

New Marine Facilities to Service  
Mandorah and Cox Peninsula

APPENDIX

E

LIKELIHOOD OF OCCURRENCE  
ASSESSMENT

Likelihood of occurrence	Criteria
Unlikely	<p>Species that fit into one or more of the following criteria:</p> <ul style="list-style-type: none"> <li>▪ Species highly restricted to certain geographical areas not overlapping the Study Area.</li> <li>▪ Species that have specific habitat requirements that are not present in the Study Area.</li> </ul>
Low	<p>Species that fit into one or more of the following criteria:</p> <ul style="list-style-type: none"> <li>▪ Have not been recorded previously in the Study Area and for which the Study Area is beyond the current distribution range.</li> <li>▪ Use specific habitats or resources not present in the Project Area.</li> </ul>
Moderate	<p>Species that fit one or more of the following criteria:</p> <ul style="list-style-type: none"> <li>▪ Have infrequently been recorded previously in the Study Area.</li> <li>▪ Use specific habitats or resources present in the Project Area, but in a poor or modified condition.</li> <li>▪ Are unlikely to maintain sedentary populations, however may seasonally use resources within the Project Area, opportunistically or during migration.</li> </ul>
High	<p>Species that fit one or more of the following criteria:</p> <ul style="list-style-type: none"> <li>▪ Have frequently been recorded previously in the Study Area.</li> <li>▪ Use habitat types or resources that are present in the Project Area, that are abundant and/or in good condition.</li> <li>▪ Are known to, or likely to, maintain resident populations surrounding the Project Area.</li> <li>▪ Are known to, or likely to, visit the Project Area during regular seasonal movements or migration.</li> </ul>

**Key:**

CR = Critically endangered

EN = Endangered

VU = Vulnerable

LC = Least concern

CD = Conservation dependent

DD = Data deficient

**EPBC Act Protected Matters Categories**

(T) – Threatened

(M) – Migratory

(C) – Whales and other cetaceans

Note: All species in table are listed as 'Marine' under EPBC Act and this may be their reason for inclusion if they are not T, M or C.

**Table D1 Likelihood assessment of listed marine species with potential to occur in the project study area**

Scientific name	Common name	EPBC Act	TPWC Act	Distribution and habitat*	No. of records and source	Likelihood of occurrence in Study Area	Justification
<b>Birds</b>							
<i>Acrocephalus orientalis</i> (M)	Oriental Reed-Warbler	-	-	Inhabit areas of dense vegetation such as reedbeds, bamboo thickets and lantana alongside water. Distributed Australia-wide, however migratory towards northern Australia in late summer and early autumn.	-	Unlikely	Habitat is not present in the study area, therefore unlikely. Potentially overfly marine areas and study area, especially during migration (late summer, early autumn).
<i>Actitis hypoleucus</i> (M)	Common Sandpiper	-	-	Widespread in small numbers along coastlines and inland areas of northern and western Australia. Known to be observed at Kakadu National Park and the Darwin area. Kakadu National Park is also listed as a site of international importance.	30 - NT Fauna Atlas	High	Have frequently been recorded previously in the Study Area. Study site habitat area is suitable for the species, with known breeding grounds around the Darwin area - fly by likely to occur.
<i>Anous stolidus</i> (M)	Common Noddy	-	-	Mainly distributed in ocean regions off the coast of Queensland. The Common Noddy been recorded in the NT in low numbers, but rare (100-150 breeding population). When breeding, birds' nest in pigface ( <i>Carpobrotus spp.</i> ), saltbush, bushes and low vegetation. Generally, inhabits offshore tropical islands	-	Low	Habitat within the study area not suitable for species, however, may fly over study site.
<i>Anseranas semipalmata</i>	Magpie Goose	-	-	Magpie Geese are known to be distributed throughout coastal northern Australia. The NT has the world's largest population of Magpie Geese, generally breeding nearby wetland ecosystems.	-	Low	Use specific habitats or resources not present however may fly through. Species or species habitat may occur within area
<i>Apus pacificus</i> (M)	Fork-tailed Swift	-	-	Widespread but scattered distribution throughout the NT. Inhabiting areas of inland plains, coastal areas or above foothills. Tea-tree swamps, saltmarshes, heathland and low scrub are generally habitat suitable for Fork-tailed Swift. However, have been recorded within sandplains and grassland with spinifex present.	-	Unlikely	Species or species habitat may occur within the study area. Behaviour of species is generally aerial therefore unlikely present in study area, however potentially flying through.

Scientific name	Common name	EPBC Act	TPWC Act	Distribution and habitat*	No. of records and source	Likelihood of occurrence in Study Area	Justification
<i>Ardea ibis</i>	Cattle Egret	-	-	One of the major distributions occurs from the Top End of NT to north-west WA. Typically recorded within wooded lands, terrestrial wetlands and grasslands of temperate and tropical regions.	-	Low	Species or species habitat may occur within the study area
<i>Arenaria interpres</i> (M)	Ruddy Turnstone	-	-	Located Australia-wide outside of breeding season, however two populations have been recorded in the NT at Castlereagh Bay and Bynoe Harbour. Habitats include regions with exposed rock, coral reefs, shelves, shallow tidepools and rocky/gravel beaches.	16 – NT Fauna Atlas	High	Have frequently been recorded previously in the Study Area.  Potential foraging area. Known breeding site (Bynoe Harbour) located south of Study Area, therefore may also fly through.
<i>Calidris acuminata</i> (M)	Sharp-tailed Sandpiper	-	-	Located in Australia throughout non-breeding seasons, however generally in Groote Eylandt and Gove Peninsula, McArthur River and east Borroloola in the NT. Habitat involves both inland and coastal locations that occupy freshwater and saline habitats. Areas of low vegetation near lagoons, swamps, lakes, waterholes and hypersaline salt lakes. Intertidal mudflats serve as habitat for foraging on low tides, moving to freshwater systems during high tide.	1 – NT Fauna Atlas	Moderate	Have infrequently been recorded previously in the Study Area.  Are unlikely to maintain sedentary populations, however may seasonally use resources within the Project Area, opportunistically or during migration.
<i>Calidris alba</i> (M)	Sanderling	-	-	Known to inhabit coastal areas surrounding Darwin, as well as Australia wide. Small groups have also been recorded throughout inland Australia. Sandy beaches, spits and sandbars often provide habitat for Sanderlings. Records within sheltered inlets, estuaries and harbours occur less often. Often found in coastal areas on low beaches of firm sand, near reefs and inlets, along tidal mudflats and bare open coastal lagoons; individuals are rarely recorded in near-coastal wetlands. They roost on/behind bare sand, washed up kelp, coastal dunes and rocky reefs.	-	Moderate	Are unlikely to maintain sedentary populations, however may seasonally use resources within the Project Area, opportunistically or during migration.
<i>Calidris canutus</i> (T, M)	Red Knot	EN	VU	Common in all the main suitable habitats around the coast of Australia. 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.	-	Moderate	Are unlikely to maintain sedentary populations, however may seasonally use resources within the Project Area,

Scientific name	Common name	EPBC Act	TPWC Act	Distribution and habitat*	No. of records and source	Likelihood of occurrence in Study Area	Justification
							opportunistically or during migration. Migration patterns may see presence of Red Knots, generally during September and October. Numbers reduce in December.
<i>Calidris ferruginea</i> (T, M)	Curlew Sandpiper	CE	VU	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 Curlew Sandpipers generally roost on bare dry shingle, shell or sand beaches, sandspits and islets in or around coastal or near-coastal lagoons and other wetlands, occasionally roosting in dunes during very high tides and sometimes in saltmarsh	1 – NT Fauna Atlas	Moderate	Have infrequently been recorded previously in the Study Area. Are unlikely to maintain sedentary populations, however may seasonally use resources within the Project Area, opportunistically or during migration.
<i>Calidris melanotos</i> (M)	Pectoral Sandpiper	-	-	Inhabits saline and/or freshwater wetlands along coastal lagoons, bays, estuaries, lakes, floodplains, creeks, saltmarshes and inundated grasslands. Kakadu National Park is listed as one of the 17 East Asian Australasian Flyway site network sites located in Australia. In the Northern Territory (NT), the Pectoral Sandpiper is found at Darwin and Alice Springs	-	Moderate	Are unlikely to maintain sedentary populations, however may seasonally use resources within the Project Area, opportunistically or during migration.
<i>Calidris tenuirostris</i> (T, M)	Great Knot	CE	VU	In Australasia, the species typically prefers sheltered coastal habitats, with large intertidal mudflats or sandflats. This includes inlets, bays, harbours, estuaries and lagoons. They are occasionally found on exposed reefs or rock platforms, shorelines with mangrove vegetation, ponds in saltworks, at swamps near the coast, saltlakes and non-tidal lagoons. The Great Knot rarely occurs on inland lakes and swamps	2 – NT Fauna Atlas	Moderate	Have infrequently been recorded previously in the Study Area. Are unlikely to maintain sedentary populations, however may seasonally use resources within the Project Area, opportunistically or during migration.
<i>Calonectris leucomelas</i> (M)	Streaked Shearwater	-	-	Found in the western Pacific, breeding on the coast and on offshore islands of Japan, Russia, and on islands off the coasts of China, North Korea and South Korea. This marine species can be found over both pelagic and inshore waters.	-	Unlikely	Generally found in pelagic zones, however potential to fly over study site

Scientific name	Common name	EPBC Act	TPWC Act	Distribution and habitat*	No. of records and source	Likelihood of occurrence in Study Area	Justification
							throughout migratory periods.
<i>Charadrius leschenaultia</i> (T, M)	Greater Sand Plover, Larger Sand Plover	VU	VU	In the NT, presence surrounding the Darwin area is evident. In the non-breeding grounds in Australasia, the species is almost entirely coastal, inhabiting littoral and estuarine habitats. They mainly occur on sheltered sandy, shelly or muddy beaches with large intertidal mudflats or sandbanks, as well as sandy estuarine lagoons and inshore reefs, rock platforms, small rocky islands or sand cays on coral reefs. They are occasionally recorded near-coastal saltworks and salt lakes, including marginal saltmarsh, and on brackish swamps. They usually roost on sand-spits and banks on beaches or in tidal lagoons, and occasionally on rocky points above the high-tide mark. Whale shark ( <i>Rhincodon typus</i> )	-	Moderate	Are unlikely to maintain sedentary populations, however may seasonally use resources within the Project Area, opportunistically or during migration.
<i>Charadrius mongolus</i> (T, M)	Lesser Sand Plover, Mongolian Plover	EN	VU	The species is found around the entire coast of Australia, internationally important sites within NT include Darwin. In non-breeding grounds in Australia, this species usually occurs in coastal littoral and estuarine environments. They inhabit large intertidal sandflats or mudflats in sheltered bays, harbours and estuaries, and occasionally sandy ocean beaches, coral reefs, wave-cut rock platforms and rocky outcrops. It also sometimes occurs in short saltmarsh or among mangroves. The species also inhabits saltworks and near-coastal saltpans, brackish swamps and sandy or silt islands in riverbeds. Roosts during high tide on sandy beaches, spits and rocky shores; forage individually or in scattered flocks on wet ground at low tide, usually away from the water's edge.	21 – NT Fauna Atlas	High	Have frequently been recorded previously in the Study Area. Are unlikely to maintain sedentary populations, however may seasonally use resources within the Project Area, opportunistically or during migration.
<i>Charadrius veredus</i> (M)	Oriental Plover, Oriental Dotterel	-	-	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 WA, and there are records at a few scattered sites elsewhere, mainly along the northern coast, such as in the Top End, the Gulf of Carpentaria and on Cape York Peninsula. They forage among short grass or on hard stony bare ground, but also on mudflats or among seaweed on beaches. Sometimes roost on soft wet mud or in shallow	3 – NT Fauna Atlas	Moderate	Have infrequently been recorded previously in the Study Area. Are unlikely to maintain sedentary populations, however may seasonally use resources within the Project Area, opportunistically or during migration.

Scientific name	Common name	EPBC Act	TPWC Act	Distribution and habitat*	No. of records and source	Likelihood of occurrence in Study Area	Justification
				water of beaches and tidal mudflats, and also occasionally in dry, open habitats, such as saltmarsh or paddocks.			
<i>Chrysococcyx osculans</i>	Black-eared Cuckoo	-	-	Widespread geographically within Australia, inhabiting dry regions occupied with open shrubland and woodlands of malle and mulga trees.	-	Low	Species or species habitat may occur within area. Scattered nature of distribution therefore reduces likelihood of presence. May fly past.
<i>Fregata ariel</i> (M)	Lesser Frigatebird, Least Frigatebird	-	-	Breeding populations are found in the tropical waters of Indian and Pacific Oceans, except in the east Pacific, and the South Atlantic on remote tropical and sub-tropical islands. Mainly feeds on fish but can snatch bird eggs and chicks as well as scavenge.	6 – NT Fauna Atlas	Moderate	Have infrequently been recorded previously in the Study Area. Are unlikely to maintain sedentary populations, however may seasonally use resources within the Project Area, opportunistically or during migration.
<i>Fregata minor</i> (M)	Great Frigatebird, Greater Frigatebird	-	-	Large range geographically, generally inhabiting tropical waters of the Indian and Pacific Oceans. Mangroves, bushes and bare ground are usually breeding habitats for the species.	-	Low	Known recording of species in and around study area throughout migration. However not recorded in Darwin area in most recent 30 years.
<i>Glareola maldivarum</i> (M)	Oriental Pratincole	-	-	Within Australia the Oriental Pratincole is widespread in northern areas, especially along the coasts of the Pilbara Region and the Kimberley Division in WA, the Top End of the NT, and parts of the Gulf of Carpentaria. It is also widespread but scattered inland, mostly north of 20° S. There are occasional records in southern Australia, at sparsely scattered sites, with records in all states, including an unconfirmed report in Tasmania. The species has also been recorded on various outlying islands, including Lord Howe Island, and, in the Indian Ocean, Christmas Island and Cocos-Keeling Islands. In non-breeding grounds in Australia, the Oriental Pratincole usually inhabits open plains, floodplains or short grassland (including farmland or airstrips), often with extensive bare areas. They often occur	-	Low	Species or species habitat may occur within area. Scattered nature of dispersal therefore reduces likelihood of presence. May fly past.

Scientific name	Common name	EPBC Act	TPWC Act	Distribution and habitat*	No. of records and source	Likelihood of occurrence in Study Area	Justification
				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. During the heat of the day they usually loaf near water at the edges of terrestrial wetlands, and at one wetland they roosted in the hoofprints of stock. They usually roost in bare areas such as claypans or areas with low vegetation, such as saltmarsh or airfields.			
<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	-	-	Distributed along the coastline (including offshore islands) of mainland Australia and Tasmania. Found in coastal habitats (especially those close to the sea-shore) and around terrestrial wetlands in tropical and temperate regions of mainland Australia and its offshore islands. The habitats occupied by the sea-eagle are characterised by the presence of large areas of open water (larger rivers, swamps, lakes, and the sea).	14 – NT Fauna Atlas	High	Have frequently been recorded previously in the Study Area.  Are unlikely to maintain sedentary populations, however may seasonally use resources within the Project Area, opportunistically or during migration.
<i>Hirundo daurica</i> (M)	Red-rumped Swallow	-	-	Red-rumped Swallow occupies a very large geographical range, being found within areas of sea cliffs, valleys, mountains, river gorges and open hilly regions.	-	Low	Species or species habitat may occur within area. Scattered nature of distribution therefore reduces likelihood of presence. May fly past.
<i>Hirundo rustica</i> (M)	Barn Swallow	-	-	In Australia, the Barn Swallow is recorded in open country in coastal lowlands, often near water, towns and cities. Birds are often sighted perched on overhead wires and also in or over freshwater wetlands, paperbark Melaleuca woodland, mesophyll shrub thickets and tussock grassland.	-	Moderate	Are unlikely to maintain sedentary populations, however may seasonally use resources within the Project Area, opportunistically or during migration.
<i>Limnodromus semipalmatus</i> (M)	Asian Dowitcher	-	VU	Widespread distribution globally. River deltas, lake shores, flooded meadows and riversides are areas of suitable habitat.	-	Low	Suitable species habitat not present within the study area.
<i>Limosa lapponica baueri</i> (T, M)	Nunivak Bar-tailed Godwit,	VU	VU	The bar-tailed godwit has been recorded in the coastal areas of all Australian states But spends its nonbreeding period mostly in the north of WA and south-east Asia. The species	6 – NT Fauna Atlas	Moderate	Have infrequently been recorded previously in the Study Area.

Scientific name	Common name	EPBC Act	TPWC Act	Distribution and habitat*	No. of records and source	Likelihood of occurrence in Study Area	Justification
	Western Alaskan Bar-tailed			occurs mainly in coastal habitats such as large intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons and bays. It has also been recorded in coastal sewage farms and saltworks, saltlakes and brackish wetlands near coasts, sandy ocean beaches, rock platforms, and coral reef-flats.			Are unlikely to maintain sedentary populations, however may seasonally use resources within the Project Area, opportunistically or during migration.
<i>Limosa limosa</i> (M)	Black-tailed Godwit	-	-	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. Occurs in sheltered bays, estuaries and lagoons with large intertidal mudflats and sand flats.	-	Moderate	Are unlikely to maintain sedentary populations, however may seasonally use resources within the Project Area, opportunistically or during migration.
<i>Merops ornatus</i>	Rainbow Bee-eater	-	-	The Rainbow Bee-eater is distributed across much of mainland Australia, and occurs on several near-shore islands. It is not found in Tasmania, and is thinly distributed in the most arid regions of central and Western Australia. The Rainbow Bee-eater occurs mainly in open forests and woodlands, shrublands, and in various cleared or semi-cleared habitats, including farmland and areas of human habitation (Higgins 1999). It usually occurs in open, cleared or lightly timbered areas that are often, but not always, located in close proximity to permanent water	43 – NT Fauna Atlas	High	Have frequently been recorded previously in the Study Area. Species habitat present within the study area.
<i>Motacilla cinerea</i> (M)	Grey Wagtail	-	-	The Grey Wagtail is an opportunistic migrant to Australia. The species typically migrates to Indonesia occasionally landing in Australia. Most records for the species are from Northern Australia and SA. The non-breeding habitat only of the Grey Wagtail has a strong association with water, particularly rocky substrates along water courses but also lakes and marshes. It can be found mainly in banks and rocks in fast-running freshwater habitats: rivers, creeks, streams, and around waterfalls, both in forest and open country; but occurs almost anywhere during migration.	-	Low	Suitable habitat not present in the study area.
<i>Motacilla flava</i> (M)	Yellow Wagtail	-	-	Breeds in northern latitudes and travels south before the onset of winter. Occurs in a variety of damp or wet habitats with low vegetation. Outside of the breeding season, it is also found in cultivated areas.	-	Low	Suitable habitat not present in the study area.

Scientific name	Common name	EPBC Act	TPWC Act	Distribution and habitat*	No. of records and source	Likelihood of occurrence in Study Area	Justification
<i>Numenius madagascariensis</i> (T, M)	Eastern Curlew, Far Eastern Curlew	CE	VU	Within Australia, the Eastern Curlew has a primarily coastal distribution. The species is found in all states, particularly the north, east, and south-east regions including Tasmania. 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 seagrass.	16 – NT Fauna Atlas	High	<p>Have frequently been recorded previously in the Study Area.</p> <p>Are unlikely to maintain sedentary populations, however may seasonally use resources within the Project Area, opportunistically or during migration.</p> <p>During the non-breeding season (the austral summer) birds in the NT are often solitary or in small flocks, rarely far from the coast. They are most common in mangrove areas, but will also forage on intertidal flats and saltmarshes.</p>
<i>Numenius phaeopus</i> (M)	Whimbrel	-	-	The Whimbrel nests in the branches of mangroves, around mudflats and in estuaries. They also nest in a depression on the ground filled with fragments of vegetation, usually in an exposed location. The Whimbrel is migratory and moves south from breeding grounds for the Northern Hemisphere winter. The subspecies, <i>Numenius phaeopus variegatus</i> , breeds in east Siberia and migrates to India through to Melanesia, Micronesia, Australia and New Zealand. During migration the Whimbrel occurs widely through inland regions on its route. Chambers Bay has been identified as an area of significance within the NT, with an estimated population of 1500.	36 – NT Fauna Atlas	High	<p>Have frequently been recorded previously in the Study Area.</p> <p>Are unlikely to maintain sedentary populations, however may seasonally use resources within the Project Area, opportunistically or during migration.</p> <p>Nearby habitat is likely to be suitable for Whimbrel distribution, therefore potentially flying over site.</p>
<i>Pandion haliaetus</i> (M)	Osprey	-	-	The breeding range of the Eastern Osprey extends around the northern coast of Australia (including many offshore islands) from Albany in Western Australia to Lake Macquarie in NSW; with a second isolated breeding population on the coast of South Australia, extending from Head of Bight east to Cape Spencer and Kangaroo Island. The total range	-	Moderate	<p>Species and habitat known</p> <p>Are unlikely to maintain sedentary populations, however may seasonally use resources within the Project Area,</p>

Scientific name	Common name	EPBC Act	TPWC Act	Distribution and habitat*	No. of records and source	Likelihood of occurrence in Study Area	Justification
				(breeding plus non-breeding) around the northern coast is more widespread, extending from Esperance in Western Australia to NSW, where records become scarcer towards the south, and into Victoria and Tasmania, where the species is a rare vagrant. Eastern Ospreys occur in littoral and coastal habitats and terrestrial wetlands of tropical 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			opportunistically or during migration.
<i>Pluvialis squatarola</i> (M)	Grey Plover	-	-	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. They also occur around terrestrial wetlands such as near-coastal lakes and swamps, or salt-lakes. The species is also very occasionally recorded further inland, where they occur around wetlands or salt-lakes	6 – NT Fauna Atlas	Moderate	Have infrequently been recorded previously in the Study Area. Are unlikely to maintain sedentary populations, however may seasonally use resources within the Project Area, opportunistically or during migration.
<i>Rhipidura rufifrons</i> (M)	Rufous Fantail	-	-	The Rufous Fantail forages mainly in the low to middle strata of forests, sometimes in or below the canopy or on the ground; in northern Australia they also forage in mangroves	-	Low	Species and species habitat is unlikely to be observed in the study area.
<i>Rostratula australis</i> (T)	Australian Painted Snipe	EN	VU	Most records are from the southeast, particularly the Murray Darling Basin, with scattered records across northern Australia and historical records from around the Perth region in WA. Prefers fringes of swamps, dams and nearby marshy areas where there is a cover of grasses, lignum, low scrub or open timber. Nests on the ground amongst tall vegetation, such as grasses, tussocks or reeds.	-	Low	Scattered distribution provides potential for species to fly over site
<i>Rostratula benghalensis (sensu lato)</i> (T)	Painted Snipe	EN	VU	The Australian Painted Snipe has been recorded at wetlands in all states of Australia. It is most common in eastern Australia, where it has been recorded at scattered locations throughout much of Queensland, NSW, Victoria and south-eastern South Australia. It has been recorded less frequently	-	Low	Scattered distribution within the Northern Territory and habitat give reasoning for low likelihood.

Scientific name	Common name	EPBC Act	TPWC Act	Distribution and habitat*	No. of records and source	Likelihood of occurrence in Study Area	Justification
				at a smaller number of more scattered locations farther west 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 grassland or saltmarsh, dams, rice crops, sewage farms and bore drains. Typical sites include those with rank emergent tussocks of grass, sedges, rushes or reeds, or samphire; often with scattered clumps of lignum <i>Muehlenbeckia</i> or canegrass or sometimes tea-tree ( <i>Melaleuca</i> ). The Australian Painted Snipe sometimes utilises areas that are lined with trees, or that have some scattered fallen or washed-up timber			
<i>Sternula albifrons</i> (M)	Little Tern	-	-	Migrates from eastern Asia, this species is found along the north, east and south-east Australian coasts. The Australian breeding population can be divided into two major subpopulations: (1) a northern subpopulation that breeds across northern Australia, from about Broome in north-western WA (where first recorded only in December 1995), through coastal NT (mainly from just west of Darwin to the QLD border) to the Gulf of Carpentaria and eastern Cape York Peninsula (with an extended breeding season covering most of the year); and (2) an eastern subpopulation that breeds on the eastern and south-eastern coast of the mainland and northern and eastern Tasmania, occasionally extending as far west as western VIC and south-eastern SA (and breeding in the austral spring-summer). 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 the Northern Territory, Little Terns are commonly seen in sandy coastal habitats and in mangrove-mudflat habitats along the coast or in bays and estuaries, but not recorded on wetlands more than 1 km from the coast	2 – NT Fauna Atlas	Moderate	Have infrequently been recorded previously in the Study Area.  Are unlikely to maintain sedentary populations, however may seasonally use resources within the Project Area, opportunistically or during migration.
<i>Tringa nebularia</i> (M)	Common Greenshank,	-	-	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 is found in a wide variety of inland wetlands and sheltered	13 – NT Fauna Atlas	High	Have frequently been recorded previously in the Study Area.

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	Greenshank			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. The Common Greenshank roosts and loaf round wetlands, in shallow pools and puddles, or slightly elevated on rocks, sandbanks or small muddy islets.			Are unlikely to maintain sedentary populations, however may seasonally use resources within the Project Area, opportunistically or during migration.
<b>Fish, Sharks &amp; Rays</b>							
<i>Anoxypristes cuspidata</i> (M)	Narrow Sawfish, Knifetooth Sawfish.	-	-	Inshore/offshore most widely distributed and abundant sawfish in Gulf of Carpentaria waters.	-	Low	The Study area contains habitat that isn't generally utilised by the species however may pass through when searching for feeding grounds.
<i>Campichthys tricarinatus</i>	Three-keel Pipefish	-	-	Endemic to tropical northern Australia from the Montebello Islands, WA to Thursday Island, Torres Strait, Qld; inhabits inshore coral reef and rubble areas at about 2-11 m.	1 – NT Fauna Atlas	Moderate	Have infrequently been recorded previously in the Study Area. Use specific habitats or resources present in the Project Area, but in a poor or modified condition.
<i>Carcharhinus longimanus</i> (M)	Oceanic Whitetip Shark	-	-	The Oceanic Whitetip Shark is widespread throughout tropical and subtropical pelagic waters of the world (30°N to 35°S). Within Australian waters, it is found in from Cape Leeuwin (WA) through parts of the NT, down the east coast of QLD and NSW to Sydney. It has not been recorded within the Gulf of Carpentaria or the Arafura Sea, preferring pelagic waters. A single specimen has been recorded in SA.	-	Unlikely	Transient and generally only inhabits open ocean habitats, therefore not suitable within study site.
<i>Carcharodon carcharias</i> (T, M)	White Shark, Great White Shark	VU	-	In Australia, white sharks have been recorded from central QLD around the south coast to north-west WA, but may occur further north on both coasts. White sharks are widely, but not evenly, distributed in Australian waters. This species can be found from close inshore around rocky reefs, surf beaches and shallow coastal bays to outer continental shelf and slope areas. The majority of recorded white shark movements occur between the coast and 100 m in depth but have been recorded to dive to depth of over 1,200 m.	-	Unlikely	Habitat and geological range of the study site is not suitable for this species.

Scientific name	Common name	EPBC Act	TPWC Act	Distribution and habitat*	No. of records and source	Likelihood of occurrence in Study Area	Justification
				Individuals may travel long distances in a relatively short time, but can remain in the same areas for weeks to months.			
<i>Choeroichthys brachysoma</i>	Pacific Short-bodied Pipefish, Short-bodied Pipefish	-	-	Although this species has been recorded in depths of up to 27.4 m (Dawson 1976), it most commonly occurs in seagrass, reef and coral habitats in depths of less than 5 m (Dawson 1985). Specimens in Aust. fish collections were collected in association with reefs (fringing, exposed, sheltered and limestone), live corals (including <i>Porites</i> , <i>Acropora</i> , <i>Millepora</i> and <i>Synarea</i> ), soft corals, dead corals, algae (including <i>Sargassum</i> and filamentous algae), seagrass, sponges, hydroids, coral and shell rubble, coral rock, beach rock, sandstone terraces, isolated rock pools, caves, lagoons, mud, sand, and silt.	-	Low	Within geographical range. Potential habitat (eg. Coral Reef) is scattered in the Study Area. However, no known records within Darwin area..
<i>Choeroichthys suillus</i>	Pig-snouted Pipefish	-	-	Tropical, subtropical, known from northern Australia and Papua New Guinea; from Jurien Bay (WA) to Moreton Bay (Qld); in rubble habitats of inshore coral reefs to 15 m.	-	Low	Within geographical range. Potential habitat (eg. Coral Reef) is scattered in the Study Area. However, no known records within Darwin area.
<i>Corythoichthys amplexus</i>	Fijian Banded Pipefish, Brown-banded Pipefish	-	-	This species prefers protected coral habitats in depths of 0-31m, but is apparently most commonly found in depths greater than 9m. It occurs in shallow reefs as well as deep walls, with algae and known from clear coastal outer reef crests and along the edges of rubble. It inhabits shallow caves but is bold enough to spend most of the day out searching for food. Specimens in Australia fish collections were collected in association with outer reefs, reef edges, coral gutters, bomboras, caves, isolated coral knolls, reef walls and slopes, against drop-offs, ledges, live corals (including <i>Acropora</i> , <i>alcyonarians</i> and <i>gorgonians</i> ), soft corals, sand rubble, lagoons, sand and fine silt. The above specimens were collected in depths of 0-35 m using ichthyocides and dipnets.	-	Low	Species may occur in the area due to suitable habitat present, however not recorded in the study area. Although this species is reported to occur throughout the Indo-West Pacific, it is probably restricted to the Fijian region.
<i>Corythoichthys flavofasciatus</i>	Reticulate Pipefish, Yellow-banded	-	-	This species is observed in still lagoons, sand and coral bomboras. It also occurs in rubble reef and is usually found in pairs. Specimens in Aust. fish collections were collected in	-	Low	Species may occur in the area due to suitable habitat present, however not recorded in the study area

Scientific name	Common name	EPBC Act	TPWC Act	Distribution and habitat*	No. of records and source	Likelihood of occurrence in Study Area	Justification
	Pipefish, Network Pipefish			association with fringing coral reefs, coral reef crests, reef flats, live corals (including <i>Acropora</i> ), gorgonians, limestone rock platforms, soft corals, dead corals, algae, encrusting organisms, rubble, rocky shores, gutters, drop-offs, bomboras, pools, caves and sand.			
<i>Corythoichthys haematopterus</i>	Reef-top Pipefish	-	-	This species occurs on reef crests and slopes and on rubble patches and large coral heads. It is also known from intertidal and generally shallow sheltered inner reef flats and rubble lagoons, usually in association with partially silty habitats.	-	Low	Species may occur in the area due to suitable habitat present, however not recorded in the study area
<i>Doryrhamphus excisus</i>	Bluestripe Pipefish, Indian Blue- stripe Pipefish, Pacific Blue- stripe Pipefish	-	-	<i>Doryrhamphus</i> species are free-swimming benthic fishes found in various reef habitats in coastal to outer reefs, and usually stay close to small caves or narrow crevices into which they retreat when threatened. Specimens in Aust. fish collections were collected in association with coral reefs, reef flats, reef crests, limestone platforms, rocks, boulders, sand, rock and coral rubble, seagrasses, shallow channels, outer reef slopes, vertical reef walls, rocky surge channels, coral gutters, sandy gutters, bomboras, live corals (including <i>Acropora</i> ), dead corals, lagoons, rockpools, artificial reefs, sand and fine silt.	-	Unlikely	Species or species habitat may occur in the study site, however study site not within geographical range.
<i>Doryrhamphus janssi</i>	Cleaner Pipefish, Janss' Pipefish	-	-	Free-swimming benthic fishes found in various reef habitats in coastal to outer reefs, and usually stay close to small caves or narrow crevices into which they retreat when threatened. This species occurs under overhangs, in often in association with sponges, in depths of 5-30 m.	-	Low	Within geographical range. Potential habitat (eg. Coral Reef) is scattered in the Study Area. However, no known records in Darwin area.
<i>Festucalex cinctus</i>	Girdled Pipefish	-	-	Species preferred rubble bottoms but is also found in sponge and seagrass habitats (Kuiter 1992) in sheltered coastal bays with sparse low algal growth. Specimens in Aust. fish collections were collected in association with seagrass (including <i>Zostera</i> and <i>Posidonia</i> ), kelp ( <i>Ecklonia</i> ), boulders, rocky reefs, rocks, shell rubble, sand, silt and mud.	-	Low	Within geographical range. Potential habitat (eg. Coral Reef) is scattered in the Study Area. However, no known records in Darwin area.
<i>Halicampus brocki</i>	Brock's Pipefish	-	-	Recorded in Australia from scattered locations in north WA, the NT and QLD. Found elsewhere in the tropical Western Pacific - from the Philippines and north to the Ryukyu Islands, Japan, south to northern Australia, the Coral Sea, eastwards to Micronesia. Usually inhabits patches of coral and macro-algae on coastal reefs at 3-45 m.	-	Low	Within geographical range. Potential habitat (eg. Coral Reef and Macroalgae) is scattered within in the Study Area. However, no known records in Darwin area.

Scientific name	Common name	EPBC Act	TPWC Act	Distribution and habitat*	No. of records and source	Likelihood of occurrence in Study Area	Justification
<i>Halicampus grayi</i>	Mud Pipefish, Gray's Pipefish	-	-	Distributed widely in Indo-west Pacific tropical areas. From Northern Australia to the Gulf of Aden. The Mud Pipefish inhabits areas of muddy and silty bottoms along the continental shelf from onshore bays to deep offshore areas up to 100m.	-	Low	Species or species habitat (e.g. silty and muddy bottoms) may be present within the study area. However, no known records in Darwin Area.
<i>Halicampus spinirostris</i>	Spiny-snout Pipefish	-	-	Known from the tropical Indo-west Pacific - Indonesia, northern Australia, the South China Sea, Vietnam across to American Samoa; inhabits shallow coral rubble areas in lagoons and intertidal zones of inshore coral reefs in 5-10 m.	-	Low	Within geographical range. Potential habitat (e.g. Coral Rubble) is scattered within in the Study Area. However, no known records in the Darwin area.
<i>Haliichthys taeniophorus</i>	Ribboned Pipehorse , Ribboned Seadragon	-	-	Shark Bay, WA, to Cape York, QLD. Elsewhere the species occurs in West Papua, Indonesia, and Papua New Guinea. Inhabits a variety of inshore shallow water areas including weedy regions bordering open substrates, coral reefs, rocky, gravel, sandy and muddy substrates; also associated with sponges, macroalgae, hydroids, shells and seagrasses usually from 1-18 m.	-	Low	Within geographical range. Potential habitat is within in the Study Area. However, no known records in the Darwin area.
<i>Hippichthys cyanospilos</i>	Blue-speckled Pipefish, Blue-spotted Pipefish	-	-	The Blue-speckled Pipefish inhabits estuarine and coastal areas that are characterised by brackish shallow water and mangrove environments. Widely distributed across Indo-West Pacific, from the Red Sea and East Africa coast to Fiji, Australia and the Philippines	-	Low	Species or species habitat not present within the study area.
<i>Hippichthys parvicarinatus</i>	Short-keel Pipefish, Short-keeled Pipefish	-	-	The Short-keel Pipefish is known only from estuarine and freshwater habitats in the Northern Territory. Endemic species to the Northern Territory.	-	Low	Species or species habitat not present within the study area.
<i>Hippichthys penicillatus</i>	Beady Pipefish, Steep-nosed Pipefish	-	-	Found from Carnarvon, WA, to Woy Woy, NSW. Elsewhere the species occurs in the tropical, Indo-west Pacific, from western Persian Gulf (Kuwait, Saudi Arabia), north central Indian Ocean, and eastward to Japan and Australia.	-	Low	Within geographical range. Potential habitat is within in the Study Area. However, no known records in the Darwin area.
<i>Hippocampus histrix</i>	Spiny Seahorse,	-	-	Recorded in Australia from south of Ashmore Reef, Timor Sea, the Great Barrier Reef, QLD, and in Port Stephens, NSW. Elsewhere the species occurs in the tropical and	-	Low	Potential habitat (e.g. soft corals and sponges) is present in the Study Area.

Scientific name	Common name	EPBC Act	TPWC Act	Distribution and habitat*	No. of records and source	Likelihood of occurrence in Study Area	Justification
	Thorny Seahorse			subtropical Western Pacific, from Bali, Indonesia, Papua New Guinea, New Caledonia and Japan. Inhabits areas with both hard and soft bottoms, often attached to soft corals or sponges at 10-95 m, usually below 15 m. The Thorny Seahorse may also be found on shallower algae-rubble or rocky reef areas in about 10 m.			However no known records in the Darwin area.
<i>Hippocampus kuda</i>	Spotted Seahorse, Yellow Seahorse	-	-	This is a wide-ranging Indo-Pacific seahorse that inhabits waters from Indonesia to the Philippines, Pakistan and India to southern Japan, Hawaii, and the Society Islands, but it might be possible that variations of this species may also reside in other areas outside of the Indo-Pacific region. Inhabit seagrass and marine algae areas of estuaries and seaward reefs; also on steep mud slopes. Found in open water and attached to drifting Sargassum up to 20 km from shore.	-	Low	Species or species habitat not present within the study area.
<i>Hippocampus planifrons</i>	Flat-face Seahorse	-	-	Endemic to WA, from Dirk Hartog Island to Broome. Inhabits tidepools, macroalgal and rubble reefs in shallow bays from the intertidal to a depth of about 20 m. Endemic to tropical areas (north and north east) of Australia.	-	Low	Potential habitat (e.g. soft corals and sponges) is present in the Study Area. However, no known records in the Darwin area.
<i>Hippocampus spinosissimus</i>	Hedgehog Seahorse	-	-	Inhabit coral reefs, muddy or sandy bottoms in the continental shelf. Distributed across the Indo-Pacific region spanning from Tiawan and Australia to Sri Lanka.	-	Low	Potential habitat (e.g. coral reefs) is present in the Study Locality. However, no known records in the Darwin area
<i>Glyptis garricki</i> (T)	Northern River Shark, New Guinea River Shark	EN	EN	In Australia the northern river shark is known from few records, including in the Northern Territory (NT) from the Adelaide and East and South Alligator River systems. It is also known from the Kimberley coast and King Sound in Western Australia. Little is known of the ecology of the northern river shark but it is probably restricted to shallow, brackish reaches of large rivers.	-	Unlikely	Use specific habitats or resources not present within the Study area.
<i>Manta alfredi</i> (M)	Reef Manta Ray, Coastal Manta Ray,	-	-	The Giant Manta Ray occurs in tropical, sub-tropical and temperate waters of the Atlantic, Pacific and Indian Oceans. Commonly sighted along productive coastlines with regular upwelling, oceanic island groups and particularly offshore pinnacles and seamounts. Widespread, although relatively uncommon in Australian waters; also Cocos (Keeling) Islands and Christmas Island in the eastern Indian Ocean.	-	Unlikely	Use specific habitats or resources not present within the Study Locality

Scientific name	Common name	EPBC Act	TPWC Act	Distribution and habitat*	No. of records and source	Likelihood of occurrence in Study Area	Justification
	Inshore Manta Ray, Prince Alfred's Ray, Resident Manta Ray			Elsewhere the species is circumglobal, usually offshore, often around oceanic islands, sometimes coastal, and most common in tropical waters. Giant Manta Rays aggregate year round in Coral Bay (Bateman Bay) and Ningaloo Reef during autumn and winter.			
<i>Manta birostris</i> (M)	Giant Manta Ray	-	-	Distributed in the Indo-West Pacific: Red Sea, South Africa, Thailand to WA; north to Japan (Yaeyama Island), to Solitary Island, Australia as far east as French Polynesia and the Hawaiian Islands. Adults are commonly sighted inshore, within a few kilometres of land; found around coral and rocky reefs as well as along productive coastlines with consistent upwelling, tropical island groups, atolls and bays.	-	Unlikely	Use specific habitats or resources not present within the Study Locality
<i>Micrognathus micronotopterus</i>	Tidepool Pipefish	-	-	The Small Tidepool Pipefish is often found in coral reef tidepool on the north coast of the Australia. Tropical East-Indo-west Pacific, known from Singapore, Indonesia, northern Australia and the Philippines; recorded in Australian waters from Exmouth Gulf, WA, to the Gulf of Carpentaria near Yirrkala, Northern Territory. Usually inhabits shallow inshore reefs and tidepools, amongst sparse seagrasses and algae-rubble, in depths from 1-5m, although individuals have been collected from depths to 10m.	-	Low	Study site does not contain suitable habitat for species.
<i>Pristis clavata</i> (T, M)	Dwarf Sawfish, Queensland Sawfish	VU	VU	Since European settlement, the species' Australian distribution has previously been considered to extend north from Cairns around the Cape York Peninsula in QLD, across northern Australian waters to the Pilbara coast in WA. A review of specimen records of Dwarf Sawfish has found no records of the species from the eastern coast of the Cape York Peninsula, although the species has been confirmed from the Pine River on the western coast of Cape York Peninsula. The Dwarf Sawfish usually inhabits shallow (2–3 m) coastal waters and estuarine habitats.	-	Low	Potential habitat is present in the Study Area. However no known records in the Darwin area.
<i>Pristis pristis</i> (T, M)	Freshwater Sawfish, Largetooth	VU	VU	The Freshwater Sawfish may potentially occur in all large rivers of northern Australia from the Fitzroy River, Western Australia, to the western side of Cape York Peninsula, Queensland. It is mainly confined to the main channels of	-	Low	Study site does not contain suitable habitat for species.

Scientific name	Common name	EPBC Act	TPWC Act	Distribution and habitat*	No. of records and source	Likelihood of occurrence in Study Area	Justification
	h Sawfish, River Sawfish			large rivers. In northern Australia, this species appears to be confined to freshwater drainages and the upper reaches of estuaries, occasionally being found as far as 400 km from the sea			
<i>Pristis zijsron</i> (T, M)	Green Sawfish, Dindagub ba, Narrowsn out Sawfish	VU	VU	In Australian waters, Green Sawfish have historically been recorded in the coastal waters off northern Australia and down the east coast as far as Jervis Bay, NSW. Individuals have been recorded in inshore coastal environments and estuaries but the species does not penetrate into freshwater. There are also records of green sawfish hundreds of kilometres offshore in relatively deep water.	-	Moderate	Are unlikely to maintain sedentary populations, however may seasonally use resources within the Project Area, opportunistically or during migration.
<i>Rhincodon typus</i> (T, M)	Whale Shark	VU	-	In Australia, the whale shark is known from NSW, QLD, NT, WA and occasionally VIC and SA, but it is most commonly seen in waters off northern WA, NT and QLD.  The whale shark is an oceanic and coastal, tropical to warm-temperate pelagic shark. It is often seen far offshore, but also comes close inshore and sometimes enters lagoons of coral atolls. The whale shark is generally encountered close to or at the surface, as single individuals or occasionally in schools or aggregations of up to hundreds of sharks.	-	Unlikely	Migratory species who's habitat (open ocean) is not suited to that present in the study area.
<i>Solegnathus hardwickii</i>	Pallid Pipehorse Hardwick' s Pipehorse	-	-	Found Northeast of the Monte Bello Islands, WA to north of Cartier Island, Timor Sea, to the Arafura Sea north of Maningrida, NT. Inhabits areas with hard substrates, in association with gorgonian corals, black corals, algae and sponges. Continental slopes	-	Unlikely	Species or species habitat (eg. Continental shelf, hard substrates, algae and sponges) may occur within the study area.
<i>Solegnathus lettensis</i>	Gunther's Pipehorse	-	-	Recorded in Australia from Rottnest Is, WA (32°00'E) to N of Bathurst Is, NT (130°09'S). Found elsewhere in the Indo-west Pacific	-	Unlikely	Species usually distributed along the continental slope, therefore unlikely to be present in the study area.
<i>Solenostomus cyanopterus</i>	Robust Ghostpipe fish, Blue- finned Ghost Pipefish,	-	-	Occurs within Shark Bay region to NE of the Monte Bello Islands, WA, and the northern Great Barrier Reef, QLD, to Shellharbour, NSW; also Christmas Island in the eastern Indian Ocean. Inhabits shallow protected coral and rocky reefs, along with deep, clear estuaries with seagrass or macro-algae at depths to 28m. Individuals or pairs are often seen head, mimicking algae or seagrass leaves.	-	Low	Species or species habitat (shallow protected coral and rocky reefs) may be present within the study area. Therefore, potential distribution of species in study area. However no

Scientific name	Common name	EPBC Act	TPWC Act	Distribution and habitat*	No. of records and source	Likelihood of occurrence in Study Area	Justification
							known records in the Darwin area.
<i>Sphyraena lewini</i> (T)	Scalloped Hammerhead	CD	-	The Scalloped Hammerhead is found in warm temperate and tropical coastal seas around the world. In Australia, the species is found in New South Wales (NSW), Queensland, the Northern Territory, and Western Australia. The Australian population is believed to be primarily composed of males and juvenile females, while adult females of the stock are suspected to segregate from the males and may use Indonesian waters more than Australian waters.	-	Low	Scalloped Hammerheads are generally found within semi-ocean pelagic zones, therefore unlikely to be located within the study area, potential to swim through.
<i>Syngnathoides biaculeatus</i>	Double-end Pipehorse , Double-ended Pipehorse , Alligator Pipefish	-	-	In Australian waters, known from Geraldton to Shark Bay, and north to Ashmore and Cartier Reefs, WA, and from the Timor Sea, the NT, eastwards to QLD and south to Batemans Bay (NSW). Inhabits shallow, protected waters of bays, lagoons and estuaries including mangrove areas, in association with seagrass beds and macroalgae in depths at 0-10 m. Juveniles sometimes found clinging to floating algae and plant debris including Sargassum rafts.	-	Low	Use specific habitats or resources not present in the Project Area.
<i>Trachyrhamphus bicoarctatus</i>	Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish	-	-	Bentstick Pipefish are known in Australian waters from the central coast of WA, northwards throughout the waters of the NT and QLD to central NSW. They live in sheltered coastal lagoon and reef areas on sandy and rubble habitats amongst seagrasses and macroalgae at 1– 30 m.	-	Low	Use specific habitats or resources not present in the Project Area.
<i>Trachyrhamphus longirostris</i>	Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish	-	-	Recorded in Australian waters from North West Cape, WA, northwards around the tropical north to about Magnetic Island, QLD. Most specimens have been trawled or dredged from muddy to sandy-bottom habitats in depths of 16-91m, in association with sand, rubble, seagrasses, algae, sponges, sea pens and hydroids.	-	Low	Use specific habitats or resources not present in the Project Area.
<b>Mammals and Cetaceans</b>							
<i>Balaenoptera edeni</i> (M, C)	Bryde's Whale	-	-	Bryde's Whales occur in temperate to tropical waters, both oceanic and inshore, bounded by latitudes 40° N and 40° S,	-	Unlikely	Use specific habitats or resources not present

Scientific name	Common name	EPBC Act	TPWC Act	Distribution and habitat*	No. of records and source	Likelihood of occurrence in Study Area	Justification
				or the 20 °C isotherm. Bryde's whales are found year-round 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).			within the Study area. Generally observed in the open ocean.
<i>Balaenoptera musculus</i> (T, M, C)	Blue Whale	EN	-	The continental shelf and coastal waters of Australia are generally used for migration and opportunistic feeding by bluewhales, although they are generally associated with open ocean. The only known feeding areas in Australia are located around the southern continental shelf, including Perth Canyon, in WA and the Bonney Upwelling and adjacent upwelling areas of SA and VIC. Satellite tagging has confirmed that the pygmy blue whale feeds off the Perth Canyon and heads north in March/April to potential breeding grounds in Indonesian waters by June.	-	Unlikely	Use specific habitats or resources not present within the Study area. Generally observed in the open ocean.
<i>Delphinus delphis</i> (C)	Common Dolphin, Short-beaked Common Dolphin	-	-	Common Dolphins are found in offshore waters. They have been recorded in waters off all Australian states and territories, but are rarely seen in northern Australian waters. Common Dolphins appear to occur in two main locations around Australia, with one cluster in the southern south-eastern Indian Ocean and another in the Tasman Sea. Common Dolphins are usually found in areas where surface water temperatures are between 10°C and 20°C, and in habitats also inhabited by small epipelagic fishes such as anchovies and sardines.	-	Unlikely	Use specific habitats or resources not present within the Study area.
<i>Dugong dugon</i> (M)	Dugong	-	-	Dugongs occur in coastal and island waters from Shark Bay in WA (25° S) across the northern coastline to Moreton Bay in QLD (27° S). Specific areas supporting dugongs in the Northern Territory include: the northern coast (Daly River to Millingimbi, including Melville Island and Vernon Islands and the Darwin region); and the Gulf of Carpentaria, including the Sir Edward Pellew Group of Islands, the mouth of the Limmen Bight River, and the waters between Blue Mud Bay and Groote Eylandt. 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.	9 – NT Fauna Atlas	Moderate	Have infrequently been recorded previously in the Study Area.  Potential for dugongs to be foraging or passing through the study site is likely. Transient, has the potential to swim through the Study Locality, albeit widespread. Known species habitat present in Study area.

Scientific name	Common name	EPBC Act	TPWC Act	Distribution and habitat*	No. of records and source	Likelihood of occurrence in Study Area	Justification
<i>Grampus griseus</i> (C)	Risso's Dolphin, Grampus	-	-	In Australia, Risso's Dolphins have been recorded from all states except Tasmania and the NT. Stranding records range from about 23° S to 39° S, although there is at least one stranding from further north, on Croker Island in the NT. No estimates of abundance are available but this species is believed to be reasonably abundant throughout the main part of its range, with depths from the limited sighting data ranging from 180 m to 1500 m. Fraser Island has the only suspected 'resident' population in Australia. Risso's Dolphin occur mainly on steep sections of the upper continental slope, usually in waters deeper than 1000 m, in tropical and warm temperate latitudes.	-	Unlikely	No known records of species within Darwin area.
<i>Megaptera novaeangliae</i> (T, M, C)	Humpback Whale	VU	-	Occurs in oceanic and coastal waters worldwide. The west coast humpback whales are often sighted as far north as Ashmore Reef (12° S). Camden sound appears to be the northern most limit for the majority of the west coast whales and is considered to be an important breeding area. The migratory habitat for the humpback whale around mainland Australia is primarily coastal waters less than 200 m in depth and generally within 20 km of the coast. There is also evidence that during the southern migration, some west Australia whales appear to split off from the coastal migratory route and head offshore from the coast between Exmouth and Shark Bay.	-	Unlikely	Transient, has the potential to swim through the Study Locality, albeit widespread. NT coastline within the migration route of Humpback whales, during October. However, the close proximity of the study site to the shore reduces likelihood of occurrence at the site.
<i>Orcaella heinsohni</i> (M, C)	Australian Snubfin Dolphin	-	-	All available data on the distribution and habitat preferences of Australian Snubfin Dolphins indicate that they mainly occur in one location: shallow coastal and estuarine waters of Queensland, Northern Territory and north Western Australia. Within Australia, Australian Snubfin Dolphins have been recorded almost exclusively in coastal and estuarine waters. It is doubtful that they venture very far upstream in river systems, although occasional vagrants may venture upstream	10 – NT Fauna Atlas	Moderate	Have infrequently been recorded previously in the Study Area. Transient, has the potential to swim through the Study Locality, albeit widespread.
<i>Orcinus orca</i> (M, C)	Killer Whale	-	-	In Australia, orcas are recorded from all states, with concentrations reported around Tasmania. Sightings are also frequent in SA and VIC. They may be more common in cold, deep waters, but off Australia, orcas are most often seen along the continental slope and on the shelf, particularly near seal colonies. Orcas have regularly been observed within the Australian territorial waters along the ice edge in summer.	-	Unlikely	Use specific habitats or resources not present within the Study Locality. With no known records in the area.

Scientific name	Common name	EPBC Act	TPWC Act	Distribution and habitat*	No. of records and source	Likelihood of occurrence in Study Area	Justification
<i>Sousa chinensis</i> (M, C)	Indo-Pacific Humpback Dolphin	-	-	In Australia, Indo-Pacific humpback dolphins are known to occur along the northern coastline, extending to Exmouth Gulf on the west coast (25° S), and the QLD/NSW border region on the east coast (34° S). Within their geographical range, Australian humpback dolphins are found primarily in coastal waters however, this species is known to inhabit shallow coastal, estuarine, and occasionally riverine habitats, in tropical and subtropical regions.	-	Moderate	Are unlikely to maintain sedentary populations, however may seasonally use resources within the Project Area, opportunistically or during migration.  Transient, has the potential to swim through the Study Locality, albeit widespread.
<i>Stenella attenuata</i> (C)	Spotted Dolphin, Pantropical Spotted Dolphin	-	-	In Australia, Pantropical Spotted Dolphins have been recorded off the NT, WA down south to Augusta, QLD and NSW. The record for VIC is believed to be erroneous. Pantropical Spotted Dolphins inhabit both near-shore and oceanic habitats in tropical and warm temperate seas. They have also been found on the shelf and along the continental slope, indicating that they may use neritic (over the continental slope) habitat as well.	-	Unlikely	Species that have specific habitat requirements that are not present in the Study Area.
<i>Tursiops aduncus</i> (M, C)	Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin	-	-	Bottlenose dolphins are distributed throughout the Australian coastline, but the taxonomic status of many populations is unknown. Indian Ocean Bottlenose Dolphins have been confirmed to occur in estuarine and coastal waters of eastern, western and northern Australia. In Australia, the Indian Ocean Bottlenose Dolphin is restricted to inshore areas such as bays and estuaries, nearshore waters, open coast environments, and shallow offshore waters including coastal areas around oceanic islands.  Indian Ocean Bottlenose Dolphins are also known to associate with whales, such as Humpback Whales.	7 – NT Fauna Atlas	Moderate	Are unlikely to maintain sedentary populations, however may seasonally use resources within the Project Area, opportunistically or during migration.  Transient, has the potential to swim through the Study Locality, albeit widespread.
<i>Tursiops truncatus</i> s. str. (C)	Bottlenose Dolphin	-	-	The distribution of the Bottlenose Dolphin in Australian waters is not well known, but there are records for QLD, NSW, Tasmania, SA and south-western WA. Bottlenose Dolphins are found in tropical and temperate waters. They inhabit inshore areas such as bays, lagoons, fjords and estuaries, and nearshore (open coast) and offshore environments, including the coast of oceanic islands. They are associated with many types of substrate and habitats, including mud, sand, seagrasses, mangroves and reefs. Bottlenose Dolphins are known to associate with several	-	Unlikely	Species that have specific habitat requirements that are not present in the Study Area.

Scientific name	Common name	EPBC Act	TPWC Act	Distribution and habitat*	No. of records and source	Likelihood of occurrence in Study Area	Justification
				cetacean species such as Pilot Whales, White-sided, Spotted, Rough-toothed and Risso's Dolphins, and Humpback and Right whales.			
<b>Reptiles</b>							
<i>Acalyptophis peronii</i>	Horned Seasnake	-	-	The horned seasnake occurs in tropical waters from Barrow Island in WA to Moreton Bay in QLD. The Horned Seasnake is typically found on sandy substrates.	-	Low	Use specific habitats or resources not present in the Project Area.
<i>Aipysurus duboisi</i>	Dubois' Seasnake	-	-	The Dubois' Seasnake occurs between Exmouth Gulf in WA and Hervey Bay in QLD; and on Ashmore Reef and the Sahul Shelf. The Dubois' Seasnake is most often observed in shallow water near protected coral reefs at depths of 3–4 m, but it has also been caught in trawling nets at depths of approximately 45 m. During trawling on the northern Australian continental shelf, the species was most frequently caught at depths of 20–50 m.	-	Low	Use specific habitats or resources not present in the Project Area.
<i>Aipysurus eydouxi</i>	Spine-tailed Seasnake	-	-	The Spine-tailed Seasnake occurs in tropical northern Australia from Exmouth Gulf in WA to Fraser Island in QLD. The species is known to inhabit shallow bays and estuaries, where it is commonly associated with soft muddy substrates, rather than rock or coral.	-	Low	Use specific habitats or resources not present in the Project Area.
<i>Aipysurus laevis</i>	Olive Seasnake	-	-	Surveys conducted before 2000 found that the Olive Seasnake occurs in coastal and coral reef waters across northern Australia, including the coast of the NT, the north east coast of WA (north of Exmouth) and the coast of QLD. The Olive Seasnake is found along lower reef edges and upper lagoon slopes of leeward reefs and occurs on larger, sheltered reefs and rarely on highly exposed reefs. Their study also found that the longitude of reef location was a major determinant of the presence or absence of the Olive Seasnake at locations through the Pompey and Swain reef regions of the southern Great Barrier Reef. At Ashmore Reef, the Olive Seasnake occurs on reef flats at both high and low tide, in channels and at the reef crest, in water depths up to 20 m. It is more common on reef flats at high tide. Live coral cover provides crevices suitable for both prey shelter and	-	Low	Use specific habitats or resources not present in the Project Area.

Scientific name	Common name	EPBC Act	TPWC Act	Distribution and habitat*	No. of records and source	Likelihood of occurrence in Study Area	Justification
				prey egg nests. Coral reefs also provide shelter for the Olive Seasnake."			
<i>Astrotia stokesii</i>	Stokes' Seasnake	-	-	The Stokes' Seasnake inhabits the tropical seas of northern Australia, including WA, the NT and QLD. At Ashmore Reef, Stokes' Seasnake is associated with inner reef drop-offs at water depths of 7–10 m. It also occurs on muddy substrates at depths of 10 m. Stokes' Seasnake has been found in coastal tidal pools. At Ashmore Reef, Stokes' Seasnake uses deeper water near the reef crest and channels but avoids the reef flat at low tide. It is most likely to be caught during trawling at depths of 11–20 m.	-	Low	Use specific habitats or resources not present in the Project Area.
<i>Caretta caretta</i> (T, M)	Loggerhead Turtle	EN	VU	The loggerhead turtle has a worldwide distribution in coastal tropical and subtropical waters. In Australia, loggerheads occur in coral reefs, bays and estuaries in tropical and warm temperate waters off the coast of QLD, NT, WA and NSW. Migrations from southern Queensland rookeries to the Northern Territory, Torres Strait, Papua New Guinea, Solomon Islands, New Caledonia and Vanuatu have been recorded. During the nesting months females generally remain within 10 km of the rookery	-	Low	Have not been recorded previously in the Study Area.
<i>Chelonia mydas</i> (T, M)	Green Turtle	VU	NE	Green Turtles occur in tropical and subtropical waters throughout the world. In Australia, the main breeding distribution includes the Great Barrier Reef, the northwest shelf of Western Australia, Wellesley Island group in the southern Gulf of Carpentaria and the Top End coast. Many nesting sites occur in the Northern Territory (NT), mostly from the western end of Melville Island to near the border with Queensland. Nationally significant breeding sites in the NT include Cobourg Peninsula, the mainland from Gove to the northern edge of Blue Mud Bay, the southeast of Groote Eylandt, and the northern beaches of islands in the Sir Edward Pellew group. Adult Green Turtles are primarily herbivorous, feeding mostly on seagrass and algae, while juveniles are carnivorous.	5 – NT Fauna Atlas	Moderate	Have infrequently been recorded previously in the Study Area. Use specific habitats or resources present in the Project Area, but in a poor or modified condition. May seasonally use resources within the Project Area, opportunistically or during migration.
<i>Crocodylus johnstoni</i>	Freshwater Crocodile, Johnston'	-	-	Inhabit both freshwater and saltwater habitats, however generally found within creeks, rivers, swamps, lagoons and upstream from the coastline.	-	Low	Use specific habitats or resources not present in the Project Area.

Scientific name	Common name	EPBC Act	TPWC Act	Distribution and habitat*	No. of records and source	Likelihood of occurrence in Study Area	Justification
	Saltwater Crocodile, Johnston's Crocodile						No previous records in the Study Area.
<i>Crocodylus porosus</i> (M)	Salt-water Crocodile, Estuarine Crocodile	-	LC	May be found in any water body in northern Australia including fresh and salt water. Range from Broome in Western Australia, through the Northern Territory to Rockhampton QLD. Inhabit coastal areas within the Northern Territory, with suitable habitats being coastal creeks, tidal rivers, floodplains, swamps and billabongs. Nesting occurs between November and May, in areas that are not greatly affected by tidal movement (e.g. Swamps).	-	Moderate	Known to inhabit surrounding area of study site. However, capture and removal of any entering Darwin Harbour occurs regularly.
<i>Dermochelys coriacea</i> (T, M)	Leatherback Turtle, Leathery Turtle	EN	CR	The Leatherback Turtle has a near-global distribution, though it nests mostly in tropical areas and feeds mostly in temperate seas and oceans. There are very few records of nesting in Australia.  In the Northern Territory (NT), the only places where breeding has been reported are the Sir Edward Pellew Islands, near Maningrida, Danger Point on Cobourg Peninsula and Palm Bay on Croker Island. Tracks of Leatherback Turtles are occasionally recorded on the north coast and Gulf of Carpentaria.  The Leatherback Turtle is typically an oceanic species. They forage within the water column, preying primarily on jellyfish, but seaweed, fish, crustaceans and other marine invertebrates are also consumed.  In Australia, Leatherback Turtles forage mostly in subtropical and temperate waters of Queensland, Western Australia, New South Wales, Victoria and Tasmania. They have also been recorded feeding off the NT coast.	-	Low	Have not been recorded previously in the Study Area.
<i>Disteira kingii</i>	Spectacled Seasnake	-	-	The Spectacled Seasnake has only been known to occur in Australia, between Safety Bay in WA (in 2000) and across the northern coastline of Australia down to Moreton Bay in QLD as recorded in the mid-1970s. The species was found, in 2000, to be confined to coastal waters of northern Australia from WA to the eastern coast of QLD. In the Gulf of Carpentaria, the Spectacled Seasnake is caught most frequently around Weipa and Karumba, and in water deeper than 20 m.	-	Low	Use specific habitats or resources not present in the Project Area.

Scientific name	Common name	EPBC Act	TPWC Act	Distribution and habitat*	No. of records and source	Likelihood of occurrence in Study Area	Justification
<i>Distiera major</i>	Olive-headed Seasnake	-	-	This species is widely distributed in the tropical waters of northern Australia and Southern Papua New Guinea, from Shark Bay in WA to Moreton Bay in QLD and to New Caledonia. Specimens have been observed in and collected from sand or mud habitats in water depths between 3–10 m	-	Low	Use specific habitats or resources not present in the Project Area.
<i>Enhydrina schistose</i>	Beaked Seasnake	-	-	The species is known from widely scattered localities in northern Australia, including the Hey-Embley River, Mission River, and Repulse Bay in North Queensland. The Beaked Seasnake has not been recorded in Western Australia (Cogger 2000; Limpus 1975; Porter et al. 1997). The species inhabits mud and sand environments in estuaries, harbours and shallow bays (Limpus 1975; Porter et al. 1997; Voris et al. 1978). It frequently travels into the fresh water reaches of larger rivers (Cogger 2000) though in Malaysia, is confined to the estuarine environment (Voris 1985). In the Gulf of Carpentaria, the Beaked Seasnake was most likely to be caught in the shallowest water sampled by trawling operations (11–20 m) and most captures were in the eastern Gulf, around Weipa and Karumba (Ward 2000).	-	Low	Use specific habitats or resources not present in the Project Area.
<i>Eretmochelys imbricata</i> (T, M)	Hawksbill Turtle	VU	VU	Hawksbill Turtles occur in tropical, subtropical and temperate waters of all oceans of the world. In Australia, there are two main genetically isolated subpopulations: one on the west coast and the other in the Top End and north-eastern Queensland.  In the Northern Territory (NT), most nesting occurs on islands rather than mainland beaches. Principal nesting sites are concentrated around north-eastern Arnhem Land and Groote Eylandt.  Hawksbill Turtles are omnivorous, eating a wide variety of plants and animals including sponges, gastropods, seagrass and algae.	5 – NT Fauna Atlas	Moderate	Have infrequently been recorded previously in the Study Area.  Use specific habitats or resources present in the Project Area, but in a poor or modified condition.  May seasonally use resources within the Project Area, opportunistically or during migration.
<i>Hydrelaps darwiniensis</i>	Black-ringed Seasnake	-	-	The Black-ringed Seasnake was known (in 2000) to be endemic to the shallow coastal waters of northern Australia and southern Papua New Guinea, west of Torres Strait (Cogger 2000). Black-ringed Seasnakes inhabit the intertidal zone of tidal creeks and flats of relatively compact mud or sandy mud with crab and mud skipper holes (Cogger 2000; Ehmann 1992b).	-	Low	Use specific habitats or resources not present in the Project Area.

Scientific name	Common name	EPBC Act	TPWC Act	Distribution and habitat*	No. of records and source	Likelihood of occurrence in Study Area	Justification
<i>Hydrophis atriceps</i>	Black-headed Seasnake	-	-	The Black-headed Seasnake was known to occur in northern Australia, between Darwin and the coast of Papua New Guinea in 2000 (Cogger 2000). The Black-headed Seasnake has been captured in trawling nets at depths of 20–40 m (Ward 1996b; Ward 2000).	-	Low	Use specific habitats or resources not present in the Project Area.
<i>Hydrophis coggeri</i>	Slender-necked Seasnake	-	-	The Slender-necked Seasnake is found in the waters of the northern Australian coast (Cogger 2000). Slender-necked Seasnakes at Ashmore Reef appear to inhabit the deeper (30–50 m) water beyond the reef edges as well as the reef flat. This is in contrast to the populations in Fiji that are often encountered on reef flats and in lagoons, especially where there are seagrasses (Cogger 2000; Guinea 1982; Guinea & Whiting 2005; McCosker 1975).	-	Low	Use specific habitats or resources not present in the Project Area.
<i>Hydrophis elegans</i>	Elegant Seasnake	-	-	The Elegant Seasnake is widespread in tropical Australia. This includes QLD, WA and the NT. Its distribution extends from Shark Bay in WA to Moreton Bay in QLD. The Elegant Seasnake uses a variety of marine and estuarine habitats, including sandy substrates in less than two metres of water to depths of approximately 80 m. The Elegant Seasnake is sometimes found in freshwater habitats as well as estuaries.	-	Low	Use specific habitats or resources not present in the Project Area.
<i>Hydrophis inornatus</i>	Plain Seasnake	-	-	The Plain Seasnake was thought to be widely distributed in Asia at the turn of the century (Cogger 2000). Only a few specimens had been collected from northern Australian waters by 2000 (Cogger 2000). Specimens have been trawled off Kurumba and dip netted from Mission River in the Gulf of Carpentaria in 1975 (Heatwole 1975). This species comprised less than one percent of the seasnakes captured by dip nets in the Hey-Embley and Mission Rivers of northern Queensland in a 1997 study (Porter et al. 1997). Little is known of the habitat occupied by Plain Seasnakes. Specimens collected by Heatwole (1975) were captured over muddy substrates.	-	Low	Habitat within the study area is potentially suitable for the species, however no sightings present.
<i>Hydrophis mcdowelli</i>	Small-headed sea snake	-	-	The species is restricted to northern Australia (Cogger 2000), including south and south-west Gulf of Carpentaria (Milton et al. 2008) and the coast of the Northern Territory (Milton 2001; Ward 2002 pers. comm.). The Small-headed Seasnake has been caught on the northern Australian continental shelf in water up to 50 m deep, in river estuaries and other turbid (muddy) inshore waters (Cogger 2000).	-	Low	Use specific habitats or resources not present in the Project Area.

Scientific name	Common name	EPBC Act	TPWC Act	Distribution and habitat*	No. of records and source	Likelihood of occurrence in Study Area	Justification
<i>Hydrophis ornatus</i>	Spotted Seasnake , Ornate Reef Seasnake	-	-	The Ornate Seasnake occurs in tropical northern WA, the NT and northern QLD. The species sometimes occurs further south in summer, extending its range as far as Tasmania. The Ornate Seasnake occurs in a variety of habitats, including clear water near coral reefs and turbid (muddy) water in estuaries. The species has been captured throughout the Gulf of Carpentaria, particularly at depths of 21–50 m.	-	Low	Use specific habitats or resources not present in the Project Area.
<i>Hydrophis pacificus</i>	Large-headed Seasnake , Pacific Seasnake	-	-	The Large-headed Seasnake is restricted to northern Australia (Cogger 1996), including areas of the Gulf of Carpentaria, the coast of the Northern Territory, and the Hey, Embley and Mission Rivers near Weipa on Cape York (Milton 2001; Porter et al. 1997; T. M. Ward 2002 pers. comm.). The Large-headed Seasnake has been caught during trawling in open water up to 50 m deep on the northern Australian Continental Shelf, and in rivers on Cape York (Porter et al. 1997; Ward 2000). This species primarily occurs where the sea bed consists of soft sediments, such as that used for prawn trawling (Milton 2001).	-	Low	Use specific habitats or resources not present in the Project Area.
<i>Lepidochelys olivacea</i> (T, M)	Olive Ridley Turtle, Pacific Ridley Turtle	EN	V	Olive Ridley Turtles occur in tropical and subtropical waters of all oceans of the world. In Australia, the vast majority of the nesting sites occur in the Northern Territory (NT). Nesting sites in the NT have been recorded from Melville Island to Groote Eylandt. The largest nesting colonies occur on Melville Island, islands to the east of Croker Island and some islands off north-east Arnhem Land. Olive Ridley Turtles typically occur in shallow protected waters, though studies outside the NT indicate that individuals may disperse widely from nesting beaches to feeding areas. The species is carnivorous and feeds on benthic molluscs, crabs, echinoderms and gastropods.	2 – NT Fauna Atlas	Moderate	Have infrequently been recorded previously in the Study Area. Use specific habitats or resources present in the Project Area, but in a poor or modified condition. May seasonally use resources within the Project Area, opportunistically or during migration.
<i>Natator depressus</i> (T, M)	Flatback Turtle	VU	DD	Flatback Turtles are restricted to tropical waters of Australia and New Guinea. They have an extensive distribution around the coastline of the Northern Territory (NT), and have been recorded breeding at a large number of mainland and island sites.	15 – NT Fauna Atlas	Moderate	Have infrequently been recorded previously in the Study Area. Use specific habitats or resources present in the

Scientific name	Common name	EPBC Act	TPWC Act	Distribution and habitat*	No. of records and source	Likelihood of occurrence in Study Area	Justification
				Flatback Turtles inhabit shallow, soft-bottomed sea beds and feed on soft corals and soft-bodied animals such as jellyfish and sea cucumbers.			Project Area, but in a poor or modified condition. May seasonally use resources within the Project Area, opportunistically or during migration.
<i>Parahydrophis mertoni</i>	Northern Mangrove Seasnake	-	-	Principally coastal and estuarine and associated mud flats (Cogger 1996).	-	Low	Use specific habitats or resources not present in the Project Area.
<i>Pelamis platurus</i>	Yellow-bellied Sea snake	-	-	The yellow-bellied seasnake is the most widely distributed of all sea snake species. The greatest density of populations was thought to exist south of the tropics where it was most commonly found on beaches after storms. Populations were also found in tropical seas and the Gulf of Carpentaria. The yellow-bellied sea snake is usually found within a few kilometres of the coast and prefers shallow inshore waters found to be between 11.7–36 °C. Nevertheless, the species is the most pelagic of all known sea snakes, occurring in the open waters well away from coasts and reefs.	-	Low	Use specific habitats or resources not present in the Project Area.

\* Information taken directly from the following sources (prioritised depending on availability):

- Threatened species of the Northern Territory Fact Sheets – Department of Environment, Parks and Water Security (NT Government):

<https://nt.gov.au/environment/animals/threatened-animals>

- Species Profile and Threats Database – Department of Agriculture, Water and the Environment (Australian Government): <http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>

- Fishes of Australia Database: <https://fishesofaustralia.net.au/>

Likelihood of occurrence	Criteria
Unlikely	<p>Species that fit into one or more of the following criteria:</p> <ul style="list-style-type: none"> <li>▪ Species highly restricted to certain geographical areas not overlapping the Study Area.</li> <li>▪ Species that have specific habitat requirements that are not present in the Study Area.</li> </ul>
Low	<p>Species that fit into one or more of the following criteria:</p> <ul style="list-style-type: none"> <li>▪ Have not been recorded previously in the Study Area and for which the Study Area is beyond the current distribution range.</li> <li>▪ Use specific habitats or resources not present in the Project Area.</li> </ul>
Moderate	<p>Species that fit one or more of the following criteria:</p> <ul style="list-style-type: none"> <li>▪ Have infrequently been recorded previously in the Study Area.</li> <li>▪ Use specific habitats or resources present in the Project Area, but in a poor or modified condition.</li> <li>▪ Are unlikely to maintain sedentary populations, however may seasonally use resources within the Project Area, opportunistically or during migration.</li> </ul>
High	<p>Species that fit one or more of the following criteria:</p> <ul style="list-style-type: none"> <li>▪ Have frequently been recorded previously in the Study Area.</li> <li>▪ Use habitat types or resources that are present in the Project Area, that are abundant and/or in good condition.</li> <li>▪ Are known to, or likely to, maintain resident populations surrounding the Project Area.</li> <li>▪ Are known to, or likely to, visit the Project Area during regular seasonal movements or migration.</li> </ul>

**Key:**

CR = Critically endangered

EN = Endangered

VU = Vulnerable

NE = Near threatened

DD = Data deficient

**EPBC Act Protected Matters Categories**

(T) – Threatened

(M) – Migratory

**Table D1 Likelihood assessment of listed terrestrial species with potential to occur in the project study area**

Scientific name	Common name	EPBC Act	TPWC Act	Distribution and habitat*	No. of records and source	Likelihood of occurrence in Study Area	Justification
<b>Birds</b>							
<i>Cuculus optatus</i> (M)	Oriental Cuckoo	-	-	Usually inhabits rainforest and monsoon forest edges; roadsides, river flats, mangroves and islands and leafy trees in paddocks.	1- NT Fauna Atlas	Moderate	Species or species habitat known to occur within Study Area. Use specific habitats or resources present in the Project Area, but in a poor or modified condition. Previously recorded in Study Area.
<i>Erythrotriorchis radiatus</i> (T)	Red Goshawk	VU	VU	The Red Goshawk occurs in coastal and sub-coastal areas in wooded and forested lands of tropical and warm-temperate Australia. Riverine forests are also used frequently. Such habitats typically support high bird numbers and biodiversity, especially medium to large species which the goshawk requires for prey. The Red Goshawk nests in large trees, frequently the tallest and most massive in a tall stand, and nest trees are invariably within one km of permanent water	-	Moderate	Species or species habitat known to occur within Study Area. Use specific habitats or resources present in the Project Area, but in a poor or modified condition. No previous records in Study Area.
<i>Erythrura gouldiae</i> (T)	Gouldian Finch	EN	EN	Distributed throughout tropical northern sub-coastal areas from Western Australia to the Gulf of Carpentaria and central Cape York Peninsula. Gouldian Finchs prefer tropical savanna woodlands with grassy understories <a href="https://www.birdlife.org.au/bird-profile/gouldian-finches">https://www.birdlife.org.au/bird-profile/gouldian-finches</a>	-	Moderate	Species or species habitat known to occur within Study Area. Use specific habitats or resources present in the Project Area, but in a poor or modified condition. No previous records in Study Area.
<i>Falco hypoleucus</i> (T)	Grey Falcon	VU	VU	The species occurs in arid and semi-arid Australia, including the Murray-Darling Basin, Eyre Basin, central Australia and WA. Usually restricted to shrubland, grassland and wooded	-	Moderate	Species or species habitat likely to occur within Study Area.

					watercourses of arid and semi-arid regions, although it is occasionally found in open woodlands near the coast.			Are unlikely to maintain sedentary populations, however may seasonally use resources within the Project Area, opportunistically. No previous records in Study Area.
<i>Geophaps smithii smithii</i> (T)	Partridge Pigeon (eastern)	VU	-	The Partridge Pigeon can be found across the Top End towards the Kimberley. Being sparsely distributed throughout central and eastern regions of Arnhem Land. Inhabiting Lowland eucalypt open forests and woodlands, with grassy understoreys <a href="https://nt.gov.au/_data/assets/pdf_file/0003/206355/partridge-pigeon.pdf">https://nt.gov.au/_data/assets/pdf_file/0003/206355/partridge-pigeon.pdf</a>	-	Moderate	Species or species habitat known to occur within Study Area. Use specific habitats or resources present in the Project Area, but in a poor or modified condition. No previous records in Study Area.	
<i>Tyto novaehollandiae Kimberli</i> (T)	Masked Owl (northern)	VU	VU	In northern Australia, the Masked Owl has been recorded from riparian forest, rainforest, open forest, <i>Melaleuca</i> swamps and the edges of mangroves, as well as along the margins of sugar cane fields	-	Moderate	Species or species habitat likely to occur within Study Area. Are unlikely to maintain sedentary populations, however may seasonally use resources within the Project Area, opportunistically. No previous records in Study Area.	
<b>Mammals</b>								
<i>Antechinus bellus</i> (T)	Fawn Antechinus	VU	EN	The fawn antechinus is the only species of Antechinus found in the savannah woodland and tall open forest of the Top End of the Northern Territory (NT) (Watson & Calaby 2008). The species is restricted to the NT, largely to the mainland but there is one record of the species from the Tiwi Islands.	-	Moderate	Species or species habitat likely to occur within Study Area. Use specific habitats or resources present in the Project Area, but in a poor or modified condition.	

							No previous records in Study Area.
<i>Conilurus penicillatus</i> (T)	Brush-tailed Rabbit-rat, Brush-tailed Tree-rat, Pakooma	VU	EN	<p>In the NT, this species has been recorded from near-coastal areas from near the mouth of the Victoria River in the west to the Pellew Islands in the east, and including Bathurst, Melville, Inglis and Centre Islands and Groote Eylandt (Parker 1973; Kemper and Schmitt 1992; Woinarski 2000). There are no recent records from much of this historically recorded range, and it is currently known to persist in the NT only on Cobourg Peninsula, Bathurst, Melville and Inglis Islands, and Groote Eylandt.</p> <p>The preferred habitat of the brush-tailed rabbit-rat is eucalypt tall open forest (Firth et al. 2006a). However, at least on Cobourg Peninsula, it also occurs on coastal grasslands (with scattered large Casuarina equisetifolia trees, beaches, and stunted eucalypt woodlands on stony slopes (Firth and Calaby 1974; PWCNT 2001)). It shelters in tree hollows, hollow logs and, less frequently, in the crowns of pandanus or sand-palms (Firth et al. 2006b). Most foraging is on the ground, but it is also partly arboreal.</p>	-	Moderate	<p>Species or species habitat may occur within Study Area.</p> <p>Use specific habitats or resources present in the Project Area, but in a poor or modified condition.</p> <p>No previous records in Study Area.</p>
<i>Dasyurus hallucatus</i> (T)	Northern Quoll [Dambimangari], Wiminji [Martu]	EN	CR	<p>In the Northern Territory (NT), it is restricted to the Top End. A 1905 record from Alexandria (Thomas 1906) marks the southern limit of its known NT distribution, now far from any recent records. It has been recorded from Groote Eylandt and the nearby Northeast and Winchelsea Islands, Marchinbar Island (in the Wessel group), Inglis Island (in the English Company Islands group) and Vanderlin Island (Sir Edward Pellew group). Recently, it has also been translocated to Astell and Pobassoo islands in the English Company island group.</p> <p>The northern quoll is a generalist predator, consuming a wide range of invertebrates and small vertebrate prey. It dens in hollow logs, rock crevices and caves, and in tree hollows. Most foraging is on the ground, but it is also an adept climber. It occurs in a wide range of habitats, but the most suitable habitats appear to be rocky areas. It was common in many eucalypt open forests.</p>	-	Moderate	<p>Species or species habitat known to occur within Study Area.</p> <p>Use specific habitats or resources present in the Project Area, but in a poor or modified condition.</p> <p>No previous records in Study Area.</p>
<i>Macroderma gigas</i> (T)	Ghost Bat	VU	NE	<p>The species' current range in northern Australia ranges from relatively arid conditions in the Pilbara region of Western Australia to humid rainforests of northern Queensland. One of the largest known colonies occurs in a series of gold mine workings at Pine Creek in the Northern Territory. Elsewhere in the Territory they have been recorded throughout the mainland</p>	-	Low	<p>Species or species habitat likely to occur within Study Area.</p> <p>Use specific habitats or resources not present in the Project Area.</p>

					Top End north of approximately 17° latitude as well as Elcho Island, Groote Eylandt and other nearby islands.  The distribution of Ghost Bats is influenced by the availability of suitable caves and mines for roost sites. There are likely to be very few maternity sites across Australia (only ten are known) which probably explains the strong genetic differentiation of populations across Australia.		No previous records in Study Area.
<i>Mesembriomys gouldii</i> (T)	Black-footed Tree-rat, Djintamoonga, Manbul	EN	VU	Found in the Top End of the Northern Territory (NT) in tropical woodlands and open forests in coastal areas. Also occurs in the Kimberley in Western Australia, and the east and west coastal areas of Cape York Peninsula south to Townsville and inland to the Lynd Junction, where it is far less common.  Black-footed tree-rats are fairly solitary, nocturnal animals, sheltering in tree hollows and pandanus stands during the day (Griffiths et al. 2002).	-	Moderate	Species or species habitat known to occur within Study Area.  Use specific habitats or resources present in the Project Area, but in a poor or modified condition.  No previous records in Study Area.
<i>Petrogale concinna canescens</i> (T)	Nabarlek	EN	VU	Petrogale c. canescens has been recorded in scattered populations from sandstone cliffs bordering the Arafura Swamp (in the east) to the Daly River catchment (in the west).  Nabarleks are restricted to rocky areas (sandstone or granite), especially on steep slopes, with large boulders, caves and crevices (Churchill 1997). They may move from these to forage in adjacent flat areas (Sansom et al 1985).	-	Low	Species or species habitat likely to occur within Study Area.  Use specific habitats or resources not present in the Project Area.  No previous records in Study Area.
<i>Phascogale pirate</i> (T)	Northern Brush-tailed Phascogale	VU	EN	Recent taxonomic studies (Rhind et al. 2001, Spencer et al. 2001) have suggested that the northern population of brush-tailed phascogale is specifically distinct from that in south-western and south-eastern Australia. As redefined, the northern brush-tailed phascogale is restricted to the Top End of the Northern Territory (NT), and is taxonomically distinct from populations in the Kimberley and Cape York Peninsula.  There are relatively few records in the NT: the most recent (since 1980) are from the Tiwi Islands, Cobourg Peninsula, West Island (in the Sir Edward Pellew group, but now considered extinct there), Kakadu National Park (notably around Jabiru and near Jim Jim ranger station), and Litchfield National Park. There are older records from the Gove and Katherine areas.  There have been no detailed studies of the northern brush-tailed phascogale, but its ecology is probably similar to that	-	Low	Species or species habitat likely to occur within Study Area.  Use specific habitats or resources not present in the Project Area.  No previous records in Study Area.

					reported for its temperate relatives (Rhind 1998). The diet is predominantly invertebrates with some small vertebrates. It is a nocturnal mammal, feeding both in trees and on the ground. It shelters in tree hollows during the day. Most records are from tall open forests dominated by Eucalyptus miniata (Darwin woollybutt) and E. tetrodonta (Darwin stringybark).	-		
<i>Saccolaimus saccolaimus nudiclunatus</i> (T)	Bare-rumped Sheath-tailed Bat, Bare-rumped	VU	DD	<p>It was first recorded in the Northern Territory in 1979, and there have been very few (&lt;5) records since (McKean et al. 1981; Thomson 1991). All confirmed records have been from the Kakadu lowlands. McKean et al. (1981) asserted that it was likely to be more widespread in the north of the NT, but the very few records since, despite substantial survey work on microchiropteran bats (e.g. Milne et al. 2003, 2004), suggest that this may not be the case.</p> <p>This is a high-flying insectivorous bat. Specimens were collected from open Pandanus woodland fringing the sedgelands of the South Alligator River in Kakadu National Park (Friend and Braithwaite 1986). In the Northern Territory, it has also been recorded from eucalypt tall open forests (Churchill 1998). In Queensland, it is known mainly from coastal lowlands, including eucalypt woodlands and rainforests (Duncan et al. 1999). It roosts in tree hollows and caves (Duncan et al. 1999).</p>	-	Low	<p>Species or species habitat likely to occur within Study Area.</p> <p>Use specific habitats or resources not present in the Project Area.</p> <p>No previous records in Study Area.</p>	
<i>Trichosurus vulpecula arnhemensis</i> (T)	Northern Brushtail Possum	VU	EN	<p>Two subspecies of common brushtail possum occur in the Northern Territory (NT). The subspecies <i>T. v. vulpecula</i>, occurs in isolated populations in the southern NT. It formerly had a much more extensive distribution in the NT that included most of the Tanami and Great Sandy Deserts across to the Western Australian border at Lake Mackay and Kintore, south to Charlotte Waters, east to the Todd and Hale River floodouts in the Simpson Desert, and as far north as the Murchinson Ranges. Outside the NT, this subspecies occurred across much of the continent, including South Australia, Victoria, New South Wales, southern and southwestern Queensland and much of Western Australia. It remains common in much of this area, including urban areas of most capital cities.</p> <p>The subspecies <i>T. v. arnhemensis</i> occurs in the monsoon tropics of the Top End of the NT and in the Kimberley, Western Australia. It remains locally common (notably in some Darwin suburbs), but is generally declining (Woinarski 2004) and is listed as Near Threatened in the NT.</p> <p>A range of sites is used as shelter including caves and rock holes, tree hollows and the tops of dense trees. The diet</p>	-	Moderate	<p>Species or species habitat known to occur in Study Area.</p> <p>Use specific habitats or resources present in the Project Area, but in a poor or modified condition.</p> <p>No previous records in Study Area.</p>	

					consists of the flowers, fruits and leaves of a wide range of non-eucalypt species (Evans 1986).	-		
<i>Xeromys myoides</i> (T)	Water Mouse, False Water Rat, Yirrkoo	VU	DD		<p>In the Northern Territory, it is known from only 10 records at 6 sites (South Alligator River in 1903, Daly River floodplain in 1972, two sites on the Tomkinson River in 1975, Melville Island in 1975 and Glyde River floodplain in 1998 and 1999) (Redhead and McKean 1975; Magnusson et al. 1976; Woinarski et al. 2000). Beyond the Northern Territory, it is also known from several sites in coastal south-eastern Queensland and one site in New Guinea.</p> <p>The ecology of the species is reasonably well known from a detailed study on North Stradbroke Island, Queensland (Van Dyck 1996). The false water rat is a nocturnal predator eating mainly marine and freshwater invertebrates, especially including crabs, pulmonates and molluscs. It forages entirely on the ground, and is an adept swimmer. It builds and shelters in either burrows or substantial earthen mounds. Its habitats comprise mangrove forests, freshwater swamps and floodplain saline grasslands (Woinarski et al. 2000).</p>	-	Low	<p>Species or species habitat likely to occur in Study Area.</p> <p>Use specific habitats or resources not present in the Project Area.</p> <p>No previous records in Study Area.</p>
<b>Insects</b>								
<i>Attacus wardi</i>	Atlas Moth	-	VU		<p>The Atlas Moth is a narrow-range endemic species restricted to high-rainfall coastal areas of the north-western Top End and northern Kimberley. In the Northern Territory (NT), the species has been recorded at several localities on Melville Island, Arau Point and Black Point on the Cobourg Peninsula, and at several coastal localities from Dundee Beach to Gunn Point in the Darwin region. Only a single record has been collected from the Kimberley in Western Australia: a specimen collected from Lesueur Island in December 1974.</p> <p>Although it has been suggested that the Atlas Moth might also occur further east in the Top End—given the distribution of the larval food plant and availability of suitable habitat —no evidence of its occurrence there has been obtained2. Records from Cape York Peninsula in Queensland are considered to be erroneous.</p> <p>The preferred breeding habitat of the Atlas Moth is the edges of large patches of monsoon forests where the larval food plant <i>Croton habrophyllus</i> grows. Critical breeding habitat appears to be coastal semi-deciduous vine thickets. The species also breeds in wetter monsoon forests, such as Maxwell Creek, that have a substantial component of evergreen plants associated with permanent water.</p>	-	Low	<p>Species or species habitat likely to occur in Study Area.</p> <p>Use specific habitats or resources not present in the Project Area.</p> <p>No previous records in Study Area.</p>

Reptiles								
<i>Acanthophis hawkei</i> (T)	Plains Death Adder	VU	VU	The plains death adder has a disjointed distribution. It is known to occur on the cracking soils on floodplains of the Adelaide, Mary and Alligator Rivers as well as the cracking black soils of the Barkly Tableland on the Northern Territory (NT)/Queensland (QLD) border and the Mitchell Grass Downs of western QLD. It likely occurs on floodplains and cracking soil plains across mainland northern Australia. The plains death adder occurs on the flat, treeless cracking-soil plains of northern Australia, where it is a major predator on frogs, reptiles and rats.	-	Low	Species or species habitat known to occur in Study Area. Use specific habitats or resources not present in the Project Area. No previous records in Study Area.	

\* Information taken directly from the following sources (prioritised depending on availability):

- Threatened species of the Northern Territory Fact Sheets – Department of Environment, Parks and Water Security (NT Government):  
<https://nt.gov.au/environment/animals/threatened-animals>

- Species Profile and Threats Database – Department of Agriculture, Water and the Environment (Australian Government): <http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>