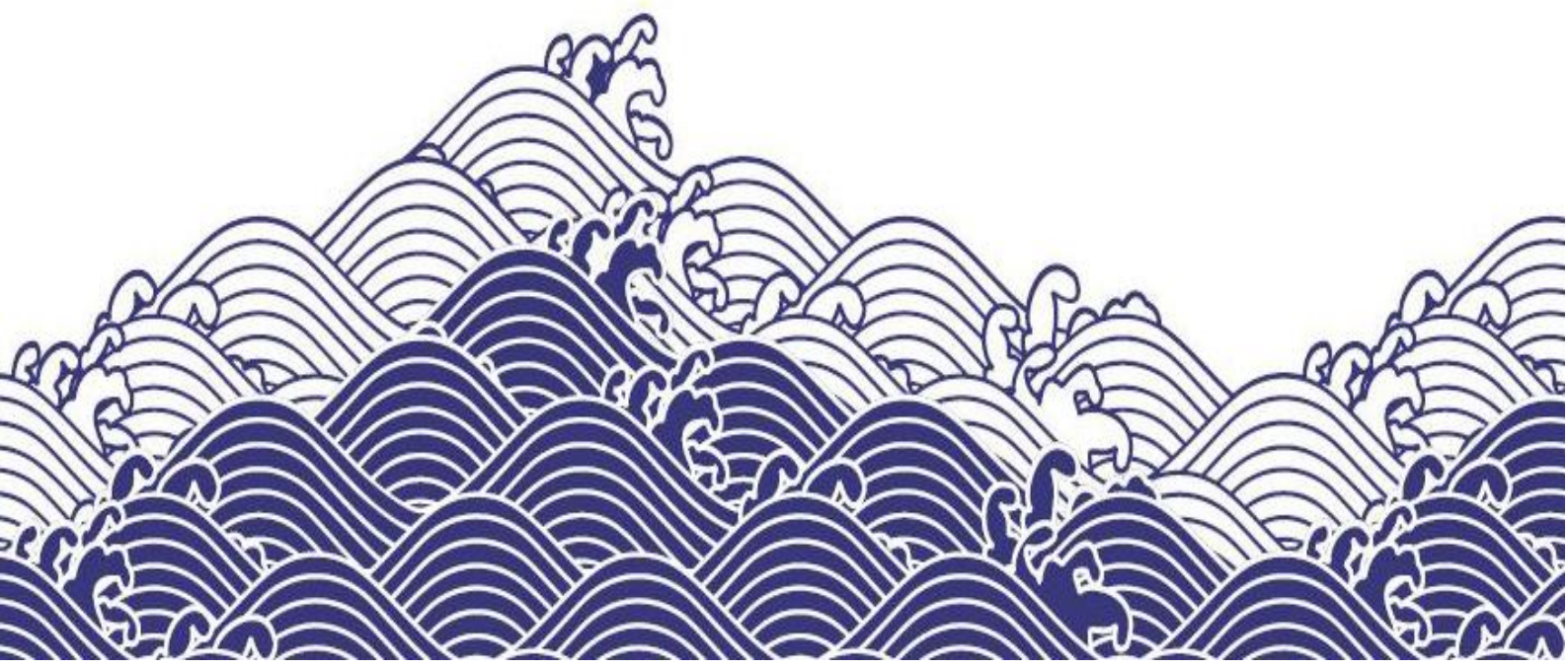


Appendix B:
**Likelihood of occurrence
assessment**



Threatened and migratory species: Likelihood of occurrence assessment

Common Name	Scientific Name	Group	EPBC Act Status	TPWC Act Status	Description	PMST		Records (including Atlas of Living Australia (ALA) and other sources)/ ecological assessment	Likelihood of Occurrence	Relevant Area		Relevant referral	
						PDA (Nearshore)	Onshore PDA			PDA (Nearshore)	Onshore PDA	EPBC	NT
A bladderwort	<i>Utricularia dunstaniae</i>	Plant	-	V	<i>Utricularia dunstaniae</i> is a small carnivorous plant. Preferred habitat includes sandsheet heath with wet sand, in woodlands or shrublands.	-	N/A - Records from NR Maps	No records within the project area. 12 NR Maps records from the broader 20km buffer. Limited suitable habitat present on site, however previous surveys by EcOz have determined that the sandsheet habitat present on Middle Arm Peninsula around the project area as unsuitable habitat for this species.	Unlikely to occur	N/A	N/A	N/A	N/A
A bladderwort	<i>Utricularia singeriana</i>	Plant	-	V	<i>Utricularia singeriana</i> is a small carnivorous plant. Preferred habitat includes seasonally inundated grassland and low open woodland.	-	N/A - Records from NR Maps	No records within the project area. 20 NR Maps records from the broader 20km buffer. Limited suitable habitat present on site, however previous surveys by EcOz have determined that the potential habitat present on Middle Arm Peninsula around the project area as unsuitable habitat for this species.	Unlikely to occur	N/A	N/A	N/A	N/A
A triggerplant	<i>Stylidium ensatum</i>	Plant	E	E	<i>Stylidium ensatum</i> is an erect annual herb endemic to the area around Darwin, NT, with four known localities. It grows to 22cm tall, and flowers from June to July. The preferred habitat for this species is the wet margins of drainage flats in damp heavy clay or peaty soils, which are poorly draining and seasonally inundated. <i>Stylidium ensatum</i> occurs with sedges, perennial grasses, herbs such as <i>Burmannia</i> spp., and shrubs such as <i>Osbeckia</i> and <i>Banksia dentata</i> .	N/A	Species or species habitat known to occur within 20 km buffer	There are no records within the project area. Multiple NR Maps records have been observed on the landward end of the Middle Arm Peninsula. However, surveys completed for the NT Government were completed within Middle Arm Peninsula, and these survey points have been marked as a 'confirmed absense' (Department of Land Resource Management 2016). No suitable habitat within the onshore corridor.	Unlikely to occur	N/A	N/A	N/A	N/A
Alligator Rivers Yellow Chat	<i>Epthianura crocea tunneyi</i>	Land bird	E	E	The Alligator Rivers yellow chat is endemic to the Northern Territory. This species has been recorded predominantly from within the Kakadu National Park, but also can occur on the floodplains of the Adelaide, Mary, Widman, South Alligator and East Alligator Rivers. There are also occasional records of this species between Darwin to Oenpelli. The Alligator River yellow chat is restricted to coastal and subcoastal grassy floodplains that are sparsely vegetated with grasses, sedges and forbs. Foraging occurs from the ground, as this species is mainly insectivorous.	Species or species habitat may occur within area	Species or species habitat may occur within 20 km buffer	No records in project area or within Middle Arm Peninsula. 8 NR Maps records are observed in the 20km buffer zone. Limited suitable habitat is present. The project area is outside of the species known distribution.	Unlikely to occur	N/A	N/A	N/A	N/A
Asian Dowitcher	<i>Limnodromus semipalmatus</i>	Shorebird	V/M	-	The Asian Dowitcher breeds in isolated colonies in central and eastern Siberia, Mongolia and north-east China. The species is a regular visitor to the north-west between Port Hedland and Broome. Elsewhere in Australia, they are sporadic and rare. In the Northern Territory the Asian Dowitcher is found in Darwin and Arnhem Land. The Asian Dowitcher occurs in sheltered coastal environments, such as embayments, coastal lagoons, estuaries and tidal creeks. They are known to frequent shallow water and exposed mudflats or sandflats.	Species or species habitat known to occur within area	Species or species habitat known to occur within area	No records within project area or Middle Arm Peninsula. Multiple ALA and NR Maps records within the 20 km buffer zone. Suitable habitat adjacent to project area (sheltered coastal environments, harbour).	Likely to occur	Y	Y	✓	✓
Australian Humpback Dolphin	<i>Sousa sahalensis</i>	Marine Mammal	V/M	-	Australian humpback dolphins are a cryptic species that are typically found within 20 km of the coast, with preference for shallow, often turbid, inshore waters, embayments and estuaries. Several locations in the Darwin region are considered important populations of Australian humpback dolphins, including Darwin Harbour, Bynoe Harbour and Shoal Bay. The species does not appear to undergo large-scale seasonal migrations, however seasonal shifts in abundance have been observed.	Breeding known to occur within area	N/A	500+ ALA records within nearshore PDA in past 30 years, many more within 20 km buffer. A BIA for this species overlaps the PDA (nearshore) in Darwin Harbour where breeding is known to occur. Suitable habitat corresponds to project area extent. Monitoring programs have recorded this species at multiple locations within and adjacent to Darwin Harbour area (Griffiths et al., 2020).	Known to occur	Y	N	✓	✓
Atlas Moth	<i>Attacus wardi</i>	Invertebrate	-	V	The Atlas Moth is a large insect, with a range restricted to coastal areas in the north-western Northern Territory and the Kimberley. Preferred breeding habitat includes the edges of large patches of monsoon forests, with semi-deciduous vine thickets being critical habitat. The Atlas Moth depends on <i>Croton habrophyllus</i> as a larval food plant. The species is present during the latter half of the wet season, typically January to March.	-	N/A - Records from NR Maps	No records within the project area. 17 NR Maps in the 20km buffer zone. Suitable habitat (vine thickets) present adjacent to the project area.	May occur	N	Y	X	✓
Australian Painted Snipe	<i>Rostratula australis</i>	Shorebird	E	E	The Australian painted snipe occurs in shallow freshwater (occasionally brackish) wetlands, both ephemeral and permanent, such as lakes, swamps, claypans, inundated or waterlogged grassland/saltmarsh, dams, rice crops, sewage farms and bore drains, generally with a good cover of grasses, rushes and reeds, low scrub, <i>Muehlenbeckia</i> spp. (lignum), open timber or samphire. It has been recorded at wetlands in all states and territories and is most common in eastern Australia and less frequently recorded in the NT. Contemporary NT records have come from McMinns Lagoon near Darwin, Yellow Waters in Kakadu, the Sturt Plateau, the Barkly, the Tanami Desert, and the Alice Springs waste stabilisation ponds. Species habitat is Fringes of permanent and temporary wetlands, swamps and inundated grasslands (Taylor et al. 2013). Is nomadic and scattered across Australia with no predictable occurrence (Rogers 2001), but could occur at any wetland or inundated grassland across its distribution, including nearly all of the NT and Qld (Garnett et al. 2011).	Species or species habitat known to occur within area	Species or species habitat known to occur within area	No recent records overlapping project area. Nearest contemporary NR Maps records are from around McMinns Lagoon inland from Darwin, within 20km buffer zone. Limited suitable habitat present in or adjacent to the project area.	Likely to occur	Y	Y	✓	✓

Threatened and migratory species: Likelihood of occurrence assessment

Common Name	Scientific Name	Group	EPBC Act Status	TPWC Act Status	Description	PMST		Records (including Atlas of Living Australia (ALA) and other sources)/ ecological assessment	Likelihood of Occurrence	Relevant Area		Relevant referral	
						PDA (Nearshore)	Onshore PDA			PDA (Nearshore)	Onshore PDA	EPBC	NT
Australian Snubfin Dolphin	<i>Orcaella heinsohni</i>	Marine Mammal	V/M	-	The Australian Snubfin Dolphin (<i>Orcaella heinsohni</i>), formerly known as the Irrawaddy Dolphin, occurs only in waters off the northern half of Australia, from approximately Broome on the west coast to the Brisbane River on the east coast. Within Australia, the species occurs almost exclusively in protected shallow coastal waters, close to river and creek mouths, with occasional vagrants venturing upstream in river systems. The species has displayed evidence of connectivity and movement (observed high rates of temporary emigration) between local sites, including Darwin Harbour, Bynoe Harbour and Shoal Bay in the Northern Territory. Boat-based surveys have been undertaken in the coastal waters of Darwin Harbour and Port Essington, finding that Australian Snubfin Dolphins were widely and unevenly distributed throughout the Northern Territory.	Breeding known to occur within area	N/A	50+ ALA records within Nearshore PDA in past 30 years, many more within 20 km buffer. Four ALA records within 20 km of Offshore PDA. A BIA for this species overlaps the PDA (nearshore) in Darwin Harbour where breeding is known to occur. Suitable habitat corresponds to project area extent. Monitoring programs have recorded this species at multiple locations within and adjacent to Darwin Harbour area (Griffiths et al., 2020).	Known to occur	Y	N	✓	✓
Bare-rumped Sheath-tailed Bat	<i>Saccolaimus saccolaimus nudicluniatius</i>	Terrestrial mammal	V	-	The Bare-rumped Sheath-tailed Bat is a large insectivorous bat, with a distribution across northern Australia from north-eastern Queensland across to the Kimberly. Most records are near-coastal, but this species has been found up to 150km inland. Preferred habitats include coastal lowland rainforests, and more open forests dominated by Eucalyptus or Corymbia species. In Australia, Bare-rumped Sheath-tailed Bats have been observed to use hollows for roosting, including hollows found in <i>Eucalyptus miniata</i> .	N/A	Species or species habitat known to occur within area	There are multiple NR Maps records of the species adjacent to the onshore corridor. Suitable habitat is present (<i>Eucalyptus miniata</i> mid woodland), however prior ecological surveys have not found any hollows present within the onshore corridor, limiting suitable roosting habitat.	Likely to occur	N	Y	✓	✓
Barn Swallow	<i>Hirundo rustica</i>	Land bird	M	-	The Barn Swallow is a small migratory bird, migrating to Australia in their non-breeding season. The Barn Swallow has been 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. The Barn Swallow is a nearly annual yet uncommon, non-breeding visitor to the Darwin region where it is recorded from October to April (McCrie and Noske 2015).	Species or species habitat known to occur within area	Species or species habitat known to occur within area	No records in the project area or Middle Arm Peninsula. Many ALA records in the broader 20km buffer zone. The species prefers open country, but also utilises woodlands.	May occur	Y	Y	✓	✓
Bar-tailed Godwit	<i>Limosa lapponica</i>	Shorebird	M	-	The Bar-tailed Godwit breeds in the north of Scandinavia, Russia and north-west Alaska. The Bar-tailed Godwit has been recorded in the coastal areas of all Australian states. In the NT, populations have also been recorded in the Top End, from Darwin and Melville Island, east to the Alligator River and Croker Island. It is also found in the Gulf of Carpentaria, around Gove Peninsula, Grootte Eylandt, Numbulwar and the Sir Edward Pellew Group. Sites of international importance for this species in the NT include the Milingimbi coast and Echo Island. It is found mainly in coastal habitats such as large intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons and bays. The species usually forages near the edge of water or in shallow water, mainly in tidal estuaries and harbours.	Species or species habitat known to occur within area	Species or species habitat known to occur within area	Four NR Maps records within Nearshore PDA, however records not dated. No other records within the project area. 10 NR Maps records on the Middle Arm Peninsula. Subspecies was not distinguished at the time of survey. Suitable habitat within or adjacent to the project area. Monitoring programs have recorded this species at multiple locations within Darwin Harbour area (Lilleyman, 2016).	Known to occur	Y	Y	✓	✓
Black-footed Tree-rat (Kimberley and mainland NT)	<i>Mesembriomys gouldii gouldii</i>	Terrestrial mammal	E	E	The Black-footed Tree-rat is a large rodent, with a distribution restricted to forests and woodlands of the north Kimberley and mainland Northern Territory. They occur mostly in lowland open forests and woodlands dominated by <i>Eucalyptus miniata</i> and <i>Eucalyptus tetrodonta</i> , particularly where these forests have a relatively dense shrubby understorey. The black-footed tree-rat is a nocturnal rodent that dens mostly in tree hollows, but occasionally in dense foliage (notably of <i>Pandanus</i>), and occasionally in buildings. Hard fruits and seeds are a major component of their diet, which is supplemented by grass, invertebrates and nectar-rich flowers.	N/A	Species or species habitat known to occur within area	There are numerous NR Maps records (562) adjacent to the onshore corridor, and suitable habitat (<i>Eucalyptus miniata</i> mid woodland) is present within the onshore corridor. Further ALA and NR Maps records have been recorded throughout the 20km buffer.	Likely to occur	N	Y	✓	✓
Black-tailed Godwit	<i>Limosa limosa</i>	Shorebird	E/M	-	The black-tailed godwit has a large discontinuous breeding range extending from Iceland to the Russian Far East. During the austral summer non-breeding season, black-tailed godwits are found in all states and territories of Australia; however, coastal regions support the highest densities of the species. The largest populations are found on the north coast between Darwin and Weipa. Feeding habitat includes areas of mud or soft, wet sand within sandflats, intertidal mudflats, saltmarshes, and the beaches of oceanic coastlines, bays, and estuaries. They are usually found in sheltered bays, estuaries, and lagoons with large intertidal mudflats and/or sandflats.	Roosting known to occur within area	Roosting known to occur within area	No records within project area or Middle Arm Peninsula. Many ALA records in the broader 20km buffer zone. Suitable habitat adjacent to project area (sheltered bays).	Likely to occur	Y	Y	✓	✓
Blue Whale	<i>Balaenoptera musculus</i>	Marine Mammal	E/M	-	Much of the Australian continental shelf and coastal waters have no particular significance to blue whales and are used only for migration and opportunistic feeding. However, some key habitat areas within Australian waters include: the Perth Canyon, Geographe Bay, Antarctic waters, and wintering areas (such as waters enroute to the Indonesian archipelago).	Species or species habitat may occur within area	N/A	No recent ALA records within project area. The project area does not contain any known feeding, breeding, calving, aggregation or migratory areas. This species is known to occur in the North Marine Region on an infrequent basis. The sub-species, pygmy blue whale (<i>Balaenoptera musculus breviceauda</i>), migrates from the Perth Canyon in March/April to head to warmer Indonesian waters arriving around June. This migration corridor is west of the project area.	May occur	N	N	✓	✓
Broad-billed Sandpiper	<i>Limicola falcinellus</i>	Shorebird	M	-	The broad-billed sandpiper is a small wader with a wide global distribution. It breeds in the Northern Hemisphere and migrates south for the non-breeding season. In Australia, the broad-billed sandpiper has a scattered coastal distribution, but is most commonly found on the north and north-west coasts, including the Pilbara and Kimberley in Western Australia, Melville Island and Darwin in the Northern Territory and south-east of the Gulf of Carpentaria in Queensland. This species occurs in sheltered coastal environments, such as estuarine mudflats and saltmarshes. Nesting often occurs on the ground, or in the top of a tussock.	Roosting known to occur within area	Roosting known to occur within 20 km buffer	No records within project area. Many ALA records present in the broader 20km buffer. Suitable habitat present in or adjacent to the project area.	May occur	Y	Y	✓	✓

Threatened and migratory species: Likelihood of occurrence assessment

Common Name	Scientific Name	Group	EPBC Act Status	TPWC Act Status	Description	PMST		Records (including Atlas of Living Australia (ALA) and other sources)/ ecological assessment	Likelihood of Occurrence	Relevant Area		Relevant referral	
						PDA (Nearshore)	Onshore PDA			PDA (Nearshore)	Onshore PDA	EPBC	NT
Brush-tailed Rabbit-rat	<i>Conilurus penicillatus</i>	Terrestrial mammal	V	E	The Brush-tailed Rabbit-rat is a moderate sized, partially aboreal rodent, found across northern Australia. The preferred habitat is eucalypt tall open forest, and they have been known to also occur on coastal grasslands with scattered large Casuarina equisetifolia trees, beaches, and stunted eucalypt woodlands on stony slopes. It shelters in tree hollows, hollow logs and, less frequently, in the crowns of pandanus or sand palms.	N/A	Species or species habitat may occur within area	The project area does not contain any known feeding, breeding, calving, aggregation or migratory areas. This species is known to occur in the North Marine Region on an infrequent basis. The sub-species, pygmy blue whale (<i>Balaenoptera musculus brevicauda</i>), migrates from the Perth Canyon in March/April to head to warmer Indonesian waters arriving around June. This migration corridor is west of the project area.	Unlikely to occur	N/A	N/A	N/A	N/A
Bryde's Whale	<i>Balaenoptera edeni</i>	Marine Mammal	M	-	Bryde's Whales occur in temperate to tropical waters, both oceanic and inshore. Bryde's Whales have been recorded from all Australian states except the Northern Territory, however there is often doubt over the exact identity of some sightings (Sei Whales).	Species or species habitat may occur within area	N/A	No recent ALA records within project area. One recent ALA record (mother and calf) in the Garig Gunak Barlu Marine Park 200 km north-east from project area (2020). The project area does not contain any known feeding, breeding, calving, aggregation or migratory areas, however species has widespread distribution. Based on insufficient data this species has been conservatively assessed as "May occur."	May occur	Y	N	✓	✓
Christmas Island Frigatebird	<i>Fregata andrewsi</i>	Seabird	E	E	The Christmas Island Frigatebird is a large seabird, which breeds on Christmas Island. During the non-breeding season, the species has a wide sea-faring range across the Indo-Malaysian seas. The species is a specialised aerial feeder.	-	N/A - Records from NR Maps	No records within the project area. 3 NR Maps in the 20km buffer zone. The species is a sea-faring bird and unlikely to use any habitat within the project area.	Unlikely to occur	N/A	N/A	N/A	N/A
Common Greenshank	<i>Tringa nebularia</i>	Shorebird	E/M	-	The Common Greenshank breeds in the Northern Hemisphere but occurs across Europe, Africa, Asia, Melanesia and Australasia. In Australia, the species occurs in all types of wetlands and is the most widespread of any shorebird in Australia. The species is sparsely scattered throughout the NT and there are no known important sites for the species in the area. It occurs in sheltered coastal habitats, typically with large mudflats and saltmarsh, mangroves or seagrass.	Species or species habitat known to occur within area	Species or species habitat known to occur within area	No records within project area, multiple ALA and NR Maps records on Middle Arm Peninsula. Many more ALA and NR Maps records present in the broader 20km buffer zone. Suitable habitat adjacent to project area (sheltered coastal waters, mangroves, seagrass). Monitoring programs have recorded this species in Darwin Harbour (Lilleyman, 2016).	Known to occur	Y	Y	✓	✓
Common Noddy	<i>Anous stolidus</i>	Seabird	M	-	The Common Noddy usually breeds on or near islands, rocky islets, shoals or cays or coral or sand. Birds may nest in low vegetation, on the ground or bare rock, among coral rubble or in sand close to grassy areas. The species forages in surrounding waters of the nest site during breeding season (up to hundreds of kilometres) and occurs in groups throughout the pelagic zone during the non-breeding period. Only one known breeding location is known in the Northern Territory, with about 100-130 individuals recorded (Chatto 2001).	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	One ALA record within Nearshore PDA. 21 recent records within 20km of project area. No suitable habitat within project area.	Known to occur	Y	Y	✓	✓
Common Sandpiper	<i>Actitis hypoleucos</i>	Shorebird	M	-	The Common Sandpiper mainly breeds in parts of Europe and Asia, and occasionally Africa. The population that migrates to Australia breeds in the Russian far east. Found along all coastlines of Australia and in many areas inland, the Common Sandpiper is widespread in small numbers. The population when in Australia is concentrated in northern and western Australia. Kakadu National Park and the Darwin area are areas of national importance to the species, with maximum counts of 300 and 52 individuals respectively. The species utilises a wide range of coastal wetlands and some inland wetlands, with varying levels of salinity, and is mostly found around muddy margins or rocky shores and rarely on mudflats.	Species or species habitat known to occur within area	Species or species habitat known to occur within area	ALA records from 2011 are observed in the project area, with many more records found on Middle Arm Peninsula and the 20km buffer. Suitable habitat directly adjacent to project area (coastlines, muddy margins). Darwin area of national importance for this species. Monitoring programs have recorded this species in Darwin Harbour (Lilleyman, 2016).	Known to occur	Y	Y	✓	✓
Curlew Sandpiper	<i>Calidris ferruginea</i>	Shorebird	CE/M	CE	In Australia, Curlew Sandpipers occur around the coasts and are also quite widespread inland, though in smaller numbers. In the Northern Territory, they mostly occur around Darwin, north to Melville Island and Cobourg Peninsula, and east and south-east to Gove Peninsula, Groote Eylandt and Sir Edward Pellew Island. They are recorded inland from Victoria River Downs and around Alice Springs. 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. This species does not breed in Australia, however there are records of non-breeding one year old birds remaining in Australia rather than migrating north. There is potential species habitat adjacent to Project area, No records of habitat use around Middle Arm and few recent records within the Darwin Harbour, however widespread occurrence elsewhere around Darwin (Lee Point and East Point).	Species or species habitat known to occur within area	Species or species habitat known to occur within area	No records within project area or on Middle Arm Peninsula. Many ALA and NR Maps records within 20km buffer zone. Suitable habitat directly adjacent to project area (sheltered coastal area, salt flats).	Likely to occur	Y	Y	✓	✓
Dugong	<i>Dugong dugon</i>	Marine Mammal	M	-	Dugongs occur in coastal and island waters from Shark Bay in Western Australia across the northern coastline to Moreton Bay in Queensland. Dugongs spend most of their time in the neritic zone, especially near tidal and subtidal seagrass meadows. 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.	Species or species habitat known to occur within area	N/A	Seven ALA records within Nearshore PDA, many more records within 20 km buffer. Suitable habitat corresponds to nearshore project area extent (seagrass habitats adjacent to nearshore PDA). Commonly encountered in Darwin region. Monitoring programs have recorded this species at multiple locations within and adjacent to Darwin Harbour area (Cardno 2015 and Groome et al. 2017).	Known to occur	Y	N	✓	✓

Common Name	Scientific Name	Group	EPBC Act Status	TPWC Act Status	Description	PMST		Records (including Atlas of Living Australia (ALA) and other sources)/ ecological assessment	Likelihood of Occurrence	Relevant Area		Relevant referral	
						PDA (Nearshore)	Onshore PDA			PDA (Nearshore)	Onshore PDA	EPBC	NT
Dwarf Sawfish	<i>Pristis clavata</i>	Fish, Sharks and Rays	V/M	V	The Dwarf's Sawfish's distribution was previously considered to extend north from Cairns, across northern Australian waters to the Pilbara coast in Western Australia. A recent review found no records of the species from the eastern coast of the Cape York Peninsula. The Dwarf Sawfish inhabits shallow coastal waters and estuarine habitats, restricted to brackish and salt water. Estuarine habitats are used as nursery areas during the wet season, with juvenile Dwarf Sawfish remaining in these areas for up to three years. Adults are known to seasonally migrate back into inshore waters, although it is unknown how far offshore they travel. Juveniles and adults inhabit shallow, turbid waters, often associated with mangroves and river mouths, demonstrating a preference for estuarine environments (Pogonoski et al. 2002).	Species or species habitat known to occur within area	N/A	No recent ALA records overlapping project area. Four ALA records within 20 km buffer. Suitable habitat in project area, particularly for juveniles.	Likely to occur	Y	N	✓	✓
Darwin Cycad	<i>Cycas armstrongii</i>	Plant	-	V	Darwin Cycad is a medium cycad endemic to the Northern Territory. Preferred habitat consists of open grassy woodlands. Prime cycad habitat has deep loamy, well-drained soil and the species is frequently associated with <i>Eucalyptus miniata</i> and <i>Eucalyptus tetradonta</i> (Liddle 2009).	-	N/A - Records from NR Maps	No records are within the project area, however EcOz surveys have shown Darwin Cycad to be present throughout Middle Arm Peninsula, commonly associated with areas of <i>Eucalyptus miniata</i> and <i>E. tetradonta</i> woodland, which is not present within the BCCS Onshore project area. Many ALA and NR Maps records are present throughout the 20km buffer.	May occur	N	Y	X	✓
Eastern Curlew	<i>Numenius madagascariensis</i>	Shorebird	CE/M	CE	Far eastern curlews are endemic to the East Asian – Australasian Flyway. During the austral summer non-breeding season, most (estimated at 73 %) of the species' population occurs in Australia. Within Australia, far eastern curlews have a mostly coastal distribution; they are rarely recorded inland. The distribution of the far eastern curlew is continuous from Barrow Island and the Dampier Archipelago in Western Australia, through the Kimberley Division and along the Northern Territory, Queensland, the islands of the Torres Strait and New South Wales coasts. They occur patchily elsewhere. The far eastern curlew mainly forages around sheltered intertidal sandflats or mudflats that are open and without vegetation or seagrass. The species often also forages near mangroves, on saltflats or saltmarsh, around rockpools, amongst rubble on coral reefs, and on ocean beaches near the tideline.	Species or species habitat known to occur within area	Species or species habitat known to occur within area	50+ NR Maps record from within the project area in the last 30 years. Multiple ALA and NR Maps records on Middle Arm Peninsula, and many records within 20km buffer zone. Suitable habitat directly adjacent to project area (saltflats, mangroves, beaches). Monitoring programs have recorded this species in Darwin Harbour (Lilleyman, 2016).	Known to occur	Y	Y	✓	✓
Fawn Antechinus	<i>Antechinus bellus</i>	Terrestrial mammal	V	E	The Fawn Antechinus is a small dasyurid, found across the monsoonal tropics of the Northern Territory. The species is a terrestrial and partly arboreal insectivore that is generally nocturnal. They shelter in tree hollows and fallen logs. Preferred habitat includes open forests and woodlands dominated by <i>Eucalyptus miniata</i> or <i>Eucalyptus tetradonta</i> , particularly where these forests have a relatively dense understorey.	N/A	Species or species habitat known to occur within area	There are no records within the project area, and 4 NR Maps records on Middle Arm Peninsula. A further 5 NR Maps records are observed in the 20km buffer. Limited suitable habitat (<i>Eucalyptus miniata</i> with an open understorey) is available within the onshore corridor. Camera trapping surveys were conducted with no detections (EcOz 2023).	Unlikely to occur	N/A	N/A	N/A	N/A
Fin Whale	<i>Balaenoptera physalus</i>	Marine Mammal	V/M	-	Fin whales have been observed during aerial surveys in South Australian waters between November and May, however, fin whale distribution in Australian waters is known primarily from stranding events and whaling records. Fin whales are considered a cosmopolitan species and occur from polar to tropical waters, but rarely in inshore waters. The Australian Antarctic waters are important feeding grounds for fin whales, but there are no known mating or calving areas in Australian waters.	Species or species habitat may occur within area	N/A	No recent ALA records within project area. The project area does not contain any known feeding, breeding, calving, aggregation or migratory areas, however species has widespread distribution. Based on insufficient data this species has been conservatively assessed as "May occur."	May occur	Y	N	✓	✓
Flatback Turtle	<i>Natator depressus</i>	Marine Reptile	V/M	-	Flatback Turtles are found only in the tropical waters of northern Australia, Papua New Guinea and Irian Jaya and is one of only two species of sea turtle without a global distribution. Five genetic stocks are recognised, including eastern Queensland, Arafura Sea, Cape Domett, south-west Kimberley and Pilbara. In the Northern Territory, Flatback Turtles are the most widely spread nesting turtle species, utilising a wide variety of beach types around the entire coastline. Notable nesting sites in proximity to the project area include Cobourg Peninsula, Melville Island, Fog Bay and Turtle Point. Flatback turtles forage across the Australian continental shelf and into continental waters off Indonesia and Papua New Guinea, feeding in turbid, shallow inshore waters from 10 m to 40 m in depth.	Breeding known to occur within area	N/A	15 NR Maps records within Nearshore PDA, many more within 20 km buffer. Two records within 20 km buffer of Offshore PDA. Internesting BIA overlaps PDA (nearshore and offshore) and foraging BIA in Joseph Bonaparte Gulf (IDA).	Known to occur	Y	N	✓	✓
Fork-tailed Swift	<i>Apus pacificus</i>	Land bird	M	-	The Fork-tailed Swift does not breed in Australia, but are a non-breeding visitor to all states and territories. In the Northern Territory, there are widespread but scattered records in the north. The Fork-tailed Swift is almost exclusively aerial, flying from less than 1 m to at least 300 m above ground and probably much higher. In Australia, they mostly occur over inland plains but sometimes above foothills or in coastal areas.	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	No ALA records within project area, and 2 ALA records on Middle Arm Peninsula including directly adjacent to the project area. Many more ALA records present in the 20 km buffer area. Suitable foraging habitat surrounding project area, however species is predominantly aerial with no habitat of value in project area.	Likely to occur	Y	Y	✓	✓
Freshwater Sawfish	<i>Pristis pristis</i>	Fish, Sharks and Rays	V/M	V	The Freshwater Sawfish is mainly conserved to the main channels of large rivers of northern Australia from Fitzroy River in Western Australia to the western side of Cape York Peninsula in Queensland. In the Northern Territory, they are known in the Adelaide and Daley Rivers. The species spends their first three-four years in freshwater, gradually moving to rivers, estuaries, coastal and occasionally offshore environments. The preferred habitat is mud bottoms of river embayments and estuaries but are also found up to 400 km upstream.). Primarily found in turbid, low-salinity waters, juveniles and adults utilize freshwater and estuarine habitats, including mangrove-lined rivers and coastal floodplains (Pogonoski et al. 2002).	Species or species habitat likely to occur within area	N/A	No recent ALA records overlapping or within 20 km of project area. Suitable habitat within nearshore PDA.	May occur	Y	N	✓	✓

Threatened and migratory species: Likelihood of occurrence assessment

Common Name	Scientific Name	Group	EPBC Act Status	TPWC Act Status	Description	PMST		Records (including Atlas of Living Australia (ALA) and other sources)/ ecological assessment	Likelihood of Occurrence	Relevant Area		Relevant referral	
						PDA (Nearshore)	Onshore PDA			PDA (Nearshore)	Onshore PDA	EPBC	NT
Ghost Bat	<i>Macroderma gigas</i>	Terrestrial mammal	V	-	The Ghost Bat is the largest microbat in Australia, with a broad northern Australian distribution. They currently occupy habitats ranging from the arid Pilbara to tropical savanna woodlands and rainforests. During the daytime they roost in caves, rock crevices and old mines. Roost sites used permanently are generally deepnatural caves or disused mines with a relatively stable temperature.	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	There are no records within the project area, and no suitable habitat within the onshore corridor. One 2005 ALA record was observed 9.5 km from the Project. The Darwin region is at the very edge of this species estimated distribution.	Unlikely to occur	N/A	N/A	N/A	N/A
Giant Manta Ray	<i>Mobula birostris</i>	Fish, Sharks and Rays	M	-	The Giant Manta Ray is a large ray that is highly mobile and globally distributed throughout tropical to temperate pelagic waters. It occurs across northern Australia in a wide range from Montague Island (New South Wales) to Shark Bay (Western Australia). This species is mainly pelagic from the surface to a depth of 1,000 m. Found in tropical and temperate Australian waters. Primarily inhabits open ocean environments, but also frequents coastal areas, particularly where there are aggregations of plankton (Kyne et al n.d.).	Species or species habitat may occur within area	N/A	No recent ALA records overlapping or within 20 km of project area. No known aggregations sites near project area. Suitable habitat within project area.	May occur	Y	N	✓	✓
Gouldian Finch	<i>Erythrura gouldiae</i>	Land bird	E	V	Sparsely distributed across northern Australia between the Kimberley and north-central Queensland, the Gouldian finch was historically observed in flocks of thousands, its total population is now estimated at less than 2500. It is vividly multi-coloured and seen singly or in flocks of up to a couple of hundred. It inhabits open woodlands that are dominated by Eucalyptus trees and support a ground cover of Sorghum and other grasses. The critical components of suitable core habitat for the Gouldian finch appear to be the presence of favoured annual and perennial grasses (especially Sorghum), a nearby source of surface water and, in the breeding season, unburnt hollow-bearing Eucalyptus trees.	Species or species habitat known to occur within area	Species or species habitat known to occur within area	No records within project area or Middle Arm Peninsula. Many ALA and NR Maps records present in the broader 20km buffer zone. Limited suitable habitat within or adjacent (Eucalyptus woodland) to project area.	May occur	N	Y	✓	✓
Great Frigatebird	<i>Fregata minor</i>	Seabird	M	-	Major breeding populations of Great Frigatebirds are found in tropical waters of the Pacific and Indian Oceans. This species breeds on small, remote tropical and sub-tropical islands, in mangroves or bushes and occasionally on bare ground. Great Frigatebirds prey on fish and squid over the open ocean and occasionally chicks of other bird species. Christmas Island provides breeding habitat for around 3,500 pairs, and other important breeding locations include North Keeling Island, Ashmore Reef MP and Coral Sea MP islands and cays.	Species or species habitat known to occur within area	Species or species habitat known to occur within area	No records within project area or Middle Arm Peninsula, 12 ALA records within 20km around Darwin Harbour. Offshore migratory species uncommon to the area. No suitable habitat within project area.	May occur	Y	Y	✓	✓
Great Knot	<i>Calidris tenuirostris</i>	Shorebird	V/M	CE	The Great Knot breeds in north-east Siberia but the breeding distribution is poorly known. The Great Knot has been recorded around the entirety of the Australian coast, with a few scattered records inland. The greatest numbers are found in northern Australia; where the species is common on the coasts of the Pilbara and Kimberley, from the Dampier Archipelago to the Northern Territory border, and in the Northern Territory from Darwin and Melville Island, through Arnhem Land to the south-east Gulf of Carpentaria. Sites of significance within the NT include Roper River area, Fog Bay and adjacent islands, Boucat Bay and Castlereagh Bay. The species typically prefers sheltered coastal habitats, with large intertidal mudflats or sandflats. This includes inlets, bays, harbours, estuaries and lagoons.	Roosting known to occur within area	Roosting known to occur within area	Two NR Maps record within project area. A total of four NR Maps records on Middle Arm Peninsula, with many more ALA and NR Maps records throughout the 20 km buffer zone. Suitable habitat directly adjacent to project area (sheltered coastal habitat). Monitoring programs have recorded this species in Darwin Harbour (Lilleyman, 2016).	Known to occur	Y	Y	✓	✓
Greater Sand Plover	<i>Charadrius leschenaultii</i>	Shorebird	V/M	V	Greater Sand Plovers breed in central Asia and during the non-breeding season, the species is recorded in many coastal areas of Australia. In Australia, the Greater Sand Plover occurs in coastal areas in all states, though the greatest numbers occur in northern Australia, especially the north-west. There are sparsely scattered records of this species from the largely inaccessible area between Roebuck Bay and Darwin, but it often occurs in the Top End of the Northern Territory, including on Groote Eylandt. The Darwin area is an internationally important site for this species in Australia, with a maximum count of 1024 individuals. 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.	Species or species habitat known to occur within area	N/A	Seven NR Maps records within Nearshore PDA. Multiple NR Maps records on Middle Arm Peninsula, including directly adjacent to the project area. Many more ALA and NR Maps records present throughout the 20km buffer. Darwin internationally important site for this species. Suitable habitat adjacent to project area (sheltered beaches).	Likely to occur	Y	Y	✓	✓
Green Sawfish	<i>Pristis zijsron</i>	Fish, Sharks and Rays	V/M	V	In Australian waters, Green Sawfish are currently distributed from about the Whitsundays in Queensland across northern Australian waters to Shark bay in Western Australia. Little is known about their Northern territory distribution, and the area is less populated than the east coast. Individuals have been recorded in inshore coastal environments and estuaries but the species does not occur in fresh water. The species inhabits muddy bottom habitats and enters estuaries, frequently found in shallow water but also recorded in offshore trawl grounds of over 70 m in depth. Species inhabits tropical and subtropical coastal waters, estuaries, and river systems across northern Australia, including areas within Darwin Harbour (Last & Stevens 2009). Juveniles and adults are found in shallow, turbid waters, often associated with mangrove habitats and river mouths, displaying a preference for estuarine environments (Pogonoski et al. 2002).	Species or species habitat known to occur within area	N/A	No recent ALA records within project area. 24 ALA records within 20 km buffer (Nearshore PDA). Suitable habitat within project area and known distribution in Darwin Harbour.	Likely to occur	Y	N	✓	✓

Threatened and migratory species: Likelihood of occurrence assessment

Common Name	Scientific Name	Group	EPBC Act Status	TPWC Act Status	Description	PMST		Records (including Atlas of Living Australia (ALA) and other sources)/ ecological assessment	Likelihood of Occurrence	Relevant Area		Relevant referral	
						PDA (Nearshore)	Onshore PDA			PDA (Nearshore)	Onshore PDA	EPBC	NT
Green Turtle	<i>Chelonia mydas</i>	Marine Reptile	V/M	-	Green Turtles occur in tropical and sub-tropical waters throughout the world, capable of migrating over 2600 km between foraging and nesting sites. In Australia, Green Turtles nest, forage and migrate across tropical northern Australia with a large number of key nesting grounds in the Northern Territory, mostly occurring from the western end of Melville Island to near the border of Queensland. Green Turtles spend their first five to ten years drifting on ocean currents, later settling in shallow benthic foraging habitats such as tropical tidal and sub-tidal coral and rock reef habitat or inshore seagrass beds. In the Northern Territory, Green Turtles nest mainly on wide beaches backed by large dune systems. The nearest turtle nesting location to the project area is at Casuarina Beach within Darwin Harbour (18 km north of Onshore PDA). Only small numbers of Green Turtles have been observed nesting in the Darwin region, however Green Turtles regularly inhabit the area, accounting for 74% of turtle sightings during fine scale observations.	Breeding known to occur within area	N/A	Three NR Maps records within Nearshore PDA, many more records within 20 km. Seven NR Maps records within 20 km of Offshore PDA. Foraging and breeding grounds correspond to project area extent. Foraging BIA in Joseph Bonaparte Gulf (IDA and PDA – Offshore). Monitoring programs have recorded this species at multiple locations within Darwin Harbour and tagged juveniles have remained within a small core home range within the Harbour (Cardno 2015).	Known to occur	Y	N	✓	✓
Grey Falcon	<i>Falco hypoleucos</i>	Land bird	V	V	The Grey Falcon occurs at low densities across inland Australia, typically in arid and semi-arid areas. Preferred habitat includes timbered lowland plains, particularly acacia shrublands with tree-lined watercourses. The Grey Falcon has been observed hunting in treeless areas, tussock grasslands, and open woodlands.	Species or species habitat known to occur within area	Species or species habitat known to occur within area	No records in vicinity of project area. No suitable habitat within or adjacent to project area.	Unlikely to occur	N/A	N/A	N/A	N/A
Grey Nurse Shark	<i>Carcharias taurus</i>	Fish, Sharks and Rays	M	-	The grey nurse shark is widespread species found worldwide in tropical to temperate coastal waters. In Australia, there are two distinct populations, the east coast population, predominately found in southern Queensland and coastal NSW, and the west coast population, where this species has been found from south Western Australia to the North West Shelf. This species is generally found at depths between 15 and 40 m, but can reach depths of 200 m on the continental shelf. Grey nurse sharks generally occur as solitary individuals or in small groups, with larger aggregations grouping for mating. Darwin Harbour was a known locality of the Grey Nurse Shark pre-2000 (NT Gov, 2024).	Species or species habitat may occur within area	N/A	One NR Maps record within Nearshore PDA. Some suitable habitat within IDA and PDA (continental shelf, 15-40m).	Likely to occur	Y	N	✓	✓
Grey Plover	<i>Pluvialis squatarola</i>	Shorebird	V/M	-	Grey Plovers breed in the Northern Hemisphere, in northern Siberia and migrates via the East Asian-Australasian Flyway. In Australia, the Grey Plover has been recorded in all states, where it is found along the coasts, and it especially abundant on the western and southern coastlines. In the Northern Territory, small numbers of Grey Plovers are regularly recorded in the Top End, with internationally important sites located at Boucaut Bay and the Darwin area (169 and 164 maximum counts respectively). Grey Plovers occur almost entirely in coastal areas, where they usually inhabit sheltered embayments, estuaries and lagoons. They usually roost in sandy areas, such as on unvegetated sandbanks or sand-spits on sheltered beaches or other sheltered environments.	Roosting known to occur within area	Roosting known to occur within area	Three NR Maps records records within Nearshore PDA, five additional NR Maps records on Middle Arm Peninsula. Many more ALA and NR Maps records present in the broader 20km buffer zone. Suitable habitat adjacent to project area (sheltered embayments). Monitoring programs have recorded this species in Darwin Harbour (Lilleyman, 2016).	Known to occur	Y	Y	✓	✓
Grey Wagtail	<i>Motacilla cinerea</i>	Land bird	M	-	The Grey Wagtail is a scarce but regular visitor to northern Australia, generally arriving in late October and departing around March. This species has a strong association with water, with preferred habitat including creeks, rivers, and rocky tidal flats.	-	Species or species habitat known to occur within area	No records in the project area or Middle Arm Peninsula. 46 ALA records are present in the broader 20km buffer zone. Limited suitable habitat is present adjacent to the project area.	May occur	Y	Y	✓	✓
Grey-tailed Tattler	<i>Tringa brevipes</i>	Shorebird	M	-	The grey-tailed tattler is a medium sized wader with a wide global distribution. In Australia, this species has a primarily northern coastal distribution, but can be found in every state. There are eight sites of international importance in the non-breeding season located in Australia, six in the Northern Territory, five in Western Australia and five in Queensland. The grey-tailed tattler can be found in sheltered coastal environments, forages in shallow water and exposed intertidal mudflats and often roosts in mangrove branches. Breeding occurs in the Northern Hemisphere from May-August, and migrate southward towards Australia shortly afterward.	Roosting known to occur within area	Roosting known to occur within 20 km buffer area	Nine ALA records within Nearshore PDA. Multiple ALA records on Middle Arm peninsula. Many more ALA records present in the broader 20km buffer area. Suitable habitat directly adjacent to project area (mangroves, beaches). Monitoring programs have recorded this species in Darwin Harbour (Lilleyman, 2016).	Known to occur	Y	Y	✓	✓
Hawksbill Turtle	<i>Eretmochelys imbricata</i>	Marine Reptile	V/M	V	Hawksbill Turtles are found in tropical, subtropical and temperate waters in all the oceans of the world. Nesting is usually confined to tropical beaches with larger congregations in Mexico, Seychelles, Indonesia and Australia. In the Northern Territory, key nesting and inter-nesting areas include Cobourg Peninsula, East Arnhem Land, Grootte Island, Sir Edward Pellew Islands and Wessel and English Islands. This species spend their first 5-10 years drifting in ocean currents associated with Sargassum, then settle and forage in tropical tidal and sub-tidal coral and rocky reef habitat. Hawksbill Turtles primarily feed on sponges and algae, and less frequently in seagrass habitats.	Species or species habitat known to occur within area	N/A	Four NR Maps records within Nearshore PDA, many within 20 km buffer. Two NR Maps records within 20 km of Offshore PDA. Foraging grounds correspond to project area extent.	Known to occur	Y	N	✓	✓
Hibiscus	<i>Hibiscus brennani</i>	Plant	V	V	<i>Hibiscus brennani</i> is an erect woody shrub, endemic to the Northern Territory. There is one known population, at Baroalba Creek in Kakadu National Park. Preferred habitat includes sandstone cliffs, in gullies, and on broken sandstone.	-	N/A - Records from NR Maps	No records within the project area or Middle Arm Peninsula. There are two NR Maps records, from the Darwin Botanical Gardens. The project area is outside of the species known range.	Unlikely to occur	N/A	N/A	N/A	N/A

Threatened and migratory species: Likelihood of occurrence assessment

Common Name	Scientific Name	Group	EPBC Act Status	TPWC Act Status	Description	PMST		Records (including Atlas of Living Australia (ALA) and other sources)/ ecological assessment	Likelihood of Occurrence	Relevant Area		Relevant referral	
						PDA (Nearshore)	Onshore PDA			PDA (Nearshore)	Onshore PDA	EPBC	NT
Howard River Toadlet	<i>Uperoleia daviesae</i>	Amphibian	V	V	The Howard River Toadlet is endemic to a small area of the monsoonal tropics in the north-western Top End of the Northern Territory, extending approximately 40 km east to south-east of Darwin. Its entire distribution is restricted to an extent of occurrence of approximately 824 km ² within the Howard River, Elizabeth River, Adelaide River and Blackmore River catchments. The distribution extends from western Berry Springs, Wickham and Holtze, east to Litchfield Creek subcatchment and north to the base of the Gunn Point peninsula. Surveys by various consultants and the NT DEPWS have not located this species beyond this region. Most Howard River Toadlets have been found at breeding sites, which are restricted to seasonally inundated sandsheet heathland.	-	Species or species habitat known to occur within area	There are no ALA records within the project area, and no suitable habitat within the onshore PDA. The project area is outside of the known distribution of the species. Nocturnal surveys were conducted with no detections (EcOz 2023)	Unlikely to occur	N/A	N/A	N/A	N/A
Humpback Whale	<i>Megaptera novaeangliae</i>	Marine Mammal	M	-	Both the east coast and west coast Australian populations make their annual migrations between breeding areas in tropical waters along the east and west coast of Australia and feeding areas in the Antarctic. Recent records in NT waters suggest a regular southward migration each year around October along the western NT coast and have been reported in Kakadu National Park.	Species or species habitat likely to occur within area	N/A	No recent ALA records within project area. 12 records within 20 km of Nearshore PDA, 1 record within 20 km of IDA, and 5 records within 20 km of Offshore PDA. The project area does not contain any known feeding, breeding, calving, aggregation or migratory areas.	Likely to occur	Y	N	✓	✓
Killer Whale	<i>Orcinus orca</i>	Marine Mammal	M	-	In Australia, Killer Whales are recorded from all states, with concentrations reported around Tasmania. A sighting at Yirrkala in April 1999 provides evidence that they also occur in Northern Territory waters. Macquarie Island appears to be a key locality, with Killer Whales regularly reported there. Killer Whales are most often seen along the continental slope and on the shelf, particularly near seal colonies. Killer Whales have regularly been observed within the Australian territorial waters along the ice edge in summer.	Species or species habitat may occur within area	N/A	No recent ALA records within the project area. One ALA record within 20 km of Nearshore PDA. Limited suitable habitat within project area.	Likely to occur	Y	N	✓	✓
Leatherback Turtle	<i>Dermochelys coriacea</i>	Marine Reptile	E/M	CE	Leatherback Turtles are a highly pelagic species capable of diving to several hundred metres with a global tropical and temperate distribution. The species is known to venture close to shore mainly during the nesting season and can be found foraging in Australian waters year-round over the continental shelf. No major nesting sites have been recorded in Australia, though scattered isolated nesting occurs in southern Queensland and the Northern Territory (Cobourg Peninsula). Adults feeds mainly on pelagic soft-bodied creatures (i.e. jellyfish and tunicates) that occur in areas of upwelling or convergence. Leatherback Turtles require sandy beaches to nest, and juveniles are presumed to be dispersed by ocean current like other species.	Breeding likely to occur within area	N/A	No recent ALA or NR Maps records overlapping or within 20 km of project area (nearest record 250 km away). Nesting in Northern Territory is isolated to Cobourg Peninsula to the north-east of project area. Foraging and breeding grounds suitable to habitats in project area.	May occur	Y	N	✓	✓
Latham's Snipe	<i>Gallinago hardwickii</i>	Shorebird	V	-	Latham's Snipe is a medium-sized migratory shorebird, visiting Australia during the non-breeding season (generally September to February). Preferred habitat include freshwater wetlands, saltmarsh, and creek edges. The species is also known to use crops and pasture. Preferred wetland vegetation includes sedges, grasses, lignum, reeds, and rushes.	-	N/A - Records from NR Maps	No records within the project area. 2 NR Maps in the 20km buffer zone. No suitable habitat in the project area. The project area is outside the known distribution of the species.	Unlikely to occur	N/A	N/A	N/A	N/A
Lesser Frigatebird	<i>Fregata ariel</i>	Seabird	M	-	Lesser Frigatebird are found throughout tropical waters in the Indian, west and central Pacific Oceans. This species breeds on small, remote tropical and sub-tropical islands, in mangroves or bushes, and even on bare ground. Outside of breeding seasons, it is sedentary, with immature and non-breeding individuals dispersing throughout tropical seas, especially of Indian and Pacific Oceans. Important breeding sites are located at Ashmore Reef MP and Coral Sea MP.	Species or species habitat known to occur within area	Species or species habitat known to occur within area	One ALA record within Nearshore PDA, many within 20 km buffer. 24 records within 20 km of Offshore PDA. No suitable habitat within project area.	Known to occur	Y	Y	✓	✓
Lesser Sand Plover	<i>Charadrius mongolus</i>	Shorebird	E/M	E	Lesser Sand Plovers migrate along the East Asian-Australasian Flyway and their breeding distribution is poorly studied in Siberia. Within Australia, the Lesser Sand-Plover is widespread in coastal regions, and has been recorded in all states. It mainly occurs in northern and eastern Australia, in south-eastern parts of the Gulf of Carpentaria, western Cape York Peninsula and islands in Torres Strait, and along the entire east coast, though it occasionally also occurs inland. It is most numerous in QLD and NSW. The only known important sites for the species in the NT is the Darwin area, where the maximum count is 1440 individuals. This species usually forages on sheltered intertidal mudflats and sandflats, sandy beaches, estuaries and mangroves.	Roosting known to occur within area	Roosting known to occur within area	One NR Maps record directly adjacent to the project area, and multiple ALA and NR Maps records around Darwin Harbour. Suitable habitat adjacent to project area (mangroves, sandy beaches) and Darwin is known important site for this species. Monitoring programs have recorded this species in Darwin Harbour (Lilleyman, 2016).	Likely to occur	Y	Y	✓	✓
Little Curlew	<i>Numenius minutus</i>	Shorebird	M	-	The little curlew spends the non-breeding season in northern Australia (September - April), from Port Headland in Western Australia to Queensland, where it is predominantly found on the coasts but occasionally inland. Scattered records of the little curlew indicate this species also occurs in New South Wales, Victoria and South Australia, but sites of international importance only occur in Northern Australia. This species is known to breed in Siberia from May before migrating southward for the non-breeding season in late July. The little curlew is often found around shallow pools, river beds and the edges of billabongs. This species feeds on insects, seeds and berries, and forages in short, dry grassland environments, such as dry floodplains, coastal swamps, mudflat and dry saltmarshes.	Roosting known to occur within area	Roosting known to occur within 20 km buffer area	Six ALA records within Nearshore PDA. Many recent ALA records within 20km around Darwin Harbour. Some suitable habitat adjacent to project area.	Known to occur	Y	Y	✓	✓
Little Ringed Plover	<i>Charadrius dubius</i>	Shorebird	M	-	The little ringed plover is a migratory shorebird. Migration and distribution of this species is not well known, however the little ringed plover can generally be found on river banks, mudflats, estuaries and lakes. In the breeding season, the little ringed plover prefers bare or sparsely vegetated shores, shallow freshwater pools and river islands. In Australia, distribution is also largely unknown, but records have confirmed sightings of this species in the Northern Territory, Queensland, and south Western Australia.	Roosting known to occur within area	Roosting known to occur within 20 km buffer area	No records within project Area or Middle Arm Peninsula. Over 400 ALA records within the broader 20km buffer zone. Limited suitable habitat adjacent to project area.	May occur	Y	Y	✓	✓

Threatened and migratory species: Likelihood of occurrence assessment

Common Name	Scientific Name	Group	EPBC Act Status	TPWC Act Status	Description	PMST		Records (including Atlas of Living Australia (ALA) and other sources)/ ecological assessment	Likelihood of Occurrence	Relevant Area		Relevant referral	
						PDA (Nearshore)	Onshore PDA			PDA (Nearshore)	Onshore PDA	EPBC	NT
Little Tern	<i>Sternula albifrons</i>	Seabird	V/M	-	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.	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	100+ NR Maps records within Nearshore PDA, Multiple ALA and NR Maps records on Middle Arm Peninsula including adjacent to the project area. Many more records present throughout the 20km buffer zone. Suitable habitat adjacent to project area (mangroves, coastal habitats).	Known to occur	Y	Y	✓	✓
Loggerhead Turtle	<i>Caretta caretta</i>	Marine Reptile	E/M	V	Loggerhead Turtles occur in tropical, sub-tropical and temperate waters around the world and nest mainly on sub-tropical beaches. Nesting aggregations occur in Oman, eastern USA, southern Japan, Greece, Turkey, South Africa, southern Queensland and Western Australia. In Australia, the species occurs in waters of coral and rocky reefs, seagrass beds and muddy bays, nesting on open, sandy beaches. Nesting stocks from Western Australia forage from Shark Bay through to Arnhem Land, and into the Java Sea of Indonesia. Juvenile Loggerhead Turtles live at or near the surface of the open ocean and move with currents for around 15 years. Adult Loggerhead Turtles choose a wide variety of tidal and sub-tidal inshore habitat as feeding areas, with a diet of mostly benthic invertebrates.	Foraging, feeding or related behaviour known to occur within area	N/A	No recent ALA or NR Maps records within the project area. One NR Maps record within 20 km of Nearshore PDA. Foraging BIA within 20km of IDA in Joseph Bonaparte Gulf.	Likely to occur	Y	N	✓	✓
Longfin Mako	<i>Isurus paucus</i>	Fish, Sharks and Rays	M	-	The Longfin Mako is a large bodied shark that is widely distributed throughout tropical and sub-tropical waters but is rarely encountered. It is taken as bycatch in tropical pelagic longline fisheries throughout its distribution. In Australia, it is found from Geraldton (Western Australia) across the Northern Territory and Queensland down to Port Stevens (New South Wales). This species is found in tropical, epipelagic waters likely occurring in deep waters based on its Diet. They are highly migratory between jurisdictions.	Species or species habitat likely to occur within area	N/A	No recent ALA records overlapping or within 20 km of project area. Suitable habitat within project area. No known aggregations in Australia.	May occur	Y	N	✓	✓
Long-toed Stint	<i>Calidris subminuta</i>	Shorebird	M	-	The long-toed stint is a small sandpiper and a regular visitor to coastal Australia. The breeding distribution of this species is now well known, but migration to non-breeding grounds, including Australia, is thought to begin in July. In Australia, records of the long-toes stint have been found on the coast of all states, and this species occurs in terrestrial wetlands with shallow brackish or freshwater, including lakes, swamps, rivers, streams, lagoons and sewage ponds. It forages for seed, crustaceans, insects and molluscs on wet mud, and occasionally in open water far from shore.	Roosting known to occur within area	Roosting known to occur within 20 km buffer area	No records in the project area or Middle Arm Peninsula. 41 ALA records in the broader 20km buffer zone. Limited habitat adjacent to project area.	May occur	Y	Y	✓	✓
Marsh Sandpiper	<i>Tringa stagnatilis</i>	Shorebird	M	-	The marsh sandpiper is a medium sized wader with a global distribution. This species breeds from eastern Europe to eastern Siberia (April - August) before migrating southward to non-breeding areas such as Africa, southern Asia and Australia. In Australia, the marsh sandpiper can be found in coastal and inland wetlands, including swamps, lagoons, billabongs and intertidal mudflats. Scattered populations occur in the Northern Territory and Western Australia.	Roosting known to occur within area	Roosting known to occur within 20 km buffer area	One ALA records within project area, 2 ALA records on Middle Arm Peninsula and many ALA records within 20km around Darwin Harbour. Suitable habitat adjacent to project area. Monitoring programs have recorded this species in Darwin Harbour (Lilleyman, 2016).	Known to occur	Y	Y	✓	✓
Masked Owl (northern)	<i>Tyto novaehollandiae kimberli</i>	Land bird	V	V	The Masked Owl is a large robust owl with a prominent dark-rimmed facial disc, with this subspecies found across northern Australia. The Masked Owl typically occurs in tall open eucalypt forests, especially those dominated by Eucalyptus miniata and Eucalyptus tetrodonta, and has been observed roosting in monsoon rainforests. Foraging habitat includes a range of vegetation types, including open grasslands. The Masked Owl is a large robust owl with a prominent dark-rimmed facial disc, with this subspecies found across northern Australia. The Masked Owl typically occurs in tall open eucalypt forests, especially those dominated by Eucalyptus miniata and Eucalyptus tetrodonta, and has been observed roosting in monsoon rainforests. Foraging habitat includes a range of vegetation types, including open grasslands.	-	Species or species habitat known to occur within area	No records in vicinity of project area. No suitable habitat within or adjacent to project area. Nocturnal call playback and acoustic monitoring surveys have been completed with no detections (EcOz 2023)	Unlikely to occur	N/A	N/A	N/A	N/A
Merten's Water Monitor	<i>Varanus mertensi</i>	Reptile	E	V	Merten's Water Monitor is a large semi-aquatic lizard, up to 1.5m in total length. This species is found patchily across tropical northern Australia, from the west Kimberley across to the wet tropics of FNQ. Merten's Water Monitor is rarely found more than 5-10m from the edge of a water source, and preferred habitat includes perennial and semi-permanent pools (springs, seeps, swamps, creeks, gorges), the margins of permanent streams, rivers, and lakes, floodplains, waterholes within woodlands, and irrigation channels. They are often recorded basking on a range of structures in and around waterbodies including rocks, mudbanks, branches, roots, and man-made infrastructure. Merten's Water Monitor shelters in hollows between rocks and burrows carved into the banks of waterways.	-	Species or species habitat known to occur within area	There are no records of Merten's Water Monitor within or adjacent to the project area. There are many ALA (78) and NR Maps (60) records within the 20 km buffer zone. There are limited suitable habitat (mangroves) present within the onshore corridor. Camera trapping surveys were conducted with no detections (EcOz 2023)	Unlikely to occur	N/A	N/A	N/A	N/A
Mitchell's Water Monitor	<i>Varanus mitchelli</i>	Reptile	CE	V	Mitchell's Water Monitor is a slender semi-aquatic lizard, with a distribution across northern WA and NT. This species inhabits freshwater and saline wetlands, to large rivers and coastal floodplains. Mitchell's water monitor has a strong association with Pandanus and other areas of woody vegetation that are directly adjacent to waterbodies including mangroves. It is often encountered basking or resting on pandanus and other woody vegetation near the water, partially submerged logs, mangroves, riverbanks, rocks, and manmade structures	-	Species or species habitat known to occur within area	There are no records of Mitchell's Water Monitor within or adjacent to the project area. There are many ALA (26) and NR Maps (100) records within the 20 km buffer zone. There are limited suitable habitat (mangroves) present within the onshore corridor.	May occur	N	Y	✓	✓

Threatened and migratory species: Likelihood of occurrence assessment

Common Name	Scientific Name	Group	EPBC Act Status	TPWC Act Status	Description	PMST		Records (including Atlas of Living Australia (ALA) and other sources)/ ecological assessment	Likelihood of Occurrence	Relevant Area		Relevant referral	
						PDA (Nearshore)	Onshore PDA			PDA (Nearshore)	Onshore PDA	EPBC	NT
N/A (herb)	<i>Cleome insolata</i>	Plant	-	V	<i>Cleome insolata</i> is an annual herb, endemic to the Darwin rural region. Preferred habitat includes poorly-drained sandsheet habitats, often on the margins of drainage depressions. It is often found in open exposed habitat, and associated with a range of woodlands and sedgeland. It appears to be tolerant of disturbed habitats, and has been recorded in paddocks and other modified environments.	-	N/A - Records from NR Maps	No records within project area or Middle Arm Peninsula. 116 NR Maps records within 20km of project area, primarily in the Weddel area. Limited suitable habitat directly adjacent to project area (Melaleuca woodland). Transects for this species have been conducted by EcOz (2023), but there was no detections.	Unlikely to occur	N/A	N/A	N/A	N/A
N/A (herb)	<i>Typhonium praetermissum</i>	Plant	-	V	<i>Typhonium praetermissum</i> is a small ground herb, found during the wet season. Preferred habitat includes open <i>Eucalyptus miniata</i> woodland with well draining soil. It is endemic to the Northern Territory, with a distribution across the greater Darwin region.	-	N/A - Records from NR Maps	No records within the project area, however many NR Maps records are present on Middle Arm Peninsula. EcOz surveys have recorded this species on Middle Arm Peninsula, however detections and suitable habitat was not detected within the BCCS Onshore project area. Thousands of records are present throughout the 20km buffer. Suitable habitat (<i>E. miniata</i> woodland) is present in the project area.	May occur	N	Y	X	✓
N/A (herb)	<i>Typhonium taylorii</i>	Plant	E	E	<i>Typhonium taylorii</i> is a small deciduous and geophytic herb. It is endemic to the Northern Territory, where it is known from the Howard River Floodplain and in the Darwin rural area, however the distribution of this cryptic and ephemeral (seasonally dormant) species is otherwise unknown. <i>Typhonium taylorii</i> grows on saturated sand substrate in Melaleuca woodland in full sun or partial shade. It is most likely insect pollinated, and has been recorded in flower in mid January.	-	Species or species habitat likely to occur within 20 km buffer area	No records within project area or Middle Arm Peninsula, many ALA and NR Maps records within 20km of project area. Some suitable habitat directly adjacent to project area (Melaleuca woodland). Different <i>Typhonium</i> species have been recorded on Middle Arm. Transects for this species have been conducted by EcOz (2023), but there was no detections.	Unlikely to occur	N/A	N/A	N/A	N/A
N/A (subshrub)	<i>Atalaya brevialata</i>	Plant	CE	CE	<i>Atalaya brevialata</i> is a subshrub endemic to the Northern Territory. It is found in a small area south of Darwin near the Elizabeth River. <i>Atalaya brevialata</i> grows in woodland with Darwin box (<i>Eucalyptus tectifica</i>) and smooth-barked bloodwood (<i>Corymbia foelschaena</i>) and occurs on sandy soils. This species develops fruit, yet seed dispersal is restricted spatially due to the low height of the fruit-bearing stems and the vestigial wings on the fruit itself.	-	Species or species habitat known to occur within 20 km buffer area	No records within project area. Multiple NR Maps records within 10km at landward end of Middle Arm Peninsula. Some suitable habitat adjacent to project area. Transects for this species have been conducted by EcOz (2023), but there was no detections.	Unlikely to occur	N/A	N/A	N/A	N/A
Nabarlek (Top End)	<i>Petrogale concinna canescens</i>	Terrestrial mammal	E	E	The Nabarlek is a very small rock-wallaby, restricted to the monsoonal tropics of the Northern Territory. The Nabarlek occurs in rugged sandstone or granite rocky areas, especially on steep slopes with large boulders, caves and crevices. The species is shy and nocturnal during the dry season, but becomes partly diurnal in the wet season.	-	Species or species habitat likely to occur within area	There are no records within the project area, and no suitable habitat within the onshore corridor.	Unlikely to occur	N/A	N/A	N/A	N/A
Narrow Sawfish	<i>Anoxypristis cuspidata</i>	Fish, Sharks and Rays	M	-	The Narrow Sawfish is a benthic-pelagic sawfish species found throughout the Indo-West Pacific. It is found from the Persian Gulf, across southern Asia to Australia and north to Japan and South Korea. In Australia, it is found across northern Australia from the Pilbara Coast (Western Australia) to Broad Sound (Queensland). The Narrow Sawfish is a benthic-pelagic species that inhabits coastal and estuarine habitats. It occurs to depths of at least 40 m. Adults mainly occur offshore while juveniles and pupping females require inshore and estuarine habitats.	Species or species habitat likely to occur within area	N/A	No recent ALA records overlapping project area. One NR Maps record within 20 km of Nearshore PDA. Suitable habitat within nearshore PDA.	Likely to occur	Y	N	✓	✓
Northern Blue-tongued Skink	<i>Tiliqua scincoides intermedia</i>	Reptile	CE	-	The Northern Blue-tongued Skink is a large, robust lizard found across northern Australia. Preferred habitat includes riparian forest, vine scrub, monsoon rainforest, pandanus-lined gorges, melaleuca forest, eucalypt woodland and savanna, sparse and dense shrubland, and spinifex and tussock grassland. Most but not all detections have occurred near seasonal or permanent water	-	Species or species habitat known to occur within area	There are no records within the project area or Middle Arm Peninsula. There are 2 ALA and 86 NR Maps records in the broader 20km buffer zone. There is suitable habitat (melaleuca forest, eucalypt woodland, water). Camera trapping surveys were conducted with no detections (EcOz 2023)	May occur	N	Y	✓	✓
Northern Brushtail Possum	<i>Trichosurus vulpecula arnhemensis</i>	Terrestrial mammal	V	-	The Northern Brushtail Possum is a nocturnal marsupial, commonly nesting in tree hollows and the forest canopy. This subspecies is found across northern Western Australia and the northern parts of the Northern Territory. Most records are from tall open forests dominated by <i>Eucalyptus miniata</i> and <i>Eucalyptus tetrodonta</i> .	-	Species or species habitat known to occur within area	There is two NR Maps record within the project area, and numerous ALA and NR Maps records within Middle Arm Peninsula and the 20km buffer. Suitable habitat (<i>Eucalyptus miniata</i> mid woodland) is present within the onshore corridor.	Known to occur	N	Y	✓	✓
Northern Brush-tailed Phascogale	<i>Phascogale pirata</i>	Terrestrial mammal	V	E	The Northern Brush-tailed Phascogale is a carnivorous marsupial, restricted to eucalypt forests in the top end of the Northern Territory. This species is nocturnal, sheltering in tree hollows during the day. Most records are from tall open forests dominated by <i>Eucalyptus miniata</i> and <i>Eucalyptus tetrodonta</i> .	-	Species or species habitat likely to occur within area	There are no records within or adjacent to the onshore corridor. There is suitable habitat present (<i>Eucalyptus miniata</i> mid woodland), however prior ecological surveys have not found any hollows present within the onshore corridor, limiting suitable sheltering habitat. Camera trapping surveys were conducted with no detections (EcOz 2023)	Unlikely to occur	N/A	N/A	N/A	N/A
Northern Quoll	<i>Dasyurus hallucatus</i>	Terrestrial mammal	E	CE	The Northern Quoll is the smallest of the four Australian quoll species. Historically, the Northern Quoll was common across northern Australia occurring almost continuously from the Pilbara, Western Australia to near Brisbane, Queensland. The species' preferred habitat consists of rocky escarpment, open forest and open woodland.	-	Species or species habitat known to occur within area	There are no records within the Project area, and three NR Maps records on Middle Arm Peninsula. A further 148 ALA and NR Maps records are observed throughout the 20km buffer zone. Limited suitable habitat (<i>Eucalyptus miniata</i> mid woodland) within the onshore corridor. In the NT, this species is restricted to the Top End (DEPWS, 2021). Camera trapping surveys were conducted with no detections (EcOz 2023)	Unlikely to occur	N/A	N/A	N/A	N/A

Threatened and migratory species: Likelihood of occurrence assessment

Common Name	Scientific Name	Group	EPBC Act Status	TPWC Act Status	Description	PMST		Records (including Atlas of Living Australia (ALA) and other sources)/ ecological assessment	Likelihood of Occurrence	Relevant Area		Relevant referral	
						PDA (Nearshore)	Onshore PDA			PDA (Nearshore)	Onshore PDA	EPBC	NT
Northern River Shark	<i>Glyphis garricki</i>	Fish, Sharks and Rays	E	E	Northern river sharks are capable of living in and moving between freshwater and seawater. The species utilises rivers, tidal sections of large tropical estuarine systems, macrotidal embayments, inshore and offshore marine habitats. Adults have been recorded only in marine environments, whereas neonates, juveniles and subadults have been recorded in freshwater, estuarine, and marine environments. Within Australia, Northern River Sharks are known to occur in Western Australia and the Northern Territory between King Sound and East Alligator River. The closest known habitats of the Northern River Shark to the project area are the Adelaide and Daly Rivers. It prefers turbid, tidal rivers and associated mangrove habitats, often in areas with low salinity (Morgan et al. 2011). This species is primarily found in the lower reaches of rivers, near their mouths, and can tolerate varying levels of salinity (Pillans et al. 2019).	Species or species habitat may occur within area	N/A	No recent ALA records overlapping or within 20 km of project area. Nearest recent ALA record of species located at Daly and Adelaide Rivers (over 40 km from the PDA - nearshore). Suitable habitat overlaps project area.	May occur	Y	N	✓	✓
Nunivak Bar-tailed Godwit	<i>Limosa lapponica baueri</i>	Shorebird	E	V	Alaskan bar-tailed godwits breed in north-east Siberia, and in western and northern Alaska. In Australia, Alaskan bar-tailed godwit mainly occurs along the north and east coasts. The subspecies is widespread in the Torres Strait and along the east and south-east coasts of Queensland, New South Wales, and Victoria. Populations have also been recorded in the northern Australia, from Darwin east to the Gulf of Carpentaria. Bar-tailed godwits usually forage near the edge of water or in shallow water within tidal estuaries and harbours. Roosting tends to occur on large intertidal sandflats, spits, and banks. Less frequently, roosting occurs within mudflats, estuaries, coastal lagoons, and bays.	Species or species habitat known to occur within area	Species or species habitat known to occur within area	No records within the project area, and 10 NR Maps records on the Middle Arm Peninsula. Multiple recent ALA and NR Maps records within 20 km of the PDA (nearshore). Subspecies was not distinguished at the time of survey. Suitable habitat within or adjacent to the project area.	Likely to occur	Y	Y	✓	✓
Oceanic Whitetip Shark	<i>Carcharhinus longimanus</i>	Fish, Sharks and Rays	M	-	The Oceanic Whitetip Shark is a widespread pelagic species that has been subject to overfishing throughout much of its distribution. The Oceanic Whitetip Shark is widespread throughout tropical and subtropical pelagic waters of the world. Within Australian waters, it is found in from Cape Leeuwin (Western Australia) through parts of the Northern Territory, down the east coast of Queensland and New South Wales to Sydney. It has not been recorded within the Gulf of Carpentaria or the Arafura Sea, preferring pelagic waters. It prefers waters above 200C and can reach depths of >180 m.	Species or species habitat may occur within area	N/A	No recent ALA records overlapping or within 20 km of project area. No known aggregations in Northern Territory waters.	May occur	Y	N	✓	✓
Olive Ridley Turtle	<i>Lepidochelys olivacea</i>	Marine Reptile	E/M	-	Olive Ridley Turtles occur in tropical and sub-tropical waters across the world, migrating up to 2600 km between foraging and nesting sites. A substantial portion of the Australian population of Olive Ridley Turtles forage over the shallow benthic habitats of the continental shelf from northern Western Australia to south-east Queensland, however have also been found to forage in pelagic habitats up to 100 m in depth. Low densities of Olive Ridley Turtle nests have been recorded in the Northern Territory, including Cobourg Peninsula and offshore islands. Adult females nest on sandy beaches, where hatchlings later disperse in offshore currents for a pelagic phase of unknown length.	Breeding known to occur within area	N/A	No records overlapping project area. 20+ records within 20 km of PDAs. Foraging and breeding grounds correspond to project area extent. Foraging BIA in Joseph Bonaparte Gulf (IDA and offshore PDA).	Likely to occur	Y	N	✓	✓
Omura's Whale	<i>Balaenoptera omurai</i>	Marine Mammal	M	-	The Omura's whale is one of the most recently described species of baleen whale. Initially known only from stranding and whaling specimens, it has now been identified in all ocean basins excluding the central and eastern Pacific. based on acoustic records, the Omura's whale has been detected off areas of the northwest coast of Australia year-round (Browne et al., 2024). Vocalisations were detected year-round in the Joseph Bonaparte Gulf in the Timor Sea. Given the year-round detection of potential Omura's whale vocalisations in the JBG and across north-western Australia, the Omura's whale may be encountered within the project area.	PMST distribution currently not available due to insufficient data		No ALA records in proximity to project area, however recent acoustic surveys have detected the species in JBG year-round. The IDA and Offshore PDA provides suitable foraging and breeding habitat.	May occur	-	-	✓	✓
Oriental Cuckoo	<i>Cuculus optatus</i>	Land bird	M	-	The Oriental Cuckoo is a regular migrant to Australia, where it spends the non-breeding season (Sept- May) in coastal regions across northern and eastern Australia as well as offshore islands. The species uses a range of vegetated habitats such as monsoon rainforest, wet sclerophyll forest, open woodlands and appears quite often along edges of forests, or ecotones between forest types.	-	Species or species habitat known to occur within area	No records within project Area, three ALA records on Middle Arm Peninsula. Many more ALA records present throughout the 20km buffer area. Limited suitable habitat surrounding project area (monsoon forest).	Likely to occur	N	Y	✓	✓
Oriental Plover	<i>Charadrius veredus</i>	Shorebird	M	-	The Oriental Plover breeds at scattered sites mainly in northern and eastern Mongolia and is a non-breeding visitor to Australia. The species occurs in both coastal and inland areas, mostly in northern Australia. There is an internationally important site for this species at Lake Sylvester in the NT. Immediately after arriving in non-breeding grounds in northern Australia, Oriental Plovers spend a few weeks in coastal habitats such as estuarine mudflats and sandbanks, on sandy or rocky ocean beaches or nearby reefs, or in near-coastal grasslands, before dispersing further inland. They usually forage among short grass or on hard stony bare ground, and roost on soft wet mud or in shallow water of beaches and tidal mudflats.	Roosting known to occur within area	Species or species habitat known to occur within area	No records within project Area, three ALA records on Middle Arm Peninsula. Many more ALA records present throughout the 20km buffer area. Limited suitable habitat surrounding project area (monsoon forest).	Likely to occur	Y	Y	✓	✓

Threatened and migratory species: Likelihood of occurrence assessment

Common Name	Scientific Name	Group	EPBC Act Status	TPWC Act Status	Description	PMST		Records (including Atlas of Living Australia (ALA) and other sources)/ ecological assessment	Likelihood of Occurrence	Relevant Area		Relevant referral	
						PDA (Nearshore)	Onshore PDA			PDA (Nearshore)	Onshore PDA	EPBC	NT
Oriental Pratincole	<i>Glareola maldivarum</i>	Shorebird	M	-	Most of the migratory population of the species is thought to spend the non-breeding season in Australia. Within Australia the Oriental Pratincole is widespread in northern areas, especially along the coasts of the Pilbara Region and the Kimberley Division in Western Australia, the Top End of the Northern Territory, and parts of the Gulf of Carpentaria. Lake De Burgh, Lake Woods and Lake Sylvester are nationally important sites for this species within the NT. 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. The species also occurs along the coast, inhabiting beaches, mudflats and islands, or around coastal lagoons.	Roosting known to occur within area	Roosting known to occur within area	No records within project area or Middle arm Peninsula, multiple ALA records around Darwin Harbour. Limited suitable habitat adjacent to project area (beaches). Monitoring programs have recorded this species in Darwin Harbour (Lilleyman, 2016).	Likely to occur	Y	Y	✓	✓
Oriental Reed-Warbler	<i>Acrocephalus orientalis</i>	Shorebird	M	-	The species is a wet-season (October – March) migrant to northern Australia, and whilst rare, it is probably a regular visitor. The Oriental Reed-warbler is a small insectivore, found in aquatic vegetation along waterways and waterbodies. It has been recorded using <i>Typha</i> sp., in sugar cane plantations, and in mangroves. Habitat consists of Wetland low-flooded freshwater vegetation, swamps, lakes, riverine fringes, and fresh to saline wetlands – including sandy or muddy edges – with grass or sedge vegetation. Species mostly occur on northern coastline of Australia or more abundant in northern than southern coastlines.	Species or species habitat may occur within area	Species or species habitat may occur within area	One ALA record within 20 km of project area. Limited suitable habitat (mangroves) is present adjacent to the project area.	May occur	Y	Y	✓	✓
Osprey	<i>Pandion haliaetus</i>	Land bird	M	-	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. The total range (breeding plus non-breeding) around the northern coast is more widespread. 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 require extensive areas of open fresh, brackish or saline water for foraging.	Breeding known to occur within area	Breeding known to occur within area	1 ALA record within project area and multiple on Middle Arm Peninsula. Suitable foraging habitat surrounding project area (harbour). An Osprey nesting site exists at Ichthys LNG.	Known to occur	Y	Y	✓	✓
Pacific Golden Plover	<i>Pluvialis fulva</i>	Shorebird	M	-	The Pacific golden plover breeds in north Siberia before migrating southward for the non-breeding season, where it is widespread in coastal regions in Asia, Australasia, Melanesia and Polynesia. This species is present at non-breeding grounds in Australia from September to May, and predominantly occurs coastal regions, but there are a small number of inland records in all states. The Pacific golden plover is found in large numbers in the east and south-east, along the Queensland and New South Coastlines, and along the coastline of the Pilbara and Kimberley, as well as the Top End. There is one site of international importance for this species, and it is in Moreton Bay in Queensland. The Pacific golden plover prefers coastal habitats such as beaches, mudflats and sandflats and often forage on sandy and muddy shores, estuaries and lagoons.	Roosting known to occur within area	Roosting known to occur within 20 km buffer area	One ALA record within the project area, three ALA records on Middle Arm Peninsula. Suitable habitat surrounding project area (beaches, mangroves, harbours). Monitoring programs have recorded this species in Darwin Harbour (Lilleyman, 2016).	Known to occur	Y	Y	✓	✓
Pale Field-rat	<i>Rattus tunneyi</i>	Terrestrial mammal	-	V	The Pale Field-rat is a medium rodent, with a distribution across northern and eastern Australia. In the past, the species was found in arid and semi-arid areas, but is now restricted to higher rainfall areas. The Pale Field-rat occurs in a range of habitats, including grasslands, woodlands, and monsoon forests. Breeding typically occurs in the dry season.	-	N/A - Records from NR Maps	No records within the project area, however three NR Maps records have been observed on Middle Arm Peninsula nearby to the project area. A further 63 records are observed throughout the 20 km buffer. Limited suitable habitat (woodlands) is present in the project area. Camera trapping surveys were conducted with no detections (EcOz 2023)	Unlikely to occur	N/A	N/A	N/A	N/A
Partridge Pigeon (eastern)	<i>Geophaps smithii smithii</i>	Land bird	V	-	The Partridge Pigeon is a terrestrial, ground dwelling pigeon found in sub-coastal Northern Territory. Partridge Pigeons occur principally in lowland eucalypt open forests and woodlands, with grassy understoreys. Their diet comprises seeds, mostly of grasses but also from Acacia and other woody plants. The species forages entirely on the ground, and flies infrequently.	-	Species or species habitat known to occur within area	No records within project area or Middle Arm Peninsula. Multiple ALA and NR Maps records in the broader 20km buffer zone. No suitable habitat present within project area. Camera trapping surveys have been completed with no detections (EcOz 2023)	Unlikely to occur	N/A	N/A	N/A	N/A
Pectoral Sandpiper	<i>Calidris melanotos</i>	Shorebird	M	-	The Pectoral Sandpiper breeds in northern Russia and North America. In the Northern Territory (NT), the Pectoral Sandpiper is found at Darwin and Alice Springs. In Australasia, the Pectoral Sandpiper prefers shallow fresh to saline wetlands. The species is found at coastal lagoons, estuaries, bays, swamps, lakes, inundated grasslands, saltmarshes, river pools, creeks, floodplains and artificial wetlands. The species is usually found in coastal or near coastal habitat but occasionally found further inland. Kakadu NP is a key site for this species in the EAAF site network. In the Northern Territory (NT), the Pectoral Sandpiper is found at Darwin and Alice Springs (Higgins & Davies 1996).	Species or species habitat known to occur within area	Species or species habitat known to occur within area	No records in the project area or Middle Arm Peninsula. 45 ALA records in the broader 20km buffer zone. Suitable habitat adjacent to project area (saltmarsh, sheltered harbour).	Likely to occur	Y	Y	✓	✓
Pig-nosed Turtle	<i>Carettochelys insculpta</i>	Marine Reptile	V	-	The Pig-nosed Turtle is a large freshwater turtle, found in the northern Australia and New Guinea. The species has diverse habitat requirements, including still and moving freshwater habitats. The Pig-nosed turtle is not known to occur in estuarine areas.	-	N/A - Records from NR Maps	No records within the project area. 3 NR Maps in the 20km buffer zone. No suitable terrestrial habitat in the project area. The project area is outside the known distribution of the species.	Unlikely to occur	N/A	N/A	N/A	N/A
Pin-tailed Snipe	<i>Gallinago stenura</i>	Shorebird	M	-	The pin-tailed snipe breeds in Siberia, and migrates southward into Asia and Oceania for the non-breeding season (August - April). Its distribution in Australia is not well known, but confirmed records of this species confirm occurrences in New South Wales, south-west Western Australia, Pilbara and the Top End. During the non-breeding season, the pin-tailed snipe occurs in shallow freshwater swamp, pond and lake environments with some vegetation.	Roosting likely to occur within area	Roosting likely to occur within 20 km buffer area	No records within project area or Middle Arm Peninsula. Limited suitable habitat present within project area.	Unlikely to occur	N/A	N/A	N/A	N/A

Threatened and migratory species: Likelihood of occurrence assessment

Common Name	Scientific Name	Group	EPBC Act Status	TPWC Act Status	Description	PMST		Records (including Atlas of Living Australia (ALA) and other sources)/ ecological assessment	Likelihood of Occurrence	Relevant Area		Relevant referral	
						PDA (Nearshore)	Onshore PDA			PDA (Nearshore)	Onshore PDA	EPBC	NT
Plains Death Adder	<i>Acanthophis hawkei</i>	Reptile	V	V	The Plains Death Adder is a short, stout-bodied terrestrial snake, found across Western Queensland, across the north of the Northern Territory to north-east Western Australia. Suitable habitat for the plains death adder consists of flat, treeless, cracking-soil riverine floodplains.	-	Species or species habitat known to occur within area	No records are within or adjacent to the project area. No suitable habitat is present within or adjacent to the project area.	Unlikely to occur	N/A	N/A	N/A	N/A
Red Goshawk	<i>Erythrotriorchis radiatus</i>	Land bird	E	V	The Red Goshawk is a large, powerful hawk, found across northern Australia. They are rarely seen, and quite solitary and secretive. Foraging habitat includes coastal tall open forests and woodlands, tropical savannas, freshwater wetlands, and edges of rainforests. Breeding habitat includes riparian vegetation and tall dry woodlands with proximity to watercourses, particularly Eucalyptus tetrodonta.	-	Species or species habitat known to occur within area	No records in the project area or Middle Arm Peninsula. 3 NR Maps records are present in the broader 20km buffer zone. No suitable habitat present within the project area	Unlikely to occur	N/A	N/A	N/A	N/A
Red Knot	<i>Calidris canutus</i>	Shorebird	V/M	E	The red knot has a worldwide distribution, breeding at a range of locations right around the Arctic. Red knots are widespread around the Australian coast. Very large numbers are regularly recorded in north-west Australia, with Eighty Mile Beach and Roebuck Bay being strongholds for the species. Whilst in Australia, the species mainly inhabits intertidal mudflats, sandflats, and sandy beaches of sheltered coasts, estuaries, bays, inlets, lagoons, and harbours. They are occasionally seen on terrestrial saline wetlands near the coast and have been recorded on sewage ponds and saltworks.	Species or species habitat known to occur within area	Species or species habitat known to occur within area	No records within project area, seven ALA records on Middle Arm Peninsula including directly adjacent to the project area. Many more ALA records present in the 20 km buffer zone. Suitable habitat adjacent to project area (sheltered inlet, shorelines). Monitoring programs have recorded this species at multiple locations across Darwin Harbour (Lilleyman, 2016).	Likely to occur	Y	Y	✓	✓
Red-necked Stint	<i>Calidris ruficollis</i>	Shorebird	M	-	The red-necked stint predominantly breeds in Siberia before migrating southward to south-east Asia and Australasia. During the non-breeding season, over 80% of the global population resides in Australia, where it is distributed along the coastline and occurring in large densities on the Victorian and Tasmanian Coasts. There are 21 sites of international importance located in Australia, most of which occur in Western Australia and Victoria. The red-necked stint is most commonly found in coastal inlets, bays, lagoons and estuaries, but have also sporadically been recorded on exposed beaches and rocky shores, and often forages on wet mud on intertidal mudflats and in very shallow water.	Roosting known to occur within area	Roosting known to occur within 20 km buffer area	Two ALA records within Nearshore PDA. Seven ALA records on Middle Arm Peninsula including directly adjacent to the project area. Many more ALA records present in the 20 km buffer zone. Suitable habitat adjacent to project area (sheltered inlet, shorelines). Monitoring programs have recorded this species in Darwin Harbour (Lilleyman, 2016).	Likely to occur	Y	Y	✓	✓
Red-rumped Swallow	<i>Cecropis daurica</i>	Land bird	M	-	The Red-rumped Swallow is an irregular visitor to Australia during its non-breeding season. The Red-rumped Swallow is widespread across the Northern Hemisphere where it breeds. Records in Australia are of non-breeding migrants (December - February) and confined to the north of the country, particularly around Cairns, Gulf of Carpentaria, Darwin and Broome. Predominately forages over wetlands: e.g. swamps, rivers, dams etc. or open areas such as golf course or cane fields, where insects are taken on the wing. They have been recorded feeding in mixed flocks with other aerial insectivores.	Species or species habitat known to occur within area	Species or species habitat known to occur within area	No records in the project area or Middle Arm Peninsula. 18 ALA records observed within the broader 20km buffer. No suitable habitat adjacent to project area.	May occur	Y	Y	✓	✓
Red-tailed Tropicbird (Indian Ocean)	<i>Phaethon rubricauda westralis</i>	Seabird	E	-	The subspecies has a wide range across eastern Indian Ocean when not breeding. Breeding areas currently occur on Christmas Island, Cocos (Keeling) Islands, Bedwell Island, Rowley Shoals, islands of Ashmore Reef and more recently Rottnest Island. The Indian Ocean red-tailed tropicbird is pelagic and can be found in tropical and subtropic parts of the Indian Ocean. The subspecies nests alone, or in loose colonies on islands, stacks, atolls, cays or coastal cliffs.	-	-	No recent ALA records overlapping or adjacent to project area (no records in NT). No known breeding or congregation areas within or adjacent to project area.	Unlikely to occur	N/A	N/A	N/A	N/A
Reef Manta Ray	<i>Mobula alfredi</i>	Fish, Sharks and Rays	M	-	The Reef Manta Ray is a large pelagic ray found in tropical and subtropical waters of the Indo-Pacific. It occurs across northern Australia in a wide range from Coffs Harbour (New South Wales - NSW) to Shark Bay (Western Australia - WA) with occasional records as far south as South West Rocks (NSW) and Perth (WA). This species is pelagic and mainly inshore around coral and rocky reefs from the surface to a depth of 432 m. Their distribution is influenced by factors like water temperature, plankton availability, and the presence of these key habitats (Marshall et al., 2011).	Species or species habitat may occur within area	N/A	No recent ALA records overlapping or within 20 km of project area. No known aggregation sites or suitable habitats near project area.	May occur	Y	N	✓	✓
Ruddy Turnstone	<i>Arenaria interpres</i>	Shorebird	V/M	-	The Ruddy Turnstone breeds on the coasts of Europe, Asia and North America, generally north of 60° latitude. The Ruddy Turnstone is widespread within Australia during its non-breeding period of the year, including from Tasmania in the south to Darwin in the north and many coastal areas in between. It is found in most coastal regions, with occasional records of inland populations. It strongly prefers rocky shores or beaches where there are large deposits of rotting seaweed. The Ruddy Turnstone roosts on beaches, above the tideline, among rocks, shells, beachcast seaweed or other debris.	Roosting known to occur within area	Roosting known to occur within area	Seven NR Maps records within Nearshore PDA. Two NR Maps records on Middle Arm Peninsula. Numerous ALA and NR Maps records observed throughout the 20km buffer Suitable habitat adjacent to project area (beaches, shorelines). Monitoring programs have recorded this species within Darwin Harbour area (Lilleyman, 2016).	Known to occur	Y	Y	✓	✓
Salt-water Crocodile	<i>Crocodylus porosus</i>	Marine Reptile	M	-	The Salt-water Crocodile is found in Australian coastal waters, estuaries, lakes and inland waterways from Rockhampton in Queensland, throughout coastal Northern Territory to King Sound in Western Australia. Salt-water Crocodiles usually occur in tidal rivers, coastal floodplains and channels, billabongs and swamps up to 150 km inland from the coast. They usually inhabit the lower (estuarine) reaches of rivers, and prefer nesting in elevated, isolated freshwater swamps with no tidal influence. Every year the Northern Territory Government capture over a hundred salt-water crocodiles in Darwin Harbour and relocate them as part of their management program for the salt-water crocodiles.	Species or species habitat likely to occur within area	N/A	Two NR Maps records within Nearshore PDA, many within 20 km buffer. Two ALA records within 20 km of Offshore PDA. Regularly sighted with over a hundred captured every year in Darwin Harbour.	Known to occur	Y	Y	✓	✓

Threatened and migratory species: Likelihood of occurrence assessment

Common Name	Scientific Name	Group	EPBC Act Status	TPWC Act Status	Description	PMST		Records (including Atlas of Living Australia (ALA) and other sources)/ ecological assessment	Likelihood of Occurrence	Relevant Area		Relevant referral	
						PDA (Nearshore)	Onshore PDA			PDA (Nearshore)	Onshore PDA	EPBC	NT
Sanderling	<i>Calidris alba</i>	Shorebird	M	-	This species has a circumpolar breeding distribution, migrating south to spend the non-breeding season predominantly on sandy coastal shores of all continents except Antarctica. The Sanderling occurs in coastal areas around Australia. They occur around Darwin, and possibly elsewhere on the northwest coast, also on Melville Island, shores of Van Diemen Gulf and Groote Eylandt. There are no known important sites in proximity to the project area. The species is almost always found on the coast, mostly on open sandy beaches exposed to open sea-swell, and also on exposed sandbars and spits, and shingle banks, where they forage in the wave-wash zone and amongst rotting seaweed. Less often the species occurs on more sheltered sandy shorelines of estuaries, inlets and harbours.	Roosting known to occur within area	Roosting known to occur within area	One ALA record within Nearshore PDA. Many ALA records present in the broadened 20km buffer zone. Limited suitable habitat surrounding project area (beaches, harbours). Monitoring programs have recorded this species in Darwin Harbour (Lilleyman, 2016).	Known to occur	Y	Y	✓	✓
Sei Whale	<i>Balaenoptera borealis</i>	Marine Mammal	E/M	-	Sei whales have been infrequently recorded in Australian waters and there are no known mating or calving areas. The Australian Antarctic waters are important feeding grounds for Sei Whales, as are temperate, cool waters.	Species or species habitat may occur within area	N/A	No recent ALA records overlapping or within 40 km of project area. The project area does not contain any known feeding, breeding, calving, aggregation or migratory areas, however species has a widespread distribution. Based on insufficient data this species has been conservatively assessed as "May occur."	May occur	Y	N	✓	✓
Sharp-tailed Sandpiper	<i>Calidris acuminata</i>	Shorebird	V/M	-	The Sharp-tailed Sandpiper breeds in northern Siberia and sends the non-breeding season in Australia and occasionally NZ. In the Northern Territory (NT) they mostly occur in the north coastal regions, generally east to Groote Eylandt and Gove Peninsula, but also around McArthur River and east of Borroloola. Widely but sparsely scattered inland records occur south to northern Tanami Desert, and in south Northern Territory, from Alice Springs, north to Napabie Lakes and south to Uluru National Park. This species prefers muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation.	Roosting known to occur within area	Roosting known to occur within area	Three NR Maps records within Nearshore PDA. Multiple ALA and NR Maps records on Middle Arm Peninsula including directly adjacent to the project area. Many more ALA and NR Maps records observed in the broader 20km buffer zone. Suitable habitat adjacent to project area (saltmarsh, low vegetation).	Known to occur	Y	Y	✓	✓
Shortfin Mako	<i>Isurus oxyrinchus</i>	Fish, Sharks and Rays	M	-	The Shortfin Mako is a large bodied, highly mobile, pelagic shark that is widespread throughout tropical and temperate waters of all oceans. The species comprises three known subpopulations: Atlantic, Eastern North Pacific, and Indo-West Pacific. The Shortfin Mako is a cosmopolitan species. The Indo-West Pacific subpopulation occurs from the western Indian Ocean across to the eastern Pacific Ocean. It is found throughout Australian waters, with the exception of the Arafura Sea, Torres Strait, and Gulf of Carpentaria. The Shortfin Mako is found in pelagic and continental shelf waters, occurring from the surface to depths of at least 500 m. The species have been reported to make extensive movements of thousands of kilometres.	Species or species habitat likely to occur within area	N/A	No recent ALA records overlapping or within 20 km of project area. No known aggregations in Northern Territory waters.	May occur	Y	N	✓	✓
Speartooth Shark	<i>Glyphis glyphis</i>	Fish, Sharks and Rays	CE	V	The speartooth shark is a medium sized whaler shark only found in river catchments in the Northern Territory, Queensland and Papua New Guinea. In the Northern Territory, it is known to occur in the Van Diemen Gulf. Habitat use of the adult speartooth shark is mostly unknown, but juveniles are found in turbid rivers, and it is inferred this species may be restricted to freshwater and brackish rivers. Individual Speartooth Sharks move up and down stream in response to tidal cycles, traveling up to 25 km in a particular direction over one tidal cycle.	Species or species habitat may occur within area	N/A	No recent ALA records overlapping or within 20 km of project area. Species only observed in river catchments.	May occur	Y	N	✓	✓
Spotted Bottlenose Dolphin	<i>Tursiops aduncus</i> (Arafura/Timor Sea populations)	Marine Mammal	M	-	In Australia, Spotted bottlenose dolphins are distributed widely around the Australian mainland and known to occur in four main regions around Australia, including Arafura/Timor Seas. Spotted bottlenose dolphins are found in coastal lagoons and enclosed bays with mangrove forests and seagrass beds, but are also found in open coastal waters around islands and coastal cliffs associated with rock or coral reefs.	Species or species habitat known to occur within area	N/A	12 records within Nearshore PDA, many more within 20 km. One record within 20 km of Offshore PDA. A BIA for this species overlaps the PDA (nearshore) in Darwin Harbour where breeding is known to occur. Suitable habitat corresponds to project area extent.	Known to occur	Y	N	✓	✓
Streaked Shearwater	<i>Calonectris leucomelas</i>	Seabird	M	-	This species occurs over pelagic and inshore waters. In northern Australia, the streaked shearwater is usually found in offshore waters more than 19 km from the mainland coast foraging for squid and fish. Although it doesn't breed in Australia, it is recorded regularly in northern Australia from October to March.	Species or species habitat known to occur within area	Species or species habitat known to occur within area	Four ALA records within Offshore PDA. 3 ALA records within 20 km of Nearshore PDA, 16 within 20 km of IDA, and 14 within 20 km of Offshore PDA. Foraging grounds in open ocean and inshore waters correspond to project area extent.	Known to occur	Y	Y	✓	✓
Swinhoe's Snipe	<i>Gallinago megala</i>	Shorebird	M	-	Swinhoe's snipe is a migratory shorebird that breeds in Siberia before moving southward for the non-breeding season. This species arrives in northern Australia in October, where it has been recorded in the Pilbara, between the Kimberley Divide and Cape York Peninsula, but more commonly observed in the Top End. This species is found at the edges of wetlands, such as paddy fields, swamps and freshwater streams, and also in clumps of grass at the edges of fresh and brackish wetlands.	Roosting known to occur within area	Roosting known to occur within 20 km buffer area	No records within project area or Middle Arm Peninsula, multiple recent ALA records within 20km around Darwin Harbour. Limited suitable habitat present within project area.	Likely to occur	Y	Y	✓	✓
Terek Sandpiper	<i>Xenus cinereus</i>	Shorebird	V/M	-	The terek sandpiper breeds in northern Russia and areas in eastern Europe before migrating southward for the non-breeding season. In Australia, this species predominantly occurs in coastal environments, with occasional inland occurrences. It is widespread in north Western Australia, the Northern Territory and in Queensland. There are 12 sites of international significance located in Australia, most of which occurring in Queensland. The terek sandpiper forages on crustaceans, insects and seeds in the open on mudflats, estuaries harbours and lagoons, and often roost in or among mangroves.	Roosting known to occur within area	Roosting known to occur within 20 km buffer area	16 NR Maps records within Nearshore PDA. Multiple NR Maps records on Middle Arm Peninsula. Many more ALA and NR Maps records present within the 20 km buffer zone. Suitable habitat adjacent to project area (harbours, mangroves, samphire). Monitoring programs have recorded this species in Darwin Harbour (Lilleyman, 2016).	Known to occur	Y	Y	✓	✓

Threatened and migratory species: Likelihood of occurrence assessment

Common Name	Scientific Name	Group	EPBC Act Status	TPWC Act Status	Description	PMST		Records (including Atlas of Living Australia (ALA) and other sources)/ ecological assessment	Likelihood of Occurrence	Relevant Area		Relevant referral	
						PDA (Nearshore)	Onshore PDA			PDA (Nearshore)	Onshore PDA	EPBC	NT
Wandering Tattler	<i>Tringa incana</i>	Shorebird	M	-	The wandering tattler is a vagrant in the East Asian-Australian Flyway and is uncommon in Australia. This species breeds in Siberia, Alaska and Canada (May-August) before migrating southward for the non-breeding season. In Australia, there are few records of this species from Darwin in the Northern Territory, and along the east coast (Queensland and New South Wales). The wandering tattler is often found on rocky coasts, and occasionally found on coral reefs and beaches.	Roosting known to occur within area	Roosting known to occur within 20 km buffer area	No records in vicinity of project area and no suitable habitat.	Unlikely to occur	N/A	N/A	N/A	N/A
Water Mouse	<i>Xeromys myoides</i>	Terrestrial mammal	V	-	The Water Mouse is a small rodent, found in coastal northern and eastern Australia. The habitat of the Water Mouse is aquatic environments, including coastal saltmarsh, samphire shrublands, saline reed-beds and saline grasslands, mangroves, and coastal freshwater wetlands, and wet heathlands.	-	Species or species habitat likely to occur within area	There are no records within or adjacent to the onshore corridor. There is some suitable habitat (mangroves, samphire saltflats). Camera trapping, active nest searches, and live trapping surveys were conducted with no detections (EcOz 2023)	Unlikely to occur	N/A	N/A	N/A	N/A
Whale Shark	<i>Rhincodon typus</i>	Fish, Sharks and Rays	V/M	-	The Whale Shark occurs in approximately 124 countries worldwide, with a broad distribution in tropical and warm temperate seas, both oceanic and coastal. In Australia, the species is most common in waters off northern Western Australia, Northern Territory and Queensland. It is often seen far offshore, but also comes inshore, generally encountered close to or at the surface as single individuals or sometimes schools of up to hundreds. Research suggests Whale Sharks spend at least 40% of their time in the upper 15 m of the water column, filter feeding on planktonic and nektonic prey. Whale Sharks spend at least 50% of their time at depth equal to or less than 30 m.	Species or species habitat may occur within area	N/A	No recent ALA records overlapping or within 20 km of project area. Suitable foraging habitat within project area. Recent satellite tracking data for Northern Australia did not record any individuals passing through the NT (D'Antonio et al., 2024).	May occur	Y	N	✓	✓
Whimbrel	<i>Numenius phaeopus</i>	Shorebird	M	-	The Whimbrel breeds in north and west Alaska. The Whimbrel is a regular migrant to Australia and New Zealand, with a primarily coastal distribution. It is common and widespread from Carnarvon to the north-east Kimberley Division, Western Australia and has been found around the coasts of the Top End, where it sometimes follows rivers inland. Chambers Bay in the NT is an internationally important site for this species. The Whimbrel is often found on the intertidal mudflats of sheltered coasts. It is also found in harbours, lagoons, estuaries and river deltas, often those with mangroves, but also open, unvegetated mudflats.	Roosting known to occur within area	Roosting known to occur within area	25+ ALA records within the Nearshore and Onshore PDA. Multiple ALA records on Middle Arm Peninsula, and many records within 20km buffer zone. Suitable habitat directly adjacent to project area (sheltered coasts, mudflats). Monitoring programs have recorded this species at multiple locations within Darwin Harbour area (Lilleyman, 2016).	Known to occur	Y	Y	✓	✓
White Shark	<i>Carcharodon carcharias</i>	Fish, Sharks and Rays	V/M	-	The Great White Shark is widely, but sparsely found in all seas including cold temperate waters in both hemispheres. It is most frequently observed in coastal temperate and subtropical regions, rarely recorded in tropical areas. In Australia, the species has been sighted in all coastal areas except in the Northern Territory, and the majority are recorded between the coast and the 100 m depth contour. They are usually found in regions with high prey density or around rocky reefs, surf beaches and shallow coastal bays. The species also makes open ocean excursions covering thousands of kilometres and seem to be highly directed. While primarily a temperate species, seasonal movements into warmer waters occur, but the species is not considered a resident of NT waters (Huvneers et al. 2018).	Species or species habitat may occur within area	N/A	No recent ALA records overlapping or within 20 km of project area. No records in coastal waters of the NT and moderately common suitable habitat within project area.	Unlikely to occur	N/A	N/A	N/A	N/A
White-tailed Tropicbird	<i>Phaethon lepturus</i>	Seabird	M	-	The White-tailed Tropicbird is pantropical, breeding at many locations, though usually in low numbers. The species is most common off North-West Australia and a rare visitor to the Coral Sea and east coast. The species is primarily oceanic in tropical waters, rarely inshore, and only is near land when breeding. Nests are located on islands and atolls utilising a variety of habitats from closed canopy rainforest to bare sandy ground and rugged rocky terrain. The species feeds mainly on fish and cephalopods, captured by deep plunge diving. Patterns of movement away from the breeding sites is not well known.	Species or species habitat may occur within area	Species or species habitat may occur within area	No recent records overlapping project area. No known breeding or congregation areas in proximity to project area and very large offshore pelagic distribution.	Unlikely to occur	N/A	N/A	N/A	N/A
Wood Sandpiper	<i>Tringa glareola</i>	Shorebird	M	-	The wood sandpiper is a small wader that breeds across Eurasia before migrating southward for the non-breeding season. Most of the East Asian-Australasian Flyway population spends the non-breeding season in South-East Asia. In Australia, this species predominantly occurs in north-west Australia, with all areas of national importance located in Western Australia. The wood sandpiper typically is found in areas that are well-vegetated, shallow freshwater wetlands, such as swamps, billabongs, lakes and waterholes, and forages on insects and molluscs on mud along shores or in clear shallow water.	Roosting known to occur within area	Roosting known to occur within 20 km buffer area	No records within project area or Middle Arm Peninsula, many ALA records within 20km around Darwin Harbour. Some suitable habitat adjacent to project area.	Likely to occur	Y	Y	✓	✓
Yellow Wagtail	<i>Motacilla flava</i>	Land bird	M	-	The Yellow Wagtail is a regular wet season visitor to northern Australia. Habitat requirements for the Yellow Wagtail are highly variable, but typically include open grassy flats near water. Habitats include open areas with low vegetation such as grasslands, airstrips, pastures, sports fields; damp open areas such as muddy or grassy edges of wetlands, rivers, irrigated farmland, dams, waterholes; sewage farms, sometimes utilise tidal mudflats and edges of mangroves.	-	Species or species habitat known to occur within area	No records in the project area or Middle Arm Peninsula. 46 ALA records are present in the broader 20km buffer zone. Limited suitable habitat is present adjacent to the project area	May occur	Y	Y	✓	✓
Yellow-snouted Ground Gecko	<i>Lucasium occultum</i>	Reptile	E	V	The Yellow-snouted Ground Gecko is a small ground lizard, known from a limited number of locations in the north-west of Kakadu National Park. The known habitats include mature open forests dominated by <i>Eucalyptus miniata</i> and <i>E. tetradonta</i> , on red sandy-loam soils.	-	N/A - Records from NR Maps	No records within the project area. 1 NR Maps in the 20km buffer zone. No suitable habitat in the project area. The project area is outside the known distribution of the species.	Unlikely to occur	N/A	N/A	N/A	N/A

Threatened and migratory species: Likelihood of occurrence assessment

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						PDA (Nearshore)	Onshore PDA			PDA (Nearshore)	Onshore PDA	EPBC	NT
Yellow-spotted Monitor	<i>Varanus panoptes</i>	Reptile	-	V	The Yellow-spotted Monitor is a large terrestrial monitor. The species occurs across a broad geographic range, from Queensland across to the Pilbara. Preferred habitats include coastal beaches, floodplains, grasslands, and woodlands. It's diet consists of small terrestrial vertebrates and insects.	-	N/A - Records from NR Maps	No records within the project area. 227 NR Maps in the 20km buffer zone. Suitable habitat (woodlands) present adjacent to the project area. Camera trapping surveys were conducted with no detections (EcOz 2023)	Unlikely to occur	N/A	N/A	N/A	N/A