

NATIVE VEGETATION CLEARING PERMIT APPLICATION

BROOME TOWN BEACH GROUYNE UPGRADE AND JETTY PROJECT

PREPARED FOR:

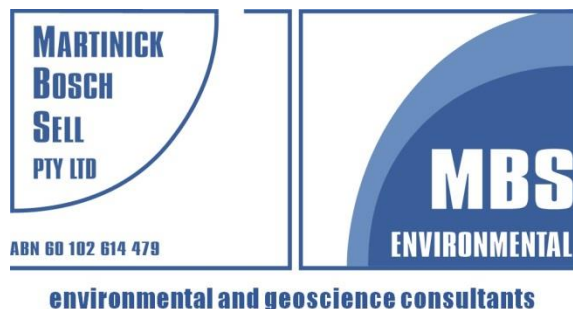


AUGUST 2019

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1. SUMMARY

Town Beach is located approximately 1 km south of the centre of Broome, facing south east into Roebuck Bay. Town Beach is a significant location for Broome people and for visitors to the town, with an important role in recreation, culture and heritage. Viewing of the Staircase to the Moon draws thousands of visitors each year, the children's water park and playground is highly popular and night markets attract large crowds. Town Beach is also the home of Indigenous heritage values; the Pioneer Cemetery, the Catalina Flying Boat wrecks and the Broome Historical Society Museum (Shire of Broome 2017a).

The Shire of Broome is proposing to undertake an upgrade of the Town Beach Jetty as part of a set of upgrades to Broome's Town Beach, in the Kimberley region of Western Australia. The Broome Town Beach Groyne Upgrade and Jetty Project (the Proposal) includes upgrades to the existing groyne and the construction of a new jetty extending offshore from this groyne. Clearing of a total of 0.28 ha of native vegetation (mangroves) is required.

An assessment against the ten clearing principles was undertaken based on information collected from a desktop review of the Proposal area, and a site inspection.

The assessment of the proposed clearing against the ten clearing principles determined that the clearing of 0.28 ha of vegetation (mangroves) for the Proposal would not be at variance with nine of the ten clearing principles but was likely to be at variance to one principle. Appropriate environmental management procedures will be implemented to ensure potential impacts associated with the clearing are minimised.

2. INTRODUCTION

2.1 LOCATION

The clearing area is located approximately 1 km south of the centre of Broome, facing southeast into Roebuck Bay (Figure 1). Town Beach is a significant location for Broome people and for visitors to the town, with an important role in recreation, culture and heritage. Viewing of the Staircase to the Moon draws thousands of visitors each year, the children's water park and playground is highly popular and night markets attract large crowds. Town Beach is also the home of Indigenous heritage values; the Pioneer Cemetery, the Catalina Flying Boat wrecks and the Broome Historical Society Museum (Shire of Broome 2017a).

2.2 BACKGROUND

Broome has experienced rapid and continued growth over the last decade to become one of the fastest growing towns in the State (Shire of Broome 2017b). Several major upgrades to Broome's Town Beach are underway, including the development of precincts for heritage, youth and nature play areas, terraced viewing for the Staircase to the Moon, a look-out and memorial, and expansion of the existing water park. The improvements are part of a Town Beach Precinct Master Plan drawn from the Old Broome Development Strategy that was produced following extensive consultation and input from the community (Cardno (WA) 2014). The Proposal will build on these existing strengths and attractions, enhancing the experience for both the Broome community and visitors (Shire of Broome 2017a).

In late 2018, following referral to the EPA and grant of a native vegetation clearing permit (CPS 8006/1), a revetment seawall was constructed immediately to the north of the Town Beach Jetty (Plate 1) as a defence against the severe erosion of the Pindan cliffs (Plate 1) (Shire of Broome 2017b).

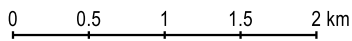
2.3 THE PROPOSED CLEARING

The Proposal involves upgrades to the historic Town Beach Jetty, present as a groyne structure and in a state of disrepair, with erosion ongoing (Plate 2). The remains of a previous jetty structure occur to the west of the groyne structure. The groyne upgrades require the clearing of mangroves immediately adjacent to the Town Beach Jetty (Figure 2).

The *Environmental Protection Act 1986* (EP Act) and *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* require that all land clearing activities are approved by the Department of Water and Environment Regulation (DWER) in the form of a Clearing Permit (CP). This report supports the application for a CP (Area Permit) for 0.28 ha of clearing for the proposed groyne upgrade.



Scale: 1:50000
 Original Size: A4
 Image: Copernicus Sentinel Data 2019
 Grid: GDA 94 MGA Zone 51



Shire of Broome
 Town Beach Jetty

Figure 1

Location Plan

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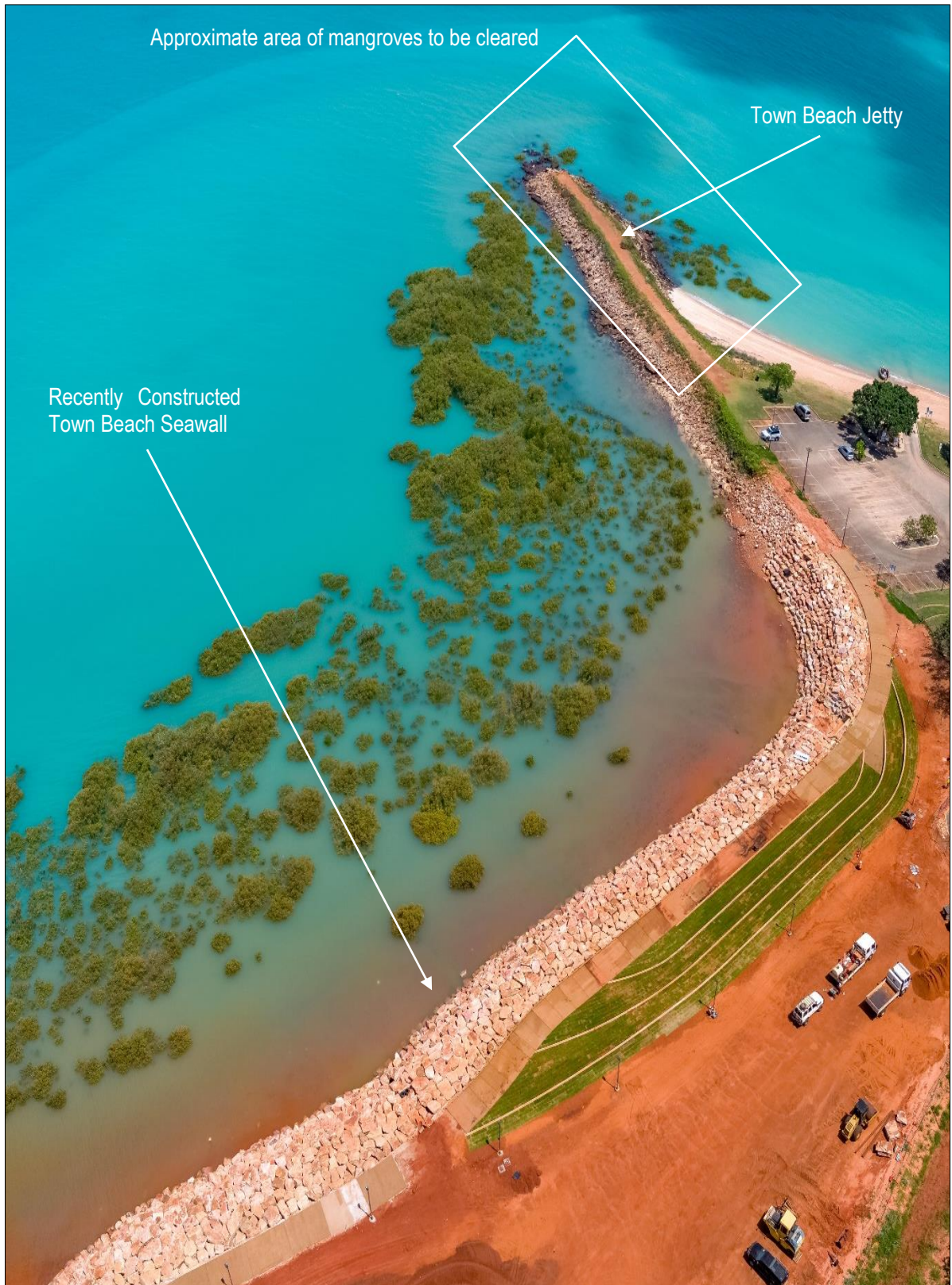


Plate 1: Recently Constructed Town Beach Seawall and Adjacent Town Beach Jetty (Roadline 2019)



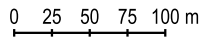
**Plate 2: Evidence of erosion at Seaward end of Town Beach Jetty
(MBS Environmental 2019)**



Legend

- Clearing Area
- Approximate Mangrove Extent

Scale: 1:5000
 Original Size: A4
 Grid: GDA 94 MGA Zone 51



Shire of Broome
 Town Beach Jetty

Figure 2

Clearing Area in Relation to Mangrove Habitat

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2.4 TENURE

The groyne is located on Reserve 31340 (Lot 556 on Plan 77711 and Lot 600 on Plan 410010). The Shire of Broome has a land management order over Reserve 31340 for the purpose of Drainage, Recreation, Historical and Cultural Display, Caravan Park and Café. Land below the low water mark comes under the management of the Kimberley Ports Authority.

2.5 ABORIGINAL AND EUROPEAN HERITAGE

On 25 February 2010 agreements recognising the connection of the Yawuru People with land in and around Broome were signed. These Indigenous Land Use Agreements (ILUAs) were registered by the National Native Title Tribunal on 6 August 2010. Various lands were transferred to Yawuru ownership, enabling the traditional owners to actively participate in the development of Broome. These ILUAs also set aside land as conservation estate to be jointly managed by the Yawuru, the Department of Parks and Wildlife, and the Shire of Broome.

Within and adjacent to the Old Broome precinct, including Town Beach, there are several sites that are under the tenure of the Yawuru. The entire foreshore is significant to the Yawuru, with Roebuck Bay being a traditional foraging area.

The Town Beach Jetty is an important historical site representing the shipping and pearling industries that were the foundation and sustenance of settlement and development in Broome (Shire of Broome 2017c). Town Beach Jetty is listed (as the 'Mangrove Point Jetty') by the State Heritage Office as 'Other Heritage Listings and Surveys - Municipal Inventory' (#04860). It is categorised as Grading B, with the following description:

"A place of considerable cultural heritage significance to Shire of Broome that is worthy of recognition and protection through provisions of the Shire of Broome's Town Planning Scheme. Planning application needs to be submitted to Shire of Broome for any proposed development. Recommend: Retain and conserve the place. Undertake photo record of the place prior to any development."

2.6 ENVIRONMENTAL SETTING

2.6.1 Climate

The northern coastal region of Western Australia is characterised by the Koppen and Geiger Climate Classification as BSh – hot semi-arid climate featuring hot summers, and warm to cool winters (BoM 2017). The closest official Bureau of Meteorology (BoM) weather station currently operating is Broome Airport where quality controlled climate data is available dating back to 1939. The minimum average monthly temperature ranges from 13.7°C to 26.5°C and maximum average monthly temperature ranges from 28.9°C to 34.3°C (BoM 2017). Rainfall of more than 1 mm occurs on average on 35.5 days per year, with the maximum mean monthly rainfall being 191.1 mm (during January). The annual average rainfall is approximately 622.8 mm per annum (BoM 2017).

2.6.2 Soils

Soils are described as: “*CarpentariaSystem_335Cr: Coastal Plains, extensive bare mud flats, associated sandy margins and minor dunes, saline sands and muds, supporting paperbark thickets, samphire shrublands and fringing mangrove forests*”.

2.6.3 Vegetation

Vegetation mapping of the Broome area was completed on a broad scale (1:250,000) by Beard (1972-80). These vegetation units were re-assessed by Shepherd et al. (2001) to account for clearing in the intensive land use zone, dividing some larger vegetation units into smaller units. There is one Beard / Shepherd vegetation unit in the area adjacent to the clearing area: “*Dampierland_750: Pindan woodland. Acacia thicket with eucalypt woodland over spinifex Acacia tumida, Eucalyptus tectifica, Corymbia grandifolia, Triodia pungens, T. bitextura*” (Shepherd et al. 2001). No terrestrial native vegetation is proposed to be cleared.

Grey mangroves (*Avicennia marina*) occur adjacent to the existing groyne (Plate 1, Figure 2). Beyond the clearing area, to the north and south, and around the eastern shoreline of Roebuck Bay, are larger areas of mature mangrove habitat including the Grey mangrove (*Avicennia marina*) and the Stilted mangrove (*Rhizophora stylosa*).

3. ASSESSMENT OF CLEARING PRINCIPLES

3.1 NATIVE VEGETATION CLEARING PRINCIPLES

Clearing applications are assessed against 10 principles as outlined in Schedule 5 of the *EP Act 1986*. These principles aim to ensure that all potential impacts resulting from removal of native vegetation are assessed in an integrated way and apply to all lands throughout Western Australia. The principles address the four environmental areas of biodiversity significance, land degradation, conservation estate and ground and surface water quality.

The following sections discuss the potential impacts associated with clearing for the upgrade works. A summary of the outcomes of the assessment against the 10 Clearing Principles is provided in Table 1.

Table 1: Summary of Clearing Assessment Against Clearing Principles

Principle Number	Clearing Principle	Outcome
a	Native vegetation should not be cleared if it comprises a high level of biological diversity.	Not at variance
b	Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.	Not at variance
c	Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.	Not at variance
d	Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a Threatened Ecological Community (TEC).	Not at variance
e	Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.	Not at variance
f	Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.	Likely at variance
g	Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.	Not at variance
h	Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation areas.	Not at variance
i	Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.	Not at variance
j	Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence of flooding.	Not at variance

3.2 BIODIVERSITY

Clearing principle a: Native vegetation should not be cleared if it comprises a high level of biological diversity.

A small number of isolated mangroves occur within the intertidal disturbance area. These mangroves do not represent a diverse community (only one species, *Avicennia marina*, is present).

The proposed clearing is not at variance to Principle a.

3.3 SIGNIFICANT FAUNA HABITAT

Clearing principle b: Native vegetation should not be cleared if it comprises the whole or part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

The proposed clearing area does not contain significant fauna habitat, only small, isolated, mangroves. Beyond the clearing area, to the north and south, are larger areas of mature mangrove habitat which are more likely to be utilised by fauna species as they provide denser and more structurally diverse habitat.

The clearing for the purpose of the groyne upgrade is minimal and the clearing area does not contain significant habitat for fauna indigenous to Western Australia

The proposed clearing is not at variance to Principle b.

3.4 SIGNIFICANT FLORA

Clearing principle c: Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

Available Department of Biodiversity Conservation and Attractions (DBCA) databases document one rare flora species (*Seringia exastia*) as having been recorded in the local area. *Seringia exastia* is known from 18 locations in the Broome area, from red sandy soils associated with hummock grasslands. Noting the absence of this habitat, the proposed clearing is highly unlikely to impact this species (DBCA 2018b).

The proposed clearing is not at variance to Principle c.

3.5 THREATENED ECOLOGICAL COMMUNITIES

Clearing principle d: Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community.

Two Threatened Ecological Communities (TECs) have been recorded in the region. TEC 44 the 'Species-rich faunal community of the intertidal mudflats of Roebuck Bay' occurs adjacent to the clearing area and TEC 67 the 'Monsoon (vine) thickets on coastal sand dunes of Dampier Peninsula' occurs approximately 1,400 m from the clearing area (DBCA 2018b, 2018c).

Minor impacts to mudflats immediately adjacent to the groyne may occur (the total clearing area is 1.28 ha of which less than half comprises intertidal sand and mud habitat), but will be minor at a local scale and negligible at a regional scale.

The clearing area does not include native vegetation that comprises the whole or a part of, or is necessary for the maintenance of, a TEC, and the proposed clearing is not at variance to Principle d.

3.6 REMNANT VEGETATION

Clearing principle e: Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

The vegetation to be cleared is not significant as a remnant of native vegetation in an area that has been extensively cleared. Extensive mangroves occur across the local area and more regionally (refer Section 2.6.3).

The proposed clearing will not be at variance with Clearing Principle e.

3.7 WATERCOURSE OR WETLAND ENVIRONMENTS

Clearing principle f: Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

No watercourses occur within or adjacent to the clearing area. The Roebuck Bay wetland (DBCA-045) / Directory of Important Wetlands Roebuck Plains System (WA021) overlaps the clearing area.

The clearing will impact up to 0.28 ha of mangroves or up to 7.7% of the locally mapped extent, refer Figure 2. Extensive mangroves occur across the local area and more regionally (refer Section 2.6.3).

The clearing is likely to be at variance with principle f.

3.8 LAND DEGRADATION

Clearing principle g: Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

The purpose of the clearing is to allow the refurbishment of the groyne, which is currently in a state of disrepair, with erosion ongoing (Plate 2). Thus the clearing will reduce the risk of land degradation that is currently contributing to sediment loads and coastal instability in the area.

The proposed clearing is not at variance to Principle g.

3.9 CONSERVATION ESTATE

Clearing principle h: Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

The Yawuru Nagulagun/Roebuck Bay Marine Park occurs to the east and south of the clearing area. The proposed clearing is approximately 1 km away from the Marine Park and will not impact the values of this conservation area.

The proposed clearing is not at variance to Principle h.

3.10 SURFACE AND GROUNDWATER QUALITY

Clearing principle i: Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

There are no underground or surface freshwater features within the proposed clearing area and therefore no impacts to surface or underground water quality will result from the clearing.

The clearing of mangroves adjacent to the groyne has the potential to cause slight increases in turbidity in the marine environment and this will be managed through the use of silt curtains (as required) during the clearing and construction phases. As a result, significant deterioration in the quality of marine water quality is considered unlikely.

The proposed clearing is not at variance to Principle i.

3.11 FLOODING POTENTIAL

Clearing principle j: Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence of flooding.

The clearing area faces Roebuck Bay and is largely protected from significant wave action during ambient conditions but can be subject to erosion in cyclone events (Baird 2017). Advice from the Roebuck Bay Caravan Park stated that the park operators have been using selective fill and vegetation to control erosion, and associated flood risk, along this section of the shoreline since 1990 which has proved effective for stabilisation of the coast (Baird 2017). The shoreline is noted as currently stable based on historical record and monitoring of the shoreline position is ongoing (Baird 2017).

The clearing of a small area of small mangroves immediately adjacent to the groyne is not expected to cause, or exacerbate, the incidence of flooding. The upgrade of the groyne, along with the recently completed seawall (refer Plate 1), will assist in stabilising the coast and mitigating the flood risk.

The proposed clearing is not at variance to Principle j.

4. CONCLUSION

The proposed clearing was assessed as not at variance with nine of the ten clearing principles.

The proposed clearing is likely to be at variance to Principle f due to the proposed clearing of mangrove habitat within the Roebuck Bay wetland (DBCA-045) and Directory of Important Wetlands Roebuck Plains System (WA021). However, given the small scale of clearing and local and regional abundance of dense mangrove habitat, the clearing is unlikely to lead to any significant environmental impacts. All efforts will be made to minimise clearing and associated impacts to the environment.

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