Port of Port Hedland Zone 5 Bypass Channel Project

Image courtesy of Pilbara Ports and Doug Perrine

7 April 2026

Marine Fauna Desktop Review

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Acronyms and Abbreviations

Abbreviation	Definition
AC	Almost Certain
AMSA	Australian Maritime Safety Authority
BC Act	*Biodiversity Conservation Act 2016*
BIA	Biologically Important Area
BPPH	Benthic Primary Producer Habitats
CALM	*Conservation and Land Management Act 1984*
CD	Chart Datum
CSD	Cutter Suction Dredge
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DWER	Department of Water and Environmental Regulation
EAA	East Asian–Australian
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EP Act	Environmental Protection Act 1986
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
ERA	Environmental Risk Assessment
IBA	Important Bird and Biodiversity Area
IMS	Invasive Marine Species
IUCN	International Union Conservation of Nature
JAMBA	Japan Australia Migratory Bird Agreement
L	Likely
LAT	Lowest Astronomical Tide
LTDMP	Long Term Dredge Management Plan
MNES	Matters of National Environmental Significance
NAGD	National Assessment Guidelines for Dredging
P	Probably
PAH	Polycyclic Aromatic Hydrocarbons
Pilbara Ports	Previously Pilbara Ports Authority
PMST	Protected Matters Search Tool
PPA	Pilbara Ports Authority (now Pilbara Ports)
R	Rare
SDP	Sea Dumping Permit
SG7C	Spoil Ground 7C
SST	Sea Surface Temperature
TACC	Technical Advisory and Consultative Committee
TSHD	Trailing Suction Hopper Dredge
TSS	Total Suspended Sediments
U	Unlikely
UCL	Upper Confidence Limit

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SUMMARY

The Port of Port Hedland (Port) is a single-channel port that underpins a significant proportion of Western Australia's export economy. The channel can be broken down into six distinct zones based on location, bathymetry, channel slopes and sea conditions. As vessel sizes have increased and traffic volumes grown, the consequences of any disruption to this route have become more pronounced. Although vessel control failures remain relatively infrequent, incidents in recent years have demonstrated that even brief mechanical or navigational issues can escalate quickly within the confined geometry of the channel. In certain sections, such as Zone 5, the physical characteristics of the channel provide limited opportunity for recovery once control is lost.

Pilbara Ports is proposing to conduct capital dredging to create a bypass channel to the east of Zone 5 of the existing Channel (the Project). Once the capital works are completed, this area will become part of the annual channel maintenance dredging campaign (via amendment to the existing Port of Port Hedland five-year SDP for maintenance dredging SD2022/4041). The Proposal is a strategic marine risk-mitigation project intended to maintain vessel transit at an acceptable reduced capacity, should a grounding incident occur in Zone 5 of the channel.

The majority of the dredging footprint is located within Commonwealth waters and will be regulated by the Department of Climate Change, Energy, the Environment and Water (DCCEEW) under the *Environment Protection (Sea Dumping) Act 1981* (the Sea Dumping Act). Matters of National Environmental Significance (MNES) including threatened and migratory marine fauna species are to be considered during approval for a sea dumping permit under the Sea Dumping Act. The *Environmental Protection Act 1986* (EP Act) is the primary legislative instrument for environmental assessment in WA. Under Part IV of the EP Act, the WA Environment Protection Authority (EPA) is responsible for providing advice to the Minister for proposals assessed under Part IV of the EP Act and considered by the EPA as likely to have significant impact on the environment. 'Marine Fauna' are a key environmental factor to be considered during environmental impact assessment (EIA) under the EP Act.

This document presents the outcomes of a marine fauna desktop study that will be used to inform the EIA for the Project and formulation of related management measures. The objectives were to:

- Identify the marine fauna of significance that may occur within or adjacent to the Project development;
- Assess the likelihood of the identified marine fauna of significance occurring within or adjacent to the Project development;
- Summarise the ecological characteristics (i.e., population, distribution, habitat use and life history) for the species with a greater than 'possible' potential to occur within or adjacent to the Project development (i.e. species of relevance to the Project); and
- Identify and assess the known threats to the relevant listed marine fauna against potential Project impact pathways to allow identification of the species of key concern for the Project.

There are no conservation significant marine fauna species populations or habitats that are restricted to the Project dredging and disposal areas. The habitats within and adjacent to the Project are predominantly bare sand and areas of limestone pavement supporting mixed communities with low cover of benthic primary producers.

The species of key concern were identified to be the humpback whale, flatback turtle, green turtle, hawksbill turtle and loggerhead turtle. This assessment was based on:

- the dredging and disposal areas spatially overlapping, or being in close proximity to, biologically important areas for these species; and
- the identification of vessel collision (humpback whale) and entrainment (marine turtles) impacts due to dredging activities to be a potential significant impact pathway for the listed species.

1 INTRODUCTION

1.1 Background

The Port of Port Hedland (Port) is a single-channel port that underpins a significant proportion of Western Australia's export economy. The safe and continuous movement of vessels through the channel is fundamental to maintaining supply chain reliability for the States iron ore industry and the broader national economy. While the channel has been progressively deepened and operational procedures strengthened over time, its underlying configuration remains challenging: all shipping activity depends on a single navigable route.

The channel can be broken down into six distinct zones based on location, bathymetry, channel slopes and sea conditions (Figure 1-1). As vessel sizes have increased and traffic volumes grown, the consequences of any disruption to this route have become more pronounced. Although vessel control failures remain relatively infrequent, incidents in recent years have demonstrated that even brief mechanical or navigational issues can escalate quickly within the confined geometry of the channel. In certain sections, such as Zone 5, the physical characteristics of the channel provide limited opportunity for recovery once control is lost.

Pilbara Ports is proposing to conduct capital dredging to create a bypass channel to the east of Zone 5 of the existing Channel (the Project). The Project is a strategic marine risk-mitigation project intended to maintain vessel transit at an acceptable reduced capacity, should a grounding incident occur in Zone 5 of the channel. The bypass navigation channel design depth is -11.5 m chart datum (CD) and has been divided into two distinct zones (Figure 1-2Error! Reference source not found.). Zone 5A includes the targeted areas proposed for capital dredging. Capital dredging within the channel design profile is only required in three discrete areas (Zones 5A(i), 5A(ii) and 5A(iii)) that have been shown via hydrographic survey to be above the channel design depth. Zone 5B is not proposed to be dredged at this stage but may require material to be removed via maintenance dredging in future if sufficient accretion of sediments has occurred as a result of natural forces such that safe navigation may be impeded. Once the capital works are completed, this area will become part of the annual channel maintenance dredging campaign.

Port Hedland is characterised by hard, abrasive and variably cemented calcareous materials. Two dredging methodologies are considered viable to dredge this material and may be implemented:

- Method 1: Trailing Suction Hopper Dredge (TSHD) only
    - rip and loosen seabed material;
    - Immediately dredge the loosened material by suction; and
    - transport material directly to a spoil ground for disposal.
- Method 2: Crushing using a Cutter Suction Dredge (CSD) with rehandling by a TSHD
    - Mechanically crush hard material in situ using CSD;
    - Place crushed material back onto the seabed; and
    - Enable a TSHD to subsequently re-handle and dispose of material to a spoil ground.

An established spoil ground (Spoil Ground 7 [SG7]) previously approved for spoil disposal and used in several recent capital and maintenance dredging campaigns will be used for disposal of up to 800,000 m^3 spoil material. Recent campaigns have used sub-areas SG7A and SG7B inside the SG7 boundaries.

These areas are too shallow for the expected draft of the dredge plant and disposal for the Project will target sub-area SG7C inside the greater SG7 (Figure 1-3).

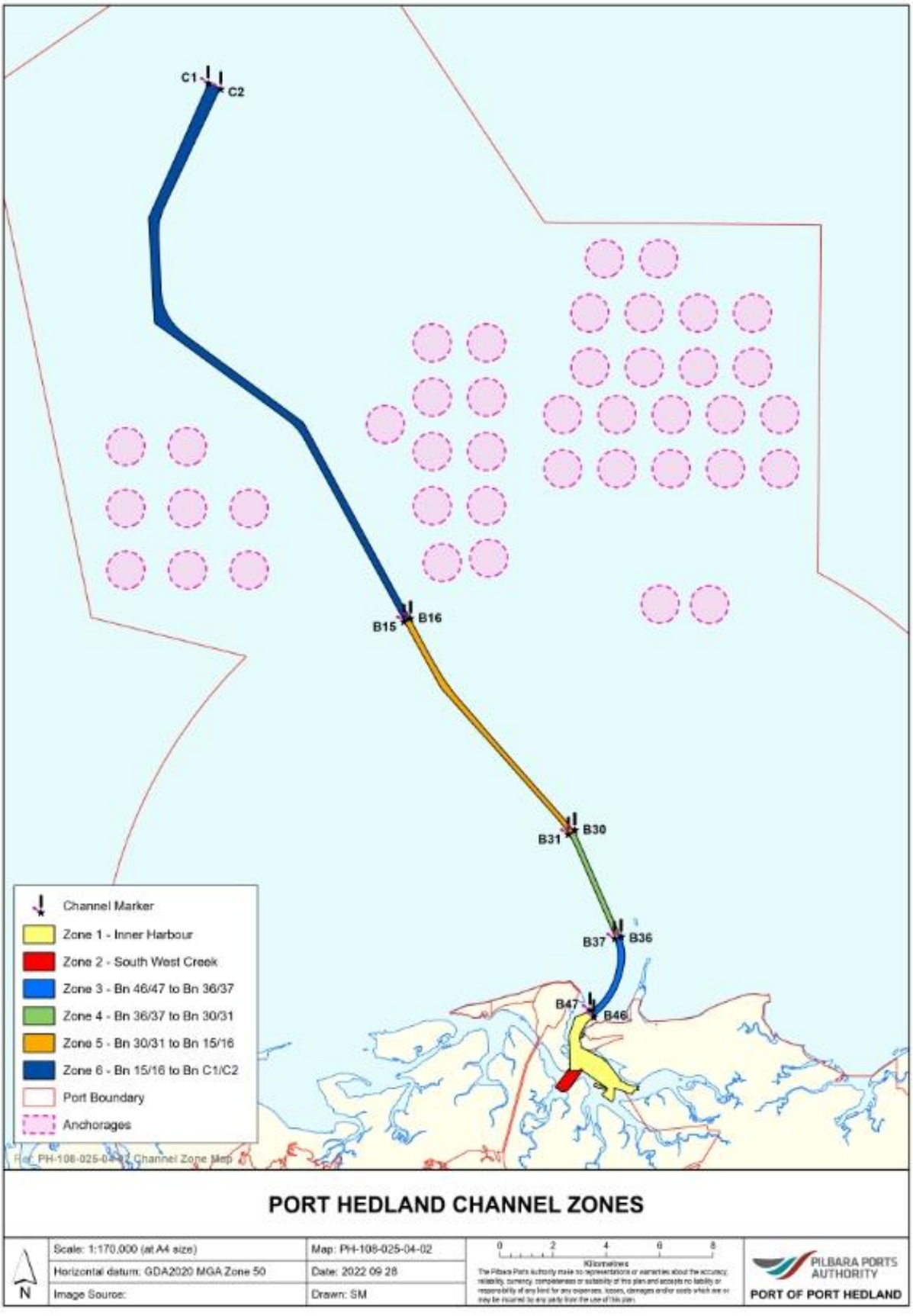

Figure 1-1. Port of Port Hedland Channel Zones

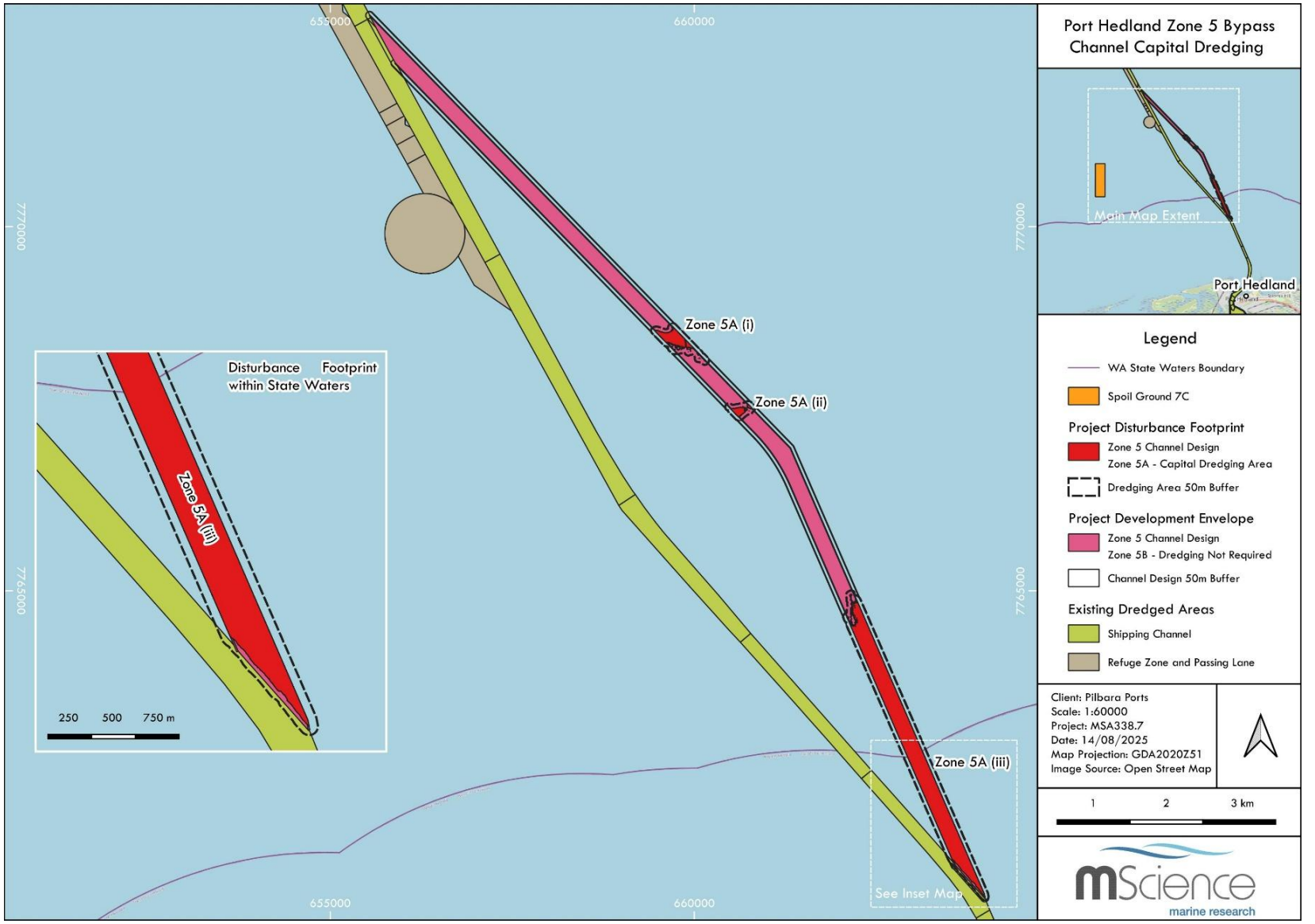

Figure 1-2. Proposed dredge area

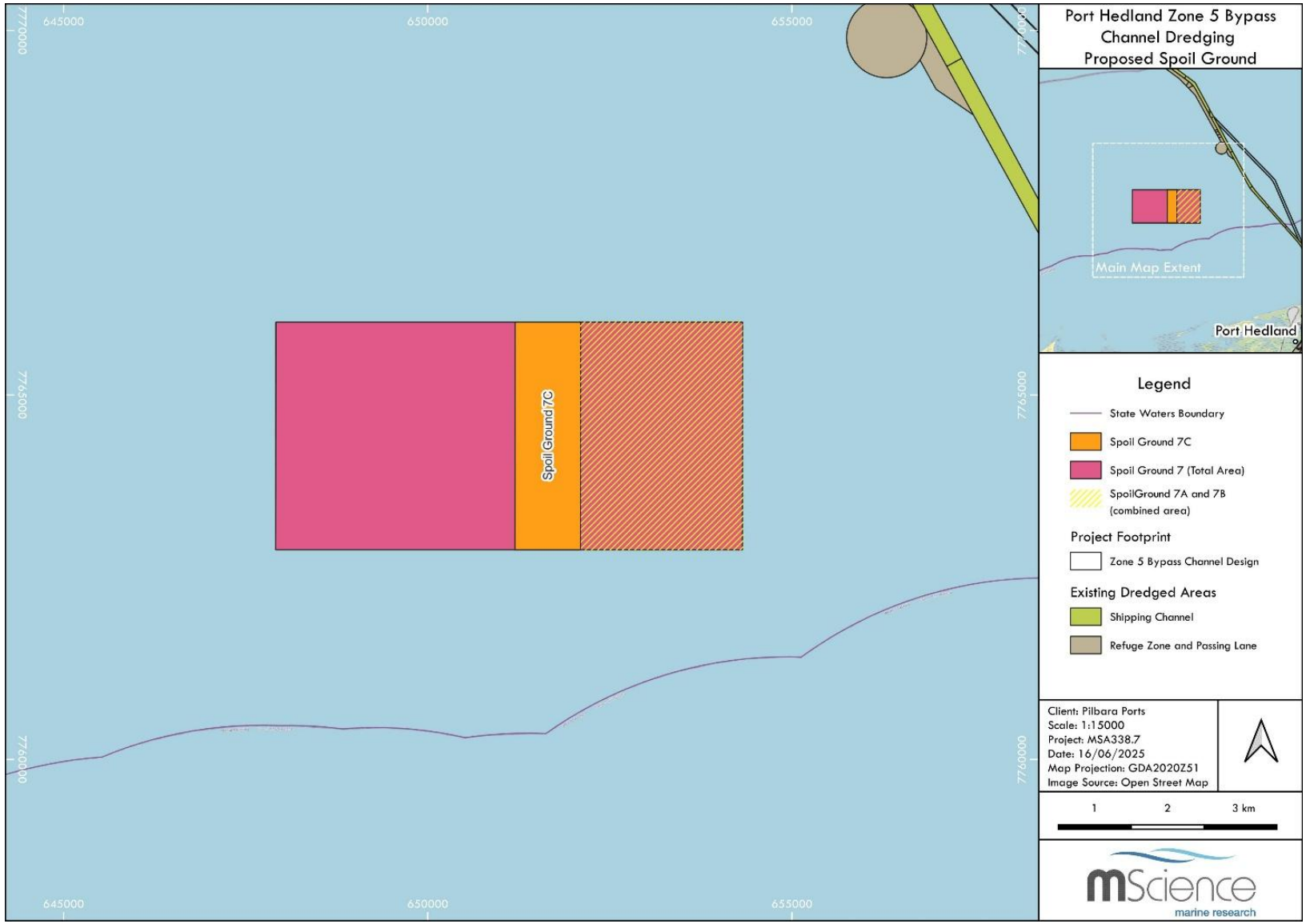

Figure 1-3. Spoil ground location

1.2 Purpose and Objectives

The Western Australia Environment Protection Authority (EPA) encourages proponents of large-scale dredging projects, such as capital dredging, to refer the project for assessment under Part IV of the *Environmental Protection Act 1986* (EP Act).

Matters of National Environmental Significance (MNES) including threatened and migratory marine fauna species are to be considered during approval for a sea dumping permit under the *Environment Protection (Sea Dumping) Act 1981* (Sea Dumping Act).

The purpose of this document is to identify and assess the likelihood of occurrence of relevant marine fauna species of significance within and adjacent to the proposed dredging and disposal activities. The identification of relevant species and their known threats allows for the correct level of information to be provided for a given species as it relates to the environmental impact assessment (EIA) for the Project.

The results of the desktop study will be used to support the EIA of the Project, and its referral under section 38 (Part IV) of the EP Act.

This document provides a desktop study covering:

- Identification of the marine fauna of significance that may occur within or adjacent to the Project development;
- An assessment of the likelihood of the identified marine fauna of significance occurring within or adjacent to the Project development;
- A summary of ecological characteristics (i.e., population, distribution, habitat use and life history) for the species with a greater than 'possible' (refer to Table 2-2 for definition) potential to occur within or adjacent to the Project development (species of relevance to the Project); and
- Identification and assessment of known threats to the relevant listed marine fauna against potential Project impact pathways to identify the species of key concern for the Project.

1.1 Relevant Legislation

Key legislation governing the protection of marine fauna and their habitats in WA include:

Environment Protection and Biodiversity Conservation Act 1999

The Commonwealth Government manages actions that might impact on matters of national environmental significance (MNES) through the *Environmental Protection and Biodiversity Conservation Act (1999)* (EPBC Act), administered by the Department of Climate Change, Energy, the Environment and Water (DCCEEW). Under the EPBC Act, an action that could have a significant impact on any MNES in accordance with the Significant Impact Guidelines 1.1 Matters of Environmental National Significance (Commonwealth of Australia 2013) should be referred to the DCCEEW for determination as to whether an environmental assessment is required. If the Commonwealth Environment Minister determines that an approval is required, the proposed action will proceed through the assessment and approval process. With relevance to marine fauna, MNES may include:

- Listed threatened species and communities; and
- Migratory species protected under international agreements.

The EPBC Act is Australia's primary legislation for meeting international conservation commitments, including those related to International Union's Conservation of Nature (IUCN) Red List of Threatened Species, various conventions protecting migratory species and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Environmental Protection Act 1986

The *Environmental Protection Act 1986* (EP Act) is the primary legislative instrument for environmental assessment in WA. Under Part IV of the EP Act, the WA EPA is responsible for providing advice to the Minister for proposals assessed under Part IV of the EP Act and considered by the EPA as likely to have significant impact on the environment.

The EPA uses environmental factors as an organising principal for environmental impact assessment. The EPA has 14 environmental factors across five themes, Sea, Land, Water, Air and People (EPA 2021). The EPA has identified an environmental objective for each environmental factor. It will have regard to these objectives when determining whether the environmental impact of a proposal or scheme may be significant.

The EPA's objective for Marine Fauna is: 'To protect marine fauna so that biological diversity and ecological integrity are maintained'.

Any proposal likely to have a significant environmental effect on the environment should be referred to the EPA under Section 38 of the EP Act. The EPA will decide whether or not to assess the proposal and if it is to be assessed will determine the level of assessment of the proposal and other proposal-specific information required. The EPA will assess the proposal based on referral information, additional assessment information where required and submissions if information is made available for public review.

Biodiversity Conservation Act 2016

The *Biodiversity Conservation Act 2016* (BC Act) has replaced both the *Wildlife Conservation Act 1950* and the *Sandalwood Act 1929.* The BC Act is the Western Australian Government's key piece of environmental legislation, administered by the Department of Biodiversity, Conservation and Attractions (DBCA). The BC Act enables protection of threatened flora and fauna and provides coverage for other biodiversity conservation matters, such as threatened ecological communities, threatening processes and critical habitats. The BC Act recognises that activities involving the disturbing of fauna (including threatened species) that are approved under the EP Act do not require further approval under the BC Act, if they are undertaken in accordance with any biodiversity conservation conditions that are applied to an authorisation.

Conservation and Land Management Act 1984

The *Conservation and Land Management Act 1984* (CALM Act) details DBCA's role as WA's management agency for the State's conservation estate. In doing so, it facilitates the protection of some marine fauna habitat through the gazettal and management of marine protected areas. The Project does not spatially overlap with any current marine parks or reserves.

Fish Resources Management Act 1994

The Department of Primary Industries and Regional Development (DPIRD) is the lead agency responsible for the management of aquatic resources in WA. DPIRD administers several WA acts, the most important of which is the WA *Fish Resources Management Act 1994* (FRMA) and accompanying *Fish Resources Regulations 1995*.

Section 3 of the FRMA lists amongst its objectives:

- To conserve fish and to protect their environment;
- To enable the management of fishing, aquaculture and associated industries and aquatic ecotourism;
- To foster the development of commercial and recreational fishing and aquaculture;
- To achieve the optimum economic, social and other benefits from the users of the resources; and
- To enable the allocation of fish resources between users of those resources.

The *Aquatic Resources Management Act 2016* (ARMA) will replace the FRMA and the *Pearling Act 1990*, to become the primary legislation used to manage aquatic resources in WA from the 01 November 2023. Final amendments to the ARMA passed on 19 August 2021 but regulations to implement the Act are not yet public.

Biosecurity Act 2015

Under the *Biosecurity Act 2015*, DCCEEW are responsible for managing biosecurity risks of introduced marine species (IMS) from ballast water and biofouling from vessels operating in Australian seas.

1.2 Marine Habitats of the Project Area

Benthic habitats are critical to marine fauna, providing essential structural complexity for shelter, breeding, and nursery grounds. The distribution and composition of subtidal Benthic Communities and Habitats (BCH) off the coast of Port Hedland, including the area in which the Project is located, have been described previously for the proposed BHP Outer Harbour Development (SKM 2009). The Outer Harbour study area was observed to be dominated by sand plains, devoid of benthic primary producers, interspersed with a series of hard substrate ridgelines (running parallel to the coastline) capable of supporting BCH.

A benthic habitat assessment was completed for the Proposal to provide a greater certainty and precision in the location and structure of known BCH within and adjacent to the Zone 5 Bypass Channel dredging design and SG7C disposal footprint.

Overall, evaluation of transects surveyed in the present assessment recognised two habitat types, with five community types found within one or more of those habitats (Table 1-1, Figure 1-4). The five community types identified are common elsewhere offshore of Port Hedland, as shown by habitat mapping for the BHP Outer Harbour Development (SKM 2009).

Close to 94% of the survey area was mapped as bare sand (<2 % cover of biota). Sparse (2 to <10 % cover) to medium density (20 to <40 %) invertebrates (non-coral) growing on unconsolidated and hard consolidated substrate formed 4% of the area. Approximately 85 ha, or 2%, consisted of mixed

community (up to 40% cover of sponges, soft corals and mixed filter feeders and up to 20% of hard coral cover) growing on isolated outcrops of hard substrate and the hard substrate ridgeline running parallel to the coastline in the north of the zone which appears to be an extension of Minilya Bank to the east of the Project area.

There were no benthic habitats, communities or biota of regional significance identified in the survey of the Project area.

Table 1-1. Benthic community and habitat types in Project area.

Habitat Type	Community Type	Biota Present
Unconsolidated Sediment Sand (flat or rippled, medium to coarse grained) and gravel	Bare	Occasional macroalgae (including <5 m^2 patches of turf algal mats and filamentous algae), filter feeders (<2 % cover) and <2 m^2 patches of seagrass (<2 % cover)
	Sparse Invertebrates	2 to <10 % cover of invertebrates (sponges and other mixed filter feeders) growing in sand.
Low Relief (<1 m) Consolidated Hard Substrate Hard limestone pavement or rubble with or without a sand veneer	Sparse Invertebrates	2 to <10 % cover of invertebrates (sponges, soft corals, gorgonians and other mixed filter feeders) and occasional hard corals (<3% cover) growing on hard substrate surrounded by patches of bare sand.
	Low Density Invertebrates	10 to <20 % cover of invertebrates (soft corals, sponges, gorgonians and other mixed filter feeders) and hard corals (<5% cover) growing on hard substrate surrounded by patches of bare sand.
	Medium Density Invertebrates	20 to <40 % cover of invertebrates (sponges, soft corals and other mixed filter feeders) and hard corals (<10% cover) growing on hard substrate surrounded by patches of sand.
	Medium Density Mixed Communities	Mixed benthos up to 40% cover of turf algae, invertebrates (sponges, soft corals and other mixed filter feeders) and hard corals (10 to 20 % cover), growing on hard substrate surrounded by patches of sand.

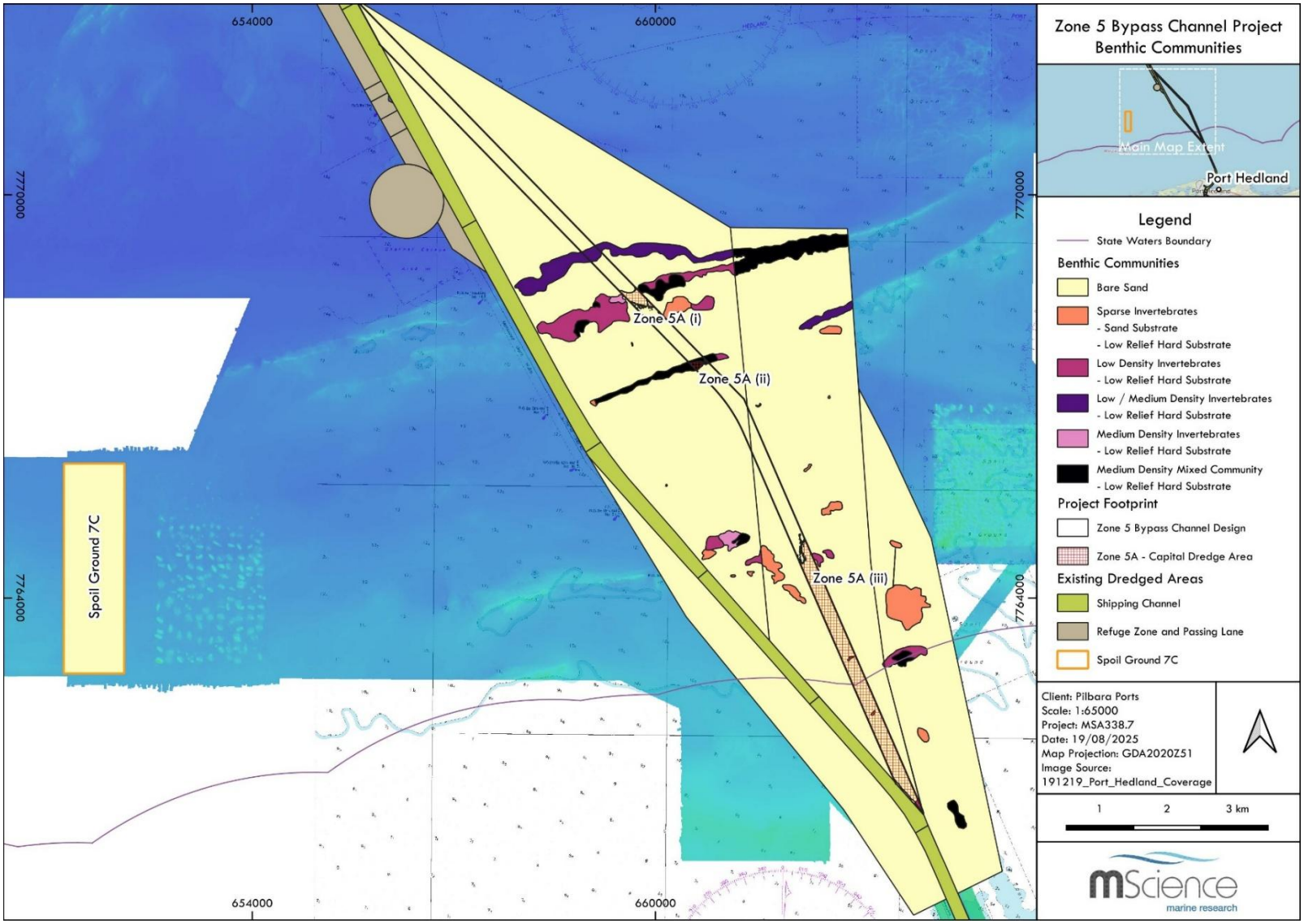

Figure 1-4. Zone 5 Bypass Channel Project benthic communities

2 MARINE FAUNA OF SIGNIFICANCE

2.1 Identification of Significant Species

2.1.1 Database Search

Table 2-1 lists the database searches and documents used to inform the desktop assessment of significant marine fauna.

Table 2-1. Database searches and documents used to inform the assessment

Author	Database/Document	Notes
DCCEEW	Protected Matters Search Tool (PMST)	Identifies MNES within a given area of interest, including threatened and migratory marine species listed under the EPBC Act. Search area defined as the Zone 5 Bypass Channel design footprint and Spoil Ground 7C, including a 20km buffer. Search completed in September 2025.
DBCA	Biodiversity Information Office Threatened, and Priority Fauna List	Identifies threatened and priority fauna listed under the BC Act.

2.1.2 Search Results and Likelihood of Occurrence

The results of the database search have been provided in Appendix A. The search identified 121 listed marine species that may potentially occur within 20km of the Project development footprint. These include seabirds, shorebirds, mammals, reptiles, elasmobranchs and other fish that potentially occur in or migrate through the area. The terrestrial species identified by the search have not been included in this assessment.

Of the 121 listed marine species, 112 have been given a threatened and/or migratory status. Including:

- 82 species of marine bird (seabirds and shorebirds)
- 10 species of marine mammal (including cetaceans)
- 7 species of marine reptile
- 13 species of elasmobranch/fish

The PMST report returns a 'presence rank' for listed species identified within the bounds (and specified buffer distance) of the search area. A species is ranked as 'may', 'likely' or 'known' to occur. The PMST report provides a starting point for any protected matters that might be within or around the search area. DCCEEW suggest scientific literature, local knowledge and expertise should be used to complement the data provided in the PMST report. As such, a review of the scientific literature for each threatened and/or migratory species was undertaken to refine the 'presence rank' for these species within 1km and 20km of the Project development envelope. The literature review focussed on identifying the population, distribution, habitat use and life history of each protected marine species. Based on the literature review, the likelihood of each protected marine species occurring within and/or adjacent to the Project development envelope was determined.

The assessment for the likelihood of occurrence for each listed threatened and/or migratory species has been summarised in Appendix B.

Matters considered in determining the likelihood of occurrence for each species included:

- Known natural distributions;
- Ecological windows;
- Specific habitat requirements and use;
- Bathymetry; and
- Climatic considerations.

The likelihood of occurrence scale was defined based on the definitions provided in Table 2-2.

Table 2-2. Likelihood of occurrence scale

Likelihood	Definition
Rare (R)	The species has not been recorded within the defined search area. No suitable habitat is present within the defined search area.
Unlikely (U)	The species has not been recorded within the defined search area. The current known distribution of the species does not overlap the defined search area, however, there is low presence of low value suitable habitat i.e. not suitable for either breeding, foraging, resting and/or migration.
Possible (P)	The species has not been recorded within the defined search area. However, the species preferred habitat is known to occur within the defined search area and is of moderate value i.e. disturbed breeding conditions, constrained foraging, resting and/or migration habitat OR The species has been recorded within the defined search area. However, there is low presence of low value suitable habitat i.e. not suitable for either breeding, foraging, resting and/or migration.
Likely (L)	The species has been recorded within the defined search area. The species preferred habitat is known to occur within the defined search area and is of moderate value i.e. disturbed breeding conditions, constrained foraging, resting and/or migration habitat.
Almost Certain (AC)	The species has been frequently recorded within the defined search area. The species preferred habitat is known to occur within the defined search area and is of high value i.e. important breeding, foraging, resting and/or migration habitat

2.2 Relevant Conservation Significant Marine Fauna

The threatened and/or migratory species listed in Table 2-3 were considered to have a greater than 'possible' likelihood of being present within (1km) and/or adjacent (within 20km) to the proposed dredging footprint and spoil ground, based on the likelihood of occurrence assessment outlined in Appendix B. The assessment of impacts to marine fauna from dredging activities provided in this document has been limited to the marine fauna of Table 2-3.

Table 2-3. Threatened and/or migratory marine fauna with potential to occur within (1 km) or adjacent (20 km) to the dredging and disposal area

Species	Likelihood of Occurrence *	
	1 km	20 km
Seabirds		
Wedge-tailed Shearwater (*Ardenna pacifica)*	AC	AC
Lesser Frigatebird (*Fregata ariel)*	AC	AC
Little Tern (*Stemula albifrons)*	R	P
Shorebirds		
Red Knot (*Calidris canutus)*	U	L
Curlew Sandpiper (*Calidris ferruginea)*	U	L
Great Knot (*Calidris tenuirostris)*	R	L
Greater Sand Plover (*Charadrius leschenaultia)*	R	L
Lesser Sand Plover (*Charadrius mongolus)*	R	L
Far Eastern Curlew (*Numenius madagascariensis)*	U	L
Little Curlew (*Numenius minutus)*	R	P
Common Sandpiper (*Actitis hypoleucos)*	U	P
Marsh Sandpiper (*Tringa stagnatilis)*	R	P
Common Greenshank (*Tringa nebularia)*	R	L
Pacific Golden Plover (*Pluvialis fulva)*	R	L
Osprey (*Pandion haliaetus)*	U	L
Grey-tailed Tattler (*Tringa brevipes)*	R	L
Ruddy Turnstone (*Arenaria interpres)*	R	L
Sharp-tailed Sandpiper (*Calidris acuminata)*	U	L
Oriental Pratincole (*Glareola maldivarum)*	R	L
Broad-billed Sandpiper (*Limicola falcinellus)*	R	L

Species	Likelihood of Occurrence *	
	1 km	20 km
Asian Dowitcher (*Limnodromus semipalmatus)*	R	L
Black-tailed Godwit (*Limosa limosa)*	R	L
Whimbrel (*Numenius phaeopus)*	R	L
Sanderling (*Calidris alba)*	R	L
Terek Sandpiper (*Xenus cinereus)*	R	L
Oriental Plover (*Charadrius veredus)*	R	L
Grey Plover (*Pluvialis squatarola)*	R	L
Red-necked Stint (*Calidris ruficollis)*	R	L
Long-toed Stint (*Calidris subminuta)*	R	L
Northern Siberian Bar-tailed Godwit (*Limosa lapponica menzbieri)*	R	L
Bar-tailed Godwit (*Limosa lapponica)*	R	L
Wood Sandpiper (*Tringa glareola)*	R	P
Marine Mammals		
Humpback whale (*Megaptera novaeangliae)*	P	P
Killer whale (*Orcinus orca)*	P	P
Australian Humpback Dolphin (*Sousa sahulensis)*	P	P
Indian Ocean / Spotted Bottlenose Dolphin (*Tursiops aduncus)*	P	P
Australian Snubfin Dolphin (*Orcaella heinsohni)*	P	P
Dugong (*Dugong dugon)*	P	P
Marine Reptiles		
Loggerhead turtle (*Caretta caretta)*	L	L
Green turtle (*Chelonia mydas)*	L	L
Leatherback turtle (*Dermochelys coriacea)*	U	P
Hawksbill turtle (*Eretmochelys imbricata)*	L	L
Flatback turtle (*Natator depressus)*	AC	AC
Elasmobranchs and other fish		
Narrow sawfish (*Anoxypristis cuspidate*)	U	P
Green sawfish (*Pristis zijsron)*	U	L
Dwarf Sawfish (*Pristis clavate)*	U	P

Species	Likelihood of Occurrence *	
	1 km	20 km
Grey nurse shark (*Carcharias taurus)*	U	P
Scalloped hammerhead shark (*Sphyrna lewini)*	U	P
Giant manta ray (*Mobula birostris*)	P	P
Reef manta ray (*Mobula alfredi*)	P	L

* R=Rare, U=Unlikely, P=Possible, L=Likely, AC=Almost Certain

The marine fauna listed in Table 2-3 have been discussed in the following sections.

2.2.1 Seabirds/Shorebirds

The Pilbara coast and islands, provide various habitats as important refuge for shorebirds and seabirds. Seabirds and shorebirds are more likely to be vulnerable to indirect impacts (e.g., light pollution or hydrocarbon spill leading to degradation of breeding/foraging areas), rather than direct impacts (habitat removal) from the Project. Three seabird species with a greater than 'possible' likelihood of being present within or adjacent to the Project development the wedge-tailed shearwater, lesser frigatebird and little tern are known to breed in locations close to the Port Hedland area (Table 2-4, Figure 2-1) (Higgins and Davies 1996; Johnstone et al. 2013).

Table 2-4. Seasonal presence of breeding seabirds in Port Hedland

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Wedged-Tailed Shearwater	Breeding known									Breeding known		
Lesser Frigatebird					Breeding known							
Little Tern				Breeding known					Breeding known			

2.2.1.1 WEDGED-TAILED SHEARWATER

The global population of the wedge-tailed shearwater is estimated to number >5,200,000 individuals. Australia hosts a large proportion of the global population with approximately 1.1 million pairs breeding in Western Australia (Commonwealth of Australia 2020a). The species feeds mostly on fish, with some cephalopods and crustaceans. It catches prey mainly on the wing by dipping but also by surface-seizing or pursuit-plunging. Usually solitary or in small parties at sea, but often in large feeding flocks with other species (Commonwealth of Australia 2020a).

The wedge-tailed shearwater is a common breeding visitor to the Pilbara coast, although colonies are concentrated on offshore islands located to the west of the Port Hedland area (Johnstone et al. 2013). The closest islands being those offshore from Balla Balla (Depuch Island, Sable Island, Ronsard Island) ~90km south-west of Port Hedland. As such, the area around these islands has been identified as a Biologically Important Area (BIA) for breeding and foraging (DCCEEW 2025)

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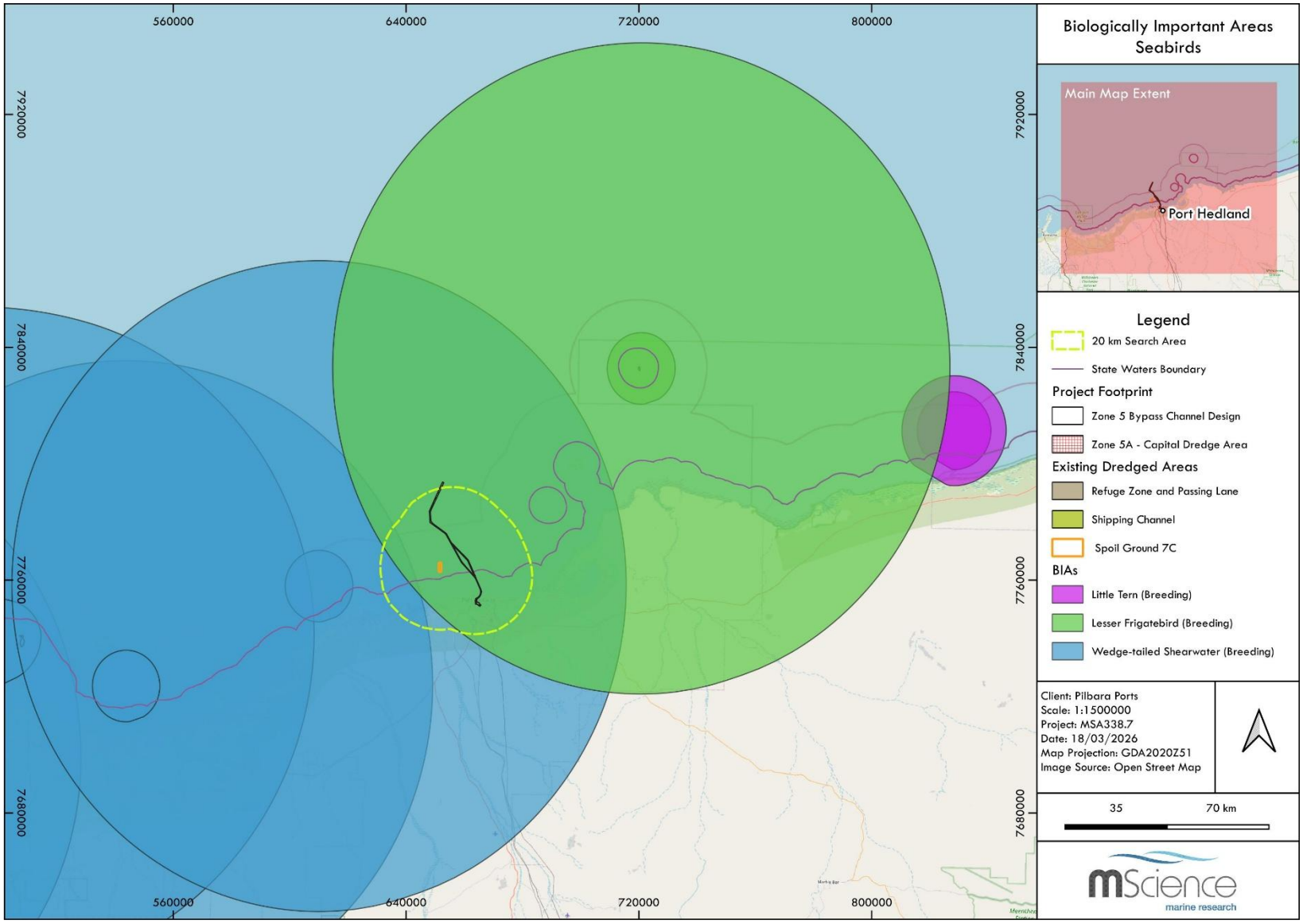

Figure 2-1. Biologically important areas for Project relevant seabirds

The wedge-tailed shearwater is listed as Migratory under the EPBC Act BC Act. Australia has no adopted or made recovery plan for the species. However, the wedge-tailed shearwater is covered under the Australian wildlife conservation plan for seabirds (Commonwealth of Australia 2020a).

It is possible that during breeding, adults will forage in the waters adjacent to the Project development, as indicated by the overlap of a BIA. However, due to low abundance of prey species, large numbers are not expected. Individuals may pass through the area enroute to more optimal foraging areas.

2.2.1.2 LESSER FRIGATEBIRD

The global population of the lesser frigatebird is widespread across tropical and subtropical regions of the Indian and Pacific Oceans. In Australia, the species breeds on several offshore islands along the Pilbara and Kimberley coasts. Lesser frigatebirds feed primarily on fish and squid, catching prey on the wing or by kleptoparasitism from other seabirds (Commonwealth of Australia 2020a). Usually seen singly or in small groups, they occasionally form larger feeding aggregations with other seabird species.

The lesser frigatebird is a breeding visitor to the Pilbara, with a major colony located on Bedout Island, approximately 90 km northeast of the Project footprint. Bedout Island is recognised as an Important Bird and Biodiversity Area (IBA) as it is home to 1% of the world's population of lesser frigatebirds, supporting over 2,000 breeding pairs prior to Cyclone Ilsa in 2023 which impacted 80–90% of all individual birds nesting on the island (Lavers et al. 2024).

The species is listed as Migratory under the EPBC Act. While there is no dedicated recovery plan, lesser frigatebird populations are covered under regional seabird conservation frameworks. BIAs have been mapped for the species, including breeding and foraging around Bedout Island (DCCEEW 2025).

It is possible that during breeding, adults will forage in the waters adjacent to the Project development. However, the reduction in adult numbers caused by Cyclone Ilsa in 2023 may temporarily reduce the frequency of use of these waters, with recovery expected over subsequent years.

2.2.1.3 LITTLE TERN

The global population of the little tern is estimated to number 190,000–410,000 individuals (Commonwealth of Australia 2020a). It is estimated that there are 3,000 breeding birds in the Australian breeding population (DCCEEW 2021). The species breeds on barren or sparsely vegetated beaches, islands and spits or in estuaries, saltmarshes, saltpans, offshore coral reefs, rivers, lakes and reservoirs. Its diet consists predominantly of small fish and crustaceans 3-6 cm long as well as insects, annelid worms and molluscs. At Port Hedland Saltworks the population is typically 20–30 birds and is essentially resident over Sept.–April (Johnstone et al. 2013).

There are at least two separate populations of the little tern in Australia: a non-breeding population from Asia and an Australian breeding population (DCCEEW 2021). The northern breeding population is very poorly known. Some sources have said that it breeds at different times of year than the south-eastern population, but recent information is showing a more complex breeding pattern for the northern population. It has been noted breeding nearly all year, but tending to two main periods: one between late April and July; another between September and early January.

The species is listed as Migratory under the EPBC Act. BIAs have been mapped for the species, the closest to the Project being an area for breeding at Eighty Mile Beach ~200 km east of Port Hedland (DCCEEW

2025). It is possible that during breeding, adults nesting at the Port Hedland Saltworks will forage in the waters adjacent to the Project development. However, large numbers are not expected due to the lack of suitable foraging habitat.

2.2.1.4 SHOREBIRDS

Australia is situated within the East Asian–Australian (EAA) Flyway, a geographic region supporting populations of migratory shorebirds throughout their annual cycle (Bamford et al. 2008). Although exact timing varies between species, an approximate annual cycle for shorebirds in the EEA Flyway has been identified as: breeding (May to August); southward migration (August to November); non-breeding (December to February); and northward migration (March to May).

All the shorebirds identified in Table 2-3 are non-breeding visitors to Australia and are unlikely to be found within the offshore area proposed for dredging. During the non-breeding period in Australia, these migratory shorebirds are typically found in coastal and inland habitats where adult birds build up the energy reserves necessary to support northward migration and subsequent breeding (Bamford et al. 2008).

The distribution and abundance of migratory shorebirds in the Port Hedland area has been reported previously for the BHP Outer Harbour Development (Bennelongia 2011) and Spoilbank Marina Project (Bamford Consulting 2019). Those studies concluded sediment (sand and mud) flats on open shorelines, particularly between Pretty Pool and Six Mile Creek, provided the most valuable shorebird foraging habitat in the area.

Bamford et al. (2008) estimated numbers of migratory waterbird species in the Gascoyne/Pilbara area. The numbers reported from the Port Hedland studies are insignificant in comparison, in most cases. Species with around 10% or greater of the estimated number in the Pilbara/Gascoyne recorded around Port Hedland include: Bar-tailed Godwit (9.0%), Whimbrel (10.6%), Grey-tailed Tattler (11.8%), Sanderling (73.0%) and Greater Sand-Plover (15.2%). Of these, the Sanderling is of note as the Port Hedland region number is close to the 1% criterion for the species in the entire East Asian/Australasian Flyway (Bamford et al. 2008).

The shorebirds identified in Table 2-2 are unlikely to be found within the Project development due to its offshore location. Individuals may pass through the area enroute to more optimal foraging areas.

2.2.2 Marine Mammals

The marine and coastal environment offshore of Port Hedland includes a unique combination of inshore reef and seagrass habitats and deeper water within channels between offshore islands, providing diversity in habitats able to support a variety of marine mammal species, including whales, dolphins and dugong.

2.2.2.1 HUMPBACK WHALE

The Project area is within a BIA for migration of the species. Humpback whales migrate from feeding grounds in the Antarctic to breeding grounds in Camden Sound in the Kimberley region of Western Australia. A population of 33,000 humpback whales are known to make this migration annually (Salgado Kent et al. 2012). The north bound migration peaks adjacent to the Port Hedland area between approximately late July and early August. The peak of the south bound migration occurs during late August and mid-October (Table 2-5, Figure 2-2).

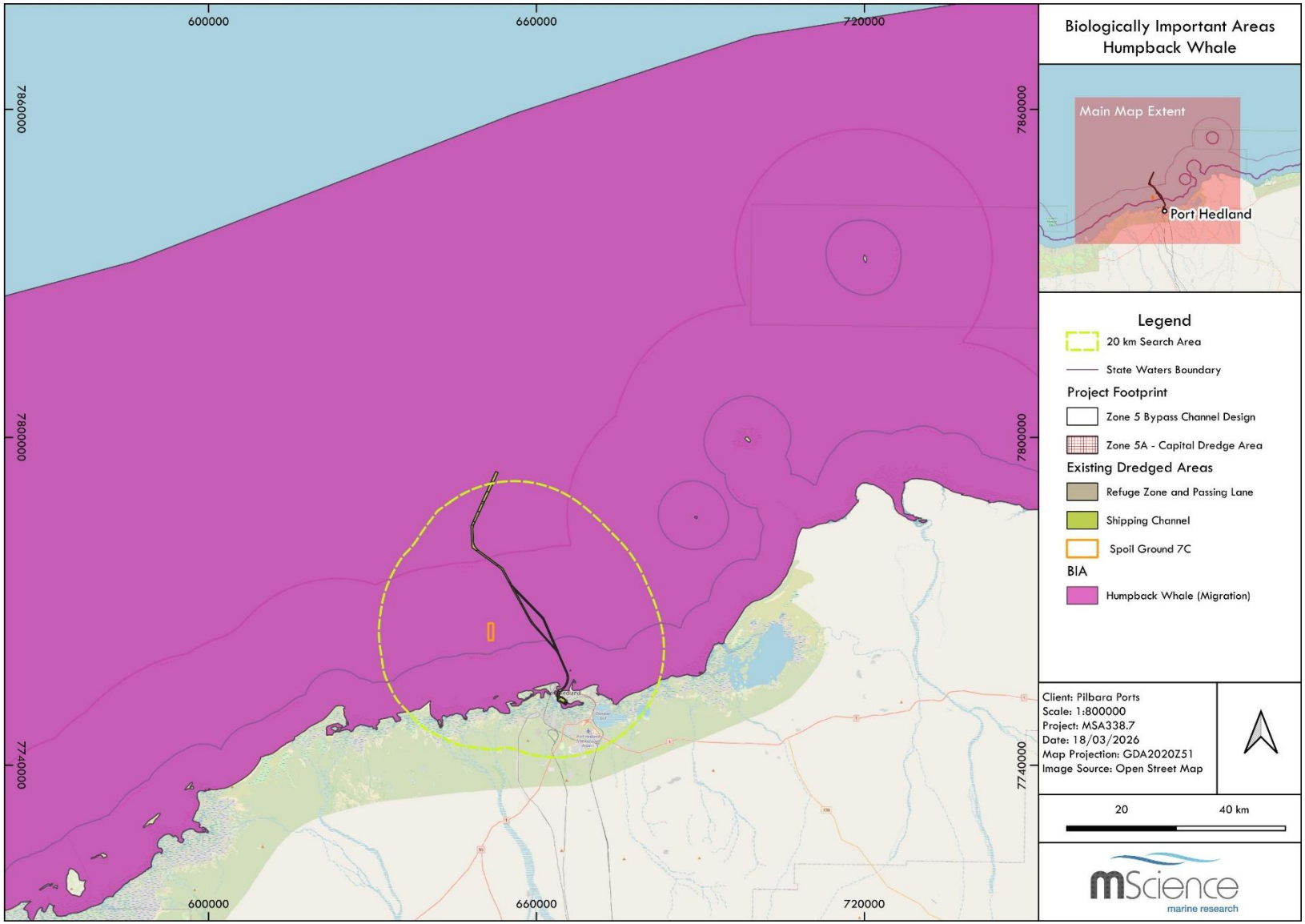

Figure 2-2. Biologically important area for the humpback whale relevant to the Project

Jenner et al. (2001) suggested that the majority of migrating whales are found in waters deeper than 50 m; however, some individuals come closer to shore, particularly during the southern migration.

Table 2-5. Peak (dark grey) migration periods for humpback whales in the Port Hedland area

Species	Activity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Humpback Whale	Northern Migration												
	Southern Migration												

The Port Hedland region is not a known feeding, aggregation or major calving area for this species (Jenner and Jenner 2009; Jenner and Jenner 2011).

Humpback whales are listed as Migratory under the EPBC Act and as Conservation Dependant fauna under the BC Act. Their global (non-statutory) listing by the IUCN is Least Concern. There is no current Recovery Plan for the species.

The greatest threats to humpback whales in WA are vessel strike, entanglement in marine debris and human-made underwater noise, in particular, high decibel impulsive sound sources such as pile driving (resulting in hearing impairment, organ damage, communication interference, elevated stress levels and/or avoidance of important habitat).

Humpback whales have been recorded within Port Hedland, and the area is listed as a BIA for migration of the species. As such, whales may be present in the outer Port Hedland harbour and Spoil Ground 7C during the known migrations.

2.2.2.2 KILLER WHALE

The killer whale has a widespread distribution from polar to equatorial regions of all oceans and has been recorded in waters off all states of Australia (Bannister et al. 1996). Killer whales appear to be more common in cold, deep waters; however, they have been observed along the continental slope and shelf of northwestern Australia (Bannister et al. 1996), as well as offshore of Port Hedland (ABC News 2024)

The species distribution and occurrence in Australia strongly reflect locations of prey aggregation, particularly breeding and feeding grounds (Morrice 2004), such as those of the humpback whale (Pitman et al. 2015).

The killer whale is listed as Migratory under both the EPBC Act and BC Act. Australia has no adopted or made recovery plan for the species.

Given the wide distribution of killer whales and their preference for colder, deeper waters, individuals are unlikely to occur in waters adjacent to the proposed dredging area.

2.2.2.3 AUSTRALIAN HUMPBACK DOLPHIN

Australian humpback dolphins are limited to the shallow (< 30 m deep) tropical/subtropical coastal waters of the Sahul shelf of northern Australia and the southern waters of Papua New Guinea (Allen et al. 2012). In the north-west of Australia, the species has been recorded between Coral Bay and Roebuck Bay (Allen et al. 2012). However, there is a paucity of studies into distribution of the Australian humpback

dolphin in the region or across WA more broadly. In the Pilbara, the species has been recorded up to 50 km from the mainland, however this finding was possibly associated with the location of offshore islands (Hanf et al. 2022).

The Australian humpback dolphin is listed as Migratory under the EPBC Act and Priority 4 under the BC Act. Australia has no adopted or made recovery plan for the species.

In addition to potential direct impact from vessel strike, humpback dolphins are at high risk from sub-lethal effects of habitat disturbance due to their high site fidelity and small, discrete populations that spatially overlap with human activity (i.e., coastal development; petroleum exploration; commercial fishing; recreational boating) (Allen et al. 2012). Underwater noise has the potential to cause direct harm, or effect hearing through masking and hinder communication ability which is important for maintain social structure and natural behaviours.

The waters within and adjacent to the dredging area and spoil grounds are consistent with habitats of known presence, and therefore, individuals may traverse the area.

2.2.2.4 INDIAN OCEAN / SPOTTED BOTTLENOSE DOLPHIN

Indian-Ocean bottlenose dolphins occur in tropical and sub-tropical, shallow waters from South Africa to the Red Sea and eastwards to the Arabian Gulf, India, China and Japan, southwards to Indonesia and New Guinea, and New Caledonia. Within Australia the species is restricted to inshore areas such as bays and estuaries, nearshore waters, open coast environments, and shallow offshore waters, around the whole Australian coast (Allen et al. 2012).

Prince (2001) undertook aerial surveys of marine mammals and other large fauna of the Pilbara coast and concluded that Pilbara coastal waters support small populations of dolphins, the majority of which appear to be bottlenose. Frequent sightings of Indian Ocean bottlenose dolphins in the waters of Port Hedland are reported in Allen et al. (2012).

Indian Ocean bottlenose dolphins are listed as Migratory under both the EPBC Act and BC Act. There is no adopted or made recovery plan for the species in Australia.

Like the humpback dolphin, bottlenose dolphins are also susceptible to vessel strike, habitat disturbance and underwater noise.

Given the known sightings of this species, Indian Ocean bottlenose dolphins may occur in waters adjacent to the dredging area and spoil grounds.

2.2.2.5 AUSTRALIAN SNUBFIN DOLPHIN

Australian Snubfin dolphins are found in the North-west Marine Region in nearshore state waters along the coast from Cape Londonderry south to Roebuck Bay, with records of vagrants as far south as Exmouth Gulf. They have been recorded within the Dampier Archipelago, Port Hedland, Cable Beach and Roebuck Bay from the Montebello Islands, Exmouth Gulf and the North West Cape (Allen et al. 2012).

Australian Snubfin Dolphins share similar habitat preferences with Australian humpback dolphins. Feeding may occur in a variety of habitats, from mangroves to sandy bottom estuaries and embayments, to rock and/or coral reefs. Feeding primarily occurs in shallow waters (less than 20 m) close to river mouths and creeks.

The Australian snubfin dolphin is listed as Migratory under the EPBC Act and Priority 4 under the BC Act. Australia has no adopted or made recovery plan for the species.

The Australian snubfin dolphin could potentially be impacted by vessel strike, habitat disturbance and underwater noise.

The waters within and adjacent to the dredging area and spoil grounds are consistent with habitats of known presence, and therefore, individuals may traverse the area.

2.2.2.6 DUGONG

Dugongs are usually found in large numbers only in shallow waters supporting extensive seagrass meadows. The species has been sighted near Little Turtle Island offshore of Port Hedland, although the observers could not determine if the animals were feeding, resting or traveling (SKM 2011).

Dugong distributions are known to be directed towards seagrass beds, and there are no extensive seagrass meadows within or adjacent to the Project development envelope (MScience 2025; SKM 2009). The Dugong's reproductive cycle is sensitive to food availability; breeding is delayed if sufficient food is not available.

Dugongs are listed as Migratory under the EPBC Act and as Other Protected Fauna under the BC Act. Their global (non-statutory) listing by the IUCN is Near Threatened. Dugongs are species of high cultural and conservation significance in Australia and many other coastal regions globally. Australia has no adopted or made recovery plan for dugongs.

Vessel strike, habitat loss and habitat degradation have been identified as key threatening processes for dugongs.

Due to the absence of seagrass habitat in waters within or adjacent to the dredging area and spoil grounds, dugongs are highly unlikely to occur regularly or in large numbers adjacent to the dredging area or spoil grounds. Individuals may infrequently transit between suitable foraging habitats.

2.2.3 Marine Reptiles

Five threatened and/or migratory turtle species have been identified as potentially occurring within and/or adjacent to the dredging area and spoil grounds; Green (*Chelonia mydas*), Hawksbill (*Eretmochelys imbricata*), Flatback (*Natator depressus*), Loggerhead (*Caretta caretta*) and Leatherback Turtle (*Dermochelys coriacea*). Knowledge of loggerhead turtle populations within the Port Hedland area is sparse. Leatherback turtles are occasional visitors to Western Australian waters and have not been documented nesting. The green and hawksbill turtle are known to commonly nest on beaches in the Pilbara Region, but only the flatback turtle is known to nest in the Port Hedland area (Table 2-6, Figure 2-3) (Commonwealth of Australia 2017; Pendoley 2005; Prince 1993).

Marine turtles have high nesting beach fidelity, returning to the same beach from where they were born to lay their eggs. Nesting sites are selected carefully as nests can be disrupted by flooding or erosion (as well as feral animals such as cats and foxes). After a period of incubation (in which time sand temperature will influence the male-female sex ratio), hatchlings will emerge and head to the open ocean using natural navigation cues. It is at this time where turtles are at their most vulnerable, with high levels of predation by native (e.g., seabirds, goannas, sharks) and introduced (e.g., cats, foxes) animals. Should they become disorientated, their path to the ocean will become less direct, which increases predation

risk, or they may not be able to find the ocean at all. Many aspects of the post-hatchling period are unknown.

Key threats to marine turtles are light pollution (i.e., disturbance to nesting behaviour and misorientation of turtle hatchlings), direct habitat removal, degradation of nesting and foraging areas, vessel strike, underwater noise and entrainment from dredgers.

Table 2-6. Peak (dark grey) activity of foraging, nesting/inter-nesting female turtles and emerging hatchlings of relevant species in the Pilbara

Species	Activity	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Green Turtle	Nesting/Inter-nesting												
	Emergence												
	Foraging												
Hawksbill Turtle	Nesting/Inter-nesting												
	Emergence												
	Foraging												
Flatback Turtle	Nesting/Inter-nesting												
	Emergence												
	Foraging												

2.2.3.1 FLATBACK TURTLE

Mundabullangana, located approximately 50 km west of Port Hedland, supports a regionally important flatback turtle rookery. This population is considered one of the largest nesting flatback turtle populations in the world (Pendoley 2009). Eighty Mile Beach, approximately 280 km north-east of Port Hedland Harbour, is thought to support a similar size nesting population to Mundabullangana. Flatback turtle nesting has been recorded across a number of mainland beaches and offshore islands within the Port Hedland area. These nesting beaches, and inter-nesting buffer, are designated BIAs (Figure 2-3). A low to moderate density of nesting has been recorded at Cemetery Beach, Paradise Beach, Pretty Pool and Cooke Point, whilst a very low density of nesting has been recorded at Downes Island (Pendoley 2009). None of these rockeries are considered regionally significant when compared with the rockery at Mundabullangana. Nesting at Cemetery Beach typically occurs between October and February, peaking between November and January with hatchling emergence occurring between December and March (Table 2-6) (Pendoley 2019). Inter-nesting activities are likely to occur during the same period of nesting.

Concentrations of resident foraging turtles have been found to be generally located around the offshore islands, including North and Little Turtle Islands, in creek mouths, over shallow intertidal platforms and out from the De Grey River mouth. North Turtle Island is considered to be a biologically important foraging area for the species (Pendoley 2005).

Knowledge of the inter-nesting movements of flatback turtles within the Port Hedland area is provided by satellite tracking of 16 individuals nesting at Cemetery Beach (Pendoley 2009). During inter-nesting,

some individuals remained relatively close (within 10 km) to the nesting beach in shallow coastal waters (<3 m depth), whilst others were observed to travel over 50 km from the nesting beach. The principal inter-nesting habitat utilised by flatback turtles nesting at Cemetery Beach was to the north and northeast of the nesting beach.

Flatback turtles are listed as Vulnerable and Migratory under the EPBC Act and BC Act. Their conservation is managed under the most recent Recovery Plan for Marine Turtles in Australia (Commonwealth of Australia 2017).

Inter-nesting and foraging adult flatback turtles may occur in the waters within and adjacent to the dredging footprint; however, large numbers are not expected, given the lack of significant foraging habitat within the dredge footprint and known movements of inter-nesting turtles to the northeast of Cemetery Beach, away from the Proposal footprint.

2.2.3.2 GREEN TURTLE

Very little green turtle nesting has been recorded within the Port Hedland area (Pendoley 2009).

The intertidal platform at North Turtle Island is considered to be a significant foraging habitat for green turtles. As such, the North Turtle/Little Turtle islands and De Grey River area is a designated BIA for this behaviour (Figure 2-3). Other foraging habitats include Weerdee Island, in creek mouths, over shallow intertidal platforms and within the Inner Harbour of the port.

Green turtles are listed as Vulnerable and Migratory under the EPBC Act and BC Act. Their conservation is managed under the most recent Recovery Plan for Marine Turtles in Australia (Commonwealth of Australia 2017).

Foraging and migrating green turtles may occur in the waters adjacent to the dredging and disposal areas; however, large numbers are not expected given the lack of significant foraging habitat and based on understanding of known migration routes (usually offshore in depth of 12 to 80 m).

2.2.3.3 HAWKSBILL TURTLE

Very little hawksbill turtle nesting has been recorded within the Port Hedland area (Pendoley 2009).

Hawksbill turtles are found within rock and reef habitats, coastal areas and ponds. They are known to forage amongst vertical underwater cliffs, on coral reefs and on gorgonian (soft coral) flats, as well as seagrass or algae meadows (Limpus 2009a). The species has been recorded from satellite transmitters as spending time in the vicinity of North Turtle Island, given the presence of sponges for foraging. As such, the North Turtle/Little Turtle islands and De Grey River area is a designated BIA for foraging for the species (Figure 2-3).

Hawksbill turtles are listed as Vulnerable and Migratory under the EPBC Act and BC Act. Their conservation is managed under the most recent Recovery Plan for Marine Turtles in Australia (Commonwealth of Australia 2017).

Foraging and migrating hawksbill turtles may occur in the waters adjacent to the dredging footprint; however, large numbers are not expected, given the lack of significant foraging habitat and our understanding of known migration routes (usually offshore in depth of 12 to 80 m).

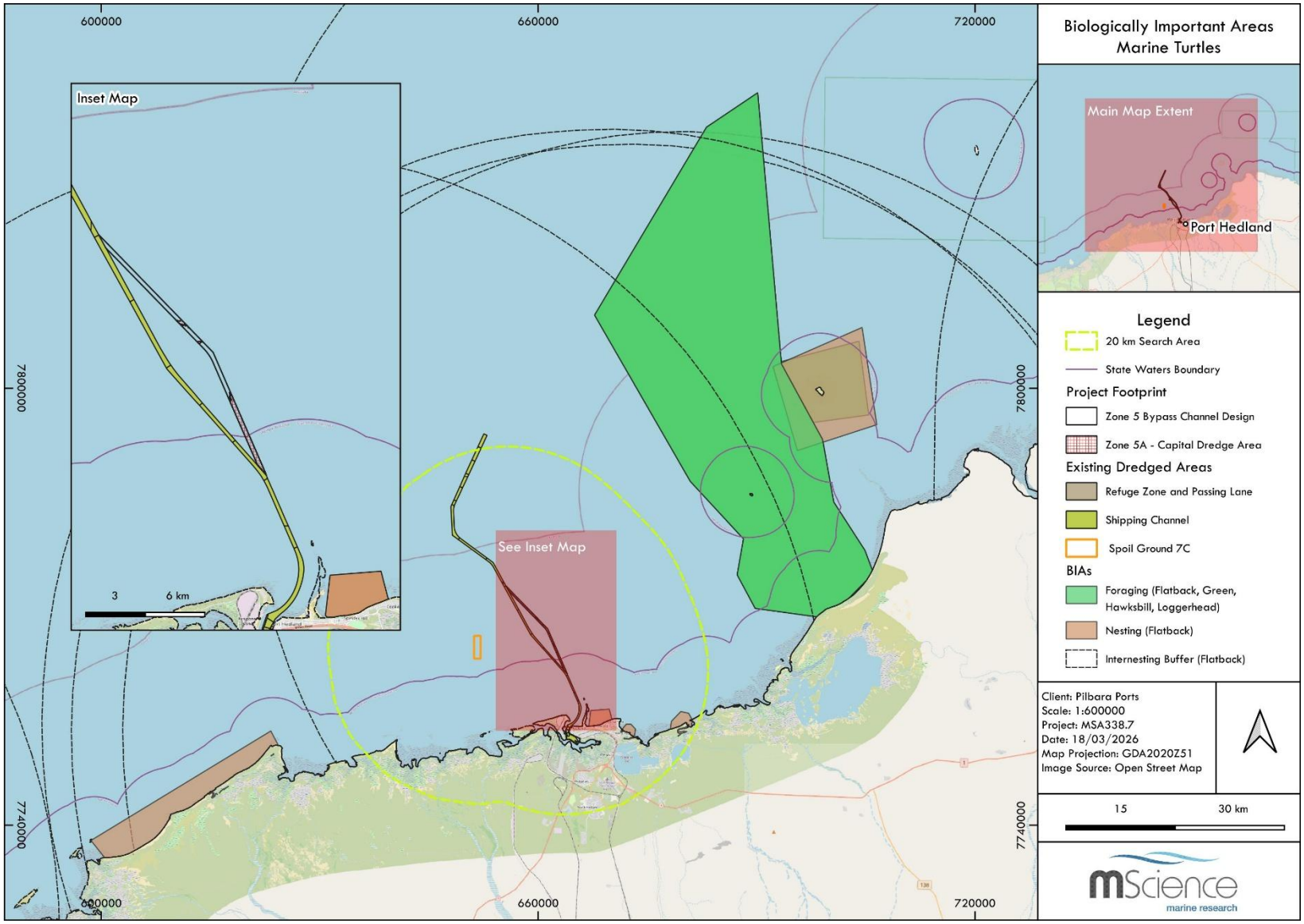

Figure 2-3. Biologically important areas for Project relevant marine turtle species

2.2.3.4 LOGGERHEAD TURTLE

Knowledge of loggerhead turtle populations at Port Hedland is sparse, and no loggerhead turtle nesting has been recorded within the Port Hedland area (Pendoley 2009).

The Western Australian loggerhead turtle stock is one of the largest in the world and is distributed from the Gascoyne (Dirk Hartog Island) to Pilbara (Varanus Island) Regions (Commonwealth of Australia 2017). Loggerhead turtles are a nearshore species which prefer warm, shallow continental shelves and coastal bays and estuaries (Limpus 2008a). The species feed in a wide range of tidal and subtidal habitats including coral and rocky reefs, seagrass meadows, and soft-bottomed sand or mud areas. The North Turtle/Little Turtle islands and De Grey River area is a designated BIA for foraging for the species (Figure 2-3).

Loggerhead turtles are listed as Endangered and Migratory under the EPBC Act the BC Act. Their conservation is managed under the most recent Recovery Plan for Marine Turtles in Australia (Commonwealth of Australia 2017).

Foraging and migrating loggerhead turtles may occur in the waters adjacent to the dredging footprint. However, significant numbers are not expected, given the sparsity of optimal foraging habitat.

2.2.3.5 LEATHERBACK TURTLE

No major leatherback turtle rookeries are known to occur in Western Australia, with scattered nesting reported in Queensland only (Limpus 2009b; Prince 2001). Leatherback Turtle diet is dominated by gelatinous organisms such as jellyfish, salps, squid and siphonophores, which influences their distribution, both in the open ocean and close to shore (Limpus 2009b).

Leatherback turtles are listed as Endangered and Migratory under the EPBC Act the BC Act. Their conservation is managed under the most recent Recovery Plan for Marine Turtles in Australia (Commonwealth of Australia 2017).

It is possible transient leatherback turtles may pass through waters offshore of Port Hedland, but due to lack of significant food sources, individuals are not expected within the proposed dredging area.

2.2.4 Elasmobranchs and Other Fish

Listed threatened and/or migratory elasmobranch species with the potential to occur within and/or adjacent to the dredging and disposal areas include the grey nurse shark (*Carcharias taurus*), scalloped hammerhead shark (*Sphyrna lewini*), giant manta ray (*Mobula birostris*) and reef manta ray (*Manta alfredi*). The PMST also identified two threatened (listed as Vulnerable) sawfish species: the green sawfish (*Pristis zijsron*) and dwarf sawfish (*P. clavate*), and the Migratory narrow sawfish.

2.2.4.1 SAWFISH

The known distribution of sawfish species in north-western Australia has been based on targeted sampling or discovery/donation of sawfish rostrum (Morgan et al. 2011). The closest targeted sawfish surveys to the Project development have occurred at Onslow (Morgan et al. 2015; Morgan et al. 2017). Nursery sites for newborn sawfish pups are generally found in shallow, nearshore habitats often in close proximity to river mouths (Morgan et al. 2011). The dredging area is not located close to a river mouth. Of the three species of sawfish identified as having the potential of occurring in proximity to the dredging

area only the green sawfish has been confirmed through sightings in the Port Hedland area (Morgan et al. 2019; Morgan et al. 2011).

The known distribution of the green sawfish is from the Whitsundays in Queensland across northern Australian waters to Shark Bay in WA. They are known to primarily occur in inshore and offshore marine waters, or in shallow estuarine waters, however, the species does not inhabit freshwater. Green sawfish generally have a very small home range, occupy very shallow waters and are likely to avoid areas of high vessel traffic, such as Pilbara Ports facilities (Morgan et al. 2017).

The dwarf sawfish usually inhabits shallow (2–3 m) coastal waters and estuarine habitats, often influenced by large tides. Estuarine habitats are used as nursery areas by dwarf sawfish, with immature juveniles remaining in these areas up until three years of age. The majority of capture locations and donated rostra in Western Australia have been between King Sound and Cape Keraudren (Morgan et al. 2011).

In Australia, the Narrow Sawfish is found across northern Australia from the Pilbara Coast in WA to Broad Sound (Queensland). It is a bentho-pelagic species that inhabits coastal and estuarine habitats. It occurs to depths of at least 40 m (Last and Stevens 2009). Adults mainly occur offshore while juveniles and pupping females require inshore and estuarine habitats.

Research and commentary provided by Dr David Morgan (Harry Butler Institute) to support the Port Hedland Spoilbank Marina Project have stated that sawfish have a home range of approximately 400 km. A collation of recent records occurring after 2010 of sawfish recorded or caught between 80 Mile Beach and south to Karratha, totalled 66 sightings, with16 located at Port Hedland (Morgan et al. 2019).

Green, dwarf and narrow sawfish are all listed as Vulnerable and Migratory and marine under the EPBC Act. Under the BC Act, green sawfish is listed as Vulnerable and dwarf sawfish are Priority 1. At the international level dwarf sawfish are listed as Endangered and green Critically Endangered. Their conservation is managed under the Sawfish and River Sharks Multispecies Recovery Plan (DoE 2015).

Globally, overfishing and habitat alteration have caused major declines in sawfish populations. In relation to coastal development, key threats to sawfish include habitat degradation from changes to coastal processes and reduction in water quality (DoE 2015).

Considering the home range of sawfish, their preference for shallow coastal waters and the availability of these suitable habitats along the Pilbara coast, it is considered that sawfish are unlikely to be present in waters within the proposed dredging area.

2.2.4.2 SHARKS AND RAYS

The grey nurse shark (west coast population) has a broad inshore distribution, primarily in sub-tropical to cool temperate waters, and is predominantly found in the south-west coastal waters of Western Australia (Last and Stevens 2009). The species is listed as Vulnerable under both the EPBC Act and BC Act. Australia has no adopted or made recovery plan for grey nurse sharks. The species tend to be found in groups at specific aggregation sites around inshore rocky reefs or islands (Otway et al. 2003). The grey nurse shark has been recorded along the North West Shelf, but their distribution in Western Australia is largely confined to the south-west coastal waters (Commonwealth of Australia 2014) and there are no known aggregation sites in Western Australia (Chidlow et al. 2005).

The scalloped hammerhead was given a Conservation Dependent listing under the EPBC Act by the threatened species scientific committee (TSSC) in 2018 (TSSC 2018). They are mobile animals that range widely over shallow coastal shelf waters. The species has a circum-global distribution in tropical and sub-tropical waters that shows strong genetic population structuring across ocean basins as it rarely ventures into or across deep ocean waters (TSSC 2018). The scalloped hammerhead is known to form large migratory schools and in Australia tend to move south during the warmer months. Adults inhabit waters adjacent to continental shelves, in water depths ranging from the surface to at least 275 m in depth, while juveniles are found close to shore in nursery habitats. Adult females are thought to occupy deeper water and move into shallower waters to mate and give birth (TSSC 2018).

Both the reef manta ray and giant manta ray are listed as Migratory under the EPBC Act and BC Act. There is no adopted or made recovery plan for either species in Australia. The reef manta ray is commonly sighted on the continental shelf, around tropical and subtropical coral and rocky reefs, islands and along coastlines, preferentially occupying shallow depths < 20 m (Armstrong et al. 2020). Reef manta rays are capable of long-distance dispersal when habitat is continuous but also display a high degree of site fidelity. The giant manta ray has a circumglobal distribution and is considered an oceanic species found predominantly in cooler, temperate to subtropical waters (Last and Stevens 2009).

The waters within and adjacent to the Project development are consistent with habitats of known presence for the reef manta ray and juvenile scalloped hammerhead sharks, and therefore, individuals of these species may traverse the area but are likely to avoid areas of high vessel traffic, such as Pilbara Ports facilities.

2.2.4.3 OTHER FISH

Thirty-one fish species from the family *Sygnathidae*, listed as other protected matters under the EPBC Act, have been identified as potentially occurring within the PMST area.

Fish species of the Port Hedland region have not been well surveyed although they are expected to include a sub-set of the fish recorded at the Dampier Archipelago, approximately 250 km to the west.

Hutchins (2004) studied the shallow-water fish fauna of the Dampier Archipelago (to a depth of 30 m) and found it comprised a total of 650 species and featured a prominent component of coral reef species (465) and to a lesser extent mangrove species (116), soft bottom inhabitants (106 species) and a relatively low number of pelagic species (67). Larger species that attract divers and recreational and commercial fishers include coral trout (*Plectropomus spp*.), tusk fish (*Cheorodon spp*.), rock cod, large potato cods (*Epinephelus tukula*) and manta rays (*Manta birostris*). Although this survey was biased towards reef fishes, the survey also considered soft bottom and mangrove habitats as well as the pelagic environment. Hutchins found that species diversity was highest in areas of high topographic diversity, particularly along the northern perimeter of the archipelago. By comparison, the topography of the Port Hedland region consists of relatively low relief limestone ridgeline formations that support only sparse hard coral habitat, and consequently is expected to also support a less diverse suite of fish species.

Due to the lack of complex benthic habitats in waters adjacent to the dredging area, neither high abundance nor diversity of fish species are expected.

3 MARINE FAUNA OF KEY CONCERN TO THE PROJECT

The following sections assess the known threats to the Project relevant listed marine fauna against potential Project impact pathways to allow identification of the species of key concern.

3.1 Seabirds and Shorebirds

On the basis of the following information, no seabird or shorebird species was considered to be of key concern to the Project. The risk of impact to seabirds and shorebirds was considered unlikely, especially with application of appropriate management and mitigation measures for operation of the dredge vessel, such as best practice lighting and hydrocarbon spill management.

Three species of seabird (wedge-tailed shearwater, lesser frigatebird and little tern) and 29 species of shorebird were assessed to have a greater than 'potential' likelihood of occurring within 20 km of the Project dredge and disposal footprint. The shorebird species identified were considered unlikely to be found within the Project footprint due to its offshore location, however individuals may pass through the area enroute to more optimal foraging areas. It is possible that during breeding, adult wedge-tailed shearwater, lesser frigatebird and little tern may forage in the waters adjacent to the Project development.

The greatest threats to seabirds and shorebirds from the Project are likely to be from indirect impacts, e.g. artificial light spill or hydrocarbon spill, rather than direct impacts.

The National Light Pollution Guidelines for Wildlife (2020b) provides a comprehensive review on the effects of artificial light on light sensitive marine fauna. The following information is based on the National Light Pollution Guidelines for Wildlife (Commonwealth of Australia 2020b), unless cited otherwise. Artificial light can disorientate seabirds and shorebirds causing collision, entrapment, stranding, grounding and interference with navigation. The degree of disruption varies by species, however all species active at night are vulnerable, although artificial light has been shown to help some nocturnal shorebird species to forage. Fledgling seabirds are known to be more affected by artificial light than adults due to the synchronised mass exodus of fledglings from their nesting sites. Artificial light up to 15 km away has been shown to effect fledgling seabirds. Bedout Island supports the closest known breeding site to the Project dredge footprint for a relevant listed seabird species (wedge-tailed shearwater and lesser frigatebird), ~90 km away to the east.

The physical aspects of light that have the greatest impact on seabirds include intensity and colour (wavelength). Long wavelength, low intensity light has been identified as least disruptive in the case of the shearwater species. There is evidence that night-time lighting of migratory shorebird foraging areas may benefit the birds by allowing greater visual foraging opportunities. However, where nocturnal roosts are artificially illuminated, shorebirds may be displaced, potentially reducing their local abundance if the energetic cost to travel between suitable nocturnal roosts and foraging sites is too great. Artificial lighting could also act as an ecological trap by drawing migratory shorebirds to foraging areas with increased predation risk. The shorebird species that frequent the Port of Port Hedland will be well habituated to the existing levels of artificial light so are unlikely to be significantly impacted by artificially light spill from a single dredge vessel.

The risk of an unplanned waste discharge or hydrocarbon spill from the dredge vessel is considered low when taking into consideration Pilbara Ports existing industry standard port operating procedures to prevent hydrocarbon and other spills into the marine environment. In addition, all vessels within port

limits must manage wastes in accordance with the Port of Port Hedland requirements appropriate to the class of vessel (including Australian Marine Safety Authority [AMSA] and International Convention for the Prevention of Pollution from Ships [MARPOL] legislative requirements)

3.2 Marine Mammals

The humpback whale was considered to be of key concern out of the listed marine mammal species relevant to the Project. This assessment was made based on the following information.

The greatest threats to the marine mammals identified to have the potential to occur within the Project development (humpback whale, humpback dolphin, Indo-Pacific bottlenose dolphin, dugong etc) are vessel strike, habitat degradation and underwater noise.

Underwater sound levels from dredging activities are known to be similar to levels reported for underwater sound associated with commercial shipping, being between 160 to 185 dB re 1µPa at 1 m from the dredge vessel (CEDA 2011; McQueen *et al.* 2019; OSPAR 2009; Reine *et al.* 2014). The National Marine Fisheries Service Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (NMFS 2024) outlines the criteria for effect of continuous (non-impulsive) noise exposure criteria for marine mammals (Table 3-1). The guidance provides the frequency-weighted accumulated sound exposure levels (SEL_{24h}) for the onset of permanent or temporary hearing damage/and or impairment, termed permanent threshold shift (PTS) and temporary threshold shift (TTS), respectively. The threshold for a marine mammal behaviour response (displacement, avoidance, communication interference) is 120 dB re 1 µPa. Relevant to this assessment, the humpback whale is part of the low frequency (LF) cetacean group, Indo-Pacific bottlenose dolphin and Australian humpback dolphin are part of the high frequency (HF) Cetacean group and Dugong is part of the Sirenian (SI) group.

Table 3-1. Criteria for effect of non-impulsive noise exposure for marine mammals

Marine Mammal Group	Dredge Vessel Source Level	Behaviour	PTS onset thresholds	TTS onset thresholds
	SPL	SPL	Weighted SEL_{24h}	Weighted SEL_{24h}
Cetacean - Low Frequency (LF)	160 to 185	120	197	177
Cetacean – High Frequency (HF)			201	181
Sirenian (SI)			200	180

Sound Pressure Level (SPL) thresholds are in dB re 1 µPa

Sound Exposure Level (SEL) thresholds are in dB re 1 μPa^2s. SEL_{24h} denotes cumulative sound exposure over a 24 h period.

The threshold criteria outlined in Table 3-1 indicate permanent injury from a dredging noise source as being unlikely to any marine mammal group i.e. PTS onset thresholds are not exceeded by dredging sound source level. An underwater noise modelling study was completed for offshore dredging associated with the Spoilbank Marina Proposal in Port Hedland (Talis 2020). The study was based on a dredging sound source of 182 dB re 1µPa and showed the underwater noise attenuated below the TTS onset thresholds for each marine mammal group within tens of meters of the sound source. Noting that an animal could only be exposed to the sound level associated with impairment if it remained in that

location for 24 hours. It is considered that impacts to marine mammals from continuous noise generated during dredging activities will be a temporary behavioural response. Therefore, there is no pathway for a significant impact from underwater noise generated by dredging activities on marine mammal populations at Port Hedland. The Port of Port Hedland is an active operational port area and, as such, is subject to existing levels of underwater noise from daily shipping activities. The single TSHD vessel proposed for the Project, that will already be implementing maintenance dredging in the area under a DCCEEW approved sea dumping permit (SD2022/4041) is not likely to significantly increase underwater noise levels above the existing levels generated by daily shipping activities.

Dredging activities associated with the Project are not considered likely to impact areas of habitat considered critical to the survival of identified marine mammal populations, their occupancy within their habitat, or fragment the population into two or more populations. Furthermore, the proposed dredging would not modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that these species could decline. Due to the absence of seagrass habitat in waters within or adjacent to the dredging area and spoil grounds, dugongs are highly unlikely to occur regularly or in large numbers adjacent to the dredging area or spoil grounds.

In addition to vessel related factors (vessel speed, type and size), the probability of a vessel-marine mammal collision can be influenced by differences in species behavioural patterns e.g. amount of time a species spends at or near the surface (Schoeman et al. 2020). The humpback whale was identified to be of key concern based on assessment of how vessel speed and approach direction disrupt normal behaviour or elicit an agonistic response in the whale and dolphin species relevant to the Project.

Humpback whales have been recorded within Port Hedland, and the area is listed as a BIA for migration of the species. As such, whales may be present in the outer Port Hedland harbour and Spoil Ground 7C during the known migrations (May to November). Stamation et al. (2009) assessed the short-term responses of humpback whales to whale-watching vessels during their southward migration in eastern Australia. While some individuals showed obvious signs of horizontal avoidance, others approached vessels, initiating interactions. Whale pods with calves were more sensitive to the presence of vessels than pods without calves. Dive times and the overall percentage of time whales spent submerged were higher in the presence of vessels, but respiration intervals did not differ. Some surface behaviours occurred less often in the presence of vessels. In the Ningaloo Marine Park, during swim with humpback whale experiences, Sprogis et al. (2020) showed that the most common type of vessel approach to place swimmers in the water was in the path of whales. During in-path approaches, vessels travelled significantly faster compared to when approaching from the side. When vessels approached in the whales' path, whales exhibited horizontal and vertical avoidance strategies by adopting a less predictable path, increasing turning angles away from the vessel, increasing swim speeds, and decreasing the duration of their dives. Whales displayed a higher frequency of agonistic behaviours when a vessel was <100 m distance from them compared to >100 m away.

Studies on humpback dolphin interactions with vessels have indicated that dolphins dove for a longer duration in areas of heavy vessel traffic or in the presence of an oncoming vessel. Dependent upon the type of vessel and the relative distance, dolphins might flee, continue their ongoing activity, perform a new activity, or approach the vessel. Whilst slow-moving vessels appeared not to cause immediate stress on the dolphin community, fast-moving vessels often cause disruption of behaviour and social life (Ng and Leung 2003). Similarly, the Indo-Pacific bottlenose dolphin has been reported to be less likely to stay

in a resting or socialising activity and more likely to start travelling or foraging in response to the presence of vessels (Christiansen et al. 2010).

Application of appropriate management measures to minimise the potential for a vessel collision, including the use of marine fauna observers (MFOs) and exclusion zones, is expected to mitigate the risk of impact to humpback whales (and other marine megafauna) due to dredging and disposal for the Project as much as possible to an acceptable level.

3.3 Marine Reptiles

The flatback turtle, green turtle, hawksbill turtle and loggerhead turtle were considered to be of key concern for the Project. This assessment was made on the basis of:

- the known locations of mating, nesting, inter-nesting, and foraging habitats for the marine turtles assessed to have a greater than 'potential' likelihood of occurring within or adjacent to the Project dredge and disposal footprint; and
- potential impact pathways from the Project.

The Project is located within a BIA for inter-nesting flatback turtles, and within 20 km of a nesting BIA for the species. A foraging BIA for flatback, green, hawksbill and loggerhead turtles has been defined extending from the De Grey River area out to the North Turtle/Little Turtle islands, approximately 35 km northeast of the Project dredging footprint at its closest point. As such:

- inter-nesting and foraging adult flatback turtles; and
- foraging and migrating green and hawksbill turtles

may occur in the waters within and adjacent to the dredging footprint.

Key threats to marine turtles are considered to be habitat removal/ degradation, artificial light spill, underwater noise, vessel strike and entrainment from dredgers.

Dredging activities associated with the Project are not considered likely to impact areas of habitat considered critical to the survival of the flatback, green, hawksbill or loggerhead populations, their occupancy within their habitat, or fragment the population into two or more populations. Furthermore, the proposed dredging would not modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that the species could decline.

For adult turtles, lighting has to be relatively close to the nesting habitat for an impact to occur. In the marine turtle impact assessment for the Port Hedland Spoilbank Marina proposal, Pendoley (2019) suggested inter-nesting flatback turtles are not considered to feed during the breeding season and are unlikely to move to well-lit areas, and their known foraging grounds are situated away from the bypass channel design area. As such, adult marine turtles are unlikely to be significantly impacted by the artificial light from the dredge vessel. Hatchling turtles are considered more sensitive to light, with impacts recorded at nesting habitat situated over 18 km away from a light source (Commonwealth of Australia 2020b). The nearest recorded flatback turtle nesting location to the southernmost section of the proposed bypass channel design dredge area is on Cemetery Beach (Pendoley 2009; Pendoley 2019), ~8 km away. There is no published data that indicates where hatchling flatback turtles move to offshore once they leave Cemetery Beach. Pendoley (2019) suggested hatchlings are likely to move in the same direction as nearshore tidal driven currents., based on offshore tracking data recorded for flatback

hatchlings at other nesting beaches within the same genetic stock (Thevenard Island). At Port Hedland, a very large tidal range of up to 6 m occurs and the maximum flood tide rate is approximately 1.5 knots. On a flood tide (i.e. incoming), the nearshore current flows in an easterly direction and on an ebb tide (i.e. outgoing), the nearshore current flows in a north-westerly direction. Given the presence of other sources of artificial light that are situated closer to the nesting habitat compared to the dredge vessel, and location of the operating dredge vessel relevant to Cemetery Beach, it is unlikely that direct artificial light from the dredge vessel would disrupt hatchlings.

Matine turtles have been observed rapidly acclimating to regular, continuous underwater noise sources such as those generated by dredging, with the response dependent on the distance from the sound source (Whittock et al. 2017). Impact thresholds for a behavioural response to continuous noise emissions have not been defined, however, Popper et al. (2014) identified mortality or permanent injury as being low risk to marine turtles. Finneran et al. (2017) presented thresholds for marine turtle injury (TTS – 200 dB re 1 μPa^2s) and hearing impairment (PTS – 220 dB re 1 μPa^2s) which are above the maximum sound levels generated by dredge vessels cited in the literature (160 to 185 dB re 1µPa at 1 m from the dredge vessel) (CEDA 2011; McQueen *et al.* 2019; OSPAR 2009; Reine *et al.* 2014). It is considered that impacts to marine turtles from continuous noise generated during dredging activities will be a temporary behavioural response. Therefore, there is no pathway for a significant impact from underwater noise generated by dredging activities on marine turtle populations at Port Hedland.

As detailed for marine mammals, vessel speed and species behavioural patterns influence the probability of a vessel-marine animal collision. Marine turtles are at greatest risk from a vessel collision when they are at- or near to, the surface, and when the vessel is travelling at fast speeds. Hazel et al. (2007) conducted a field experiment to evaluate behavioural responses of green turtles to a research vessel approaching at slow, moderate or fast speed (4, 11 and 19 km h–1, respectively). Data were recorded for 1890 encounters with turtles sighted within 10 m of the research vessel's track. The proportion of turtles that fled to avoid the vessel decreased significantly as vessel speed increased, and turtles that fled from moderate and fast approaches did so at significantly shorter distances from the vessel than turtles that fled from slow approaches.

Whittlock et al. (2017) found during an active dredging operation, flatback turtles increased their use of the dredging areas. Dive behaviour results showed turtles undertook longer and deeper resting dives during dredging, utilising the now deeper waters of the dredging areas. The movement to an active dredge area is hypothesised to be driven by a predatory avoidance response, with flatback turtles utilising the highly turbid waters to avoid detection by predators. Despite their increased use and the presence of active dredge vessels, no events of injury or mortality were recorded during the study. Due to the potential for aggregation of reproductively active flatback turtles within the active dredge area and, entrainment within the dredge vessel's drag head is a potential pathway for a significant impact from dredging activities to the flatback turtle population at Port Hedland.

With application of appropriate management and mitigation measures to minimise the potential for entrainment or a vessel collision, including the use of marine fauna observers (MFOs) and exclusion zones, the risk of impact to marine turtles due to dredging and disposal for the Project is considered low.

3.4 Elasmobranch and Other Fish

The marine bioregional plan for the northwest region identifies a number of threats of concern to sawfish and other elasmobranch species (sharks and rays). Of those identified, vessel collision and marine debris are the only threats with a potential impact pathway due to the Project.

Considering the home range of sawfish, their preference for shallow coastal waters and the availability of these suitable habitats along the Pilbara coast, it is considered that sawfish are unlikely to be present in waters within the proposed dredging and disposal areas. The waters within and adjacent to the Project development are consistent with habitats of known presence for the reef manta ray and juvenile scalloped hammerhead sharks, and therefore, individuals of these species may traverse the Project area.

With application of appropriate management and mitigation measures to minimise marine debris generated by the Project, the risk of impact to sawfish and other elasmobranchs due to dredging and disposal for the Project is considered low.

As for marine mammals and marine turtles, vessel speed and species behavioural patterns influence the probability of a vessel-marine animal collision. Reef manta rays are known to exhibit diel movements, spending daylight hours inshore in shallow waters (<20 m), then moving back offshore to deeper waters at night (IUCN 2018). The species often exhibit avoidance behaviour in response to vessel presence. This can include changing their swimming patterns, diving deeper, or moving away from their preferred habitats (Perryman et al. 2022). Specific studies on sawfish behaviour in response to a vessels approach are limited, however, the general pattern of a response can be inferred based on their preferred habitat, movement patterns and response to human disturbances. Green sawfish forage in shallow, sandy or muddy, substrate, hunting on the incoming and low tide. Morgan et al (2017) used acoustic telemetry to track individual green sawfish near Onslow and found they occupied depths up to 2 m and moved up to 10 km during each tidal cycle. In addition, analysis of the movements of acoustically tagged sawfish has shown that hard barriers (e.g. rock walls) cause individuals moving along the coast to turn around, rather than following the structure offshore into deeper water and continuing along the coast (Morgan and Lear, unpublished data). On this basis, sawfish like other elasmobranchs are likely to alter their typical movement patterns in response to an approaching vessel, such as swimming away, changing swimming speed and/or moving erratically.

With application of appropriate management and mitigation measures to minimise the potential for a vessel collision, including the use of marine fauna observers (MFOs) and exclusion zones, the risk of impact to elasmobranchs due to dredging and disposal for the Project is considered low.

3.5 Conclusion

Marine fauna of key concern identified for the Proposal includes the humpback whale, flatback turtle, green turtle, hawksbill turtle and loggerhead turtle. These species were considered to be of key concern due to the location of BIAs for each species relevant to the Project and the potential pathway for a significant impact to these species due to a collision or entrainment with the dredge vessel.

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APPENDIX A – DATABASE SEARCH RESULTS

EPBC Act Protected Matters Report

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

Report created: 08-Sep-2025

Summary
Details
- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat
Acknowledgements

Summary

Matters of National Environment Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	2
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	43
Listed Migratory Species:	69

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

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

Commonwealth Lands:	73
Commonwealth Heritage Places:	None
Listed Marine Species:	107
Whales and Other Cetaceans:	14
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	1

Extra Information

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

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	1
EPBC Act Referrals:	35
Key Ecological Features (Marine):	None
Biologically Important Areas:	5
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Commonwealth Marine Area [Resource Information]

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

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

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Calidris tenuirostris Great Knot [862]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Species or species habitat known to occur within area	In buffer area only
Erythrotriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat may occur within area	In buffer area only
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit [86432]	Endangered	Species or species habitat known to occur within area	In buffer area only
Limosa limosa Black-tailed Godwit [845]	Endangered	Species or species habitat known to occur within area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Pezoporus occidentalis Night Parrot [59350]	Endangered	Species or species habitat may occur within area	In buffer area only
Phaethon lepturus fulvus Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat may occur within area	In feature area
Phaethon rubricauda westralis Red-tailed Tropicbird (Indian Ocean), Indian Ocean Red-tailed Tropicbird [91824]	Endangered	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Pluvialis squatarola](#) Grey Plover [865]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
[Rostratula australis](#) Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area	In buffer area only
[Sternula albifrons](#) Little Tern [82849]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Tringa nebularia](#) Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area	In buffer area only
[Xenus cinereus](#) Terek Sandpiper [59300]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
MAMMAL			
[Balaenoptera musculus](#) Blue Whale [36]	Endangered	Species or species habitat likely to occur within area	In feature area
[Dasyurus hallucatus](#) Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat known to occur within area	In buffer area only
[Macroderma gigas](#) Ghost Bat [174]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
[Macrotis lagotis](#) Greater Bilby [282]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
[Orcaella heinsohni](#) Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Rhinonicteris aurantia (Pilbara form)](#) Pilbara Leaf-nosed Bat [82790]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Sousa sahulensis Australian Humpback Dolphin [87942]	Vulnerable	Species or species habitat likely to occur within area	In feature area
REPTILE			
Aipysurus apraefrontalis Short-nosed Sea Snake, Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Aipysurus foliosquama Leaf-scaled Sea Snake, Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area	In feature area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Liasis olivaceus barroni Pilbara Olive Python [66699]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area	In feature area
SHARK			
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area	In feature area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat may occur within area	In feature area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area	In feature area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In feature area
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area	In feature area

Listed Migratory Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
null			
Balaenoptera omurai Omura's Whale [87136]		Species or species habitat likely to occur within area	In feature area
Migratory Marine Birds			
Anous stolidus Common Noddy [825]		Species or species habitat may occur within area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat likely to occur within area	In feature area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area	In feature area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Macronectes giganteus](#)			
Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In feature area
[Phaethon lepturus](#)			
White-tailed Tropicbird [1014]		Species or species habitat likely to occur within area	In feature area
[Phaethon rubricauda](#)			
Red-tailed Tropicbird [994]		Species or species habitat likely to occur within area	In feature area
[Sternula albifrons](#)			
Little Tern [82849]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Migratory Marine Species			
[Anoxypristis cuspidata](#)			
Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat likely to occur within area	In feature area
[Balaenoptera edeni](#)			
Bryde's Whale [35]		Species or species habitat may occur within area	In feature area
[Balaenoptera musculus](#)			
Blue Whale [36]	Endangered	Species or species habitat likely to occur within area	In feature area
[Carcharhinus longimanus](#)			
Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area	In feature area
[Carcharias taurus](#)			
Grey Nurse Shark [64469]		Species or species habitat may occur within area	In feature area
[Carcharodon carcharias](#)			
White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area	In feature area
[Caretta caretta](#)			
Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area	In feature area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat may occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area	In feature area
Dugong dugon Dugong [28]		Species or species habitat known to occur within area	In feature area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area	In buffer area only
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area	In buffer area only
Megaptera novaeangliae Humpback Whale [38]		Breeding known to occur within area	In feature area
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat known to occur within area	In feature area
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat likely to occur within area	In feature area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area	In feature area
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area	In feature area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Species or species habitat known to occur within area	In feature area
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Endangered	Species or species habitat may occur within area	In feature area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area	In feature area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In feature area
Sousa sahulensis as Sousa chinensis Australian Humpback Dolphin [87942]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat known to occur within area	In feature area
Migratory Terrestrial Species			
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area	In buffer area only
Hirundo rustica Barn Swallow [662]		Species or species habitat known to occur within area	In buffer area only
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area	In buffer area only
Motacilla flava Yellow Wagtail [644]		Species or species habitat known to occur within area	In buffer area only
Migratory Wetlands Species			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris alba Sanderling [875]		Species or species habitat known to occur within area	In buffer area only
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris falcinellus as Limicola falcinellus Broad-billed Sandpiper [91731]		Species or species habitat known to occur within area	In buffer area only
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area	In feature area
Calidris ruficollis Red-necked Stint [860]		Species or species habitat known to occur within area	In buffer area only
Calidris subminuta Long-toed Stint [861]		Species or species habitat known to occur within area	In buffer area only
Calidris tenuirostris Great Knot [862]	Vulnerable	Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Species or species habitat known to occur within area	In buffer area only
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat known to occur within area	In buffer area only
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat may occur within area	In buffer area only
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In buffer area only
Limosa limosa Black-tailed Godwit [845]	Endangered	Species or species habitat known to occur within area	In buffer area only
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Numenius minutus Little Curlew, Little Whimbrel [848]		Species or species habitat known to occur within area	In buffer area only
Numenius phaeopus Whimbrel [849]		Species or species habitat known to occur within area	In buffer area only
Pandion haliaetus Osprey [952]		Breeding known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Pluvialis fulva](#) Pacific Golden Plover [25545]		Species or species habitat known to occur within area	In buffer area only
[Pluvialis squatarola](#) Grey Plover [865]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
[Tringa brevipes](#) Grey-tailed Tattler [851]		Species or species habitat known to occur within area	In buffer area only
[Tringa glareola](#) Wood Sandpiper [829]		Species or species habitat known to occur within area	In buffer area only
[Tringa nebularia](#) Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area	In buffer area only
[Tringa stagnatilis](#) Marsh Sandpiper, Little Greenshank [833]		Species or species habitat known to occur within area	In buffer area only
[Xenus cinereus](#) Terek Sandpiper [59300]	Vulnerable	Species or species habitat known to occur within area	In buffer area only

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State	Buffer Status
Unknown		
Commonwealth Land - [51702]	WA	In buffer area only
Commonwealth Land - [51672]	WA	In buffer area only
Commonwealth Land - [51049]	WA	In buffer area only
Commonwealth Land - [51048]	WA	In buffer area only
Commonwealth Land - [51429]	WA	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - [51679]	WA	In buffer area only
Commonwealth Land - [51677]	WA	In buffer area only
Commonwealth Land - [51676]	WA	In buffer area only
Commonwealth Land - [51675]	WA	In buffer area only
Commonwealth Land - [51674]	WA	In buffer area only
Commonwealth Land - [51692]	WA	In buffer area only
Commonwealth Land - [51691]	WA	In buffer area only
Commonwealth Land - [51690]	WA	In buffer area only
Commonwealth Land - [51718]	WA	In buffer area only
Commonwealth Land - [50349]	WA	In buffer area only
Commonwealth Land - [51693]	WA	In buffer area only
Commonwealth Land - [51682]	WA	In buffer area only
Commonwealth Land - [51719]	WA	In buffer area only
Commonwealth Land - [51687]	WA	In buffer area only
Commonwealth Land - [50324]	WA	In buffer area only
Commonwealth Land - [51686]	WA	In buffer area only
Commonwealth Land - [50325]	WA	In buffer area only
Commonwealth Land - [51681]	WA	In buffer area only
Commonwealth Land - [50326]	WA	In buffer area only
Commonwealth Land - [51680]	WA	In buffer area only
Commonwealth Land - [51688]	WA	In buffer area only
Commonwealth Land - [51689]	WA	In buffer area only
Commonwealth Land - [51684]	WA	In buffer area only
Commonwealth Land - [51685]	WA	In buffer area only
Commonwealth Land - [50359]	WA	In buffer area only
Commonwealth Land - [51712]	WA	In buffer area only
Commonwealth Land - [51713]	WA	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - [50327]	WA	In buffer area only
Commonwealth Land - [51716]	WA	In buffer area only
Commonwealth Land - [51717]	WA	In buffer area only
Commonwealth Land - [51710]	WA	In buffer area only
Commonwealth Land - [51711]	WA	In buffer area only
Commonwealth Land - [51053]	WA	In buffer area only
Commonwealth Land - [51704]	WA	In buffer area only
Commonwealth Land - [51714]	WA	In buffer area only
Commonwealth Land - [51705]	WA	In buffer area only
Commonwealth Land - [51715]	WA	In buffer area only
Commonwealth Land - [51678]	WA	In buffer area only
Commonwealth Land - [51683]	WA	In buffer area only
Commonwealth Land - [51947]	WA	In buffer area only
Commonwealth Land - [51709]	WA	In buffer area only
Commonwealth Land - [51708]	WA	In buffer area only
Commonwealth Land - [51404]	WA	In buffer area only
Commonwealth Land - [50323]	WA	In buffer area only
Commonwealth Land - [51666]	WA	In buffer area only
Commonwealth Land - [51720]	WA	In buffer area only
Commonwealth Land - [51667]	WA	In buffer area only
Commonwealth Land - [51706]	WA	In buffer area only
Commonwealth Land - [51055]	WA	In buffer area only
Commonwealth Land - [51054]	WA	In buffer area only
Commonwealth Land - [51703]	WA	In buffer area only
Commonwealth Land - [51403]	WA	In buffer area only
Commonwealth Land - [51700]	WA	In buffer area only
Commonwealth Land - [51668]	WA	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - [51671]	WA	In buffer area only
Commonwealth Land - [51670]	WA	In buffer area only
Commonwealth Land - [51673]	WA	In buffer area only
Commonwealth Land - [51694]	WA	In buffer area only
Commonwealth Land - [51699]	WA	In buffer area only
Commonwealth Land - [51052]	WA	In buffer area only
Commonwealth Land - [51697]	WA	In buffer area only
Commonwealth Land - [51698]	WA	In buffer area only
Commonwealth Land - [51669]	WA	In buffer area only
Commonwealth Land - [51051]	WA	In buffer area only
Commonwealth Land - [51707]	WA	In buffer area only
Commonwealth Land - [51050]	WA	In buffer area only
Commonwealth Land - [51696]	WA	In buffer area only
Commonwealth Land - [51695]	WA	In buffer area only

Listed Marine Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos			
Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Anous stolidus			
Common Noddy [825]		Species or species habitat may occur within area	In feature area
Apus pacificus			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Arenaria interpres			
Ruddy Turnstone [872]	Vulnerable	Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In buffer area only
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris alba Sanderling [875]		Species or species habitat known to occur within area	In buffer area only
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Calidris falcinellus as Limicola falcinellus Broad-billed Sandpiper [91731]		Species or species habitat known to occur within area overfly marine area	In buffer area only
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area overfly marine area	In feature area
Calidris ruficollis Red-necked Stint [860]		Species or species habitat known to occur within area overfly marine area	In buffer area only
Calidris subminuta Long-toed Stint [861]		Species or species habitat known to occur within area overfly marine area	In buffer area only
Calidris tenuirostris Great Knot [862]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Calonectris leucomelas](#) Streaked Shearwater [1077]		Species or species habitat likely to occur within area	In feature area
[Chalcites osculans as Chrysococcyx osculans](#) Black-eared Cuckoo [83425]		Species or species habitat may occur within area overfly marine area	In buffer area only
[Charadrius leschenaultii](#) Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
[Charadrius mongolus](#) Lesser Sand Plover, Mongolian Plover [879]	Endangered	Species or species habitat known to occur within area	In buffer area only
[Charadrius ruficapillus](#) Red-capped Plover [881]		Species or species habitat known to occur within area overfly marine area	In buffer area only
[Charadrius veredus](#) Oriental Plover, Oriental Dotterel [882]		Species or species habitat known to occur within area overfly marine area	In buffer area only
[Fregata ariel](#) Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area	In feature area
[Fregata minor](#) Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area	In buffer area only
[Glareola maldivarum](#) Oriental Pratincole [840]		Species or species habitat may occur within area overfly marine area	In buffer area only
[Haliaeetus leucogaster](#) White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Species or species habitat known to occur within area overfly marine area	In buffer area only
Hirundo rustica Barn Swallow [662]		Species or species habitat known to occur within area overfly marine area	In buffer area only
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat likely to occur within area overfly marine area	In buffer area only
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In buffer area only
Limosa limosa Black-tailed Godwit [845]	Endangered	Species or species habitat known to occur within area overfly marine area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In feature area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In buffer area only
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area overfly marine area	In buffer area only
Motacilla flava Yellow Wagtail [644]		Species or species habitat known to occur within area overfly marine area	In buffer area only
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Numenius minutus Little Curlew, Little Whimbrel [848]		Species or species habitat known to occur within area overfly marine area	In buffer area only
Numenius phaeopus Whimbrel [849]		Species or species habitat known to occur within area	In buffer area only
Pandion haliaetus Osprey [952]		Breeding known to occur within area	In feature area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat likely to occur within area	In feature area
Phaethon lepturus fulvus Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat may occur within area	In feature area
Phaethon rubricauda Red-tailed Tropicbird [994]		Species or species habitat likely to occur within area	In feature area
Pluvialis fulva Pacific Golden Plover [25545]		Species or species habitat known to occur within area	In buffer area only
Pluvialis squatarola Grey Plover [865]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In buffer area only
Recurvirostra novaehollandiae Red-necked Avocet [871]		Species or species habitat known to occur within area overfly marine area	In buffer area only
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area overfly marine area	In buffer area only
Sternula albifrons as Sterna albifrons Little Tern [82849]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Stiltia isabella Australian Pratincole [818]		Species or species habitat known to occur within area overfly marine area	In buffer area only
Tringa brevipes as Heteroscelus brevipes Grey-tailed Tattler [851]		Species or species habitat known to occur within area	In buffer area only
Tringa glareola Wood Sandpiper [829]		Species or species habitat known to occur within area overfly marine area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area overfly marine area	In buffer area only
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Species or species habitat known to occur within area overfly marine area	In buffer area only
Xenus cinereus Terek Sandpiper [59300]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In buffer area only
Fish			
Acentronura larsonae Helen's Pygmy Pipehorse [66186]		Species or species habitat may occur within area	In feature area
Bulbonaricus brauni Braun's Pughead Pipefish, Pug-headed Pipefish [66189]		Species or species habitat may occur within area	In feature area
Campichthys tricarinatus Three-keel Pipefish [66192]		Species or species habitat may occur within area	In feature area
Choeroichthys brachysoma Pacific Short-bodied Pipefish, Short-bodied Pipefish [66194]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Choeroichthys latispinosus Muiron Island Pipefish [66196]		Species or species habitat may occur within area	In feature area
Choeroichthys suillus Pig-snouted Pipefish [66198]		Species or species habitat may occur within area	In feature area
Doryrhamphus dactyliophorus Banded Pipefish, Ringed Pipefish [66210]		Species or species habitat may occur within area	In feature area
Doryrhamphus janssi Cleaner Pipefish, Janss' Pipefish [66212]		Species or species habitat may occur within area	In feature area
Doryrhamphus multiannulatus Many-banded Pipefish [66717]		Species or species habitat may occur within area	In feature area
Doryrhamphus negrosensis Flagtail Pipefish, Masthead Island Pipefish [66213]		Species or species habitat may occur within area	In feature area
Festucalex scalaris Ladder Pipefish [66216]		Species or species habitat may occur within area	In feature area
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area	In feature area
Halicampus brocki Brock's Pipefish [66219]		Species or species habitat may occur within area	In feature area
Halicampus grayi Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area	In feature area
Halicampus nitidus Glittering Pipefish [66224]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Halicampus spinirostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area	In feature area
Haliichthys taeniophorus Ribboned Pipehorse, Ribboned Seadragon [66226]		Species or species habitat may occur within area	In feature area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area	In feature area
Hippocampus angustus Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area	In feature area
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area	In feature area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area	In feature area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area	In feature area
Hippocampus trimaculatus Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area	In feature area
Micrognathus micronotopterus Tidepool Pipefish [66255]		Species or species habitat may occur within area	In feature area
Phoxocampus belcheri Black Rock Pipefish [66719]		Species or species habitat may occur within area	In feature area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area	In feature area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area	In feature area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area	In feature area
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area	In feature area
Trachyrhamphus longirostris Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area	In feature area
Mammal			
Dugong dugon Dugong [28]		Species or species habitat known to occur within area	In feature area
Reptile			
Aipysurus apraefrontalis Short-nosed Sea Snake, Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Aipysurus duboisii Dubois' Sea Snake, Dubois' Seasnake, Reef Shallows Sea Snake [1116]		Species or species habitat may occur within area	In feature area
Aipysurus foliosquama Leaf-scaled Sea Snake, Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Aipysurus laevis Olive Sea Snake, Olive-brown Sea Snake [1120]		Species or species habitat may occur within area	In feature area
Aipysurus mosaicus as Aipysurus eydouxii Mosaic Sea Snake [87261]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Aipysurus tenuis Brown-lined Sea Snake, Mjoberg's Sea Snake [1121]		Species or species habitat may occur within area	In feature area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area	In feature area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat may occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area	In feature area
Emydocephalus annulatus Eastern Turtle-headed Sea Snake [1125]		Species or species habitat may occur within area	In feature area
Ephalophis greyae as Ephalophis greyi Mangrove Sea Snake [93738]		Species or species habitat may occur within area	In feature area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Hydrelaps darwiniensis Port Darwin Sea Snake, Black-ringed Mangrove Sea Snake [1100]		Species or species habitat may occur within area	In feature area
Hydrophis czeblukovi Fine-spined Sea Snake [59233]		Species or species habitat may occur within area	In feature area
Hydrophis elegans Elegant Sea Snake, Bar-bellied Sea Snake [1104]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Hydrophis kingii as Disteira kingii			
Spectacled Sea Snake [93511]		Species or species habitat may occur within area	In feature area
Hydrophis macdowelli as Hydrophis mcdowelli			
MacDowell's Sea Snake, Small-headed Sea Snake, [75601]		Species or species habitat may occur within area	In feature area
Hydrophis major as Disteira major			
Olive-headed Sea Snake [93512]		Species or species habitat may occur within area	In feature area
Hydrophis ornatus			
Spotted Sea Snake, Ornate Reef Sea Snake [1111]		Species or species habitat may occur within area	In feature area
Hydrophis peronii as Acalyptophis peronii			
Horned Sea Snake [93509]		Species or species habitat may occur within area	In feature area
Hydrophis platura as Pelamis platurus			
Yellow-bellied Sea Snake [93746]		Species or species habitat may occur within area	In feature area
Hydrophis stokesii as Astrotia stokesii			
Stokes' Sea Snake [93510]		Species or species habitat may occur within area	In feature area
Natator depressus			
Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area	In feature area

Whales and Other Cetaceans			[Resource Information]
Current Scientific Name	Status	Type of Presence	Buffer Status
Mammal			
Balaenoptera acutorostrata			
Minke Whale [33]		Species or species habitat may occur within area	In feature area
Balaenoptera edeni			
Bryde's Whale [35]		Species or species habitat may occur within area	In feature area
Balaenoptera musculus			
Blue Whale [36]	Endangered	Species or species habitat likely to occur within area	In feature area

Current Scientific Name	Status	Type of Presence	Buffer Status
Balaenoptera omurai Omura's Whale [87136]		Species or species habitat likely to occur within area	In feature area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area	In feature area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area	In feature area
Megaptera novaeangliae Humpback Whale [38]		Breeding known to occur within area	In feature area
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area	In feature area
Sousa sahulensis Australian Humpback Dolphin [87942]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area	In feature area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area	In feature area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat known to occur within area	In feature area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area	In feature area

Habitat Critical to the Survival of Marine Turtles			[Resource Information]
Scientific Name	Behaviour	Presence	Buffer Status
All year (Jun - Aug)			
Natator depressus			
Flatback Turtle [59257]	Nesting	Known to occur	In feature area

Extra Information

Nationally Important Wetlands		[Resource Information]
Wetland Name	State	Buffer Status
Leslie (Port Hedland) Saltfields System	WA	In buffer area only

EPBC Act Referrals				[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
East Pilbara Network Stage 1	2024/09933		Completed	In buffer area only
Port Hedland Green Steel Project - Stage 1	2023/09764		Assessment	In buffer area only
Port Hedland Solar Project	2022/09241		Post-Approval	In buffer area only
Ridley Magnetite Project	2023/09477		Referral Decision	In buffer area only
Controlled action				
Additional Rail Infrastructure between Herb Elliott Port Facility and Cloudbreak Mine Site	2010/5513	Controlled Action	Post-Approval	In buffer area only
Great Northern Pipeline - 630 km buried gas pipeline	2009/5257	Controlled Action	Completed	In buffer area only
North Star Magnetite Project	2012/6689	Controlled Action	Post-Approval	In buffer area only
Port Hedland Outer Harbour Development and associated marine and terrestrial in	2008/4159	Controlled Action	Post-Approval	In feature area
Port Hedland Spoilbank Marina, WA	2019/8520	Controlled Action	Post-Approval	In buffer area only
Not controlled action				
150m Boodarie Gas Lateral Pipeline	2014/7116	Not Controlled Action	Completed	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Construction of a Commodities Berth, Wharf and Associated Infrastructure	2008/4129	Not Controlled Action	Completed	In buffer area only
Development of iron ore resources in eastern Pilbara region, including port at P	2004/1562	Not Controlled Action	Completed	In buffer area only
Horizon Power South Hedland Transmission Line, WA	2012/6551	Not Controlled Action	Completed	In buffer area only
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In buffer area only
Iron Bridge Port Facility, Port Hedland, WA	2015/7565	Not Controlled Action	Completed	In buffer area only
Pilbara Bulk Ore Transport System Project, WA	2016/7637	Not Controlled Action	Completed	In buffer area only
Pilbara Transmission Project, Pilbara, WA	2018/8349	Not Controlled Action	Completed	In buffer area only
Port Hedland Channel Risk and Optimisation Project, WA	2017/7915	Not Controlled Action	Completed	In feature area
Port Hedland Power Station Conversion Project	2011/6080	Not Controlled Action	Completed	In buffer area only
Project Highclere Geophysical Survey	2021/9023	Not Controlled Action	Completed	In buffer area only
Rail and Port Facilities	2001/474	Not Controlled Action	Completed	In buffer area only
South Hedland Power Station WA	2011/5929	Not Controlled Action	Completed	In buffer area only
Telfer Gold Mine Project - Mine and Borefield Extensions and Upgrade of Storage	2002/787	Not Controlled Action	Completed	In buffer area only
Telfer Gold Mine Project - Power Supply and Infrastructure Corridor	2002/786	Not Controlled Action	Completed	In buffer area only
Walkway Lighting Upgrade	2009/4965	Not Controlled Action	Completed	In buffer area only
Not controlled action (particular manner)				
Additional Rail Infrastructure	2012/6314	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Dredging of marine sediment to enable construction of eight berths and a turnin	2010/5678	Not Controlled Action (Particular	Post-Approval	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action (particular manner)				
		Manner)		
Marine Geotechnical Drilling Program	2008/4012	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Nelson Point Dredging	2009/4920	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Offshore Fibre Optic Cable Network Construction & Operation, Port Hedland WA to Darwin NT	2014/7223	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Port Headland Outer Harbour Pre-construction Pilling program	2012/6341	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Port of Port Hedland channel marker replacement project, WA	2017/8010	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Realignment of the Great Northern Highway	2010/5793	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
upgrade of 3 community recreation sites	2005/2349	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Referral decision				
Outer Harbour Development and associated marine and terrestial infrastructure	2008/4148	Referral Decision	Completed	In feature area

Biologically Important Areas			[Resource Information]
Scientific Name	Behaviour	Presence	Buffer Status
Marine Turtles			
Natator depressus Flatback Turtle [59257]	Internesting buffer	Known to occur	In feature area
Natator depressus Flatback Turtle [59257]	Nesting	Known to occur	In buffer area only
Seabirds			

Scientific Name	Behaviour	Presence	Buffer Status
Ardenna tenuirostris Short-tailed Shearwater [84292]	Breeding	Known to occur	In feature area
Fregata ariel Lesser Frigatebird [1012]	Breeding	Known to occur	In feature area
Whales			
Megaptera novaeangliae Humpback Whale [38]	Migration (north and south)	Known to occur	In feature area

Caveat

1 PURPOSE

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

The report contains the mapped locations of:

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

2 DISCLAIMER

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

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

3 DATA SOURCES

Threatened ecological communities

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

Threatened, migratory and marine species

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

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

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

4 LIMITATIONS

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

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

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

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

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

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

Acknowledgements

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

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

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

Please feel free to provide feedback via the Contact us page.

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APPENDIX B – LIKELIHOOD OF OCCURRENCE ASSESSMENT

EPBC Act 1999 Key			
Status		Presence Rank	
CE	Critically Endangered	**M**	May Occur
E	Endangered	**L**	Likely to Occur
V	Vulnerable	**K**	Known to Occur
MI	Migratory	**B - C**	Breeding – Congregation
CD	Conservation Dependent	**SH**	Species or Species Habitat

BC Act 2016 Key			
EX	Presumed Extinct	**OS**	Other Specially Protected
CR	Critically Endangered	**P1**	Priority 1
EN	Endangered	**P2**	Priority 2
VU	Vulnerable	**P3**	Priority 3
IA	Migratory birds protected under international agreement	**P4**	Priority 4
CD	Conservation Dependent		

Likelihood	**Definition**
Rare (R)	The species has not been recorded within the defined search area. No suitable habitat is present within the defined search area.
Unlikely (U)	The species has not been recorded within the defined search area. The current known distribution of the species does not overlap the defined search area, however, there is low presence of low value suitable habitat i.e. not suitable for either breeding, foraging, resting and/or migration.
Possible (P)	The species has not been recorded within the defined search area. However, the species preferred habitat is known to occur within the defined search area and is of moderate value i.e. disturbed breeding conditions, constrained foraging, resting and/or migration habitat OR The species has been recorded within the defined search area. However, there is low presence of low value suitable habitat i.e. not suitable for either breeding, foraging, resting and/or migration.
Likely (L)	The species has been recorded within the defined search area. The species preferred habitat is known to occur within the defined search area and is of moderate value i.e. disturbed breeding conditions, constrained foraging, resting and/or migration habitat
Almost Certain (AC)	The species has been frequently recorded within the defined search area. The species preferred habitat is known to occur within the defined search area and is of high value i.e. important breeding, foraging, resting and/or migration habitat.

*Preferred habitat / description sourced from DCCEEW Species Profile and Threats (SPRAT) Database (DCCEEW 2023) unless otherwise denoted

Species	EPBC Act 1999		BC Act 2016 Status	Preferred Habitat/Description*	Likelihood of Occurring within the Project Area	
	Status	Presence Rank			1 km	20 km
Seabirds						
Southern Giant-Petrel *Macronectes giganteus*	E, MI	SH - M	IA	The Southern Giant-Petrel is a marine bird that occurs in Antarctic to subtropical waters. In summer it mainly occurs over Antarctic waters.	**Unlikely** - May fly through and/or forage within the area, but large numbers not expected.	**Unlikely** - May fly through and/or forage within the area, but large numbers not expected.
Common Noddy *Anous stolidus*	MI	SH - M	IA	In Australia, the Common Noddy occurs mainly in the ocean off the Queensland coast. During the breeding season, the Common Noddy usually nests on or near islands, on rocky islets and stacks with precipitous cliffs, or on shoals or cays of coral or sand. When not at the nest, individuals will remain close to the nest, foraging in the surrounding waters. Birds may nest in bushes, saltbush, or other low vegetation. During the non-breeding period, the species occurs in groups throughout the pelagic zone.	**Unlikely** - Not known to breed in the area. May fly over but the area is not expected to represent significant foraging habitat.	**Unlikely** – May fly through and/or forage but not known to breed in the area.
Fork-tailed Swift *Apus pacificus*	MI	SH - L	IA	The Fork-tailed Swift is almost exclusively aerial and is not known to breed in Australia. They are seen in inland plains but sometimes above 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	**Unlikely** - May fly over the area but unlikely to land	**Unlikely** - May fly over the area but unlikely to land

Species	EPBC Act 1999		BC Act 2016 Status	Preferred Habitat/Description*	Likelihood of Occurring within the Project Area	
	Status	Presence Rank			1 km	20 km
				towns, urban areas and cities. *Apus pacificus subsp. pacificus* is the only subspecies to migrate to Australia.		
Wedge-tailed Shearwater *Ardenna pacifica*	MI	B - K	MI	The Wedge-tailed Shearwater is a pelagic, marine bird known from tropical and subtropical waters. The species breeds throughout its known range, mainly on vegetated islands, atolls and cays. In the north west of Australia the Wedge-tailed Shearwater breeds in October/November. The species is known to breed on several islands west of the Project area.	**Almost Certain** – Expected to occur during breeding season, given known breeding on islands and overlapping designated breeding BIA	**Almost Certain** – Expected to occur during breeding season, given known breeding on islands and overlapping designated breeding BIA
Streaked Shearwater *Calonectris leucomelas*	MI	SH - L	-	The Streaked Shearwater breeds on islands off Japan, Korea and China. The species is an uncommon visitor to Pilbara seas between March and May (Johnstone et al. 2013).	**Unlikely** - May fly through and/or forage but not known to breed in Australia.	**Unlikely** - May fly through and/or forage but not known to breed in Australia.
Lesser Frigatebird *Fregata ariel*	MI	SH - L	IA	The Lesser Frigatebird is found in Australian waters from Brisbane in the east, across the northern coast, to around Exmouth in the west, including all associated offshore islands. Lesser Frigatebirds are pelagic for most of their lives but nest on remote tropical and subtropical islands. The species is known to breed on Bedout Island east of the Project area.	**Almost Certain** – Expected to occur during breeding season, given known breeding on islands and overlapping designated breeding BIA	**Almost Certain** – Expected to occur during breeding season, given known breeding on islands and overlapping designated breeding BIA

Species	EPBC Act 1999		BC Act 2016 Status	Preferred Habitat/Description*	Likelihood of Occurring within the Project Area	
	Status	Presence Rank			1 km	20 km
Great Frigatebird *Fregata minor*	MI	SH - M		The Great Frigatebird is found across tropical and subtropical oceans. The species is seen occasionally along the Australian coast from the Northern Territory to Queensland, with strays reaching the NSW Central Coast. Breeding occurs on offshore islands, with notable colonies on Ashmore Reef and the Coral Sea. While most frigatebirds are pelagic, Great Frigatebirds spend their non-breeding season on the open sea but return to land to roost, often on small, uninhabited islands	**Rare** – Not expected to occur, not identified in PMST report.	**Unlikely** – May fly through and/or forage but not known to breed in the area.
White-tailed Tropicbird *Phaethon lepturus*	MI	SH - L	-	At the species level, the White-tailed Tropicbird occupies marine habitats in tropical waters with sea-surface temperatures of more than 22°C. The tropicbird breeds on islands and atolls, where it nests in a variety of habitats including on bare sandy ground, in closed-canopy rainforest, on rocky cliffs and in quarries. In Australia, the White-tailed Tropicbird nests in Pisonia trees amongst Pisonia-coconut vegetation, and on sandy ground. The species breeds in the Cocos-Keeling Islands, Ashmore Reef and Rowley Shoals. In Australian waters they are probably pelagic, as they are rarely found inshore.	**Unlikely** - May fly through but the area is not expected to represent significant foraging habitat – no breeding.	**Unlikely** - May fly through but the area is not expected to represent significant foraging habitat – no breeding.
Christmas Island White-tailed Tropicbird *Phaethon lepturus fulvus*	E, MI	SH - M		The Christmas Island white-tailed tropicbird is endemic to Christmas Island, which is its only known breeding location. It is widely distributed across the island and roosts and forages over the Indian Ocean. The subspecies mostly occurs north of 18°S, but may occur up to about 1500 km from Christmas Island, at the edge of the continental shelf off Western	**Rare** – Not expected based on lack of breeding on mainland Australia and distribution	**Rare** – Not expected based on lack of breeding on mainland Australia and distribution

Species	EPBC Act 1999		BC Act 2016 Status	Preferred Habitat/Description*	Likelihood of Occurring within the Project Area	
	Status	Presence Rank			1 km	20 km
				Australia at 21°S. The subspecies is oceanic, feeding on fish and cephalopods in warm tropical waters.	predominantly north of 18°S.	predominantly north of 18°S.
Red-tailed Tropicbird *Phaethon rubricauda westralis*	MI	SH - L		The Red-tailed Tropicbird has a wide range across the eastern Indian Ocean when not breeding; current breeding areas occur on Christmas Island, Cocos-Keeling Islands, Rowley Shoals, Ashmore Reef and Rottnest Island. The subspecies is pelagic, feeding on fish and cephalopods in warm tropical waters.	**Rare** - May fly through but the area is not expected to represent significant foraging habitat – no breeding.	**Rare** - May fly through but the area is not expected to represent significant foraging habitat – no breeding.
Little Tern *Stemula albifrons*	V, MI	SH - M	MI	In Australia, Little Terns inhabit sheltered coastal environments, including lagoons, estuaries, river mouths and deltas, lakes, bays, harbours and inlets, especially those with exposed sandbanks or sand-spits, and also on exposed ocean beaches. In north-western Western Australia (from Broome to the Northern Territory), known breeding colonies are small, apparently <20 pairs, but counts of hundreds of non-breeding birds have been made. Non-breeding birds, of the Australian subpopulations and of extralimital populations, extend farther around the Australian coast than known breeding colonies, as well as overlapping extensively with the Australian breeding range. In Western Australia, the species regularly occurs south to approximately 20° S, with occasional records south of there (for example, Shark Bay).	**Rare** – Not expected to occur, not identified in PMST report.	**Possible** - May be found occasionally feeding but the area is not expected to represent significant foraging habitat – no breeding.
Shorebirds						
Red Knot	V, MI	SH - M	EN	The Red Knot is common in all the main suitable habitats around the coast of Australia, as a non-breeding visitor. Very	**Unlikely** - May be found occasionally	**Likely** – expected to occur foraging and

Species	EPBC Act 1999		BC Act 2016 Status	Preferred Habitat/Description*	Likelihood of Occurring within the Project Area	
	Status	Presence Rank			1 km	20 km
Calidris canutus				large numbers are regularly recorded in north-west Australia, with 80 Mile Beach and Roebuck Bay being particular strongholds. In Australasia the Red Knot mainly inhabit intertidal mudflats, sandflats and sandy beaches of sheltered coasts, in estuaries, bays, inlets, lagoons and harbours; sometimes on sandy ocean beaches or shallow pools on exposed wave-cut rock platforms or coral reefs.	feeding but the area is not expected to represent significant foraging habitat	roosting. Non-breeding visitor to Australia.
Curlew Sandpiper *Calidris ferruginea*	CE, MI	SH - M	CR	In Western Australia, the Curlew Sandpiper are widespread around coastal and subcoastal plains from Cape Arid to south-west Kimberley Division, but are more sparsely distributed between Carnarvon and Dampier Archipelago. They occur in large numbers, in thousands to tens of thousands, at Port Hedland Saltworks, 80 Mile Beach, Roebuck Bay and Lake Macleod. Curlew Sandpipers mainly occur on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons, and also around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms.	**Unlikely** - May fly through but the area is not expected to represent significant foraging habitat	**Likely** – expected to occur foraging and roosting. Non-breeding visitor to Australia.
Great Knot *Calidris tenuirostris*	V, MI	SH - K	CR	The Great Knot winters in Australia, occurring in sheltered coastal habitats such as inlets, bays, harbours, estuaries and lagoons with large intertidal mud and sandflats, oceanic sandy beaches with nearby mudflats, sandy spits and islets, muddy shorelines with mangroves and occasionally exposed reefs or rock platforms. It roosts in refuges such as shallow water in	**Rare** – Not expected to occur, not identified in PMST report.	**Likely** – expected to occur foraging and roosting. Non-breeding visitor to Australia.

Species	EPBC Act 1999		BC Act 2016 Status	Preferred Habitat/Description*	Likelihood of Occurring within the Project Area	
	Status	Presence Rank			1 km	20 km
				sheltered sites, on coastal dunes or on saltflats amongst mangroves during high tides.		
Greater Sand Plover *Charadrius leschenaultii*	V, MI	SH - K	VU	This species inhabits littoral and estuarine habitats, sheltered sandy shelly or muddy beaches with large intertidal mudflats or sandbanks, and sandy estuarine lagoons, inshore reefs, rock platforms, small rocky islands or sand cays on coral reefs. Important areas of habitat in Western Australia include Eighty Mile Beach, Roebuck Bay and Ashmore Reef	**Rare** – Not expected to occur, not identified in PMST report.	**Likely** – expected to occur foraging and roosting. Non-breeding visitor to Australia.
Lesser Sand Plover *Charadrius mongolus*	E, MI	SH - K	EN	This species occurs in littoral and estuarine environments, large intertidal sandflats or mudflats, sandy ocean beaches, coral reefs, wave-cut rock platforms and rocky outcrops. Important Western Australian sites include Eighty Mile Beach, Roebuck Bay, Broome and Port Hedland Saltworks.	**Rare** – Not expected to occur, not identified in PMST report.	**Likely** – expected to occur foraging and roosting. Non-breeding visitor to Australia. Port Hedland Saltworks identified as Important Bird Area for this species.
Far Eastern Curlew *Numenius madagascariensis*	CE, MI	SH - M	CR	Within Australia, the eastern curlew has a primarily coastal distribution. They have a continuous distribution from Barrow Island and Dampier Archipelago, Western Australia, through the Kimberley and along the Northern Territory, Queensland, and NSW coasts and the islands of Torres Strait. The Eastern Curlew is most commonly associated with sheltered coasts, especially estuaries, bays, harbours, inlets and coastal lagoons, with large intertidal mudflats or sandflats, often with beds of	**Unlikely** - May fly through but the area is not expected to represent significant foraging habitat	**Likely** – expected to occur foraging and roosting. Non-breeding visitor to Australia.

Species	EPBC Act 1999		BC Act 2016 Status	Preferred Habitat/Description*	Likelihood of Occurring within the Project Area	
	Status	Presence Rank			1 km	20 km
				seagrass. Occasionally, the species occurs on ocean beaches (often near estuaries), and coral reefs, rock platforms, or rocky islets. The eastern curlew roosts during high tide periods on sandy spits, sandbars and islets, especially on beach sand near the high-water mark, and among coastal vegetation including low saltmarsh or mangroves. The species does not breed in Australia.		
Little Curlew *Numenius minutus*	MI	SH - K		Little Curlews generally spend the non-breeding season in northern Australia from Port Hedland in Western Australia to the Queensland coast. The Little Curlew is most often found feeding in short, dry grassland and sedgeland, including dry floodplains and blacksoil plains, which have scattered, shallow freshwater pools or areas seasonally inundated. When resting during the heat of day, the Little Curlew congregates around pools, river beds and water-filled tidal channels, and shallow water at edges of billabongs.	**Rare** – Not expected to occur, not identified in PMST report.	**Possible** – may occur foraging. Non-breeding visitor to Australia.
Australian Painted Snipe *Rostratula australis*	E	SH - M	EN	The Australian Painted Snipe has been recorded at wetlands in all states of Australia. It is most common in eastern Australia, and has been recorded less frequently at a small number of scattered locations in South Australia, the Northern Territory and Western Australia. The Australian Painted Snipe generally inhabits shallow terrestrial freshwater (occasionally brackish) wetlands, including temporary and permanent lakes, swamps and claypans. They also use inundated or waterlogged	**Rare** – Not expected to occur, not identified in PMST report.	**Unlikely** - area is not expected to represent significant foraging habitat.

Species	EPBC Act 1999		BC Act 2016 Status	Preferred Habitat/Description*	Likelihood of Occurring within the Project Area	
	Status	Presence Rank			1 km	20 km
				grassland or saltmarsh, dams, rice crops, sewage farms and bore drains.		
Common Sandpiper *Actitis hypoleucos*	MI	SH - M	MI	The Common Sandpiper is widespread in small numbers utilising a wide range of coastal wetlands and some inland wetlands where it forages in muddy margins or rocky shores and rarely on mudflats. The Common Sandpiper has been recorded in estuaries and deltas of streams, as well as on banks farther upstream; around lakes, pools, billabongs, reservoirs, dams and claypans, and occasionally piers and jetties. Areas of national importance within Western Australia include Nuytsland Nature Reserve and Roebuck Bay.	**Unlikely** – Suitable habitat not located within the Project footprint	**Possible** – may occur foraging and roosting. Non-breeding visitor to Australia.
Marsh Sandpiper *Tringa stagnatilis*	MI	SH - K	MI	The Marsh Sandpiper is found on coastal and inland wetlands throughout Australia. In Western Australia they are mainly found around the coast. The Marsh Sandpiper lives in permanent or ephemeral wetlands of varying salinity, including swamps, lagoons, billabongs, saltpans, saltmarshes, estuaries, pools on inundated floodplains, and intertidal mudflats and also regularly at sewage farms and saltworks. In Western Australia they prefer freshwater to marine environments. The species has been recorded roosting or loafing on tidal mudflats, near low saltmarsh, and around inland swamps.	**Rare** – Not expected to occur, not identified in PMST report.	**Possible** – may occur foraging and roosting. Non-breeding visitor to Australia.
Common Greenshank *Tringa nebularia*	E, MI	SH - K	MI	The Common Greenshank does not breed in Australia, however, the species occurs in all types of wetlands and has the widest distribution of any shorebird in Australia. It occurs around most of the WA coast from Cape Arid in the south to	**Rare** – Not expected to occur, not identified in PMST report.	**Likely** – expected to occur foraging and roosting. Non-

Species	EPBC Act 1999		BC Act 2016 Status	Preferred Habitat/Description*	Likelihood of Occurring within the Project Area	
	Status	Presence Rank			1 km	20 km
				Carnarvon in the north-west. In the Kimberleys it is recorded in the south-west and the north-east, with isolated records from the Bonaparte Archipelago. The Common Greenshank is 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.		breeding visitor to Australia.
Pacific Golden Plover *Pluvialis fulva*	MI	SH - K	MI	Within Australia, the Pacific Golden Plover is widespread in coastal regions. In Western Australia, the species is seldom recorded along the southern or south-western coasts, but is more widespread along the Pilbara and Kimberley coasts between North-West Cape and the Northern Territory border. The Pacific Golden Plover usually forages on sandy or muddy shores (including mudflats and sandflats) or margins of sheltered areas such as estuaries and lagoons, though it also feeds on rocky shores, islands or reefs. In addition, Pacific Golden Plovers occasionally forage among vegetation, such as saltmarsh, mangroves or in pasture or crops.	**Rare** – Not expected to occur, not identified in PMST report.	**Likely** – expected to occur foraging and roosting. Non-breeding visitor to Australia.
Osprey *Pandion haliaetus*	MI	SH - M	MI	The breeding range of the Osprey extends around the northern coast of Australia (including many offshore islands) from Albany in WA to Lake Macquarie in NSW. The distribution of the species around the northern coast appears continuous except for a possible gap at Eighty Mile Beach. Ospreys occur in littoral and coastal habitats and terrestrial wetlands of tropical	**Unlikely** – May fly through but the area is not expected to represent significant foraging habitat	**Likely** – expected to occur foraging and roosting. Breeding may occur on some

Species	EPBC Act 1999		BC Act 2016 Status	Preferred Habitat/Description*	Likelihood of Occurring within the Project Area	
	Status	Presence Rank			1 km	20 km
				and temperate Australia and offshore islands. They are mostly found in coastal areas but occasionally travel inland along major rivers, particularly in northern Australia. They frequent a variety of wetland habitats including inshore waters, reefs, bays, coastal cliffs, beaches, estuaries, mangrove swamps, broad rivers, reservoirs and large lakes and waterholes. Osprey breeds from April to February in Australia. Breeding seasons of individual pairs vary according to latitude, with breeding commencing progressively later on a cline from north to south		islands, but records are lacking
Grey-tailed Tattler *Tringa brevipes*	MI	SH - K	P4	Within Australia, the Grey-tailed Tattler has a primarily northern coastal distribution and is found in most coastal regions. The species is widespread from the Houtman Abrolhos Islands and the mainland adjacent to the Kimberley Division. The Grey-tailed Tattler is found on sheltered coasts with reefs and rock platforms or with intertidal mudflats. Also found on intertidal rocky, coral or stony reefs, platforms and islets that are exposed at low tide.	**Rare** – Not expected to occur, not identified in PMST report.	**Likely** – expected to occur foraging and roosting. Non-breeding visitor to Australia.
Ruddy Turnstone *Arenaria interpres*	V, MI	SH - K	MI	The Ruddy Turnstone is widespread within Australia during its non-breeding period of the year, including from Tasmania in the south to Darwin in the north and many coastal areas in between. It is found in most coastal regions. The Ruddy Turnstone are mainly found on exposed rocks or reefs, often with shallow pools, and on beaches. In the north, they are found in a wider range of habitats, including mudflats. The	**Rare** – Not expected to occur, not identified in PMST report.	**Likely** – expected to occur foraging and roosting. Non-breeding visitor to Australia.

Species	EPBC Act 1999		BC Act 2016 Status	Preferred Habitat/Description*	Likelihood of Occurring within the Project Area	
	Status	Presence Rank			1 km	20 km
				species roosts on beaches, above the tideline, among rocks, shells, beachcast seaweed or other debris.		
Sharp-tailed Sandpiper *Calidris acuminata*	V, MI	SH - M	MI	The Sharp-tailed Sandpiper spends the non-breeding season in Australia. In WA, scattered records occur along the Nullarbor Plain and the southern areas of the Great Victoria Desert. They are widespread from Cape Arid to Carnarvon, around coastal and subcoastal plains of Pilbara Region to south-west and east Kimberley Division. The Sharp-tailed Sandpiper prefers muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation. They use intertidal mudflats in sheltered bays, inlets, estuaries or seashores, and also swamps and creeks lined with mangroves. They tend to occupy coastal mudflats mainly after ephemeral terrestrial wetlands have dried out, moving back during the wet season.	**Unlikely** – may fly through occur but in low numbers	**Likely** – expected to occur foraging and roosting. Non-breeding visitor to Australia. Recorded at the Port Hedland Saltworks.
Pectoral Sandpiper *Calidris melanotos*	MI	SH - M	MI	In WA, the Pectoral Sandpiper is rarely recorded. Although it has been recorded in the Pilbara and the Kimberley (Higgins and Davies 1996). The species prefers shallow fresh to saline wetlands and can be found at coastal lagoons, estuaries, bays, swamps, lakes, inundated grasslands, saltmarshes, river pools, creeks, floodplains and artificial wetlands.	**Unlikely** – may occur but in low numbers	**Unlikely** – may occur but in low numbers
Oriental Pratincole *Glareola maldivarum*	MI	SH - M	MI	Within Australia the Oriental Pratincole is widespread in northern areas, especially along the coasts of the Pilbara Region and the Kimberley Division in WA. Eighty Mile Beach and Roebuck Plains are considered internationally and	**Rare** – Not expected to occur, not identified in PMST report.	**Likely** – expected to occur foraging and roosting. Recorded at the Port Hedland

Species	EPBC Act 1999		BC Act 2016 Status	Preferred Habitat/Description*	Likelihood of Occurring within the Project Area	
	Status	Presence Rank			1 km	20 km
				important sites. In non-breeding grounds in Australia, the Oriental Pratincole usually inhabits open plains, floodplains or short grassland. They often occur near terrestrial wetlands, such as billabongs, lakes or creeks, and artificial wetlands such as reservoirs, saltworks and sewage farms, especially around the margins. The species also occurs along the coast, inhabiting beaches, mudflats and islands, or around coastal lagoons.		Saltworks. Non-breeding visitor to Australia.
Broad-billed Sandpiper *Limicola falcinellus*	MI	SH - K	MI	In Australia, the Broad-billed Sandpiper is most common on the north and north-west coasts. In Western Australia they mostly occur on the coasts of the Pilbara and Kimberley between Onslow and Broome. The Broad-billed Sandpiper occurs in sheltered parts of the coast, favouring estuarine mudflats but also occasionally occur on saltmarshes, shallow freshwater lagoons, saltworks and sewage farms, and in areas with large soft intertidal mudflats, which may have shell or sandbanks nearby. Occasionally they occur on reefs or rocky platforms.	**Rare** – Not expected to occur, not identified in PMST report.	**Likely** – expected to occur foraging and roosting. Recorded at the Port Hedland Saltworks. Non-breeding visitor to Australia.
Asian Dowitcher *Limnodromus semipalmatus*	V, MI	SH - L	MI	The Asian Dowitcher is a regular visitor to the north-west between Port Hedland and Broome. Elsewhere they are sporadic and rare. The species occurs in sheltered coastal environments, such as embayments, coastal lagoons, estuaries and tidal creeks. They are known to frequent shallow water and exposed mudflats or sandflats. The species is commonly found in the round ponds and channels of saltworks and sewage farms.	**Rare** – Not expected to occur, not identified in PMST report.	**Likely** – expected to occur foraging and roosting. Recorded at the Port Hedland Saltworks. Non-breeding visitor to Australia.

Species	EPBC Act 1999		BC Act 2016 Status	Preferred Habitat/Description*	Likelihood of Occurring within the Project Area	
	Status	Presence Rank			1 km	20 km
Black-tailed Godwit *Limosa limosa*	E, MI	SH - K	MI	The Black-tailed Godwit is found in all states and territories of Australia, however, it prefers coastal regions and the largest populations are found on the north coast between Darwin and Weipa. It is generally found in small numbers elsewhere and there are scattered inland records. The species is commonly found in sheltered bays, estuaries and lagoons with large intertidal mudflats or sandflats, or spits and banks of mud, sand or shell-grit; occasionally recorded on rocky coasts or coral islets. The use of habitat often depends on the stage of the tide.	**Rare** – Not expected to occur, not identified in PMST report.	**Likely** – expected to occur foraging and roosting. Non-breeding visitor to Australia.
Whimbrel *Numenius phaeopus*	MI	SH - K	MI	The Whimbrel is a regular migrant to Australia, with a primarily coastal distribution. In WA, it is common and widespread from Carnarvon to the north-east Kimberley Division. The Whimbrel is often found on the intertidal mudflats of sheltered coasts. It is also found in harbours, lagoons, estuaries and river deltas, often those with mangroves, but also open, unvegetated mudflats. It is occasionally found on sandy or rocky beaches, on coral or rocky islets, or on intertidal reefs and platforms.	**Rare** – Not expected to occur, not identified in PMST report.	**Likely** – expected to occur foraging and roosting. Non-breeding visitor to Australia.
Sanderling *Calidris alba*	MI	SH - K	MI	Sanderlings occur on most of the coast from Eyre to Derby, and also around Wyndham. They are more often recorded on the south and southwest coasts, north to around southern Shark Bay, with more sparsely scattered records further north in Gascoyne and Pilbara Regions and the Kimberley Division. Small numbers regularly arrive during late August and early September in the south-west of Western Australia. They roost on/behind, bare sand high on the beach, clumps of washed-up	**Rare** – Not expected to occur, not identified in PMST report.	**Likely** – expected to occur foraging and roosting. Non-breeding visitor to Australia.

Species	EPBC Act 1999		BC Act 2016 Status	Preferred Habitat/Description*	Likelihood of Occurring within the Project Area	
	Status	Presence Rank			1 km	20 km
				kelp, coastal dunes and rocky reefs and ledges (Higgins and Davies 1996). The species is almost always found on the coast, mostly on open sandy beaches exposed to open sea-swell, and also on exposed sandbars and spits, and shingle banks, where they forage in the wave-wash zone and amongst rotting seaweed.		
Terek Sandpiper *Xenus cinereus*	V, MI	SH - K	-	In Australia, the Terek Sandpiper has a primarily coastal distribution. In WA, the species is rarely seen on the south coast but is widespread in the Pilbara region and Kimberley Division, from Dampier to Wyndham, with occasional records around Shark Bay. The Terek Sandpiper mostly forages in the open, on soft wet intertidal mudflats or in sheltered estuaries, embayments, harbours or lagoons. The species has also been recorded on islets, mudbanks, sandbanks and spits, and near mangroves and occasionally in samphire (Halosarcia spp.). Birds are seldom near the edge of water, however, birds may wade into the water.	**Rare** – Not expected to occur, not identified in PMST report.	**Likely** – expected to occur foraging and roosting. Non-breeding visitor to Australia.
Oriental Plover *Charadrius veredus*	MI	SH - K	MI	The Oriental Plover is a non-breeding visitor to Australia, where the species occurs in both coastal and inland areas, mostly in northern Australia. Most records are along the north-western coast, between Exmouth Gulf and Derby in Western Australia. Eighty Mile Beach, Port Hedland and Dampier Saltworks and Roebuck Bay are considered internationally important sites for the species. Immediately after arriving in non-breeding grounds in northern Australia, Oriental Plovers spend a few weeks in coastal habitats such as estuarine mudflats and	**Rare** – Not expected to occur, not identified in PMST report.	**Likely** – expected to occur foraging and roosting. Recorded at the Port Hedland Saltworks. Non-breeding visitor to Australia.

Species	EPBC Act 1999		BC Act 2016 Status	Preferred Habitat/Description*	Likelihood of Occurring within the Project Area	
	Status	Presence Rank			1 km	20 km
				sandbanks, on sandy or rocky ocean beaches or nearby reefs, or in near-coastal grasslands, before dispersing further inland.		
Grey Plover *Pluvialis squatarola*	V, MI	SH – K	MI	There are no published estimates of the extent of occurrence of the Grey Plover in Australia. The species has been recorded in all states, where it is found along the coasts, and it especially abundant on the western and southern coastlines. In non-breeding grounds in Australia, Grey Plovers occur almost entirely in coastal areas, where they usually inhabit sheltered embayments, estuaries and lagoons with mudflats and sandflats, and occasionally on rocky coasts with wave-cut platforms or reef-flats, or on reefs within muddy lagoons.	**Rare** – Not expected to occur, not identified in PMST report.	**Likely** – expected to occur foraging and roosting. Non-breeding visitor to Australia.
Red-necked Stint *Calidris ruficollis*	MI	SH – K	MI	During the non-breeding season, over 80% of the global population of the Red-necked Stint resides in Australia. The species is mostly found in coastal areas, including in sheltered inlets, bays, lagoons and estuaries with intertidal mudflats, often near spits, islets and banks and, sometimes, on protected sandy or coralline shores. The Red-necked Stint roosts on sheltered beaches, spits, banks or islets, of sand, mud, coral or shingle, sometimes in saltmarsh or other vegetation. In north Australia, adults start arriving from the third week of August and most arrive before the end of September, with arrival in southern Australia a couple of weeks later.	**Rare** – Not expected to occur, not identified in PMST report.	**Likely** – expected to occur foraging and roosting. Non-breeding visitor to Australia. Port Hedland Saltworks identified as Important Bird Area for this species.
Long-toed Stint *Calidris subminuta*	MI	SH – K	MI	The Long-toed Stint is a regular summer visitor to Australia. In Western Australia the species is found mainly along the coast. It is widespread around the Pilbara region and the Kimberley	**Rare** – Not expected to occur, not identified in PMST report.	**Likely** – expected to occur foraging and roosting. Non-

Species	EPBC Act 1999		BC Act 2016 Status	Preferred Habitat/Description*	Likelihood of Occurring within the Project Area	
	Status	Presence Rank			1 km	20 km
				Division between Karratha and Wyndham-Kununurra. The Long-toed Stint forages on wet mud or in shallow water, often among short grass, weeds and other vegetation on islets or around the edges of wetlands. They occasionally feed on open water, well away from the shore; this is more common in drying ephemeral wetlands. They roost or loaf in sparse vegetation at the edges of wetlands and on damp mud near shallow water. It also roosts in small depressions in the mud.		breeding visitor to Australia.
Northern Siberian Bar-tailed Godwit *Limosa lapponica menzbieri*	E, MI	SH – K	MI	The Bar-tailed Godwit has been recorded in the coastal areas of all Australian states. In Western Australia it is widespread around the coast, from Eyre to Derby, with a few scattered records elsewhere in the Kimberley Division. Eighty Mile Beach and Roebuck Plains are considered internationally and important sites. The Bar-tailed Godwit is found in coastal habitats, particularly large intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons and bays. The species usually roosts on sandy beaches, sandbars, spits and also in near-coastal saltmarsh.	**Rare** – Not expected to occur, not identified in PMST report.	**Likely** – expected to occur foraging and roosting. Non-breeding visitor to Australia.
Bar-tailed Godwit *Limosa lapponica*	MI	SH - K	MI	The Bar-tailed Godwit has been recorded in the coastal areas of all Australian states. In Western Australia it is widespread around the coast, from Eyre to Derby, with a few scattered records elsewhere in the Kimberley Division. The Bar-tailed Godwit is found mainly in coastal habitats such as large intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons and bays. It is found often around beds of seagrass and, sometimes, in nearby saltmarsh. It has been	**Rare** – Not expected to occur, not identified in PMST report.	**Likely** – expected to occur foraging and roosting. Non-breeding visitor to Australia.

Species	EPBC Act 1999		BC Act 2016 Status	Preferred Habitat/Description*	Likelihood of Occurring within the Project Area	
	Status	Presence Rank			1 km	20 km
				sighted in coastal sewage farms and saltworks, saltlakes and brackish wetlands near coasts, sandy ocean beaches, rock platforms, and coral reef-flats. The Bar-tailed Godwit usually forages near the edge of water or in shallow water, mainly in tidal estuaries and harbours. The Bar-tailed Godwit usually roosts on sandy beaches, sandbars, spits and also in near-coastal saltmarsh.		
Wood Sandpiper *Tringa glareola*	MI	SH - K		The Wood Sandpiper has its largest numbers recorded in north-west Australia, with all areas of national importance located in Western-Australia. The Wood Sandpiper uses well-vegetated, shallow, freshwater wetlands, such as swamps, billabongs, lakes, pools and waterholes. They also frequent inundated grasslands, short herbage or wooded floodplains, where floodwaters are temporary or receding, and irrigated crops. The Wood Sandpiper forages on moist or dry mud at the edges of wetlands, either along shores, among open scattered aquatic vegetation, or in clear shallow water	**Rare** – Not expected to occur, not identified in PMST report.	**Possible** – may occur foraging. Non-breeding visitor to Australia.
Marine Mammals						
Blue Whale *Balaenoptera musculus*	E, MI	SH - L	EN	The blue whale is considered a cosmopolitan species and range from polar to tropical waters. Blue whales, and the pygmy subspecies (*B. m. brevicauda*) are known to aggregate and feed along the southern continental shelf in the Perth Canyon during Summer (Rennie et al. 2009), and migrate west and north along the Australian coast until they reach West Timor and Indonesia (Moller et al. 2020). General distribution of the	**Unlikely** - may be found in offshore waters considering BIA for the species overlaps the search area, however still not expected given water	**Unlikely** - may be found in offshore waters considering BIA for the species overlaps the search area, however still not expected given water

Species	EPBC Act 1999		BC Act 2016 Status	Preferred Habitat/Description*	Likelihood of Occurring within the Project Area	
	Status	Presence Rank			1 km	20 km
				species is typical in water depths over 200 m and commonly over 1000 m. In the wider region, pygmy blue whales migrate along the 500 m to 1000 m depth contour on the edge of the slope and are likely to feed opportunistically on ephemeral Krill aggregations. Recent satellite tracking analysis for the pygmy blue whale conducted by Thums et al. (2022) suggests important migration areas encompassed by the Migration BIA in Australia include a broader north-west distribution and migration extent than what was represented during the study. Most whales were found to migrate much further offshore along the north-west part of the Australian coast, even out to the abyssal plain.	depths and known migration route.	depths and known migration route.
Humpback Whale *Megaptera novaeangliae*	MI	B - K	CD	Humpback Whales may be encountered during their northern migration to breeding grounds in late June to early August, and southern migration (with calves) during late August to mid October. However, the Port Hedland area does not support calving, aggregation or feeding areas	**Likely** – Search area within migratory BIA for the species but large numbers of migrating individuals not expected.	**Likely** – Search area within migratory BIA for the species but large numbers of migrating individuals not expected.
Bryde's Whale *Balaenoptera edeni*	MI	SH - M	MI	Bryde's Whales are found year-round in waters between 40° S and 40° N, primarily in temperatures exceeding 16.3 °C. The coastal form of Bryde's Whale appears to be limited to the 200 m depth isobar, moving along the coast in response to availability of suitable prey. The offshore form is found in deeper water (500 m to 1000 m).	**Unlikely** - may be found, however not expected given water depths	**Unlikely** - may be found offshore, however still not expected given water depths

Species	EPBC Act 1999		BC Act 2016 Status	Preferred Habitat/Description*	Likelihood of Occurring within the Project Area	
	Status	Presence Rank			1 km	20 km
Killer Whale *Orcinus orca*	MI	SH - M	MI	Killer Whales are cosmopolitan in distribution. The species distribution and occurrence in Australia strongly reflect locations of prey aggregation, particularly breeding and feeding grounds (Morrice 2004), such as those of the humpback whale (Pitman et al. 2015).	**Possible** – may occur in deeper waters particularly during southern humpback whale migrations when hunting for calves.	**Possible** – may occur in deeper waters particularly during southern humpback whale migrations when hunting for calves.
Australian Humpback Dolphin *Sousa sahulensis*	V, MI	SH - L	P4	Australian Humpback Dolphins are found in tropical, shallow coastal waters and tend to occur in enclosed bays with mangrove forests and seagrass beds, but are also found in open coastal waters around islands and coastal cliffs in association with rock or coral reefs (SEWPaC 2012). In the north-west of Australia, the species has been recorded between Coral Bay and Roebuck Bay (Allen et al. 2012).	**Possible** - May be found in the area but visits will be brief due to port activity.	**Possible** - May be found in the area but visits will be brief due to port activity.
Indian Ocean / Spotted Bottlenose Dolphin *Tursiops aduncus*	MI	SH - K	MI	The Indian Ocean Bottlenose Dolphin tends to occur in deep, open coastal waters (up to 200 m deep), including coastal areas around oceanic islands (SEWPaC 2012).	**Possible** - May be found in the area but visits will be brief due to port activity.	**Possible** - May be found in the area but visits will be brief due to port activity.
Australian Snubfin Dolphin *Orcaella heinsohni*	V, MI	SH - L	MI, P4	Within Australia, Australian Snubfin Dolphins have been recorded almost exclusively in coastal and estuarine waters. The species has been found in the shallow coastal waters and estuaries along the Kimberley coast. Beagle and Pender Bays on the Dampier Peninsula and tidal creeks around Yampi Sound and between Kuri Bay and Cape Londonderry are important areas for Australian Snubfin Dolphins. Australian Snubfin	**Possible** - May be found in the area but visits will be brief due to port activity.	**Possible** - May be found in the area but visits will be brief due to port activity.

Species	EPBC Act 1999		BC Act 2016 Status	Preferred Habitat/Description*	Likelihood of Occurring within the Project Area	
	Status	Presence Rank			1 km	20 km
				Dolphins share similar habitat preferences with Indo-Pacific Humpback Dolphins. Feeding may occur in a variety of habitats, from mangroves to sandy bottom estuaries and embayments, to rock and/or coral reefs. Feeding primarily occurs in shallow waters (less than 20 m) close to river mouths and creeks.		
Omura's Whale Balaenoptera omurai	M	SH - L		The Omura's whale is one of the most recently described species of baleen whale. It is likely to occur in warm, oligotrophic waters rather than highly productive temperate systems. Initially known only from stranding and whaling specimens, it has now been identified in all ocean basins excluding the central and eastern Pacific. In Australian waters there have been fewer than 30 confirmed visual sightings. The species has been sighted in the Kimberley Region and Timor Sea, but records along the northwest coast in the Pilbara Region are limited to Exmouth. There is a strong tendency toward a coastal and neritic distribution, although there are also several pelagic records.	**Unlikely** - may be found, however not expected given unsuitable habitats and water depths	**Unlikely** - may be found, however not expected given unsuitable habitats and water depths
Dugong *Dugong dugon*	MI	SH - K	OS	Dugongs occur in coastal and island waters from Shark Bay in Western Australia across the northern coastline to Moreton Bay in Queensland. Dugongs are seagrass community specialists and the range of the dugong is broadly coincident with the distribution of seagrasses in the tropical and sub-tropical waters in their Australian range.	**Possible** - visits possible, but due to lack of food source and port activity, visits would be brief and rare.	**Possible** - visits possible, but due to lack of food source and port activity, visits would be brief and rare.
Marine Reptiles						

Species	EPBC Act 1999		BC Act 2016 Status	Preferred Habitat/Description*	Likelihood of Occurring within the Project Area	
	Status	Presence Rank			1 km	20 km
Loggerhead Turtle *Caretta caretta*	E, MI	SH - K	EN	Loggerhead turtles' nest on open, sandy beaches. Western Australia supports one genetic stock of loggerhead turtles with nesting encompassing the Gascoyne (Dirk Hartog Island) to Pilbara (Varanus Island) Regions (Limpus 2002). Foraging occurs in areas of seagrass beds and coral/rocky reefs.	**Likely** – Search area adjacent to foraging BIA for the species. Foraging individuals expected to occur but in low numbers.	**Likely** – Search area adjacent to foraging BIA for the species. Foraging individuals expected to occur but in low numbers.
Green Turtle *Chelonia mydas*	V, MI	C - K	VU	Western Australia supports one genetic stock of green turtles nesting from the Gascoyne (Ningaloo Coast) to the Kimberley (Lacepede Islands) Regions (Limpus 2002). Green Turtles spend their first five to ten years drifting on ocean currents. Once Green Turtles reach 30 to 40 cm curved carapace length, they settle in shallow benthic foraging habitats such as tropical tidal and sub-tidal coral and rocky reef habitat or inshore seagrass beds (Limpus 2008b).	**Likely** – Search area adjacent to foraging BIA for the species. Foraging individuals expected to occur but in low numbers.	**Likely** – Search area adjacent to foraging BIA for the species. Foraging individuals expected to occur but in low numbers.
Leatherback Turtle *Dermochelys coriacea*	E, MI	SH - L	VU	There has been no confirmed breeding of leatherback turtles in Western Australia (Limpus 2009b). Foraging leatherback turtles from foreign rockeries e.g. Indonesia, pass through Western Australian waters.	**Unlikely** – due to absence of breeding areas and shallow waters.	**Possible** – Foraging and migrating individuals may occur.
Hawksbill Turtle *Eretmochelys imbricata*	V, MI	SH - K	VU	Hawksbill Turtles are found in tropical, subtropical and temperate waters in all the oceans of the world. Major nesting of Hawksbill Turtles in Australia occurs at Varanus Island and Rosemary Island in Western Australia (Pendoley 2005). Hawksbill Turtles spend their first five to ten years drifting on ocean currents, Once Hawksbill Turtles reach 30 to 40 cm	**Likely** – Search area adjacent to foraging BIA for the species. Foraging individuals expected to occur but in low numbers.	**Likely** – Search area adjacent to foraging BIA for the species. Foraging individuals expected to occur but in low numbers.

Species	EPBC Act 1999		BC Act 2016 Status	Preferred Habitat/Description*	Likelihood of Occurring within the Project Area	
	Status	Presence Rank			1 km	20 km
				curved carapace length, they settle and forage in tropical tidal and sub-tidal coral and rocky reef habitat (Limpus 2009a).		
Flatback Turtle *Natator depressus*	V, MI	C - K	VU	The Flatback Turtle is found only in the tropical waters of northern Australia, Papua New Guinea and Irian Jaya (DCCEEW 2023). Nesting is confined to Australia and four genetic stocks are recognised (Limpus 2007). Adults inhabit soft bottom habitat over the continental shelf, Post-hatchling and juvenile Flatback Turtles do not have the wide dispersal phase in the oceanic environment like other sea turtles. Female flatback turtles will utilise habitat at two beaches in Port Hedland for nesting purposes; Cemetery Beach and Pretty Pool Beach.	**Almost Certain** – search area within known BIA for breeding and inter-nesting of the species. Search area adjacent to foraging BIA for the species.	**Almost Certain** – search area within known BIA for breeding, inter-nesting and foraging of the species.
Short-nosed Sea Snake *Aipysurus apraefrontalis*	CE	SH - L	CR	The Short-nosed Sea snake is endemic to Western Australia, and has been recorded from Exmouth Gulf, Western Australia to the reefs of the Sahul Shelf, in the eastern Indian Ocean. Most specimens have been collected from Ashmore and Hibernia Reefs (Guinea and Whiting 2005). The species prefers the reef flats or shallow waters along the outer reef edge in water depths to 10 m.	**Unlikely** – species not previously been recorded from the area. Suitable habitat is either small in area or of low value	**Unlikely** – species not previously been recorded from the area. Suitable habitat is either small in area or of low value
Leaf-scaled Sea Snake *Aipysurus foliosquama*	CE	SH - K	CR	Until recently breeding populations of the Leaf-scaled sea snake were only known from Ashmore and Hibernia Reefs in the Timor Sea, but the species has since been found during field surveys in the coastal waters of the Exmouth Gulf (Udyawer et al. 2020). The Leaf-scaled Sea snake occurs in shallow water (less than 10 m in depth), in the protected parts of the reef flat, adjacent to living coral and on coral substrates.	**Unlikely** – species not previously been recorded from the area. Suitable habitat is either small in area of low value	**Unlikely** – species not previously been recorded from the area. Suitable habitat is either small in area of low value

Species	EPBC Act 1999		BC Act 2016 Status	Preferred Habitat/Description*	Likelihood of Occurring within the Project Area	
	Status	Presence Rank			1 km	20 km
Salt-water Crocodile *Crocodylus porosus*	MI	SH - M		The Salt-water Crocodile is found in Australian coastal waters, estuaries, lakes, inland swamps and marshes. In Western Australia the species is found in most major river systems of the Kimberley. The largest populations occur in the rivers draining into the Cambridge Gulf and the Prince Regent River and Roe River systems. There have also been isolated records in rivers of the Pilbara region, around Derby near Broome and as far south as Carnarvon on the mid-west coast.	**Rare -** not expected due to lack of suitable habitat, water depths and port activities	**Unlikely** –rare sightings within areas of suitable habitat, but likely to avoid areas of high vessel traffic
Sharks and Rays						
Grey Nurse Shark (west coast population) *Carcharias taurus*	MI	SH - M	VU	Grey nurse sharks have a broad inshore distribution and tend to be found in groups at specific aggregation sites around inshore rocky reefs or islands (Otway et al. 2003). Their distribution in Western Australia is largely confined to the south-west coastal waters (Commonwealth of Australia 2014) and there are no known aggregation sites in Western Australia (Chidlow et al. 2005)	**Unlikely** – not expected due to lack of suitable habitat, water depths and port activities	**Possible** – may be found within suitable habitat around the islands offshore from Port Hedland.
White Shark *Carcharodon carcharias*	V, MI	SH - M	VU	White sharks have a global marine distribution in temperate to tropical latitudes. In Western Australia they are most commonly found in continental shelf waters and around oceanic islands, and are present all year-round in the southwest of the state (McAuley et al. 2017).	**Unlikely** - not expected due to preference for temperate waters and lack of favoured prey.	**Unlikely** - not expected due to preference for temperate waters and lack of favoured prey.
Oceanic Whitetip Shark *Carcharhinus longimanus*	MI	SH - M	-	Oceanic Whitetip Sharks are found in pelagic waters throughout the topics and subtropics. Within Australian waters, it is found from Cape Leeuwin (Western Australia) through parts of the Northern Territory, down the east coast of	**Unlikely** – not expected due water	**Unlikely** – not expected due water

Species	EPBC Act 1999		BC Act 2016 Status	Preferred Habitat/Description*	Likelihood of Occurring within the Project Area	
	Status	Presence Rank			1 km	20 km
				Queensland and New South Wales to Sydney (Last and Stevens 2009)	depths and port activities	depths and port activities
Scalloped Hammerhead *Sphyrna lewini*	CD	SH - L	-	The Scalloped Hammerhead Shark is a coastal pelagic species with a circumglobal distribution in warm temperate and tropical coastal areas between 45°N and 34°S. They are known to form large migratory schools and in Australia tend to move south during the warmer months. Scalloped Hammerheads may be found throughout the seas around northern Australia as far south as Sydney NSW (34°S) and Geographe Bay WA (33°S). Adult Scalloped Hammerheads inhabit deep waters adjacent to continental shelves, in water depths ranging from the surface to at least 275 m in depth, while juveniles are found close to shore in nursery habitats. Adult females are thought to occupy deeper water and move into shallower waters to mate and give birth.	**Unlikely** – not expected due water depths and port activities	**Possible** – may be found in deeper waters
Whale Shark *Rhincodon typus*	V, MI	SH - M	OS	The whale shark is cosmopolitan in distribution, occurring in all tropical and warm temperate seas apart from the Mediterranean, and inhabits pelagic habitats (Colman 1997). In Western Australia, large numbers of whale sharks aggregate off Ningaloo Reef for several weeks between March and June every year. When sharks depart the Ningaloo Reef they travel northeast along the continental shelf before moving offshore into the northeastern Indian Ocean (Wilson et al. 2006).	**Unlikely** – not expected given absence of significant zooplankton populations	**Unlikely** – not expected given absence of significant zooplankton populations and water depths nearshore.
Dwarf Sawfish	V, MI	SH - K	P1	The Dwarf Sawfish usually inhabits shallow (2–3 m) coastal waters and estuarine habitats, often influenced by large tides.	**Unlikely** – shallow water coastal species,	**Possible** – species has not previously been

Species	EPBC Act 1999		BC Act 2016 Status	Preferred Habitat/Description*	Likelihood of Occurring within the Project Area	
	Status	Presence Rank			1 km	20 km
Pristis clavata				Estuarine habitats are used as nursery areas by Dwarf Sawfish, with immature juveniles remaining in these areas up until three years of age. The majority of capture locations and donated rostra in Western Australia have been between King Sound and Cape Keraudren (Morgan et al. 2011)	Project area not preferred habitat.	recorded from the area, but shallow nearshore waters are favoured
Green Sawfish *Pristis zijsron*	V	SH - K	VU	Green sawfish are currently distributed from about the Whitsundays in Queensland across northern Australian waters to Shark Bay in Western Australia and inhabit inshore shallow marine waters. The green sawfish has been recorded in estuaries, river mouths, embankments and along sandy and muddy beaches. The green sawfish has been confirmed through sightings or evidence of rostra in the Karratha area (Morgan et al. 2019; Morgan et al. 2011). Green Sawfish generally have a very small home range, occupy very shallow waters and are likely to avoid areas of high vessel traffic, such as the Port of Port Hedland (Morgan et al. 2017).	**Unlikely** – shallow water coastal species, Project area not preferred habitat.	**Likely** – species known to occur within areas of suitable habitat, but likely to avoid areas of high vessel traffic.
Narrow Sawfish *Anoxypristis cuspidata*	MI	SH - L	-	In Australia, the Narrow Sawfish is found across northern Australia from the Pilbara Coast Western Australia) to Broad Sound (Queensland). It is a bentho-pelagic species that inhabits coastal and estuarine habitats. It occurs to depths of at least 40 m (Last and Stevens 2009). Adults mainly occur offshore while juveniles and pupping females require inshore and estuarine habitats.	**Unlikely** – shallow water coastal species, Project area not preferred habitat.	**Possible** – species has not previously been recorded from the area, but shallow nearshore waters are favoured for pupping females
Reef Manta Ray	MI	SH - K	-	The Reef Manta Ray is commonly sighted on the continental shelf, around tropical and subtropical coral and rocky reefs,	**Possible** – may be found in areas of	**Likely** – expected to occur in shallow

Species	EPBC Act 1999		BC Act 2016 Status	Preferred Habitat/Description*	Likelihood of Occurring within the Project Area	
	Status	Presence Rank			1 km	20 km
Manta alfredi				islands and along coastlines, preferentially occupying shallow depths < 20 m (Armstrong et al. 2020). Reef Manta Rays are capable of long-distance dispersal when habitat is continuous but also display a high degree of site fidelity.	suitable habitat adjacent to the Project development footprint	nearshore waters around islands offshore from Port Hedland.
Giant Manta Ray *Manta birostris*	MI	SH - L	-	The Giant Manta Ray has a circumglobal distribution and is considered an oceanic species found predominantly in cooler, temperate to subtropical waters (Last and Stevens 2009).	**Possible** – may be found in deeper waters	**Possible** – may be found in deeper waters