

## MEMORANDUM

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TO	Department of Water and Environmental Regulation
FROM	Eco Logical Australia on behalf of Kimberley Ports Authority
DATE	23 February 2018
SUBJECT	<b>Native Vegetation Clearing Permit supporting information – Lot 621 Port Drive, Broome</b>

### Native Vegetation Clearing Permit - Lot 621, Port Drive, Broome

#### Introduction

Kimberley Ports Authority (KPA) manages the Port of Broome, located within the Kimberley region of Western Australia.

KPA needs to reduce vegetation on Lot 621 Port Drive, Broome (application area) (Figure 1) in order to undertake bush fire hazard reduction activities (e.g. slashing of low vegetation and mowing) around an existing dwelling, particularly given its proximity to an industrial fuel storage area. The total application area where the clearing will take place is 2 ha, however 0.38 ha of this area is already cleared (buildings and tracks). Not all vegetation within the application area is intended to be cleared. KPA intends to clear only low level shrubs and grasses, leaving trees in situ. The application area is within the Port Management Area (PMA), for which KPA is the manager. As required under the *Port Authorities Act 1999*, KPA operates under an Environmental Management Plan (EMP), which applies to all activities undertaken by KPA and guides the environmental management within the PMA.

KPA (as the former Broome Port Authority) previously obtained native vegetation clearing permit (NVCP) CPS 5873/1 to clear up to 0.16 ha on Lot 621 on Deposited Plan 70861, Reserve 28650 and Port Drive road reserve. This was for the purpose of installing underground power lines to the existing dwelling. Given that CPS 5873/1 remains valid until February 2019, the 2 ha subject to the current application does not include any of the area still approved for clearing under CPS 5873/1.

As the application area is located within an environmentally sensitive area (ESA), KPA is required to obtain a NVCP in accordance with the *Environmental Protection Act 1986*. This memo supports the application for a purpose permit to allow KPA to manage the risk of fire to property and buildings.

#### Existing environment

##### Flora and Vegetation

A number of flora and vegetation surveys have been undertaken across the application area. Woodman Environmental Consulting (Woodman) conducted a Level 2 flora and vegetation survey in 2007 and 2008 and a targeted survey for the undescribed *Scleria* species in 2009 within the PMA. Coffey conducted a targeted survey over the application area in 2013.

There were three conservation significant flora recorded from the surveys, but they do not occur within the application area (Woodman 2008, Coffey 2013).

A total of 14 introduced (weed) species were recorded by Woodman (2008) across the PMA. Two of the introduced species are listed as Declared Plants under the *Biosecurity and Agriculture Management Act 2007*, *Jatropha gossypifolia* (Bellyache bush) and *Ziziphus mauritiana* (Indian jujube). Neither of these plants were recorded within the application area. Two introduced species were recorded within the application area: *Cenchrus ciliaris* (Buffel grass) and *Passiflora foetida* (Stinking Passion flower). *Cenchrus ciliaris* is considered to be a highly invasive weed species (Coffey 2013).

None of the vegetation within the application area is considered to represent a TEC or PEC (Coffey 2013).

One floristic community type (FCT) defined by Woodman (2008) exists in the application area. FCT 4 is described as:

**FCT 4:** *Open Woodland of mixed Corymbia spp., Hakea macrocarpa and Persoonia falcata over Shrubland dominated by Acacia coleii var. coleii and other species such as Ehretia saligna var. saligna and Waltheria indica over grassland dominated by Triodia pungens and Triodia acutispicula on orange to red pindan soils on lower to upper slope positions.*

There are two Threatened Ecological Communities (TECs) and two Priority Ecological Communities (PECs) within the PMA. However, only one TEC (44: Roebuck Bay mudflats (*Species-rich faunal community of the intertidal mudflats of Roebuck bay*)) is in close proximity to the application area (approximately 250 m to the east) and will not be affected.

One *Sersalisia sericea* (Mangarr) plant was recorded on the northern boundary of the application area (see Figure 1) and is associated with the PEC 'Relict dune system dominated by extensive stands of *Mangarr Sersalisia* (formerly *Pouteria*) *sericea*' (Priority 1). However, the existence of one plant does not constitute the presence of the PEC, and the PEC is not considered to occur at this location (Coffey 2013).

The vegetation within the application area was recorded as good to degraded, with the occurrence of Buffel grass surrounding the buildings. The majority of vegetation surrounding the buildings are planted exotics, with very little native vegetation (Coffey 2013).

## Fauna

In 2009, Bamford Consulting Ecologist (Bamford) conducted a Level 1 fauna survey of the Broome Peninsula including the application area.

Nine fauna habitat types were recorded during the fauna survey. One fauna habitat is located within the application area, Pindan vegetation fauna habitat. This fauna habitat is associated with FCT 4.

The Pindan vegetation fauna habitat is widespread on the Broome Peninsula and in the region and occurs on orange to red Pindan soils in the southern half of the fauna survey area (Bamford 2010). The fauna habitat may support conservation significant species and also contain significant fauna habitat values, which include large hollow-bearing trees, particularly *Eucalyptus/Corymbia* species and *Ficus* species (Bamford 2010). No removal of trees is required within the application area.

Ten conservation significant species were recorded from or likely to occur across the Broome Peninsula (Bamford 2010). However the application area is a small area with good to degraded vegetation condition, the presence of Buffel grass and is fragmented with cleared areas and multiple tracks (Coffey 2013). It is also surrounded by industrial land uses and therefore it is considered to be of low value as habitat for conservation significant fauna.

## **Surface Water and Groundwater**

The application area is located with the Cape Leveque Coast drainage basin (DSEWPaC 2011) and is not within a proclaimed surface water management area (Department of Water 2009). There are no watercourses or wetlands within the application area. The nearest wetland of significance is at Roebuck Bay conservation reserve approximately 6 km northeast of the application area.

Groundwater resources in the Broome region comprise of both confined and unconfined aquifers (Laws 1991). The Cretaceous Broome Sandstone aquifer is an unconfined aquifer and the most utilised in the region. It comprises fine to coarse grained quartzose sandstone with minor beds and/or pebble conglomerate of grey siltstone and claystone. This aquifer is separated from the underlying aquifers by an aquiclude (the Jareldai Siltstone) and two confined aquifers Alexander Formation and the Wallal Sandstone (Laws 1991). Direct filtration from rainfall is the main recharge to the aquifer. A saltwater wedge occurs in the aquifer near Broome around the coast (Laws 1991). The regional groundwater moves with the gradient towards the coast (Laws 1991), west towards the Indian Ocean and south towards Roebuck Bay.

## **Assessment against the ten clearing principles**

Ten clearing principles have been developed under Schedule 5 of the *Environmental Protection Act 1986* to determine the impact of clearing native vegetation. Table 1 provides an assessment of the proposed clearing (maximum of 1.62 ha within 2 ha) against each of the ten clearing principles set out in Schedule 5 of the *Environmental Protection Act 1986*.

Figure 1 – Application area

**Assessment against the ten clearing principles**

**Table 1 Assessment against the ten clearing principles**

Principle	Assessment	Is the proposed clearing at variance?
<p>(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.</p>	<p>Woodman (2008) recorded a total of 167 vascular plant taxa, from 113 genera and 53 families from the flora study area on the Broome Peninsula during the August 2007 and April 2008 surveys. The number of native plant taxa recorded from Cable Beach resort in the north to the southern tip of the peninsula is low to moderate and not as high as other flora surveys undertaken in the area (Woodman 2008).</p> <p>Three conservation significant species were recorded from the flora survey (<i>Seringia exastia</i> previously <i>Keraudrenia exastia</i> – DRF, <i>Goodenia byrnesii</i> – P3, and <i>Triodia acutispicula</i> – P3). No conservation significant species were recorded from within the application area.</p> <p>No State or Federally listed TECs or PECs have been recorded within the application area. Two TECs and two PECs are known to occur nearby. The closest is TEC <i>Roebuck Bay Mudflats</i>, which is approximately 250 m east of the application area.</p> <p>One Mangarr (<i>Sersalisia sericea</i>) plant was recorded on the northern boundary of the application area. However, the presence of one plant does not indicate the presence of the PEC <i>Relict dune system dominated by extensive stands of Mangarr</i> (Coffey 2013) and this PEC is not present in the application area.</p> <p>The majority of vegetation surrounding the buildings within the application area is planted exotics, with very little native vegetation (Coffey 2013).</p>	<p>The proposed clearing is NOT considered to be at variance with this principle.</p>

Principle	Assessment	Is the proposed clearing at variance?
<p>(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.</p>	<p>Ten conservation significant fauna species were recorded or considered likely to utilise the fauna habitat present on the Broome Peninsula (Bamford 2010). These were: Barn Shallow (<i>Hirundo rustica</i> - M, S5), Fork-tailed Swift (<i>Apus pacificus</i> - M, S5), Grey Falcon (<i>Falco hypoleucos</i> - Vu, S3), Oriental Cuckoo (<i>Cuculus saturates</i> - M, S5), Peregrine Falcon (<i>Falco peregrinus</i> - S7), White throated Needletail (<i>Hirundapus caudacutus</i> - M, S5), Bilby (<i>Macrotis lagotis</i> - Vu, S3), Airlie Island Ctenotus (<i>Ctenotus angusticeps</i> - P3), Dampierland Burrowing Snake (<i>Simoselaps minimus</i> - P2), Dampierland Plain Slider (<i>Lerista separanda</i> - P2).</p> <p>Four of these species are migratory birds and are unlikely to be reliant on the fauna habitat within the application area.</p> <p>The native vegetation located within the application area does not reflect significant foraging, roosting or breeding habitat for the 10 conservation significant fauna species that have potential to occur on the Broome Peninsula.</p> <p>Impacts to this habitat and conservation significant species that may use it are not significant due to the small area being cleared in a local context and the absence of significant values within the application area. No trees are being removed.</p> <p>An ecological corridor allowing fauna movement from the southern tip of the peninsula to a larger area of native vegetation is located on the western edge of the Broome Peninsula. The application area is not part of this ecological linkage due to development on all sides, some of which has occurred after the Bamford survey was undertaken in 2009. The clearing associated with the application area will not disrupt the continuity of the ecological corridor.</p> <p>The fauna habitat in the application area is not considered to be significant for fauna as it is low quality due to the lack of native vegetation and the occurrence of invasive species (buffel grass). The removal of vegetation will not be a significant impact to fauna or habitat.</p>	<p>The proposed clearing is NOT considered to be at variance with this principle.</p>

Principle	Assessment	Is the proposed clearing at variance?
<p>(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of rare flora.</p>	<p>There are no records of any threatened flora species within the application area. Clearing of native vegetation will not directly or indirectly impact any known occurrences of threatened flora (Woodman 2008, Coffey 2013).</p> <p>The nearest threatened flora species known to occur within the PMA is <i>Seringia exastia</i> (previously <i>Keraudrenia exastia</i>) approximately 600 m northwest of the application area and is in a separate area set aside for conservation of the species.</p>	<p>The proposed clearing is NOT considered to be at variance with this principle.</p>
<p>(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.</p>	<p>No State or Federally listed TECs or PECs have been recorded within the application area.</p> <p>Two TECs and two PECs are known to occur nearby. The closest is TEC <i>Roebuck Bay Mudflats</i>, which is approximately 250 m east of the application area.</p> <p>One Mangarr (<i>Sersalisia sericea</i>) plant was recorded on the northern boundary of the application area. However, the presence of one plant does not indicate the presence of the PEC <i>Relict dune system dominated by extensive stands of Mangarr</i> (Coffey 2013) and this PEC is not present in the application area.</p>	<p>The proposed clearing is NOT considered to be at variance with this principle.</p>
<p>(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.</p>	<p>The application area is considered to represent vegetation system association 750.1 (Pindan shrublands: <i>Acacia tumida</i> shrubland with Grey Box and Cabbage Gum medium woodland over Ribbon Grass and Curly Spinifex). There is 99.6% remaining of this vegetation system from the pre-European extent within the IBRA sub-region of Pindanland, within the Damperland system (Department of Parks and Wildlife 2017). Pindan shrublands has therefore not been extensively cleared within the region.</p> <p>At a local scale, there has been extensive clearing of native vegetation within the PMA in connection with port facilities. However, the vegetation within the application area is not significant as a remnant of native vegetation, due to its low quality (i.e. lack of native vegetation and occurrence of invasive species) and insignificant role in the ecological linkages within the PMA.</p>	<p>The proposed clearing is NOT considered to be at variance with this principle.</p>

Principle	Assessment	Is the proposed clearing at variance?
<p>(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.</p>	<p>The native vegetation located within the application area is not growing in, or in association with, an environment associated with a watercourse or wetland. The application area is located on Pindan soils which are free draining, silty sands of fine to very fine grain (Laws 1991). The rainfall leaves the application area via soil infiltration and percolation into the groundwater and evaporation after a rainfall event.</p> <p>There are no watercourses or wetlands within or nearby the application area. Roebuck Bay Ramsar wetland is the nearest nationally important wetland and is located approximately 6 km northeast of the application and will not be directly or indirectly impacted by the clearing within the application area.</p>	<p>The proposed clearing is NOT considered to be at variance with this principle.</p>
<p>(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.</p>	<p>The clearing is within areas of existing disturbance and is being cleared for bush fire prevention measures. Only the removal of low level shrubs and grasses is proposed within the application area by slashing and mowing. No tree removal is required. The removal of native vegetation will not cause appreciable land degradation.</p>	<p>The proposed clearing is NOT considered to be at variance with this principle.</p>
<p>(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.</p>	<p>There are no conservation reserves within the application area.</p> <p>Roebuck Bay conservation reserve is approximately 6 km north-east of the application area and will not be impacted by clearing.</p>	<p>The proposed clearing is NOT considered to be at variance with this principle.</p>
<p>(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.</p>	<p>The application area is not located in a proclaimed surface water management area (Department of Water 2009), nor is there any watercourses or wetlands located within the application area.</p> <p>The application area is located on Pindan soils which are free draining, silty sands of fine to very fine grain (Laws 1991). The rainfall leaves the application area via soil infiltration and percolation into the groundwater and evaporation after a rainfall event.</p> <p>No deterioration in the quality of surface or underground water is expected given the small area of clearing required within the 2 ha application area.</p> <p>Any potential environmental impacts will be managed in accordance with KPA's EMP.</p>	<p>The proposed clearing is NOT considered to be at variance with this principle.</p>



Principle	Assessment	Is the proposed clearing at variance?
<p>(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence of flooding.</p>	<p>The clearing of native vegetation is not expected to cause or exacerbate the incidence of flooding on the Broome Peninsula. The application area is located on Pindan soils which are free draining, silty sands of fine to very fine grain (Laws 1991). Rainfall leaves the application area via soil infiltration and percolation into the groundwater and evaporation after a rainfall event.</p> <p>The clearing of native vegetation and management of the application area will be undertaken in accordance with KPA's EMP.</p>	<p>The proposed clearing is NOT considered to be at variance with this principle.</p>

## References

Bamford Consulting (Bamford). 2010. *Fauna Assessment of the Broome Port Area*. Unpublished report prepared by M.J. and A.R. Bamford Consulting Ecologists for the Broome Port Authority, Broome, WA.

Coffey Environments Australia Pty Ltd (Coffey). 2013. *Pre-Clearance Flora and vegetation Surveys for Numerous Port managed Lease Holdings*. Letter report prepared by Coffey Environments Australia Pty Ltd for Broome Port Authority, Broome, WA.

Department of Parks and Wildlife. 2017. *2016 Statewide Vegetation Statistics – Simplified Report*. Available from: <https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics/resource/adf443b2-a453-420f-b639-751c26072e21>. Government of Western Australia.

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Department of Water. 2009. *Surface Water Proclamation Areas 2009*. Available from: [http://www.water.wa.gov.au/\\_\\_data/assets/pdf\\_file/0004/1669/86306.pdf](http://www.water.wa.gov.au/__data/assets/pdf_file/0004/1669/86306.pdf) Government of Western Australia

Laws, A. T. 1991. *Explanatory notes on the Broome 1:250,000 hydrogeological sheet*, GSWA Hydrogeological series explanatory notes, SE51- 6.

Woodman Environmental Consulting (Woodman). 2008. *Broome Port Authority – Floristic Community Types of the Broome Peninsula*. Unpublished Report by Woodman Environmental Consulting Pty Ltd for the Broome Port Authority, Broome, WA.

Woodman Environmental Consulting (Woodman). 2009. *Broome Port Authority Further Survey for Scleria Sp.* Unpublished Report prepared by Woodman Environmental Consulting Pty Ltd for the Broome Port Authority, Broome, WA.

## Attachments

Form C2 Application for a clearing permit (purpose permit)

Form C3 Credit card payment for clearing permit applications