum ilicifolium</i>	Holly-leaved Graptophyllum	V	No	Terrestrial species.
<i>Neisosperma kilneri</i>	-	V	No	Terrestrial species.
<i>Omphalea celata</i>	-	V	No	Terrestrial species.
<i>Phaius australis</i>	Lesser Swamp-orchid	E	No	Terrestrial species.
<i>Samadera bidwillii</i>	Quassia	V	No	Terrestrial species.

Likelihood of occurrence – migratory species (in addition to those listed above)

Scientific name	Common name	EPBC Act Status	Likelihood of Occurrence	Comment / justification
MIGRATORY MARINE BIRDS				
<i>Anous stolidus</i>	Common Noddy	M	Unlikely	The species is an offshore or pelagic species only in Queensland.
<i>Apus pacificus</i>	Fork-tailed Swift	M	Unlikely	Aerial species – fly over only.
<i>Ardenna carneipes</i>	Flesh-footed Shearwater	M	Unlikely	The species is an offshore or pelagic species only in Queensland.
<i>Fregata ariel</i>	Lesser Frigatebird	M	Unlikely	The species is an offshore or pelagic species only in Queensland.

Scientific name	Common name	EPBC Act Status	Likelihood of Occurrence	Comment / justification
<i>Fregata minor</i>	Great Frigatebird	M	Unlikely	The species is an offshore or pelagic species only in Queensland.
<i>Sternula albifrons</i>	Little Tern	M	Potential	The species occurs in sheltered coastal environments, with suitable habitat present in the project area. There are no known breeding colonies in the study area or wider region.
MIGRATORY MARINE SPECIES				
<i>Anoxypristis cuspidate</i>	Narrow Sawfish	M	Unlikely	The species distribution is not well known, however it is most common in the Gulf of Carpentaria with its southward range extending to Broad Sound in Queensland.
<i>Balaenoptera edeni</i>	Bryde's Whale	M	Unlikely	The species has not been recorded in the region and is distributed in waters between 40°S and 40°N, primarily in temperatures exceeding 16.3°C.
<i>Carcharhinus longimanus</i>	Oceanic Whitetip Shark	M	Unlikely	The species has not been recorded in the region and is pelagic, inhabiting deep offshore water.
<i>Crocodylus porosus</i>	Salt-water Crocodile	M	Known	The species is known to inhabit creek and estuaries of the study area.
<i>Dugong dugon</i>	Dugong	M	Known	The species has been recorded in the Mackay region. Species has is likely to be transient in the waters adjacent to Port of Mackay as it moves to preferred foraging areas.
<i>Lamna nasus</i>	Porbeagle	M	Unlikely	The species occurs in temperate, subarctic and subantarctic waters of the North Atlantic and Southern Hemisphere. In Australia, it occurs in waters from southern Queensland to south-west Australia. It primarily inhabits oceanic waters and areas around the edge of the continental shelf, occasionally moving into coastal waters, but these movements are temporary.
<i>Manta alfredi</i>	Reef Manta Ray	M	Potential	Manta ray species have previously been reported in shark nets off of Mackay. The species may occur in the waters adjacent to the project area.
<i>Manta birostris</i>	Giant Manta Ray	M	Potential	Manta ray species have previously been reported in shark nets off of Mackay. The species may occur in the waters adjacent to the project area.
<i>Orcaella heinsohni</i>	Australian Snubfin Dolphin	M	Potential	Records and distributions are not well known, however all available data on distribution and habitat preferences indicates that the species mainly occur in shallow and coastal estuarine waters of Queensland, Northern Territory and north Western Australia. The species may occur in the waters adjacent to the project area,

Scientific name	Common name	EPBC Act Status	Likelihood of Occurrence	Comment / justification
<i>Orcinus orca</i>	Orca	M	Unlikely	The species is rarely observed in the tropical waters of Australia and has not been recorded in the region. Concentrations of individuals occur in Tasmanian waters and the Antarctic.
<i>Sousa chinensis</i>	Indo-Pacific Humpback Dolphin	M	Known	The species has been recorded in the waters off Hay Point and may be a transient visitor in the project area.
MIGRATORY TERRESTRIAL SPECIES				
<i>Cuculus optatus</i>	Oriental Cuckoo	M	No	Terrestrial species.
<i>Monarcha melanopsis</i>	Black-faced Monarch	M	No	Terrestrial species.
<i>Monarcha trivirgatus</i>	Spectacled Monarch	M	No	Terrestrial species.
<i>Myiagra cyanoleuca</i>	Satin Flycatcher	M	No	Terrestrial species.
<i>Rhipidura rufifrons</i>	Rufous Fantail	M	No	Terrestrial species.
MIGRATORY WETLAND SPECIES				
<i>Actitis hypoleucos</i>	Common Sandpiper	M	Known	The species has been recorded between Repulse Bay and Cape Palmerston.
<i>Arenaria interpres</i>	Ruddy Turnstone	M	Known	The species has been recorded between Repulse Bay and Cape Palmerston.
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	M	Known	The species has been recorded between Repulse Bay and Cape Palmerston.
<i>Calidris alba</i>	Sanderling	M	Known	The species has been recorded between Repulse Bay and Cape Palmerston.
<i>Calidris melanotos</i>	Pectoral Sandpiper	M	Potential	The species has not been recorded in the project area, however suitable habitat is present.
<i>Calidris ruficollis</i>	Red-necked Stint	M	Known	The species has been recorded between Repulse Bay and Cape Palmerston.
<i>Charadrius bicinctus</i>	Double-banded Plover	M	Known	The species has been recorded between Repulse Bay and Cape Palmerston.
<i>Charadrius veredus</i>	Oriental Plover	M	Potential	The species has not been recorded in the project area, however suitable habitat is present.
<i>Gallinago hardwickii</i>	Latham's Snipe	M	Known	The species has been recorded between Repulse Bay and Cape Palmerston.
<i>Gallinago megala</i>	Swinhoe's Snipe	M	Unlikely	The species has been recorded infrequently in Australia with records between the Kimberley Divide and Cape York Peninsula. .
<i>Gallinago stenura</i>	Pin-tailed Snipe	M	Unlikely	There are no known records of this species in Queensland.

Scientific name	Common name	EPBC Act Status	Likelihood of Occurrence	Comment / justification
<i>Limicola falcinellus</i>	Broad-billed Sandpiper	M	Known	The species has been recorded between Repulse Bay and Cape Palmerston.
<i>Limnodromus semipalmatus</i>	Asian Dowitcher	M	Known	The species has been recorded between Repulse Bay and Cape Palmerston.
<i>Limosa lapponica</i>	Bar-tailed Godwit	M	Known	The species has been recorded between Repulse Bay and Cape Palmerston.
<i>Limosa limosa</i>	Black-tailed Godwit	M	Known	The species has been recorded between Repulse Bay and Cape Palmerston.
<i>Numenius minutus</i>	Little Curlew	M	Known	The species has been recorded between Repulse Bay and Cape Palmerston.
<i>Numenius phaeopus</i>	Whimbrel	M	Known	The species has been recorded between Repulse Bay and Cape Palmerston.
<i>Pandion haliaetus</i>	Osprey	M	Potential	The species has not been recorded in the project area, however suitable habitat is present.
<i>Pluvialis fulva</i>	Pacific Golden Plover	M	Known	The species has been recorded between Repulse Bay and Cape Palmerston.
<i>Pluvialis squatarola</i>	Grey Plover	M	Known	The species has been recorded between Repulse Bay and Cape Palmerston.
<i>Tringa brevipes</i>	Grey-tailed Tattler	M	Known	The species has been recorded between Repulse Bay and Cape Palmerston.
<i>Tringa glareola</i>	Wood Sandpiper	M	Known	The species has been recorded between Repulse Bay and Cape Palmerston.
<i>Tringa incana</i>	Wandering Tattler	M	Known	The species has been recorded between Repulse Bay and Cape Palmerston.
<i>Tringa nebularia</i>	Common Greenshank	M	Known	The species has been recorded between Repulse Bay and Cape Palmerston.
<i>Tringa stagnatilis</i>	Marsh Sandpiper	M	Known	The species has been recorded between Repulse Bay and Cape Palmerston.
<i>Xenus cinereus</i>	Terek Sandpiper	M	Known	The species has been recorded between Repulse Bay and Cape Palmerston.