# EPBC Act referral

Australian Government
Department of Agriculture, Water and the Environment

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| **Title of proposal** | **2021/9098 - Broome Boating Facility** |
|---|---|

## Section 1

**Summary of your proposed action**

**1.1 Project industry type** Tourism and Recreation

**1.2 Provide a detailed description of the proposed action, including all proposed activities**

The proposed action is construction and operation of the Broome Boating Facility (BBF) which aims to improve safety and access to meet Broome's present recreational and small commercial boating requirements and future demand. The upgrade will provide marine and terrestrial facilities to support the launch and retrieval of vessels up to approximately 10 m in length. Larger vessels (nominally to 20 m) may also access the facility for passenger transfers or possible jinkering for servicing or cyclone shelter.

The BBF will provide the following amenities (Attachment 1 BBF General Arrangement):

- Four-lane boat ramp with two floating finger jetties to improve access.
- Sheltered water at the toe of the ramp to facilitate safer vessel launch and retrieval.
- Parking for 160 car/trailer combinations and 60 single car bays and a bus drop-off zone.
- Fishing platform, pedestrian promenade and improved beach access.
- Sheltered areas and public open space, public amenities, interpretative information, artwork and signage around Aboriginal culture and heritage, dinosaurian tracks and the marine environment.

A small piling campaign will be required to install an estimated total of 26 piles (to be installed in water depths <5 m (Attachment 1 BBF General Arrangement):

- 14 piles on the boat ramp to secure the floating finger jetties
- 5 mooring piles on the inside of the offshore breakwater
- 1 pile for a piled navigation aid to the north of the offshore breakwater
- 6 piles (approximately) to secure the fishing platform on the southern side of the south groyne.

The Proposed Action includes the following activities which may have a direct or indirect impact on the environment:

- Vegetation clearing: direct impacts to native vegetation by clearing, possible indirect impacts to marine fauna and birds through loss of habitat/feeding grounds. Vegetation clearing is expected to be very minor
- Dredging: direct impacts on benthic communities and habitat (BCH), possible indirect impacts to marine environmental quality (MEQ) through sedimentation/smothering of BCH, turbidity, indirect impacts to marina fauna through noise, interactions with construction equipment/dredge, removal of BCH, introduced marine species (IMS) from construction vessels. Dredging is anticipated to be limited to removal of loose rock (excavators) and possibly using excavators to dig slots for the toe rock.
- Piling: possible direct impacts on marine fauna through noise and vibration
- Construction of breakwaters and boat ramp: possible direct impact on coastal process through changed in longshore sediment transport regime, indirect impacts to marine fauna as above, possible indirect impacts on BCH through changed coastal processes, IMS
- Operation of the facility: possible direct impacts to MEQ through accidental fuel spills, possible direct impacts to marine fauna through interactions resulting from increased boating activity, displacement of migratory shorebirds, IMS, possible indirect impacts from accidental fuel spills. Operationally there may be a periodic requirement to manage sediment accretion /erosion around the facility with land-based plant – excavator, dozer and truck.

Assessment of the above can be found in Attachment 2 – Preliminary Environmental Impact Assessment (Table 11 - Pages 60-64). Note that the development footprint has been refined and has reduced in size since the completion of this assessment.

**1.3 What is the extent and location of your proposed action?**

See Appendix B

**1.5 Provide a brief physical description of the property on which the proposed action will take place and the location of the proposed action (e.g. proximity to major towns, or for off-shore actions, shortest distance to mainland)**

The proposed BBF is located on Entrance Point Beach, between the Port of Broome and Entrance Point on the Broome Peninsula where boat launching activity already occurs via concrete ramps and from the beach. The BBF commences at the shoreline at Entrance Point Beach and extends into Roebuck Bay in a South-Easterly direction. A plan showing the location of the Proposal is provided as Attachment 1 BBF General Arrangement.

The proposed BBF is located on land managed by the Kimberley Port Authority (KPA), with Lot 621 on the land side which is designated for Harbour Purposes and Lot 651 offshore as part of the Port of Broome Waters.

Land tenure is shown on Attachment 4 – Project Land Tenure.

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**1.6 What is the size of the proposed action area development footprint (or work area) including disturbance footprint and avoidance footprint (if relevant)?**

The Development Footprint and Disturbance Footprint are presented in Attachment 1 BBF General Arrangement and Attachment 3 – Development Footprint, and includes:

- Development Footprint (Area 8.0 Ha)
- Disturbance Footprint (Area 5.5 Ha)

Note the shapefile of the Development Footprint reports the area to be 7.97 Hectares (rounded to 8 Ha) and has been mapped on the correct datum and projection for Broome, WA. This has been confirmed.

**1.7 Proposed action location**

Other - Entrance Point Beach, Kabbarli Rd, Broome, Western Australia.

**1.8 Primary jurisdiction** Western Australia

**1.9 Has the person proposing to take the action received any Australian Government grant funding to undertake this project?**

☑ Yes ☐ No

**1.9.1 Provide detail**

The Project is seeking Commonwealth grant funding to supplement an existing State commitment. The State Government is actively pursuing a Commonwealth contribution toward the capital cost of the project. The State will be responsible for implementing and funding the cost of environmental avoidance, mitigation and management measures.

The following contacts are provided in response to the detil in the re-submission request or this item:

Kimberley Ports Authority (KPA) is a key stakeholder as the project is wholly located within land and seabed under the control of the KPA, and consequently the action is not subject to local government planning approval.
Contact details for the KPA are provided below:
Lot 549 Port Drive, Broome WA 6725
Phone (08)9194 3100
Email: operations@kimberleyports.wa.gov.au

The Shire of Broome is the relevant local government and is a key project stakeholder. The Council contact is the Chief Executive Officer. Contact details for the Shire are below:

The Chief Executive Officer
Shire Administration Centre
Cnr Weld and Haas Street
PO Box 44, Broome 6725
Phone: (08) 9191 3456
Email: shire@broome.wa.gov.au

**1.10 Is the proposed action subject to local government planning approval?**

☐ Yes ☑ No

| **1.11 Provide an estimated start and estimated end date for the proposed action** | Start Date | 01/07/2022 |
|---|---|---|
| | End Date | 01/06/2025 |

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**1.12 Provide details of the context, planning framework and state and/or local Government requirements**

For several decades the community, visitors and authorities in Broome have reported significant concerns regarding the small boat handling hazards in the area. Over the years there have been many incidents and accidents associated with launching and retrieving trailerable vessels. Significant injuries and lost and damaged vehicles have continued to be reported during the 2021 tourist season. The Department of Transport oversees matters of Marine Safety and regulation of marine infrastructure in Western Australia. In addition to the safety concerns there continue to be impacts to the coastal and nearshore environment associated with sub-standard boat ramps and informal beach launching and retrieval in the area. These impacts include localised pollution, coastal erosion, disturbance of marine fauna and avifauna and damage to coastal flora and vegetation.

The need to improve small boating facilities in Broome has long been recognised and the existing small vessel infrastructure in Broome is well below existing design standards and the quality of infrastructure generally available elsewhere in Regional Western Australia.

The boat ramp and carparking elements of the BBF will be located within lands vested in the KPA and zoned as Port Reserve in the Broome Shire Town Planning Scheme No.6 (Shire of Broome, 2015). This zoning allows for the provision of tourism and recreational activities associated with the port activities. An area of Coastal Reserve is located to the northwest as well as a Landscape Protection Area (SCA 7) which overlays the Port and Coastal Reserves. This Landscape Protection Area has been defined to ensure the preservation and conservation of environmental assets, including Monsoon Vine Thickets.

The land and adjacent water reserves at the proposed boating facility site are generally regulated and managed by the KPA. However, KPA has relinquished some land to conservation areas to be managed as part of the Yawuru Conservation Estate. The adjacent nearshore waters are located within the limits of the Port of Broome and are managed by the KPA and beyond this is the Yawuru Nagulagun/Roebuck Bay Marine Park (Attachment 4 - Project Land Tenure). The Roebuck Marine Park, which is managed by the Commonwealth, is located approximately 12 km west of Broome and has a contiguous boundary with the Yawuru Nagulagun/Roebuck Bay Marine Park.

The Western Australian Environmental Protection Act 1986 (EP Act) is the primary legislation that governs environmental impact assessment (EIA) and environmental protection in Western Australia. EIA in Western Australia is conducted by the Environmental Protection Authority (EPA) which has prepared administrative procedures for the purposes of establishing the practices of EIA. Proposals likely to have a significant impact on the environment are required to be referred to the EPA under Section 38 of the EP Act. A pre-referral meeting was held on 4 March 2021 with the Department of Water and Environmental Regulation (DWER) to discuss the proposal and seek guidance on the key environmental impacts, factors and mitigation measures. This proposal was referred under the EP Act on 16 November 2021.

The key decision-making authorities and other relevant approvals for the proposal are identified in the table attached as Attachment 5 - DMAs.

**1.13 Describe any public consultation that has been, is being or will be undertaken, including with Indigenous stakeholders**

Significant engagement has taken place with the community, a summary of which is provided in Attachment 14 - BBF Engagement History - CONFIDENTIAL. This includes:

- Community consultation and surveys through information sessions, public displays, a dedicated website and a significant online survey. Attachment 6 – Community survey report PUBLIC
- DoT summary of outcomes of consultation on heritage issues and dinosaurs. (Attachment 7 UPDATE Project Siting Report Heritage Dinosaurs CONFIDENTIAL) PDF Pages 1-21
- The Yawuru community is the primary local Indigenous population and they have been extensively consulted and engaged with on this project (In 2019 the Nyamba Buru Yawuru led a multi-criteria assessment and workshops to review the project against local cultural heritage and environmental concerns. Their recommendations relating to the facility location and design have been incorporated and a letter of support for the project has been received from their Executive and collaborative work is ongoing. (Attachment 8 - Letters of Support - CONFIDENTIAL (PDF page 6-7)
- The Goolarabooloo Community is also recognised as a key Indigenous stakeholder and additional engagement with this group planned during 2022.
- Throughout project planning there has been considerable liaison with academics from the Queensland University and the local Dinosaur Coast Management Group (DCMG) about potential impacts to known dinosaur prints and trackways. Following a detailed survey of dinosaur prints and trackways (Attachment 7 UPDATE Project Siting Report Heritage Dinosaurs CONFIDENTIAL; PDF Pages 35-85) the project location was shifted from Beacon Hill Beach, dredging was removed from the design, and the facility has been scaled and adjusted to avoid potential impacts to known dinosaur prints in the area. The final design secured support from the University of Queensland academic and the DCMG in 2020.
- Letters of support from stakeholders are attached. Attachment 8 – Letters of Support CONFIDENTIAL

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**1.14 Describe any environmental impact assessments that have been or will be carried out under Commonwealth, State or Territory legislation including relevant impacts of the project**

Environmental Impact Assessment – Western Australian Environmental Protection Act 1986 (EP Act)

Proposals likely to have a significant impact on the environment are required to be referred to the Western Australian Environmental Protection Authority under Section 38 of the EP Act. A pre-referral meeting was held on 4 March 2021 with the Department of Water and Environmental Regulation (DWER) to discuss the proposal and seek guidance on the key environmental impacts, factors and mitigation measures. Following this meeting it was determined to refer the project to the EPA for assessment of potential impacts with respect to the preliminary key environmental factors identified which are:

- Marine Fauna
- Coastal Processes
- Social Surroundings

The project was referred to the EPA on 16 November 2021.

No significant impacts on any Matters of National Environmental Significance are anticipated from the proposed BBF.

**1.15 Is this action part of a staged development (or a component of a larger project)?**

☐ Yes ☑ No

**1.16 Is the proposed action related to other actions or proposals in the region?**

☐ Yes ☑ No

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## Section 2

**Matters of national environmental significance**

**2.1 Is the proposed action likely to have any direct or indirect impact on the values of any World Heritage properties?**

☐ Yes ☑ No

**2.2 Is the proposed action likely to have any direct or indirect impact on the values of any National Heritage places?**

☑ Yes ☐ No

**Place**

The West Kimberley was added to National Heritage Register in August 2011. Dinosaur footprints on the Dampier Coast were recognised as having outstanding heritage

value. The proposed action location is 5km outside of the southern limit of the coastal strip of the West Kimberley National Heritage Area. The Proponent has funded studies and extensively collaborated in relation to dinosaurian prints and tracks. Although not in the West Kimberley National Heritage Area dinosaurian tracks have been found to occur in the vicinity of the proposed BBF area. The location of the two known tracks at the proposed BBF are within the Dinosaur Footprint Buffer Zones shown on the map included as Attachment 12 - Dinosaur Print Buffer Zones (CONFIDENTIAL).

**Impact**

The BBF design has undergone numerous refinements to avoid these zones so that direct impacts are avoided. The disturbance footprint has been modified to ensure that no structure is located over the on-shore track or the offshore track-bearing reef (Attachment 7, Sections 3.2 & 4, pages 15 to 22).

There is a possibility of minor indirect impacts within the buffer zones as a result of sedimentation which may occur during construction or due to changes in sediment transport noting that no impact was identified through the coastal process modelling undertaken for the project.

**2.2.2 Do you consider this impact to be significant?**

☐ Yes ☑ No

**2.3 Is the proposed action likely to have any direct or indirect impact on the ecological character of a Ramsar wetland?**

☑ Yes ☐ No

**Wetland**

Roebuck Bay Wetland of International Importance (declared as a wetland of significance in 1990 under the Ramsar Convention) located~12km east of the proposed boating facility.

**Impact**

Given the distance from the project to the RAMSAR site, it is considered unlikely that the proposed action would have any impacts on the Roebuck Bay RAMSAR Wetland

There is a possibility of minor indirect impacts to migratory birds through temporary displacement which may, in turn, impact the wetland although this is considered extremely unlikely. (Attachment 2, Section 9.1, Page 58 & 59).

No significant impacts are expected as a result of the proposed action.

**2.3.2 Do you consider this impact to be significant?**

☐ Yes ☑ No

**2.4 Is the proposed action likely to have any direct or indirect impact on the members of any listed species or any threatened ecological community, or their habitat?**

☑ Yes ☐ No

**Species or threatened ecological community**

A search of the EPBC Act's Protected Matters Search Tool identified the presence of one Threatened (Declared Rare-Extant) flora species; Seringia exastia and one Threatened Ecological Community (TEC); monsoon vine thickets of the coastal sand dunes of Dampier Peninsula. The search identified the TEC as being "likely" to occur within a 5 km buffer area of the BBF and the Threatened flora species as being "known" to occur within a 5km buffer of the BBF area.

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**Impact**

Potential indirect impact from dust during construction. However, a preliminary vegetation survey indicates that the Development Envelope does not contain this flora species or overlap with this TEC so direct or indirect impacts from the proposed action are not anticipated (Attachment 2, Section 9.1, Page 58 & 61).

**Species or threatened ecological community**

Searches of the EPBC Act Protected Matters Search Tool (PMST), DBCA database and NatureMap databases identified 23 listed threatened marine species that may occur in the area. Assessment of the Likelihood of Occurrence identified 6 marine mammals, 3 marine reptiles; and 3 sharks and rays that were considered highly likely to occur in the area and are listed under the EPBC Act. (Attachment 2, Section 5.3, Page 39-40).

Balaenoptera musculus Blue Whale
Dugong dugon Dugong
Megaptera novaeangliae Humpback Whale
Orcaella heinsohni Irrawaddy Dolphin/ Australian Snubfin
Sousa chinensis Indo-Pacific Humpback dolphin
Tursiops aduncus Indo-Pacific/ Spotted Bottlenose Dolphin
Caretta caretta Loggerhead turtle
Chelonia mydas Green turtle
Natator depressus Flatback turtle
Pristis clavata Dwarf Sawfish
Pristis pristis Freshwater Sawfish
Pristis zijsron Green Sawfish V, MM

**Impact**

Potential for minor direct and indirect impacts as a result of construction activities.
Noise impacts from underwater noise during construction (pile driving) on marine species
Introduced marine species from construction plant or vessels during operations
Accidental fuel spills to water resulting in toxic effects on marine fauna
collision impacts from construction and operational vessel movements.
Attachment 2, Section 9.1, Page 58.

**Species or threatened ecological community**

Birds
71 EPBC listed bird species may occur in the area—67 migratory and 4 non-migratory). Assessment of the Likelihood of Occurrence identified 13 bird species considered highly likely to occur in the area (Attachment 2, Section 5.3, Page 47-480).
Calidris canutus Red Knot, Knot
Calidris ferruginea Curlew Sandpiper
Calidris tenuirostris Great Knot
Charadrius leschenaultia Greater Sand Plover, Large Sand Plover
Charadrius mongolus Lesser Sand Plover, Mongolian Plover
Limosa lapponica baueri Bar-tailed Godwit (Baueri), Western Alaskan Bar- Tailed Godwit
Limosa lapponica Menzbieri Northern Siberian Bar-tailed Godwit, Bar-tailed Godwit (menzbieri)
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew
Papasula abbotti Abbotts Booty
Pluvialis fulva Pacific Golden Plover
Pluvialis squatarola Grey Plover
Tyto novaehollandiae Kimberli Masked Owl (northern)
Xenus cinereus Terek Sandpiper

**Impact**

Potential temporary displacement and/or disturbance of terrestrial fauna and migratory shorebirds during construction as a result of land clearing and construction activities. No significant impacts anticipated.
EPBC Act listed species were observed within the proposed BBF impact area. However, none of these species were detected in conservation significant numbers within the BBF impact area, nor did the site support a onservation significant total abundance or diversity of conservation significant and/or migratory shorebirds. Surrounding sites including within the Yawuru Nagulagun/ Roebuck Bay Marine Park and Roebuck Bay Ramsar wetlands found several sites supporting much greater, nationally significant, numbers of foraging and roosting migratory shorebirds (Attachment 2, Section 6.3, Page 48).

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**Species or threatened ecological community**

Mammal terrestrial animals
Searches of the EPBC Act Protected Matters Search Tool 1 listed threatened terrestrial species that may occur in the area. An assessment of the Likelihood of Occurrence identified Macrtis lagotis, Greater Bilby was considered highly likely to occur in the area. (Attachment 2, Section 5.3, Page 47-48).

**Impact**

Potential temporary displacement and/or disturbance of terrestrial fauna during construction as a result of land clearing and construction activities. Possible very minor loss of habitat. No significant impacts anticipated.
Attachment 2, Section 9.1, Page 57 - 58.

**Species or threatened ecological community**

Reptile terrestrial animals
Searches of the EPBC Act Protected Matters Search Tool 1 listed threatened terrestrial species that may occur in the area. An assessment of the Likelihood of Occurrence identified Ctenotus angusticeps, Airlie Island Ctenotus was considered highly likely to occur in the area. This species may occur in the BFF Area however is not known to occur in Pindan (the habitat comprising the disturbance area). (Attachment 2, Section 5.3, Page 48).

**Impact**

Potential temporary displacement and/or disturbance of terrestrial fauna during construction as a result of land clearing and construction activities. Possible very minor loss of habitat. No significant impacts anticipated.
Attachment 2, Section 9.1, Page 57 - 58.

**2.4.2 Do you consider this impact to be significant?**

☐ Yes ☑ No

**2.5 Is the proposed action likely to have any direct or indirect impact on the members of any listed migratory species or their habitat?**

☑ Yes ☐ No

**Migratory species**

Searches of the EPBC Act Protected Matters Search Tool identified 22 EPBC listed migratory marine species. An assessment of the Likelihood of occurrence identified 5 marine mammals, 3 marine reptiles; and 3 sharks and rays that were considered highly likely to occur in the area. (Attachment 2, Section 5.3, Page 39-40).

Dugong dugon Dugong
Megaptera novaeangliae Humpback Whale
Orcaella heinsohni Irrawaddy Dolphin/ Australian Snubfin
Sousa chinensis Indo-Pacific Humpback dolphin
Tursiops aduncus Indo-Pacific/ Spotted Bottlenose Dolphin
Caretta caretta Loggerhead turtle
Chelonia mydas Green turtle
Natator depressus Flatback turtle
Pristis clavata Dwarf Sawfish
Pristis pristis Freshwater Sawfish
Pristis zijsron Green Sawfish

**Impact**

Potential for minor direct and indirect impacts as a result of construction activities.
Noise impacts from underwater noise during construction (pile driving) on marine species
Introduced marine species from construction plant or vessels during operations
Accidental fuel spills to water resulting in toxic effects on marine fauna
collision impacts from construction and operational vessel movements.
Attachment 2, Section 9.1, Page 58.

**Migratory species**

Migratory birds
Searches of the EPBC Act Protected Matters Search Tool identified 67 listed migratory shorebird species. An assessment

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of the Likelihood of occurrence eleven migratory shorebirds were considered highly likely to occur in the area (Attachment 2, Section 6.3, Page 47).

Calidris canutus Red Knot, Knot
Calidris ferruginea Curlew Sandpiper
Calidris tenuirostris Great Knot
Charadrius leschenaultia Greater Sand Plover, Large Sand Plover
Charadrius mongolus Lesser Sand Plover, Mongolian Plover
Limosa lapponica baueri Bar-tailed Godwit (Baueri), Western Alaskan Bar- Tailed Godwit
Limosa lapponica Menzbieri Northern Siberian Bar-tailed Godwit, Bar-tailed Godwit (menzbieri)
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew
Pluvialis fulva Pacific Golden Plover
Pluvialis squatarola Grey Plover
Xenus cinereus Terek Sandpiper

**Impact**

Potential temporary displacement and/or disturbance of migratory shorebirds during construction as a result of land clearing and construction activities. No significant impacts anticipated

EPBC Act listed species were observed within the proposed BBF impact area. However, none of these species were detected in conservation significant numbers within the BBF impact area, nor did the site support a conservation significant total abundance or diversity of conservation significant and/or migratory shorebirds. Surrounding sites including within the Yawuru Nagulagun/ Roebuck Bay Marine Park and Roebuck Bay Ramsar wetlands found several sites supporting much greater, nationally significant, numbers of foraging and roosting migratory shorebirds (Attachment 2, Section 6.3, Page 48).

**2.5.2 Do you consider this impact to be significant?**

☐ Yes ☑ No

**2.6 Is the proposed action to be undertaken in a marine environment (outside Commonwealth marine areas)?**

☑ Yes ☐ No

**2.6.1 Is the proposed action likely to have any direct or indirect impact on the Commonwealth marine environment?**

☐ Yes ☑ No

**2.7 Is the proposed action likely to be taken on or near Commonwealth land?**

☐ Yes ☑ No

**2.8 Is the proposed action taking place in the Great Barrier Reef Marine Park?**

☐ Yes ☑ No

**2.9 Is the proposed action likely to have any direct or indirect impact on a water resource from coal seam gas or large coal mining development?**

☐ Yes ☑ No

**2.10 Is the proposed action a nuclear action?**

☐ Yes ☑ No

**2.11 Is the proposed action to be taken by a Commonwealth agency?**

☐ Yes ☑ No

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**2.12 Is the proposed action to be undertaken in a Commonwealth Heritage place overseas?**

☐ Yes ☑ No

**2.13 Is the proposed action likely to have any direct or indirect impact on any part of the environment in the Commonwealth marine area?**

☐ Yes ☑ No

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## Section 3

### Description of the project area

**3.1 Describe the flora and fauna relevant to the project area**

The study area falls within the Dampier Botanical District, which is broadly characterised by Pindan formation on sandplains. Vegetation can be classified as Pindan or Pindan Woodland, with both vegetation types dominated by Acacia species. Other habitat types present in the Port of Broome area include coastal sand dunes, open woodland and open woodland of mixed species and monsoon thicket on lower slopes behind dunes and secondary dunes (Attachment 2, Section 6.2m Page 44).

Several Flora and Vegetation surveys have been conducted over the Broome Peninsular in 2008, 2013 and 2016. Open Woodland was the dominant floristic community type identified on the Broome Peninsula but was generally found further inland and along the coast the dominate vegetation type is generally shrubland dominated by Acacia, and Open Woodland of mixed species. The Declared Rare-Extant flora Seringia exastia (formerly Keraudrenia exastia) has been identified north of Kavite Road.

Immediately north of the proposed Development Footprint the vegetation is considered to be poor/disturbed and dominated by weeds

Threatened flora and ecological communities within/near the proposed action are presented in Attachement 16 - Threatened flora and ecological communities.

A search of the EPBC Act's Protected Matters Search Tool identified the presence of one Threatened (Declared Rare-Extant) flora species; Seringia exastia and one Threatened Ecological Community (TEC); monsoon vine thickets of the coastal sand dunes of Dampier Peninsula. The search identified the TEC as being "likely" to occur within a 5 km buffer area of the BBF and the Threatened flora species as being "known" to occur within a 5km buffer of the BBF area. This TEC is likely to be found within the swales of coastal sand dunes in patches that contain different arrangements of plants. These patches work as an ecological network across the whole Peninsula and conservation and management efforts must therefore treat the network as a whole to keep them connected. A flora survey conducted on the Broome Peninsula by Coffey Environmental (2013 and 2016) did not identify the monsoon vine thicket TEC within the Broome Peninsula. (Attachment 2, Section 6.2m Page 44).

However, a reconnaissance survey in March 2020 identified areas of this TEC to the north of the BBF site and was found to be in very good to good condition. However, this TEC is not located in close proximity to the development proposal and will not be impacted by the BBF proposal. (Attachment 2, Section 6.2m Page 44).

Relevant Marine Fauna see (Attachment 2, Section 5.3 Page 39 to 41).

Humpback (Megaptera novaeangliae) and blue whales (Balaenoptera musculus) are known to migrate annually past Broome northwards between April and August and south from August to October. Northward migration typically occurs further offshore (~70 km) than during the southward migration (~40 km offshore).The inshore waters around Broome can be used for breeding and resting and may also be used by cow and calf pods. Whale watching tours in Broome are run between July and September each year.

Dugongs (Dugong dugon) are known to occur in Roebuck. Dugong have been recorded feeding on seagrass beds in the northern areas of Roebuck Bay, often within the intertidal zone close to the township of Broome but are a highly mobile species that move in and out of the Bay dependant on resource.

A number of conservation significant dolphin species are likely to occur in the Broome area, including Australian snubfin (Orcaella brevirostris); Indo-Pacific Humpback dolphin (Sousa chinensis) and Spotted bottlenose dolphin (Tursiops aduncus). Dolphins are known to congregate throughout the year in the nearshore waters of Roebuck Bay which provide an important habitat for breeding, feeding and calving.

Loggerhead (Caretta caretta) and Green (Chelonia mydas) regularly transit Roebuck Bay during migrations and use the area for seasonal feeding (on the shallow seagrass meadows in the north of Roebuck Bay). Flatback turtles (Natator depressus) are also known to nest in the area during the wet season at Cable Beach (~10 km north of the BBF area) and at Cape Villaret and Jacks Creek (~40 km south of the BBF area) (Turtle nesting is not known to occur in the vicinity of the proposed BBF.

The dwarf sawfish (Pristis clavata), freshwater sawfish (Pristis pristis) and green sawfish (Pristis zijsron) are known to be present in Roebuck Bay. Tracking surveys have shown that sawfish prefer shallow mudflat and sandbank areas where they rest during slack tide periods. In Roebuck Bay these areas (including tidal creeks, mangroves and adjacent mudflats) are used for foraging, as nursery areas and refuge The area of the proposed BBF is not considered suitable habitat for sawfish.

**3.2 Describe the hydrology relevant to the project area (including water flows)**

3.2 Describe the hydrology relevant to the project area (including water flows)

Surface water runoff in the Broome area is only generated after periods of heavy rainfall (typically associated with tropical cyclone events) and is quickly discharged from the area, often as sheet wash (Laws, 1991; Kelly, 2015). These freshwater runoff events are known to strongly influence marine, surface and groundwater turbidity and nutrient concentrations (Bennelongia et al., 2009). There are no wetlands or watercourses in the proposed BBF area and surface water flows are limited to natural stormwater runoff through the sand dunes onto the beach.

The Pindan sands supports a fresh superficial aquifer which is underlain by the Broome Sandstone aquifer (Kelly, 2015).

The Broome Sandstone aquifer is a shallow, fresh to brackish, unconfined aquifer system which is recharged by direct infiltration from rainfall and influenced by tides (Bennelongia et al., 2009; Ecological Australia, 2016; Wright, 2013). Both aquifers discharge to the coast, with some Broome Sandstone aquifer discharged below the low tide mark within Roebuck Deeps (Wright, 2013). Groundwater levels in the area are approximately +2 to +3 m AHD and vary seasonally with highest levels in April and lowest in November/December (Kelly, 2015).

Seaward flows of surface and ground water are considered to strongly influence the ecological character of Roebuck Bay through changes in salinity (that affect the distribution of species such as mangroves) and the transport of dissolved and particulate nutrients and carbon (Bennelongia et al., 2009; Ecological Australia, 2018).

**3.3 Describe the soil and vegetation characteristics relevant to the project area**

Vegetation can be classified as Pindan or Pindan Woodland, with both vegetation types dominated by Acacia species (GHD, 2009). Other habitat types present in the Port of Broome area include; coastal sand dunes, open woodland and open woodland of mixed species and monsoon thicket on lower slopes behind dunes and secondary dunes (DEC TEC 67 Monsoon Vine Thickets) (Bamford & Turpin, 2008). The dominate vegetation type is generally shrubland dominated by Acacia, and Open Woodland of mixed species. The Declared Rare-Extant flora Seringia exastia (formerly Keraudrenia exastia) has been identified north of Kavite Road.

The Broome area is characterised by a low-lying, gently undulating plain of red Pindan dunes rising to between 3 and 8 m Australian Height Datum (AHD) (Cardno, 2014). The Pindan dunes were formed during the Quaternary and are composed of iron rich fine-grained sand to silt sediments The Pindan dunes were formed during the Quaternary and are composed of iron rich fine-grained sand to silt sediments and are overlain in parts by Holocene dunes composed of marine sands. On the Broome Peninsular, the Pindan soils overlay the cretaceous Broome Sandstone (Wright, 2013; DPI, 2008). The Broome Sandstone forms the bedrock over a large part of the Dampier Peninsula and is formed from terrestrial sediments which were deposited in a deltaic environment (Salisbury & Romilio, 2018).

**3.4 Describe any outstanding natural features and/or any other important or unique values relevant to the project area**

On the Broome Peninsular, the Pindan soils overlay the cretaceous Broome Sandstone (Wright, 2013; DPI, 2008). The Broome Sandstone forms the bedrock over a large part of the Dampier Peninsula and is formed from terrestrial sediments which were deposited in a deltaic environment (Salisbury & Romilio, 2018).

Surficial exposure of the Broome Sandstone is generally limited to the nearshore environment, but the Sandstone deposit extends down to a depth ~300 m. Outcrops of the Broome Sandstone at the BBF site occur offshore where they form a series of complex reefs and onshore where it forms headlands and bluff features (which are overlain with Holocene dunes). At the shoreline, the Broome Sandstone may be covered with a thin highly mobile veneer of marine sediments. The Broome Sandstone forms a shore platform which extends to a depth of approximately -10 m CD and is exposed to form several areas of complex reef bathymetry. Offshore the bathymetry drops steeply to depths of -50 m CD, an area known as the Roebuck Deeps (DPaW, 2016b).

Dinosaur tracks have been identified in areas of Broome Sandstone exposed at the coast, in particularly at Gantheaume Point, Reddell Point and Entrance Point (Salisbury & Romilio, 2018). Two dinosaurian track features have been observed at the proposed BBF area: isolated sauropod tracks and partial trackways on detached rock platforms on the upper shore and near the edge of the outer reef (Salisbury & Romilio, 2018).

**3.5 Describe the status of native vegetation relevant to the project area**

Corymbia paractica - Priority Ecological Communities (PEC), PEC11 - High potential to occur
Species or species habitat known to occur within area. Refer to (Attachment 2, p 44) & (Attachment 10, p 9)

Goodenia byrnesii - High potential to occur
Species or species habitat known to occur within area Refer to (Attachment 10, p 9)

Monsoon Vine Thicket - TEC 67: Corymbia paractica - Priority Ecological Communities (PEC), PEC11
High potential to occur
Species or species habitat known to occur within area (Attachment 2, p 44) & (Attachment 10, p 9)

Goodenia byrnesii
High potential to occur
Species or species habitat known to occur within area (Attachment 10, p 9)

Monsoon Vine Thicket - TEC 67
High potential to occur

Species habitat known to occur within area (Attachment 2, p 44&45) & (Attachment 10, p10)

Sersalisia sericea (Minyjuru) - PEC12
High potential to occur
Species or species habitat known to occur within area (Attachment 2, p 44&45) & (Attachment 10, p 10)

Seringia exastia (Fringed Fire-bush) - Threatened (Declared Rare-Extant)
High potential to occur
Species or species habitat known to occur within area (Attachment 2, p 44&45) & (Attachment 10, p 10)

High potential to occur
Species habitat known to occur within area. Refer to (Attachment 2, p 44&45) & (Attachment 10, p10)

Sersalisia sericea (Minyjuru) - PEC12
High potential to occur
Species or species habitat known to occur within area Refer to (Attachment 2, p 44&45) & (Attachment 10, p 10)

Seringia exastia (Fringed Fire-bush) - Threatened (Declared Rare-Extant)
High potential to occur
Species or species habitat known to occur within area (Attachment 2, p 44&45) & (Attachment 10, p 10)

**3.6 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the project area**

The toe of the boat ramp will extend to a depth of +0.5 m Chart Datum which, together with the groynes and offshore breakwater, will provide boat launching through 90% of tidal conditions. Just beyond the proposed BBF the seabed drops off steeply into a channel (Roebuck Deep) that has a maximum depth of approximately 110 m.

**3.7 Describe the current condition of the environment relevant to the project area**

Marine Environment:

The condition of the marine environment is currently considered to be in good condition. Due to limited disturbance and a high degree of flushing, the water quality in Roebuck Bay is generally considered to be of a high quality, although it can be highly variable between seasons.

Recent sediment sampling in the vicinity of the Broome Jetty has found concentrations of metals, benzene, toluene, ethylbenzene and xylene (BTEX), organic pesticides, organotin, polycyclic aromatic hydrocarbons (PAH), and total petroleum hydrocarbon (TPH) to be below the National Assessment Guidelines for Dredging (NAGD; Commonwealth of Australia 2009) screening levels for marine sediment (Ecological, 2016; Worley Parsons, 2013).

Contaminant concentrations in marine waters have been found to be low and below the relevant guidelines (ANZECC 2000) (Ecological Australia 2016). Monitoring at the Port in 2018, during the dry season, found that the water quality was achieving a high level of ecological protection (O2 Marine, 2018). The only parameter that was not found to be within range of the lower and upper limit of default trigger values for tropical Australia Guidelines (ANZECC/ARMCANZ, 2000) was pH which was above the upper default trigger value.

Terrestrial Environment:

Three contaminated sites, in the Port of Broome, are listed under the Contaminated Sites Act (2004) and are located to the north and west of the BBF site. Site investigations in 2013 on Lots 621 and 698 (which are used as a slipway for boat repair) identified areas of elevated levels of zinc, hydrocarbons, organochlorine pesticides and asbestos containing materials and fibres. Remediation works were undertaken in 2014/2015 and a Site Management Plan has been prepared and these Lots were classified on 27 July 2018 as ‘Remediated for restricted use’ and the site is suitable for continued commercial/industrial use. The Broome Port tank farm is located on Lot 848 and was classified on 27 August 2012 as ‘Contaminated—remediation required’ due to the presence of hydrocarbons in soils and groundwater beneath the drum platform and phase separated hydrocarbons are present on the water table near a diesel bowser in the northern portion of the site. The KPA undertakes six-monthly groundwater monitoring in the Port of Broome. Data from 2017/2018 shows many exceedances of the water quality guideline values (ANZECC, 2000), including total phosphorus, total nitrogen, nitrate, cadmium, chromium, copper, lead and zinc) (Ecological Australia, 2018). KPA is required to prepare a Remediation Action Plan to assess and remediate groundwater contamination at the diesel bowser.

**3.8 Describe any Commonwealth Heritage places or other places recognised as having heritage values relevant to the project**

There are a number of historical wreck sites in the vicinity of the BBF Area (DoEE 2018) protected under the Commonwealth HS Act but the exact location of many of these shipwreck sites is unknown (BMT 2018). There are no known World War II artefacts or shipwrecks of significance in the proposed BBF area and a multibeam survey has since confirmed this. The closest known shipwreck is 1.2 km north of the proposed BBF area in Roebuck Bay. Disturbance of a historical

wreck or artefact is therefore considered very unlikely.

The proposed BBF is located within 5 km of the West Kimberley National Heritage Area (Shown on Attachment 11) which is afforded protection under the 1999 Environmental Protection and Biodiversity Conservation Act (Salisbury and Romilio 2018). This area is recognised for the presence of dinosaur footprints which are typically associated with the areas of exposed Broome Sandstone.

**3.9 Describe any Indigenous heritage values relevant to the project area**

Implementation of the proposal is expected to result in minor disturbance of the Entrance Point/Yinara Aboriginal Heritage Site. The Yawuru community is the local Indigenous population and they have been extensively consulted and engaged with on this project. In 2019 the Yawuru led a multi-criteria assessment and workshops to assess the project against local cultural heritage and environmental concerns. Their recommendations relating to the facility location and design have been incorporated and a letter of support for the project has been received from their Executive (Attachment 8) and collaborative work is ongoing. The Goolaraboolo Community also holds heritage interests in the project area and further consultation and engagement with that community is planned during 2022.

**3.10 Describe the tenure of the action area (e.g. freehold, leasehold) relevant to the project area**

The proposed actions will take place entirely within Port of Broome waters and Land, which are managed by the Kimberley Ports Authority and zoned as 'Port' in the Shire of Broome Town Planning Scheme. The existing boating facilities in the same location at Entrance Point are Port assets at present. No change is proposed to the existing tenure. The Project area is entirely within Crown Land and Seabed under a Management Order to the Kimberley Ports Authority. Details of the tenure are included at Attachment 4 – Project Land Tenure

**3.11 Describe any existing or any proposed uses relevant to the project area**

The existing site is currently used for boat launching and trailer parking. The Proposal is an upgrade and expansion to the existing boat launching facilities and infrastructure at Entrance Point to address safety, demand and access issues.

Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

## Section 4

**Measures to avoid or reduce impacts**

**4.1 Describe the measures you will undertake to avoid or reduce impact from your proposed action**

Attachment 18 Details measures that will be undertaken to avoid or reduce any impacts from the proposed action including for;

- Marine Fauna – Attachment 18 (page 1) and Attachment 15 (page 1)
- Coastal Processes – Attachment 18 (page 1)
- Heritage Sites and Values – Refer to Attachment 18 (page 2) and a site map showing the proposal in relation to indicative buffer zones to dinosaur tracks: Attachment 12 - Dinosaur Print Buffer Zones CONFIDENTIAL
- Benthic Communities and Habitat – Attachment 18 (page 3)
- Marine Environmental Quality– Attachment 18 (page 3)
- Flora and Vegetation– Attachment 18 (page 3)
- Terrestrial Environmental Quality– Attachment 18 (page 3)
- Terrestrial Fauna– Attachment 18 (page 4)

**4.2 For matters protected by the EPBC Act that may be affected by the proposed action, describe the proposed environmental outcomes to be achieved**

The following environmental outcomes are described in the context of the proposed management and mitigation.

West Kimberley NHP (Dinosaur Footprints)

Implementation of the Proposal in accordance with the defined mitigation, management and monitoring actions will ensure the following Environmental Outcomes for the values of the West Kimberley NHP: No impacts to dinosaur footprints or trackways.

Monsoon Vine Thicket TEC

Implementation of the Proposal in accordance with the defined mitigation, management and monitoring actions will ensure the following Environmental Outcomes for the Monsoon Vine Thicket TEC: No impacts to any areas of Monsoon Vine Thicket TEC.

Marine Fauna

The combined impact of the proposed action after implementing defined mitigation, management and monitoring actions will ensure the following environmental outcomes:

- No direct or indirect impacts to important habitats (i.e. nesting, nursery, foraging or breeding areas), for any conservation significant marine fauna species.
- No harm to any individual conservation significant fauna species.
- No reduction in populations of species of local and/or regional importance.
- No reduction in the biodiversity of marine fauna in the Development Envelope or surrounds.
- Temporary disturbance of marine fauna present in the vicinity of piling operations, possibly resulting in temporary behavioural changes to avoid the noise-affected area.

Migratory Shorebirds

Implementation of the proposed action in accordance with the defined mitigation, management and monitoring actions will ensure the following Environmental Protection Outcomes for migratory shorebirds:

- No reduction in the regional (i.e. Broome & Roebuck Bay) population of migratory shorebirds, including Ruddy Turnstone;
- No harm to any migratory shorebird species;
- No reduction in the biodiversity of migratory shorebirds in the Development Envelope or surrounds; and
- Temporary disturbance of migratory shorebirds present in the vicinity of construction activities, possibly resulting in temporary behavioural changes to avoid the noise-affected area.

Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

## Section 5

### Conclusion on the likelihood of significant impacts

**5.1 You indicated the below ticked items to be of significant impact and therefore you consider the action to be a controlled action**

- ☐ World Heritage properties
- ☐ National Heritage places
- ☐ Wetlands of international importance (declared Ramsar wetlands)
- ☐ Listed threatened species or any threatened ecological community
- ☐ Listed migratory species
- ☐ Marine environment outside Commonwealth marine areas
- ☐ Protection of the environment from actions involving Commonwealth land
- ☐ Great Barrier Reef Marine Park
- ☐ A water resource, in relation to coal seam gas development and large coal mining development
- ☐ Protection of the environment from nuclear actions
- ☐ Protection of the environment from Commonwealth actions
- ☐ Commonwealth Heritage places overseas
- ☐ Commonwealth marine areas

**5.2 If no significant matters are identified, provide the key reasons why you think the proposed action is not likely to have a significant impact on a matter protected under the EPBC Act and therefore not a controlled action**

World Heritage properties
The project area is not located within or adjacent to any World Heritage Areas.

National Heritage places
The project area is not located within a National Heritage Place. The West Kimberley National Heritage Place is located ~500 m (on the western side of the Entrance Point peninsula) from the proposed location. The West Kimberley National Heritage Place is recognised for the value of geological and fossil evidence of Australia's evolutionary history (DoEE, 2011), which are typically associated with the areas of exposed Broome Sandstone (Salisbury & Romilio, 2018). Relocating the site, removal of dredging and reducing the size and scale of the facility has avoided direct impacts to known dinosaur prints and tracks within the Broome Sandstone (via Dinosaur Footprint Buffer Zones, Attachment 12) and associated geological and cultural features.

Wetlands of international importance (declared Ramsar wetlands)
The project will be located ~10 km west of the Roebuck Bay RAMSAR Wetland. This wetland is a tropical marine embayment with extensive, biologically diverse intertidal mudflats. However, given the distance from the project to the RAMSAR site, it is considered unlikely that the BBF would have any impacts on the Roebuck Bay RAMSAR Wetland.

Listed threatened species, or any threatened ecological community
The PMST search also identified the 'Monsoon vine thickets on the coastal sand dunes of the Dampier Peninsula' may occur within 5 km of the project area (Attachment 9 – EPBC Protected Matters Report). However, a preliminary vegetation survey indicates that the Development Envelope does not overlap with this TEC.

Listed migratory species
Piling operations have the potential to result in temporary behavioural response in whales, dugong, dolphins, turtle and sawfish during piling operations, which may cause them to avoid the affected area. However, through avoiding piling in deep water (>5m), key environmental windows (i.e. humpback whale migration) and application of stringent underwater noise management procedures all potential residual impacts on these species can be avoided. The operational phase of the project is not predicted to have any impact on conservation significant marine fauna species. With the application of appropriate management measures, significant direct or indirect impacts from the proposed action on listed migratory marine species are not anticipated.

Migratory shorebird species that have been identified from field surveys within the BBF impact area have not been identified in significant numbers. The proposed action location is ~10 km west of the Roebuck Bay intertidal mudflats which support globally significant numbers of migratory shorebirds and water birds (Bennelongia et al., 2009; DPaW, 2016). The proposed action is therefore not expected to have any direct or indirect impacts on any listed migratory shorebirds or their habitat.

Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

## Section 6

**Environmental record of the person proposing to take the action**

**6.1 Does the person taking the action have a satisfactory record of responsible environmental management? Explain in further detail**

YES - The Department of Transport (DoT) is the State Government proponent for the proposed BBF. The DoT presently manages over 40 maritime facilities throughout Western Australia and will be responsible for facilitating the design, approvals and construction of the BBF. Following construction, the Kimberley Ports Authority will assume responsibility for the ongoing management of the facility with ongoing support from DoT and the Shire of Broome.

**6.2 Provide details of any past or present proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against either (a) the person proposing to take the action or, (b) if a permit has been applied for in relation to the action – the person making the application**

Nil

**6.3 If it is a corporation undertaking the action will the action be taken in accordance with the corporation's environmental policy and framework?**

☑ Yes ☐ No

**6.3.1 If the person taking the action is a corporation, provide details of the corporation's environmental policy and planning framework**

Refer to The Department of Transport's Environmental Policy and Framework.
Attachment 19 – Environmental Management Policy Framework and Guidelines

**6.4 Has the person taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act?**

☑ Yes ☐ No

**6.4.1 EPBC Act No and/or Name of Proposal**

This application: EPBC 2021/9098

Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

## Section 7

**Information sources**

**Reference source**

ANZECC. (2000). National Water Quality Management Strategy. Australian and New Zealand Guidelines for Fresh and Marine Water Quality. https://www.waterquality.gov.au/anz-guidelines/framework.

Animal Plant Mineral. Preliminary assessment of conservation significance values for road alignment options for the proposed Broome Boating Facility. Technical Memorandum 2020.

**Reliability**

Yes

**Uncertainties**

No

**Reference source**

Baird. (2017). Broome Townsite. Coastal Hazard Risk Management and Adaption Plan. Document number 12518.101.R2. RevC. Final Report.

Baird. (2019). Broome small boating facility: Coastal processes Report. Prepared for Department of Transport. Fremantle, Western Australia.

Baird (2020). Modelling of Revised Concept for Broome Boating Facility. Prepared for Department of Transport. Fremantle, Western Australia.

Bamford, M.J. (1988). Kakadu National Park: a Preliminary Survey of Migratory Waders, October/November 1987. RAOU Report Series. 41:1-34. Melbourne: Royal Australasian Ornithologists Union.

**Reliability**

Yes

**Uncertainties**

No

**Reference source**

Baird. (2017). Broome Townsite. Coastal Hazard Risk Management and Adaption Plan. Document number 12518.101.R2. RevC. Final Report.

Baird. (2019). Broome small boating facility: Coastal processes Report. Prepared for Department of Transport. Fremantle, Western Australia.

Baird (2020). Modelling of Revised Concept for Broome Boating Facility. Prepared for Department of Transport. Fremantle, Western Australia.

Bamford, M.J. (1988). Kakadu National Park: a Preliminary Survey of Migratory Waders, October/November 1987. RAOU Report Series. 41:1-34. Melbourne: Royal Australasian Ornithologists Union.

**Reliability**

Yes

**Uncertainties**

No

**Reference source**

Bennelongia, DHI, WRM. (2009). Ecological Character Description for Roebuck Bay. Prepared for Department of Environment and Conservation by Bennelongia Pty Ltd and DHI Water & Environment Pty Ltd, Wetland Research & Management, Perth, Western Australia, April 2009.

**Reliability**

Yes

**Uncertainties**

No

Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

**Reference source**

DPaW. (2015). Yawuru Birragun Conservation Park. Draft Management Plan 2015. Western Australia.
DPaW. (2016a). Joint Management Plan for the Yawuru Minyirr Buru Conservation Park. Draft: V8.1 – 19 July 2016.
DPaW (2016b) Yawuru Nagulagun / Roebuck Bay Marine Park Joint Management Plan 2016, Management Plan 86. Department of Parks and Wildlife, Perth, Western Australia, 2016.

**Reliability**

Yes

**Uncertainties**

No

**Reference source**

Nyamba Buru Yawuru. (2018). Proposed safe boat harbour location – Preliminary cultural heritage impact assessment.

**Reliability**

Yes

**Uncertainties**

No

**Reference source**

Ornithological Technical Services. (2020). Broome Boating Facility Project: Migratory Shorebird Assessment. Prepared for Department of Transport, June 2020.

**Reliability**

Yes

**Uncertainties**

No

**Reference source**

Pendoley, K.L. (2005). Sea turtles and the environmental management of industrial activities in north-west Western Australia. Ph.D. Thesis. PhD Thesis, Murdoch University: Perth

**Reliability**

Yes

**Uncertainties**

No

**Reference source**

Salisbury, S.W & Romilio, A. (2018). Dinosaurian tracks and related geological features of the Reddell Point-Entrance point area, Broome, Western Australia; Palaeontological survey as part of the 2018 Broome safe boat harbour site assessment process. Viii +42. The University of Queensland, Brisbane, QLD 4072.
Salisbury, S. W., A. romilio, M. C. herne, R. T. Tucker, and J. P. Nair. 2017. The dinosaurian ichnofauna of the Lower Cretaceous (Valangian–Barremian) Broome Sandstone of the Walmadany area (James Price Point), Dampier Peninsula, Western Australia. Society of Vertebrate Paleontology Memoir 16:1–152.

**Reliability**

Yes

**Uncertainties**

No

Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

**Reference source**

Shire of Broome. (2014). Shire of Broome State of the Environment Report.
Shire of Broome. (2014). Municipal Inventory of heritage places.
Shire of Broome. (2015). Local Planning Scheme No. 6. Prepared by the Department of Planning, Lands and Heritage. Original town planning scheme gazettal.

**Reliability**

Yes

**Uncertainties**

No

**Reference source**

Thums M, Jenner C, Waples K, Salgado Kent C, Meekan M. (2018) Humpback whale use of the Kimberley; understanding and monitoring spatial distribution. Report of Project 1.2.1 prepared for the Kimberley Marine Research Program, Western Australian Marine Science Institution, Perth, Western Australia, 78pp. Tourism WA. Shire of Broome visitor factsheet. Three year average 2015/2016/2017. Produced by Tourism WA – Strategy and Reaserch.
ANZECC. (2000). National Water Quality Management Strategy. Australian and New Zealand Guidelines for Fresh and Marine Water Quality. https://www.waterquality.gov.au/anz-guidelines/framework.
Animal Plant Mineral. Preliminary assessment of conservation significance values for road alignment options for the proposed Broome Boating Facility. Technical Memorandum 2020.

**Reliability**

Yes

**Uncertainties**

No

**Reference source**

Maxwell, S., Burbidge, A.A. and Morris, K. (1996). Action Plan for Australian Marsupials and Monotremes. Environment Australia, Canberra.
Cardno. (2014). Broome Coastal Vulnerability study. Shoreline Stability Analysis. Prepared for the Shire of Broome.
Wright, N. (2013). Hydrogeology and Hydrochemistry of the Unconfined Aquifer of the Broome Peninsula, Honours Manuscript, Curtin University Perth Western Australia, Novemeber 2013.
Woodman Environmental Consulting. (2008). Floristic Community Types of the Broome Peninsula. Report Prepared for Broome Port Authority.
Worley Parsons. (2013a). Broome Boating Facility. Sediment Sampling and Analysis Plan Implementation Report. Report prepared for Department of Transport.
Worley Parsons. (2013b). Broome Boating Facility. Benthic Primary Producer Habitat Survey Mapping Report. Report prepared for Department of Transport.

**Reliability**

Yes

**Uncertainties**

No

**Reference source**

Laws, A.T. (1991). Geological survey of Western Australia Hydrogeological series - Explanatory notes on the Broome 1: 250 000 hydrogeological sheet. Broome Western Australia. Prepared for Department of Mines Western Australia.
Kelly, D. (2015). Groundwater flow and solute transport modelling of the unconfined Broome aquifer: Broome Peninsula, Western Australia. FNAS Research Project Thesis. The University of Western Australia.
GHD (2009). Land Corp Broome North – Northern Portion (Area B) Preliminary Environmental Impact Assessment Biological Survey.
GHD (2014). Main Roads WA Cape Leveque Road Upgrade Greater Bilby Management Plan. GHD Australia, Western Australia.
GHD. (2017). Kimberley Technology Solutions Pty Ltd, Cockatoo Island Multi-User Supply Base Technical Study-Marine Flora and Fauna.

Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

Biologic. (2012). Ctenotus angusticeps Targeted Survey: Onslow to Broome. Prepared for BHP Billiton Iron Ore Pty Ltd.

**Reliability**

Yes

**Uncertainties**

No

**Reference source**

Department of Agriculture, Water and Environment (DAWE). (2020). Australian National Shipwreck Database. Search conducted of Broome Region on 21st December 2020. Accessed Online: http://www.environment.gov.au/heritage/historic-shipwrecks/australian-national-shipwreck-database.

**Reliability**

Yes

**Uncertainties**

No

Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

## Section 8

### Proposed alternatives

**Do you have any feasible alternatives to taking the proposed action?**

Yes ☑ No

Australian Government
Department of Agriculture, Water and the Environment

Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

## Section 9

## Person proposing the action

**9.1.1 Is the person proposing the action an organisation or business?**

☑ Yes ☐ No

**Organisation**

| | |
|---|---|
| **Organisation name (as registered for ABN/ACN)** | Department of Transport |
| **Business name** | |
| **ABN** | 27285643255 |
| **ACN** | |
| **Business address** | 5 Newman Ct, Fremantle, 6160, WA, Australia |
| **Postal address** | |
| **Main Phone number** | 0428911558 |
| **Fax** | |
| **Primary email address** | james.holder@transport.wa.gov.au |
| **Secondary email address** | |

**9.1.2 I qualify for exemption from fees under Regulation 5.23(1)(ii) of the EPBC Regulations because I am:**

☐ Small business
☑ Not applicable

**9.1.2.2 I would like to apply for a waiver of full or partial fees under Regulation 5.21A of the EPBC Regulations**

☐ Yes ☑ No

**9.1.3 Contact (for an organisation - the contact details of the person authorised to sign on behalf of the organisation)**

| | |
|---|---|
| **First name** | Steve |
| **Last name** | Jenkins |
| **Job title** | Executive Director Maritime |
| **Phone** | |
| **Mobile** | 041919062 |
| **Fax** | |
| **Email** | Steve.Jenkins@transport.wa.gov.au |
| **Primary address** | 5 Newman Ct, Fremantle, 6160, WA, Australia |
| **Address** | |

**Declaration: Person proposing the action (To be signed by the person at 9.1.3)**

I, Steve Jenkins on behalf of The Department of Transport, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf or for the benefit of any other person or entity.

Signature: ..... Date: 2.2.22

I, Steve Jenkins on behalf of The Department of Transport, the person proposing the action, consent to the designation of The Department of Transport as the proponent for the purposes of the action described in this EPBC Act Referral.

Signature: ..... Date: 2.2.22

Australian Government
Department of Agriculture, Water and the Environment

Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

## Proposed designated proponent

**9.2.1 Is the proposed designated proponent an organisation or business?**

☑ Yes ☐ No

**Organisation**

| | |
|---|---|
| **Organisation name (as registered for ABN/ACN)** | Department of Transport |
| **Business name** | |
| **ABN** | 27285643255 |
| **ACN** | |
| **Business address** | 5 Newman Ct, Fremantle, 6160, WA, Australia |
| **Postal address** | |
| **Main Phone number** | 0428911558 |
| **Fax** | |
| **Primary email address** | james.holder@transport.wa.gov.au |
| **Secondary email address** | |

**9.2.2 Contact (for an organisation - the contact details of the person authorised to sign on behalf of the organisation)**

| | |
|---|---|
| **First name** | Steve |
| **Last name** | Jenkins |
| **Job title** | Executive Director Maritime |
| **Phone** | 94357661 |
| **Mobile** | 041919062 |
| **Fax** | |
| **Email** | Steve.Jenkins@transport.wa.gov.au |
| **Primary address** | 5 Newman Ct, Fremantle, 6160, WA, Australia |
| **Address** | |

**Declaration: Proposed Designated Proponent**

I, **Steve Jenkins on behalf of The Department of Transport**, the proposed designated proponent, consent to the designation of myself as the proponent for the purposes of the action described in this EPBC Act Referral.

Signature: ..... Date: 2.2.22

Australian Government
Department of Agriculture, Water and the Environment

Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

## Referring party (person preparing the information)

**9.3.1 Is the referring party an organisation or a business?**

☑ Yes ☐ No

### Organisation

| | |
|---|---|
| **Organisation name (as registered for ABN/ACN)** | Department of Transport |
| **Business name** | |
| **ABN** | 27285643255 |
| **ACN** | |
| **Business address** | 5 Newman Ct, Fremantle, 6160, WA, Australia |
| **Postal address** | |
| **Main Phone number** | 0428911558 |
| **Fax** | |
| **Primary email address** | james.holder@transport.wa.gov.au |
| **Secondary email address** | |

**9.3.2 Contact (for an organisation - the contact details of the person authorised to sign on behalf of the organisation)**

| | |
|---|---|
| **First name** | James |
| **Last name** | Holder |
| **Job title** | Manager Maritime Projects |
| **Phone** | 0428911558 |
| **Mobile** | |
| **Fax** | |
| **Email** | James.holder@transport.wa.gov.au |
| **Primary address** | 5 Newman Ct, Fremantle, 6160, WA, Australia |
| **Address** | |

**Declaration: Referring party (person preparing the information)**

**I, _____, declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence.**

**Signature:** ..... **Date:** 10/2/2022

Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

## Appendix A

### Attachment

| Document Type | File Name |
|---|---|
| action_area_images | *Attachment 1.pdf |
| action_area_images | *Attachment 2.pdf |
| action_area_images | Att 1 BBF General Arrangement.pdf |
| action_area_images | Att 2 Preliminary Environmental Impact Assessment.pdf |
| action_area_images | Att 3 Development Footprint.pdf |
| govt_approval_conditions | *Attachment 5.pdf |
| govt_approval_conditions | *Attachment 6.pdf |
| public_consultation_reports | *Attachment 4.pdf |
| public_consultation_reports | *Attachment 3.pdf |
| public_consultation_reports | Att 5 - DMAs.pdf |
| public_consultation_reports | Att 6 Community Survey Report PUBLIC.pdf |
| public_consultation_reports | *Att 7 DoT Project Siting Report - Heritage and Dinosaurs CONFIDENTIAL.pdf |
| public_consultation_reports | **Att 8 Letters of Support CONFIDENTIAL.pdf |
| public_consultation_reports | Att 4 Project Land Tenure.pdf |
| public_consultation_reports | **Att 7 UPDATE Project Siting Report Heritage Dinosaurs CONFIDENTIAL.pdf |
| supporting_tech_reports | *Attachment 8.pdf |
| supporting_tech_reports | *Attachment 9.pdf |
| supporting_tech_reports | *Attachment 10.pdf |
| supporting_tech_reports | *Attachment 11.pdf |
| supporting_tech_reports | *Attachment 7.pdf |
| supporting_tech_reports | Att 11 - MAP Features of Conservation Significance.pdf |
| flora_fauna_investigation | *Attachment 12b.pdf |
| flora_fauna_investigation | *Attachment 12a.pdf |
| flora_fauna_investigation | Att 16 Theatened Flora and Ecological Communities MAP.pdf |
| flora_fauna_investigation | Att 17 Description of Flora and Fauna.pdf |
| flora_fauna_investigation | Att 10 - Likelihood of Occurrence Assessment.pdf |
| flora_fauna_investigation | Att 9 - EPBC Protected Matters Report.pdf |
| flora_fauna_investigation | Att 13 - Migratory Shorebird Assessment.pdf |
| impact_reduction_docs | *Attachment 13.pdf |
| impact_reduction_docs | *Attachment 14.pdf |
| impact_reduction_docs | Att 18 - Measures to avoid or reduce impact from the proposed action.pdf |
| impact_reduction_docs | Att 15 Piling Noise Management Plan.pdf |
| impact_reduction_docs | **Att 12 -Dinosaur Print Buffer Zones CONFIDENTIAL.pdf |
| impact_reduction_docs | **Att 14 BBF Engagement history - CONFIDENTIAL.pdf |
| corp_env_policy_docs | Att 19 Environmental Management Policy Framework and Guidelines.pdf |

* NOT PUBLISHED - SUPERSEDED
** NOT PUBLISHED - CONFIDENTIAL

## Appendix B

### Coordinates

| Area 1 |
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Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

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Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

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