

Appendix A Likelihood of Occurrence Assessment

An assessment was undertaken of the likelihood of occurrence for key ecological species identified through desktop review. Desktop assessments were undertaken using the Species Profile and Threats Database (SPRAT) – Department of the Environment and Energy, and NatureMap Search from the Department of Biodiversity, Conservation and Attractions, along with additional scientific literature. These searches were specific to within 5 km from the identified project site. The below criteria were applied to determine the likelihood of occurrence for threatened species:

Low potential to occur – the species has not been recorded in the region (no records from desktop searches) and/or current known distribution does not encompass project area and/or suitable habitat is generally lacking from the project area.

Moderate potential to occur – the species has been recorded in the region (desktop searches) however suitable habitat is generally lacking from the project area or species has not been recorded in the region (no records from desktop searches) however potentially suitable habitat occurs at the project area.

High potential to occur – the species has been recorded in the region (desktop searches) and suitable habitat is present at the project area.

Known to occur – the species has been recorded on-site in the recent past (i.e. last 5-10 years) and the site provides suitable habitat for it.

Codes used in the following likelihood of occurrence tables:

EPBC Act (species listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*): Ex = Extinct, CE = Critically Endangered, E = Endangered, V = Vulnerable, M = Migratory, MM = Migratory Marine, MT = Migratory Terrestrial, MW = Migratory Wetlands, Ma = Listed Marine

WC Act (species listed under the Western Australian Wildlife Conservation Act 1950):

- Threatened Species: EX = Presumed Extinct, CR = Critically Endangered, EN = Endangered, VU = Vulnerable, IA = Migratory birds protected under an International Agreement, CD = Conservation Dependent, OS = Other Specially Protected
- Priority Species: P1 = Priority 1, P2 = Priority 2, P3 = Priority 3, P4 = Priority 4

IUCN (species listed under the International Union for Conservation of Nature (IUCN) Red List of Threatened Species): EX = Extinct, EW = Extinct in the Wild, CR = Critically Endangered, EN = Endangered, VU = Vulnerable, NT = Near Threatened, LC = Least Concern.

Marine Mammals

Species Name	EPBC Act Status	BC Act Status	IUCN Status	Habitat Preference	Likelihood of Occurrence
<i>Balaenoptera musculus</i> Blue Whale	E, C	EN	EN	Blue whales have a cosmopolitan distribution found in all oceans except the Arctic, but absent from some regional seas such as the Mediterranean, Okhotsk and Bering seas. Blue whales feed almost exclusively on krill, with a variety of species being taken by different blue whale populations. They feed both at the surface and also at depth, following the diurnal vertical migrations of their prey to at least 100 m. The migration patterns of blue whales are not well understood, but appear to be highly diverse. (Reilly <i>et al.</i> , 2008)	High likelihood to occur Species or species habitat may occur within area. The Blue Whale is known to through the region during their annual migration, north from April-August for calving in tropical waters and south from August- October for feeding and are generally found in deeper waters offshore from the BBF area around July-September (IFWA 2011).
<i>Balaenoptera edeni</i> Bryde's Whale	M, C			The species appears to be limited to the 200m depth contour, moving along the coast in response to the availability of suitable prey, while the offshore form is found in deeper waters (500 to 1,000m) (Best 1977).	Moderate likelihood to occur Species or species habitat may occur within area (GHD 2017). Because of its small population, lack of sightings and preference for deeper water, it is unlikely to be encountered in the BBF area (GHD 2017).
<i>Dugong dugon</i> Dugong	MM	OS	VU	In Australia, dugongs occur in the shallow coastal waters of northern Australia from the Queensland/New South Wales border in the east to Shark Bay on the Western Australian coast, often largely sighted feeding in wide seagrass beds but	High likelihood to occur Species or species habitat likely to occur within area (GHD 2017) and studies by Bennelongia <i>et al</i>

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				also in estuarine streams. North-West Australia is thought to have one of the largest populations of Dugongs in the world (DSEWPac, 2012b). They are also found in other parts of the Indian and Pacific Oceans in warm shallow seas in areas where seagrass is found. Regional sightings pooled from 1996 to 2008 show some sighting around Cockatoo and Irvine Islands but notably less than around the Dampier Peninsula, Derby and around Walcott Inlet (Holley and Prince, 2011). Aerial surveys completed by RPS further sighted Dugong populations in the Roebuck Bay area (2009; as cited in McKenzie <i>et al.</i> 2017).	(2009) & Brown <i>et al</i> (2014) have recorded their presence in Roebuck Bay in particular feeding on seagrass beds in the northern areas of Roebuck Bay. However, they are a highly mobile species moving in and out of the bay dependant on resource availability (DPaW 2016).
<i>Megaptera novaeangliae</i> Humpback Whale	V, M	CD	LC	Humpback Whales occur throughout Australian waters with their distribution influenced by their migratory pathways and aggregation areas for resting, breeding and calving. The migratory habitat for the humpback whale around mainland Australia is primarily coastal waters less than 200 m in depth and generally within 20 km of the coast. Humpbacks arrive in the coastal waters of the Kimberley after summer from June to August to breed and calve before returning to the Southern Ocean feeding areas to the Antarctic during September to November after the winter season has passed (GHD 2017).	High likelihood to occur The species or species habitat are known to occur within the area, however they typically occur offshore (>35km) particularly on the northern migration, although some whales often with calves can stay close to shore in water depth <10m during southern migration (i.e. September).
<i>Orcaella heinsohni</i> Irrawaddy Dolphin/ Australian Snubfin	C, MM,	P4	VU, NT	This dolphin is primarily found in nearshore habitats but has been recorded up to 23km offshore. Stranding and museum specimen records indicate that Australian Snubfin Dolphins occur only in waters off the northern half of Australia, from	High likelihood to occur Species or species habitat may occur within area (GHD 2017). Beagle Bay and Pender Bay which are north of the BBF area are

Species Name	EPBC Act Status	BC Act Status	IUCN Status	Habitat Preference	Likelihood of Occurrence
				approximately Broome (17° 57' S) on the west coast to the Brisbane River (27° 32' S) on the east coast (Parra <i>et al.</i> 2002). Aerial and boat-based surveys indicate that Australian Snubfin Dolphins occur mostly in protected shallow waters close to the coast, and close to river and creek mouths (Parra <i>et al.</i> 2002).	considered important areas for the Australian Snubfin Dolphin (Department of the Environment and Energy, 2016; RPS 2012). Due to shallow water preferences, the Irrawaddy/Snubfin is likely to be present all year round in the BBF area.
<i>Orcinus orca</i> Killer whale, Orca	C, M		DD	In Australia killer whales are recorded from all states. The Killer whale prefer oceanic, pelagic and neritic regions in both warm and cold waters and are predominately seen along the continental slope (DoEE 2019c).	Low likelihood to occur
<i>Sousa chinensis</i> Indo-Pacific Humpback dolphin	C, MM	P4	NT	The Indo-Pacific Humpback Dolphin is primarily found in nearshore habitats, such as those associated with the Buccaneer Archipelago (DoEE 2016; Brown, A.M <i>et al</i> 2016). Indo-Pacific Humpback dolphins typically occur in open waters around coasts and islands, generally less than 20m water depth (Parra <i>et al.</i> , 2002). In Australia, Indo-Pacific Humpback Dolphins are known to occur along the northern coastline, extending to Exmouth Gulf on the west coast (25° S), and the Queensland/NSW border region on the east coast (34° S) (Corkeron <i>et al.</i> 1997). There are few records between the Gulf of Carpentaria in the north and Exmouth Gulf in the west, this is probably due to a lack of research effort and the remoteness of the area (Bannister <i>et al.</i> 1996; Parra <i>et al.</i> 2002).	High likelihood to occur Breeding known to occur within area (GHD 2017). Due to shallow water preferences, the Indo-Pacific Humpback is likely to be present all year round in the BBF area as they are common in estuaries and embayment's in the region including Roe-buck Bay (RPS 2012).
<i>Tursiops aduncus</i> Indo-Pacific/Spotted Bottlenose Dolphin	MM, C	MM		The Bottlenose Dolphin is a cosmopolitan species in all Australian waters in coastal, estuarine and pelagic settings. The Bottlenose Dolphin is widely distributed in tropical and sub-tropical coastal and	High likelihood to occur Species or species habitat likely to occur within area (GHD 2017). Bottlenose Dolphins have been

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				shallow offshore Indo-Pacific waters and the western Pacific Ocean, however there is limited information on the distribution and population of the Arafura/Timor sea population (Möller & Beheregaray 2001).	observed during surveys by Jenner and Jenner (2009) between Cape Leveque (north of Broome) and Scott Reef in June, July, October and November 2008). Other studies by RPS (2012) observed bottlenose dolphins in the nearshore zone and likely to be present throughout the year.

Marine Reptiles

Species Name	EPBC Act Status	BC Act Status	IUCN Status	Habitat Preference	Likelihood of Occurrence
<i>Aipysurus apraefrontalis</i> Short-nosed Seasnake	CE, Ma	CR	CR	The Short-nosed Seasnake is endemic to Western Australia, and has been recorded from Exmouth Gulf, Western Australia to the reefs of the Sahul Shelf, in the eastern Indian Ocean. The species prefers the reef flats or shallow waters along the outer reef edge in water depths to 10 m (McCosker 1975).	Moderate likelihood to occur Species or species habitat likely to occur within area.
<i>Caretta caretta</i> loggerhead turtle	E, MM, Ma	EN	VU	In Australia, Loggerhead Turtles nest on open, sandy beaches concentrated in southern Queensland and from Shark Bay to the North West Cape in Western Australia. They live at or near the surface of the ocean and move with the ocean currents, choosing a wide variety of tidal and sub-tidal habitat as feeding areas and showing fidelity to both their foraging and breeding areas. (Department of Environment and Heritage 2005). The Loggerhead Turtle occurs in the waters of coral and rocky reefs, seagrass beds and muddy bays throughout eastern, northern and western Australia (Limpus 1995).	High likelihood to occur The species has been recorded in the region (desktop searches) and Foraging, feeding or related behaviour known to occur within area (Benneologia <i>et al.</i> 2009)

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<i>Chelonia mydas</i> Green turtle	V, MM, Ma	VU	EN	Green Turtles nest, forage and migrate across tropical northern Australia. They usually occur between the 20°C isotherms, although individuals can stray into temperate waters (Cogger 2014). In Australia, the key nesting and inter-nesting areas (where females live between laying successive clutches in the same season) occur on offshore Islands off the Pilbara region (DEH 2005).	High likelihood to occur The species has been recorded in the region (desktop searches) and breeding is known to occur within area.
<i>Crocodylus porosus</i> Salt-water Crocodile	M, Ma	OS	LC	Found in Australian coastal waters, estuaries and lakes, inland swamps and marshes. It has been found at King Sound (near Broome) (DoEE 2019d).	Moderate likelihood to occur Species or species habitat likely to occur within area
<i>Dermochelys coriacea</i> leatherback turtle	E, MM, Ma	VU	VU	The Leatherback Turtle is a pelagic feeder, found in tropical, subtropical and temperate waters throughout the world. Large body size, high metabolism, a thick adipose tissue layer and regulation of blood flow them to utilise cold water foraging areas unlike other sea turtle species. For this reason, this species is regularly found in the high latitudes of all oceans including the South Pacific Ocean in the waters offshore from NSW, Victoria, Tasmania and Western Australia (Benson <i>et al.</i> 2011).	Moderate likelihood to occur the species has not been recorded in the region (no records from desktop searches). Breeding is likely to occur within area.
<i>Eretmochelys imbricata</i> Hawksbill turtle	V, MM, Ma	VU	CR	Hawksbill Turtles are found in tropical, subtropical and temperate waters in all the oceans of the world. In Australia, the key nesting and inter-nesting areas (where females live between laying successive clutches in the same season) occur on offshore Islands off Onslow (Pendoley 2005).	Moderate likelihood to occur Breeding likely to occur within area.
<i>Natator depressus</i> Flatback turtle	V, MM, Ma	VU	DD	The Flatback Turtle is 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. On the North-West Shelf, the major rookeries are on the mid-eastern coast of	High likelihood to Occur The species has been recorded in the region (desktop searches) and

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				Barrow Island and at Mundabullangana Station near Cape Thoun on the mainland (Prince 1994).	breeding is known to occur within area.

Sharks and Rays

Species Name	EPBC Act Status	BC Act Status	IUCN Status	Habitat Preference	Likelihood of Occurrence
<i>Anoxypristis cuspidata</i> Narrow sawfish, Knife tooth sawfish	M		E	This sawfish inhabits fresh and brackish waters in betho-pelagic depths and offshore waters to at least 40m. The species commonly occurs in the Indo-Pacific region (D'Anastasi et al 2019).	Moderate likelihood to occur
<i>Carcharodon carcharias</i> Great White Shark	V, MM	VU	VU	In Australia, Great White Sharks have been recorded from central Queensland around the south coast to north-west Western Australia but may occur further north on both coasts (Bonfil <i>et al.</i> 2005). They inhabit inshore waters around rocky reefs, surf beaches and shallow coastal bays; waters on the outer continental shelf and slope; and the open ocean. These sharks most commonly live in depths above 100 m (Pogonoski <i>et al.</i> , 2002).	Moderate likelihood to occur The species has not been recorded in the region (no records from desktop searches). Species may occur within area, but it is unlikely.
<i>Manta alfredi</i> Reef Manta	M			This species occurs in tropical and subtropical waters and widespread in the Indian ocean. They often reside in nearshore waters with high productivity, around rocky reefs and seamounts. Inshore coastal waters are often preferred habitat for cleaning and feeding (Marshall et al 2018).	Moderate likelihood to occur Species or species habitat may occur in the area.
<i>Manta alfredi</i> Reef Manta	M			Occurs in tropical and temperate waters, occupying a widespread distribution. It is a seasonal visitor to coastal and offshore sites. Commonly sighted along productive coastlines associated with upwellings, oceanic island groups and offshore pinnacles and seamounts (Marshall et al 2018).	Moderate likelihood to occur Species or species habitat may occur in the area.

Species Name	EPBC Act Status	BC Act Status	IUCN Status	Habitat Preference	Likelihood of Occurrence
<i>Pristis clavata</i> Dwarf Sawfish	V, MM	P1	EN	The species' Australian distribution has previously been considered to extend north from Cairns around the Cape York Peninsula in Queensland, across northern Australian waters to the Pilbara coast in Western Australia (Last & Stevens 1994). The Dwarf Sawfish usually inhabits shallow (2–3 m) coastal waters and estuarine habitats, which are utilized as nurseries for juveniles. Surveys have found most captures are of Dwarf Sawfish occur over soft sediment environments (Department of the Environment, 2015).	High likelihood to occur The species has been recorded in the region (records from desktop searches). The western extent of this species range has not been fully resolved, however species or species habitat known to occur within area (Morgan <i>et al</i> 2010).
<i>Pristis pristis</i> Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish	V, M			The Freshwater Sawfish may potentially occur in all large rivers of northern Australia from the Fitzroy River, Western Australia, to the western side of Cape York Peninsula, Queensland (Allen 2000 pers. Comm.). It is a marine/estuarine species and the period it spends in either marine or estuarine waters is largely related to its life cycle as well as different the time of the day. The preferred habitat of this species is mud bottoms of river embayment's and estuaries, but they are also found well upstream (Allen 1997).	High likelihood to occur Species or species habitat known to occur within area therefore given this species known distribution, it is possible that they can occur in the BBF area.
<i>Pristis zijsron</i> Green Sawfish	V, MM	VU	CR	The green sawfish inhabit shallow coastal marine and estuarine waters of northern Australia, from about Eighty Mile Beach, Western Australia, to the Cairns region, Queensland. It has occasionally been caught as far south as Sydney. Green sawfish are known to be pupped near the Ashburton River mouth and utilise the estuary and nearby mangrove creeks, before moving offshore to mature at a length of about 3 m (Allen <i>et al.</i> 2015).	High likelihood to occur The species is known to occur within area for breeding purposes. Individuals have been recorded from inshore coastal environments and estuaries to offshore deep waters (Morgan <i>et al</i> 2010).
<i>Rhincodon typus</i> Whale Shark	V, MM	OS	EN	Found worldwide in tropical and subtropical oceans. In Australia, the Whale Shark is known from NSW,	Low likelihood to occur

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				Queensland, Northern Territory, Western Australia and occasionally Victoria and South Australia, but it is most commonly seen in waters off northern Western Australia, Northern Territory and Queensland (Compagno and Last 1999). Whale Sharks are known to inhabit both deep and shallow coastal waters and the lagoons or coral islets and reefs. A study by Wilson <i>et al</i> (2006) found Whale Sharks spend at least 40% of their time in the upper 15 m of the water column and at least 50% of their time at depths equal to or less than 30 m.	The species has not been recorded in the region (no records from desktop searches) and are generally found in waters deeper than present at the BBF area. Species or species habitat may occur within the BBF area but unlikely due to the preference for deeper waters.

Plants

Species Name	EPBC Act Status	BC Act Status	IUCN Status	Habitat Preference	Likelihood of Occurrence
<i>Acacia monticola</i>		P3		Identified by NatureMap database search	Low likelihood to occur
<i>Corymbia paractica</i>		P1		Identified by DBCA database search	High likelihood to occur
<i>Goodenia byrnesii</i>		P1		Identified by Coffey (2013 & 2016) and Woodman (2008)	High likelihood to occur Species or species habitat known to occur within area
<i>Glycine Pindanica</i>		P3		Identified by DBCA and NatureMap database search	Low likelihood to occur
<i>Gomphrena Pusilla</i>		P2		Identified by DBCA and NatureMap database search	Low likelihood to occur
<i>Keraudrenia exastia</i> Fringed Keraudrenia	CE	CR		The Fringed Keraudrenia is endemic to Western Australia and is known from seven subpopulations within the Port of Broome, in Broome, Western Australia (WA DEC 2006). The Fringed Keraudrenia is considered to have a very restricted geographic distribution.	High likelihood to occur Species or species habitat known to occur within area.

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				The Fringed Keraudrenia grows in Pindan (red soil) heathland (Western Australian Herbarium 2006). Apart from one subpopulation which occupies a north-facing dune slope, the remaining six subpopulations occur on almost flat land and associated vegetation includes Feathertop Spinifex (<i>Triodia schinzi</i>) and scattered trees, under 7 m in height, of Soap Wattle (<i>Acacia coleii</i>), Bloodwood (<i>Eucalyptus dampieri</i>) and several other common species with a variety of intermediate sized shrubs (Broome Botanical Society 1995).	
<i>Monsoon Vine Thicket</i> (PEC 67)		P1		Identified by Woodman (2008), DBCA database search	High likelihood to occur
<i>Sersalisia sericea</i> Mangarr (Minyjuru)		P1		Identified by Coffey (2013) and DBCA database search	High likelihood to occur
<i>Seringia exastia</i> Fringed Fire-bush	CE	CR		Identified by Coffey (2013 and 2016), Woodman (2008), DBCA and NatureMap database search	High likelihood to occur
<i>Seringia katatong</i>		P3		Identified by DBCA database search	Low likelihood to occur
<i>Polymeria sp. Broome</i>		P3		Identified by NatureMap database search	Low likelihood to occur
<i>Tephrosia andrewii</i>		P3		Identified by DBCA database search	Low likelihood to occur

Birds

Species Name	EPBC Act Status	BC Act Status	IUCN Status	Habitat Preference	Likelihood of Occurrence
<i>Calidris canutus</i> Red Knot, Knot	E, M, Ma	VU	NT	The Red knot is common in all main suitable habitats around the coast of Australia (Barrett <i>et al</i> 2003; Minton, C.D.T. 2006, pers. Comm.; Watkins 1993). Very large numbers are regularly recorded in	High likelihood of occurrence Species or species habitat known to occur within area. The Red Knot prefers to inhabit the intertidal

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				the north-west Australia, with 80-mile beach and Roebuck Bay near Broome being particular strongholds. The Red Knot mainly inhabits mudflats, sandflats and sandy beaches of sheltered coasts, in estuaries, bays, inlets, lagoons and harbours; sometimes on sandy ocean beaches or shallow pools exposed wave-cut rock platforms or coral reefs (Higgins & Davies 1996).	mudflats of the Eighty Mile Beach in Western Australia (Johnstone 2017).
<i>Calidris ferruginea</i> Curlew Sandpiper	CE, M, Ma	VU	NT	In Australia, Curlew Sandpipers occur around the coasts and are also quite widespread inland, though in smaller numbers. Records occur in all states during the non-breeding period, and also during the breeding season when many non-breeding one-year old birds remain in Australia rather than migrating north. In Western Australia they are widespread around coastal and subcoastal plains. They 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.	High likelihood of occurrence Species or species habitat known to occur within area. They occur in large numbers, in thousands to tens of thousands in Roebuck Bay. In Roebuck Bay, they are also said to feed on part of the mudflats that have been exposed for a longer period, foraging in small groups (Tulp & de Goeij 1994)
<i>Calidris tenuirostris</i> Great Knot	CE, M, Ma	VU	EN	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. In Australasia, the species typically prefers sheltered coastal habitats, with large intertidal mudflats or sandflats. This includes inlets, bays, harbours, estuaries and lagoons (Higgins & Davies 1996).	High likelihood of occurrence Roosting is known to occur within area. The highest recorded numbers of birds are within Eighty Mile Beach and Roebuck Bay which is near the BBF area.
<i>Charadrius leschenaultia</i> Greater Sand Plover, Large Sand Plover	V, M, Ma	VU	LC	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 (Marchant & Higgins 1993; Minton <i>et al.</i>	High likelihood of occurrence Roosting is known to occur within area. Two Internationally important sites in Australia south of the BBF

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				<p>2006). The species is widespread between North West Cape and Roebuck Bay (Barrett <i>et al.</i> 2003; Blakers <i>et al.</i> 1984; Lane 1987; Storr 1980, 1987).</p> <p>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 (Bamford 1988; Blakers <i>et al.</i> 1984; Lane 1987; Sibson 1948; Stewart <i>et al.</i> 2007), and inshore reefs, rock platforms, small rocky islands or sand cays on coral reefs (Abbott 1982; Morris 1989; Sedgwick 1978).</p>	area include Eighty Mile Beach and Roebuck Bay.
<i>Charadrius mongolus</i> Lesser Sand Plover, Mongolian Plover	E, M, Ma	EN	LC	<p>Within Australia, the Lesser Sand Plover is widespread in coastal regions, and has been recorded in all states. Internationally important sites in Australia near the BBF area include Eighty Mile Beach, Roebuck Bay and Broome.</p> <p>In non-breeding grounds in Australia, this species usually occurs in coastal littoral and estuarine environments. It inhabits large intertidal sandflats or mudflats in sheltered bays, harbours and estuaries, and occasionally sandy ocean beaches, coral reefs, wave-cut rock platforms and rocky outcrops (Marchant & Higgins 1993).</p>	High likelihood of occurrence Roosting known to occur within area.
<i>Elanus scriptus</i> Letter Winged Kite		P4	NT	Is an endemic species found in the arid regions of western Australia and other parts of Australia. It prefers open country areas and grasslands in arid and semi-arid Australia where there are tree-lined streams or water courses. It roosts by day in the high canopy of leafy trees. (Birdlife 2019).	Moderate likelihood of occurrence

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<i>Falco hypoleucos</i> Grey falcon		P1	LC	Occurs in arid and semi-arid Australia including Western Australia. Mainly found where rainfall is less than 500mm, except when wet years are followed by drought, when the species becomes more widespread. During non-breeding season they head toward northern and coastal areas. The species frequents timberland lowland plains, particularly acacia shrublands. Other habitat types they frequent include tussock grassland and open woodland (DoE 2019).	Moderate likelihood of occurrence
<i>Falco peregrinus</i> Peregrine Falcon		P1	LC	Found across Australia in most habitats, from rainforests to the arid zone, and at most altitudes, from the coast to alpine areas. Prefers coastal and inland cliffs or open woodland near water. Feeds on small birds, rabbits and other day-active mammals. Tree hollows are suitable nesting sites in addition to cliff faces (Birdlife 2019b).	Moderate likelihood of occurrence
<i>Ixobrychus dubius</i> Australian Little Bittern		P4	LC	Some scattered records are found in coastal locations in the Kimberley region. Feeding mainly on aquatic invertebrates such as crustaceans and small vertebrates. Mainly found in freshwater wetlands, where they inhabit dense emergent vegetation of reeds and sedges, and inundated shrub thickets. They are also occasionally found in brackish and saline wetlands such as mangrove swamps, salt marsh and wooded margins of coastal lagoons (Atlas of living Australia 2019).	Moderate likelihood of occurrence
<i>Ixobrychus flavicollis</i> Black Bittern		P2	LC	Black Bitterns are found in coastal south-western, northern and eastern Australia south to far eastern Victoria. They roost and nest in trees and are found in tree-lined wetlands and in mangroves. They mainly forage from shady trees over water but have also been seen in open areas of short marshy	Moderate likelihood of occurrence

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				vegetation and along creeks in shrubby vegetation (Australian Museum 2019).	
<i>Limosa lapponica baueri</i> Bar-tailed Godwit (baueri), Western Alaskan Bar-tailed Godwit	V	VU		Bar-tailed Godwits are long-distance migratory shorebirds. About a third of the global population migrate to Australia during the non-breeding season where they occur in the north-west and east (Wilson <i>et al</i> 2007). It is found mainly in coastal habitats such as intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons and bays (Marchant & Higgins 1993).	High likelihood of occurrence Species or species habitat known to occur within area. Roebuck Bay, near the BBF area is considered an Australian site of international importance (Bamford <i>et al</i> 2008).
<i>Limosa lapponica menzbieri</i> Northern Siberian Bar-tailed Godwit, Bar-tailed Godwit (menzbieri)	E	VU		The bar-tailed godwit (northern Siberian) is a large migratory shorebird. It has been recorded in the coastal areas of all Australian states. During the non-breeding period, the distribution of <i>L. l. menzbieri</i> is predominately in the north and north-west of Western Australia and in south-eastern Asia (Bamford <i>et al</i> 2008). It occurs mainly in coastal habitats such as large intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons and bays.	High likelihood of occurrence Species or species habitat known to occur within area.
<i>Ninox connivens</i> Barking Owl		P3	LC	The barking owl feeds on a variety of small to medium-sized mammals, birds, reptiles and insects. Most hunting is performed at night and dawn, preferring to hunt in clearings, including waterways and other open areas. They nest in hollow tree trunks, are found in open woodlands and the edges of forests, usually in forests dominated by eucalyptus species, particularly the red gum, and, in the tropic's paperbark species (Birdlife 2019a).	Moderate likelihood of occurrence
<i>Numenius madagascariensis</i> Eastern Curlew, Far Eastern Curlew	CE, M, Ma	VU	EN	The Eastern Curlew is predominately coastal during the non-breeding season occurring at estuaries, mangrove swamps, saltmarshes, and intertidal flats, particularly those with extensive seagrass meadows	High likelihood of occurrence Species or species habitat known to occur within area.

Species Name	EPBC Act Status	BC Act Status	IUCN Status	Habitat Preference	Likelihood of Occurrence
				(Birdlife International 2017). In Australia it is widespread in coastal regions in the north-east and south of Australia.	
<i>Papasula abbotti</i> Abbott's Booby	E, Ma		EN	Abbott's Booby is a marine species. It spends much of its time at sea but needs to come into shore to breed. It nests in tall rainforest trees and most trees are associated with uneven terrain created by gullies, hillsides or cliffs. The nature of the Abbott Booby nest site is determined by the topography and nature of the canopy, resulting in a patchy distribution (Nelson and Powell 1986). Abbott's Booby is mainly seen year-round on Christmas Island (Andrew, McBride & Thomas 2011).	High likelihood of occurrence Species or species habitat may occur within area. One recorded at Eco Beach south of Broome in December 1999. This is the first Australian record other than at Christmas Island (O'Connor 2003) (Andrew <i>et al</i> 2011).
<i>Pluvialis fulva</i> Pacific Golden Plover	M, Ma		LC	Records BMT (2018)	High likelihood of occurrence Species or species habitat may occur within area.
<i>Pluvialis squatarola</i> Grey Plover	M, Ma		LC	Records BMT (2018)	High likelihood of occurrence Species or species habitat may occur within area.
<i>Polytelis alexandrae</i> Princess Parrot, Alexandra's Parrot	V	P4	NT	The princess Parrot inhabits sand dunes and sand flats in the arid zone of Western and central Australia. It occurs in open savanna woodlands and shrublands that usually consist of scattered stands of trees, an understory of shrubs, and a ground cover (Allen 1987).	Low likelihood of occurrence Species or species habitat likely to occur within area. The BBF area is outside the current known range of the Princess Parrot and therefore would be highly unlikely to occur in the BBF area.
<i>Puffinus huttoni</i> Hutton's Shearwater		EN	EN	In the non-breeding season this species migrates to waters of southern, western and north-western Australia. The species digs burrows on gentle to steep mountain slopes at 1,200-1,800m under tussock grass or low alpine scrubland (Marchant and Higgins 1990).	Moderate likelihood of occurrence

Species Name	EPBC Act Status	BC Act Status	IUCN Status	Habitat Preference	Likelihood of Occurrence
<i>Rostratula Australia</i> Australian Painted Snipe	E, Ma	EN	EN	The Australian Panted Snipe has been recorded at wetlands in all states of Australia (Barrett et al. 2003; Blakers et al. 1984; Hall 1910b). the Australian Painted Snipe generally inhabits shallow terrestrial freshwater (occasionally brackish) wetlands, including temporary and permanent lakes, swamps and claypans (Marchant & Higgins 1993).	Moderate likelihood of occurrence Species or species habitat may occur within area. There are no wetlands within the BBF area and the Snipe would be highly unlikely to occur in the BBF area. However, the BBF area is approximately 10km to the west of the Roebuck Bay Wetland of International Importance.
<i>Tringa brevipes</i> Grey tailed Tattler		P4		Records (BMT 2018)	High likelihood of occurrence Records BMT (2018)
<i>Tyto novaehollandiae Kimberli</i> V Masked Owl (northern)		P1		The distribution of the Masked Owl is poorly known (Woinarski 2004). A subpopulation has been suggested in the Kimberley region in Western Australia (Garnett <i>et al.</i> 2011). In northern Australia, the Masked Owl has been recorded from the riparian forest, open forest, <i>Melaleuca</i> swamps and the edges of mangroves (Higgins 1999; Nielsen 1996; Storr 1977, 1980).	High likelihood of occurrence Species or species habitat may occur within area. There are historical records of the specie from near Broome, however it is expected to be uncommon in this area (Crossman 1910).
<i>Xenus cinereus</i> Terek Sandpiper	M, Ma		LC	Records (BMT 2018)	High likelihood of occurrence Records BMT (2018)

Terrestrial Mammals

Species Name	EPBC Act Status	BC Act Status	IUCN Status	Habitat Preference	Likelihood of Occurrence
<i>Dasyurus hallucatus</i> Northern Quoll		EN	EN	The Northern Quoll occurs in the northern regions of Australia. However current distribution is discontinuous across northern Australia, with core	Low likelihood to occur

Species Name	EPBC Act Status	BC Act Status	IUCN Status	Habitat Preference	Likelihood of Occurrence
				populations is rocky and/or high rainfall areas. Habitat areas include rocky outcrops, tree hollows, hollow logs, termite mounds (Hill 2010).	Species or species habitat likely to occur within area.
<i>Macrtis lagotis</i> Greater Bilby	V	VU	VU	Wild populations of the Greater Bilby are declining and in Western Australia are restricted predominately to The Gibson Desert, Little Sandy Desert, Great Sandy Desert and parts of the Pilbara and Southern Kimberley (GHD 2014).	High likelihood to occur Species or species habitat known to occur within area.
<i>Saccolaimus saccolaimus nudicluniatus</i> Bare-rumped Sheath-tailed Bat, Bare-rumped Sheath-tail Bat	V			In Australia all confirmed roosting records are from long deep tree hollows in the poplar gum <i>Eucalyptus platyphylla</i> , Darwin woollybutt <i>E. miniate</i> and Darwin stringybark <i>E. tetradonta</i> . The hollows in these trees are used as maternity roosts. They forage over canopy or along the edge of a variety of woodland, open forest and closed forest types (Schultz 2007)	Low likelihood to occur Species or species habitat likely to occur within area.
<i>Mormopterus lumsdenae</i> Northern Free – Tailed Bat		P1	LC	This bat occurs in the northern half of Australia within 700km of the coast, encompassing areas with annual rainfall from 200mm to over 1,500mm. This species is found in a variety of habitats including eucalypt woodlands, often near natural watercourses and dams, and over rainforest, riverine and floodplain margins, woodland and savannah (Reardon 2017).	Low likelihood to occur Species or species habitat likely to occur within area.
<i>Trichosurus vulpecula arnhemensis</i> Northern brushtail possum		VU	NT	The brushtail possum occurs across Australia, this species occurs in tropical northern Australia, including the Pilbara and Kimberley of Western Australia. It is known to occupy a variety of habitats including forest and woodlands that provide sufficient trees with hollows, to ground refuges such as hollow logs. They are nocturnal animals and are herbivores mainly consisting of a diet of leaves such as <i>Eucalyptus</i> (DEC 2012).	Low likelihood to occur Species or species habitat likely to occur within area.
<i>Wyulda squamicaudata</i> Scaly-tailed Possum		P4	NT	Restricted to the west Kimberley, Western Australia. Most records are from near-coastal, high-rainfall	Low likelihood to occur

Species Name	EPBC Act Status	BC Act Status	IUCN Status	Habitat Preference	Likelihood of Occurrence
				north-western Kimberley. Occurs in rugged sandstones with adjacent open woodland or closed forest, sometimes with rainforest elements. Forages mainly in trees but may venture into open areas to feed on flowers, fruits, seeds and leaves (Burbidge 2016).	Species or species habitat likely to occur within area.
<i>Hydromys chrysogaster</i> Water-rat, Rakali		P4	LC	Generally, occurs in permanent fresh or brackish water, although can also be found in marine environments. Largely carnivorous species with a diet inclusive of insects, crustaceans, fish and small fauna (CSIRO 2004).	Low likelihood to occur Species or species habitat likely to occur within area.
<i>Mesembriomys macrurus</i> Golden backed tree rat		P4	NT	This species has been recorded from the top end of the Northern Territory (NT) and the Kimberley and Pilbara in Western Australia (WA). However since 1903 all known records have come from the higher rainfall areas of the north-west Kimberley (Threatened Species Scientific Committee 2019).	Low likelihood to occur Species or species habitat likely to occur within area.

Terrestrial Reptiles

Species Name	EPBC Act Status	BC Act Status	IUCN Status	Habitat Preference	Likelihood of Occurrence
<i>Ctenotus angusticeps</i> Airlie Island Ctenotus	V	P4		The Airlie Island Ctenotus is known from approximately 12 locations in north-west WA including Willie Creek in Broome. Populations of the species is fragmented, the habitat in which it occurs is unique and fragmented within the landscape (Maryan <i>et al.</i> 2013). The Airlie Island Ctenotus generally inhabits the landward fringe of saltmarsh communities in samphire shrubland or marine couch grassland (Maryan <i>et al.</i> 2013) in the intertidal zone along mangrove (Grey Mangrove (<i>Avicennia marina</i>) and	High likelihood to occur Species or species habitat likely to occur within area.

Species Name	EPBC Act Status	BC Act Status	IUCN Status	Habitat Preference	Likelihood of Occurrence
				Red Mangrove (<i>Rhizophora stylosa</i>)) margins, however subtle differences in vegetation /topography exist among sites where the species has been recorded (Biologic 2012).	
<i>Lerista separanda</i> Dampierland plain slider		P2	LC	In Australia endemic species is found in Dampier Land in the south-west Kimberley ranges. Found in consolidated coastal sand dunes. It is known to burrow in loose soil or sand beneath stones, logs, termite mounds etc (Cogger 2014).	Low likelihood to occur Species or species habitat likely to occur
<i>Simoselaps minimus</i> Dampier land Burrowing Snake		P2	LC	In Australia this species is found in Dampier Land in the Western Australia, covering wider areas of the Dampier peninsula. It has been recorded in open areas with few trees (Cogger 2014).	Low likelihood to occur Species or species habitat likely to occur

Migratory Birds

Class	Species	Common Name	EPBC Act Status	BC Act Status	IUCN
Birds	<i>Actitis hypoleucos</i>	Common Sandpiper	M, Ma		LC
Birds	<i>Anous stolidus</i>	Common Noddy	MM		LC
Birds	<i>Apus pacificus</i>	Fork-tailed Swift	MM		LC
Birds	<i>Arenaria interpres</i>	Ruddy Turnstone	Ma, M		LC
Bird	<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	Ma, M		LC
Bird	<i>Calidris alba</i>	Sanderling	Ma, M		LC
Bird	<i>Calidris melanotos</i>	Pectoral Sandpiper	Ma, M		LC
Bird	<i>Calidris ruficollis</i>	Red-necked Stint	M, Ma		NT
Bird	<i>Calidris subminuta</i>	Long-toed stint	M		
Bird	<i>Calonectris leucomelas</i>	Streaked Shearwater	MM, M		NT

Class	Species	Common Name	EPBC Act Status	BC Act Status	IUCN
Bird	<i>Cecropis daurica</i>	Red-rumped Swallow	M, Ma		LC
Bird	<i>Charadrius bicinctus</i>	Double-banded Plover	M, Ma		LC
Bird	<i>Charadrius dubius</i>	Little Ringed plover	M		
Bird	<i>Charadrius veredus</i>	Oriental Plover	M, Ma		LC
Bird	<i>Childonias leucopterus</i>	White winged Black tern, white winged tern	M		
Bird	<i>Cuculus optatus</i>	Oriental Cuckoo, Horsfield's Cuckoo	M		
Birds	<i>Fregata ariel</i>	Lesser Frigatebird, Least Frigatebird	MM		LC
Birds	<i>Fregata minor</i>	Great Frigatebird, Greater Frigatebird	MM		LC
Bird	<i>Gallinago megala</i>	Swinhoe's Snipe	Ma, M		LC
Bird	<i>Gallinago stenura</i>	Pin-tailed Snipe	Ma, M		LC
Bird	<i>Gelochelidon nilotica</i>	Gull-billed tern	M		
Bird	<i>Glareola maldivarum</i>	Oriental Pratincole	M, Ma		LC
Bird	<i>Hirundo rustica</i>	Barn Swallow	M, Ma		LC
Bird	<i>Hydroprogne caspia</i>	Caspian tern	M		
Bird	<i>Limicola falcinellus</i>	Broad-billed Sandpiper	M, Ma		LC
Bird	<i>Limnodromus semipalmatus</i>	Asian Dowitcher	M, Ma		NT
Bird	<i>Limosa limosa</i>	Black-tailed Godwit	M, Ma		NT
Bird	<i>Motacilla cinerea</i>	Grey Wagtail	M, Ma		LC
Bird	<i>Motacilla flava</i>	Yellow Wagtail	M, Ma		
Bird	<i>Numenius minutus</i>	Little Curlew, Little Whimbrel	M, Ma		LC
Bird	<i>Numenius phaeopus</i>	Whimbrel	M, Ma		LC
Bird	<i>Oceanites oceanicus</i>	Wilson's Storm petrel	M		
Bird	<i>Onychoprion anaethetus</i>	Bridled tern	M		

Class	Species	Common Name	EPBC Act Status	BC Act Status	IUCN
Bird	<i>Pandion haliaetus</i>	Osprey	M, Ma		LC
Bird	<i>Philomachus pugnax</i>	Ruff, reeve	M		
Bird	<i>Plegadis falcinellus</i>	Glossy Ibis	M		
Bird	<i>Pluvialis fulva</i>	Pacific Golden Plover	M, Ma		LC
Bird	<i>Pluvialis squatarola</i>	Grey Plover	M, Ma		LC
Bird	<i>Sternula albifrons</i>	Little Tern	M, Ma		LC
Bird	<i>Sterna dougallii</i>	Roseate Tern	M		
Bird	<i>Sterna hirundo</i>	Common Tern	M		
Bird	<i>Sula leucogaster</i>	Brown Booby	M		
Bird	<i>Thalasseis bergii</i>	Crested Tern	M		
Bird	<i>Tringa glareola</i>	Wood Sandpiper	M, Ma		LC
Bird	<i>Tringa nebularia</i>	Common Greenshank	M, Ma		LC
Bird	<i>Tringa stagnatilis</i>	Marsh Sandpiper, little greenshank	M, Ma		LC
Bird	<i>Tringa totanus</i>	Common redshank, redshank	M, Ma		LC
Bird	<i>Xenus cinereus</i>	Terek Sandpiper	M, Ma		LC