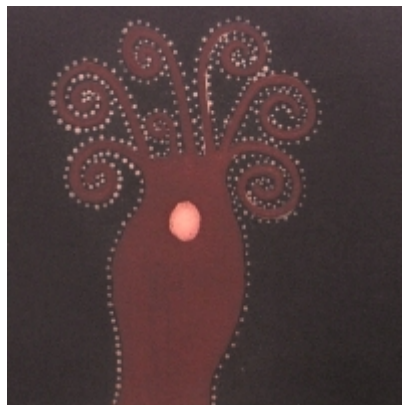


**ENVIRONMENTAL REVIEW**  
Broome-Cape Leveque Road Upgrade (SLK 147.3 – 172.2)



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Date: January 2007

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# BROOME-CAPE LEVEQUE ROAD UPGRADE

## ENVIRONMENTAL REVIEW

### 1. INTRODUCTION

Main Roads Kimberley Region proposes to upgrade the Broome-Cape Leveque Road (SLK 147.3 – 172.2). The existing road is in very poor condition and upgrading will provide significant improvement to traffic safety and accessibility. Maintenance and freight costs will be reduced and an overall better level of service will be achieved for road users.

The proposed upgrade will require:

- constructing a new road generally on and parallel to the existing alignment;
- improving the drainage; and
- gravel sheeting and sealing of the road.

The Shire of Broome is responsible for maintaining the Broome-Cape Leveque Road. However, proposed upgrading of the road will be managed by Main Roads Western Australia (MRWA) in consultation with stakeholders.

### 2. BACKGROUND

The Broome-Cape Leveque Road is situated on the Dampier Peninsula in the Kimberley Region of Western Australia. Currently, the road is graded below the surrounding ground level, narrow (one vehicle access) over large sections and closed regularly during the wet season. As a result a number of vehicle accidents have occurred and user access is limited.

The staging of the entire Broome-Cape Leveque Road upgrade and community accesses is dependant on funding and availability of resources. It has been proposed to complete the entire upgrade over a seven (7) year period in three (3) separate sections. The staging of each section is in the following order:

1. Section 1 (SLK 147.3 -195.8) – approved by Environmental Protection Authority (EPA)
2. Section 2 (SLK 102 -147.3) – construction work complete
3. Section 3 (SLK 12.7 - 102) – environmental approvals to be sought in the near future

Part of Section 1, SLK 172.2 - 195.8, has been cleared and upgrading of the road is almost complete. A Notice of Intent to Clear (NOIC) was submitted and approved for this section on 31 May 2002 which has now expired.

The remaining part of Section 1, SLK 147.3 - 172.2, remains to be cleared for proposed upgrade works, expected to commence in 2007. Clearing for this section will be undertaken in accordance with the Purpose Permit.

An Environmental Assessment and Management Plan (EAMP) was completed by Western Infrastructure in March 2002 for the Broome-Cape Leveque Road upgrade (SLK 102 – 205.6 SLK). Following external agency feedback, additional investigations were

undertaken by MRWA to address a number of concerns. Those concerns were resolved and approved by the relevant agencies and the EPA. The outcome was that the project did not require formal assessment (i.e. Not Assessed-No Advice Given).

This Environmental Review has been developed to update the information compiled in the EAMP and to verify that no environmentally significant impacts will occur as a result of the proposed works.

**3. DESCRIPTION OF THE PROJECT**

The upgrade of the Broome-Cape Leveque Road involves the construction of a new road, generally parallel to the existing alignment with some realignment of the existing substandard curves.

The road will be cleared to a maximum width of 20 metres with a raised formation and gravel construction 8.6 metres wide. The road works will include the installation of culverts, construction of roadside table drains and offshoot drains at regular intervals along the alignment.

The location and boundaries of the study area are shown in Figure 1.

The areas required to be cleared are as follows:

- Broome to Cape Leveque Rd, 24.9km x 20m 49.8 ha
- Borrow pits for sand – Broome to Cape Leveque Rd 0.5ha per km (includes access tracks) 12.45 ha

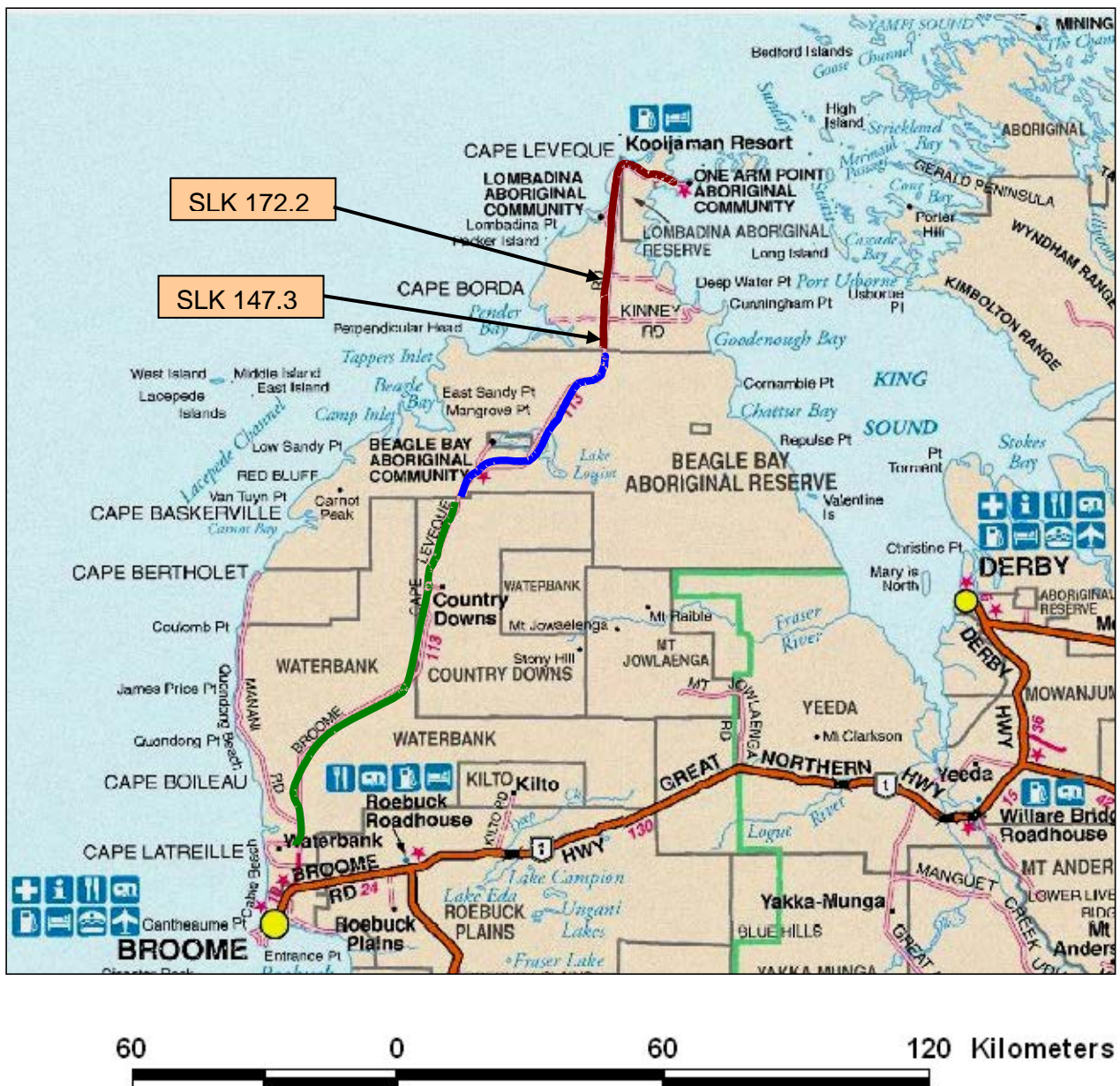
A total of 62.25 hectares will be cleared for construction works. Of this area, 49.8ha of land will be permanently cleared and 12.45ha of land will be temporarily cleared (refer Figure 2). A Revegetation Plan will be developed to rehabilitate temporarily cleared areas.

# Locality Plan

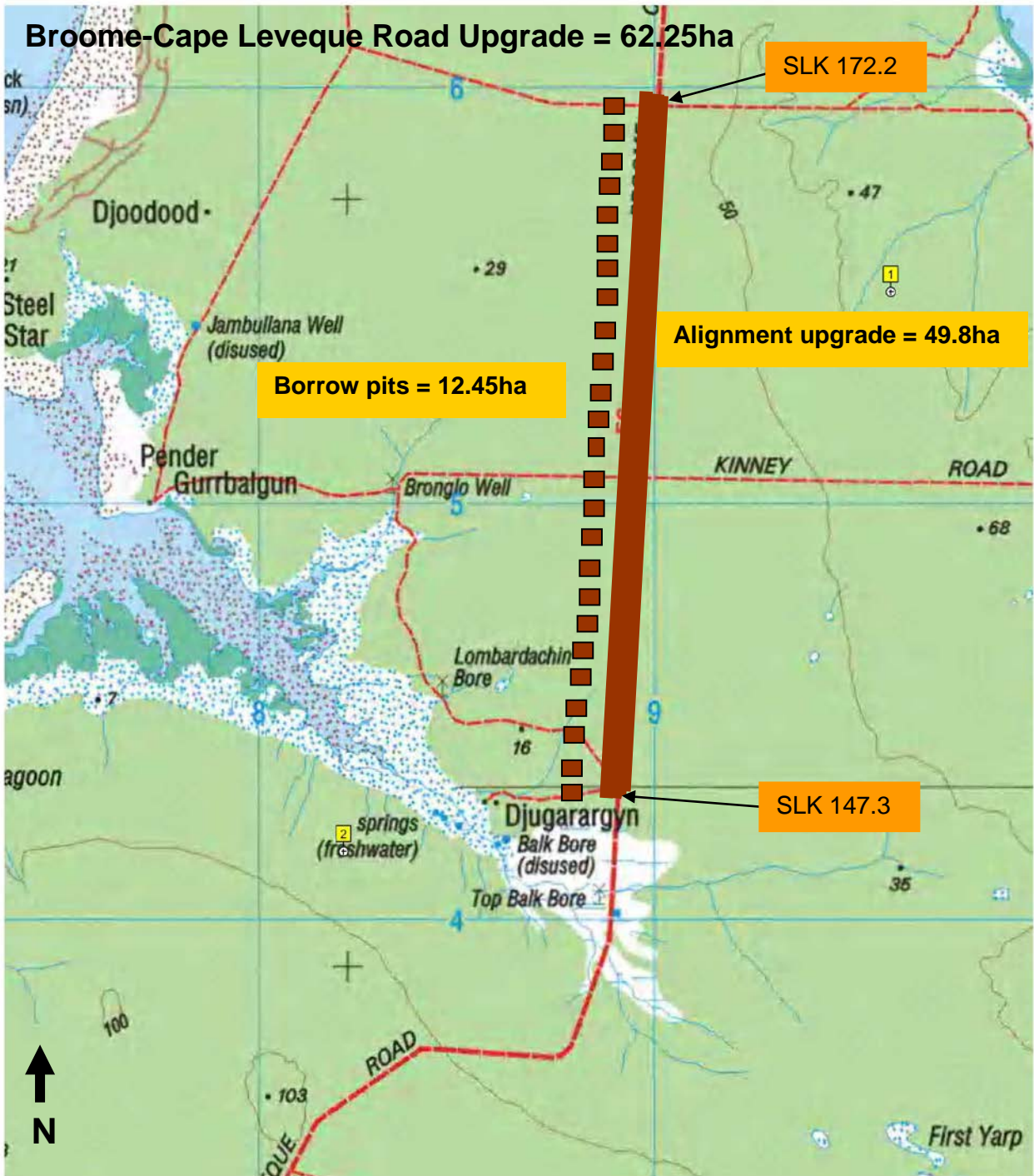
Section 1

Section 2

Section 3



**Figure 1** Locality Plan showing sections of the Broome-Cape Leveque Road upgrade



**Figure 2 Location and Quantity of Clearing for Broome-Cape Leveque Rd Upgrade**

## **3.1 Methodology**

### **3.1.1 Preliminary Desktop Study**

An assessment of the project area and its potential constraints was undertaken by reviewing a number of government agency managed databases.

#### **Wetlands**

The locations of wetlands within the project area was determined using the Commonwealth Department of Environmental and Heritage (DEH) mapping tool, Department of Environment and Conservation (DEC) Environmentally Sensitive Area (ESA) mapping tool ([http://portal.environment.wa.gov.au/portal/page?\\_pageid=53,2569721&\\_dad=portal&\\_schema=PORTAL](http://portal.environment.wa.gov.au/portal/page?_pageid=53,2569721&_dad=portal&_schema=PORTAL)) and by seeking advice from the regional DEC officer. Refer Appendix A.

#### **Threatened Flora, Fauna and Communities, Conservation Reserves and ESAs**

The DEC database was searched for known populations of threatened flora, fauna and Threatened Ecological Communities (TECs) and conservation reserves, refer Appendix B. A quick TEC check can be done using the ESAs mapping tool [http://portal.environment.wa.gov.au/portal/page?\\_pageid=53,2569721&\\_dad=portal&\\_schema=PORTAL](http://portal.environment.wa.gov.au/portal/page?_pageid=53,2569721&_dad=portal&_schema=PORTAL). Consultation with DEC regional staff also took place.

#### **Air Quality**

The need for a local air quality assessment was determined using the criteria outlined in the MRWA environmental guideline, Air Quality.

#### **Heritage**

Non-indigenous heritage was examined utilising the Australian Heritage Places Inventory (<http://www.heritage.gov.au>), Heritage Council of Western Australia (<http://register.heritage.wa.gov.au/>) and the Broome Shire Municipal Heritage Inventory refer Appendix C.

#### **Aboriginal Heritage**

A Search of the Department of Indigenous Affairs' (DIA's) (<http://www.dia.wa.gov.au/Heritage/SitesSurveysSearch.aspx>) database was undertaken to determine whether the project area contains any sites of Aboriginal heritage, refer Appendix D.

#### **Sensitive Water Resources**

The Water Information Officer of the Department of Water's regional office was consulted on sensitive water resources (including Public Drinking Water Source Areas) to determine whether the project area supported, or was adjacent to, any significant lakes, rivers or wetlands or proclaimed areas, refer Appendix E.

#### **Contaminated Sites**

There are no known previous land use activities on or adjacent to the project area that have the potential to create contamination, eg petrol station.

#### **Acid Sulfate Soils**

The Western Australian Planning Commission's acid sulfate soils maps were reviewed and the self assessment done (<http://www.wapc.wa.gov.au/Publications/213.aspx>) to determine what level of risk the project area is exposed to, refer Appendix F.

## **Weeds**

Consultation was undertaken with the Department of Agriculture and Food to determine whether there are any known populations of declared plants or significant weeds in or adjacent to the project area, refer Appendix G.

## **Dieback**

Dieback is not an issue in the area where proposed works are expected to be undertaken.

## **Commonwealth Referral**

The decision to refer the project to the Commonwealths DEH was based upon whether the project was going to impact upon matters of national significance, eg World Heritage properties, protected wetlands and migratory species, Commonwealth marine areas, threatened species or communities or nuclear actions (refer to the Commonwealth webpage [www.deh.gov.au/epbc/assessmentsapprovals/index.html](http://www.deh.gov.au/epbc/assessmentsapprovals/index.html) for further information and the search tool page at <http://www.deh.gov.au/erin/ert/epbc/imap/map.html>), refer Appendix H.

### **3.1.2 Site Investigation**

A site visit was carried out by Environment Officer Marni Baetge on 31/1/07 to examine the general features of the area. The broad vegetation types in the vicinity of the project area were identified. Other issues that were considered included topography, the impacts on creek lines, property access and the potential for noise and vibration impacts (dilapidation).

## **4. EXISTING ENVIRONMENT**

The Broome-Cape Leveque Road project area lies within the Dampier Botanical District, which is broadly characterised by pindan formation on sandplains (Beard, 1979). The EAMP (2002) identified the vegetation along the Beagle Bay to Cape Leveque alignment as highly homogenous occurring on flat sand plains with little variation in elevation. Four distinct vegetation types and their sub-types are discussed in greater detail in the Cape Leveque Road Beagle Bay to Cape Leveque Section of the EAMP.

A total of 226 taxa of vascular flora were collected during the 2002 environmental assessment. One of these, a Priority 3 species (*Triodia acutispicula*) was previously recorded at one site in the study area, but during the environmental assessment was also noted to occur in numerous locations in the surrounding area. The EAMP noted the occurrence of one Threatened Ecological Community (TEC) at one site in the proposed works area. This was the "coastal monsoon vine thicket". Additional investigations by MRWA and the Western Australian Threatened Species and Communities Unit (WATSCU) confirmed that this was incorrect. The results showed that this TEC occurred outside of the project area in dense patches associated with the coastal dunes and swales and therefore will not be impacted by the proposed road upgrade.

Recent correspondence with the DEC (January 2007) confirmed that no known occurrences of Threatened Ecological Communities, Declared Rare or Priority Flora were recorded in the project area (refer Appendix B).

A total of 8 introduced weed species were also recorded during the 2002 environmental assessment. None of these are listed in the Agriculture and Related Resources Protection



Act 1988. Consultation with the Department of Agriculture and Food (phone conversation with Michael Jeffery, Derby Office 23.01.07) confirms that each of these weed species are common throughout the Greater Dampier Peninsula and risk of spreading is minimal.

The EAMP listed a total of 11 (Schedule and Priority) fauna as being “likely to occur” on the Dampier Peninsula. Additional correspondence with the DEC and the WA Museum indicated that not all of these species are likely to be present in the area and those that may be present will not be significantly impacted by the proposed upgrade. Recent correspondence with DEC (January 2007) confirmed that the Peregrine Falcon currently exists in the project area. This species is highly mobile and impact from the proposed road upgrade is expected to be minimal (refer Appendix B).

Aboriginal Heritage has been given important consideration in planning for this project. The traditional owners have been consulted and advised of the proposed upgrade. MRWA will remain compliant with relevant legislation. In regards to the Section 1 upgrade, a number of Aboriginal stakeholders expressed concerns about the preservation of long-fruited bloodwood trees (*Corymbia polycarpa*). These trees are important to the traditional Bardi people for various uses. Although very few of these trees occur in the proposed alignment, MRWA will avoid impacting these trees as far a practical by inviting the relevant Bardi people (as previously identified in the works clearance documents) to mark them prior to clearing.



**Image 1    Looking North, SLK 155**



**Image 2    Looking South, SLK 160**



**Image 3 Looking South, SLK 165**



**Image 4 Looking South, SLK 170**

## 5. CLEARING OF NATIVE VEGETATION

Under the amended *Environmental Protection Act 1986 (EP Act)* clearing of native vegetation must be under the authority of a clearing permit.

In assessing whether the project is likely to have a significant impact on the environment, the project has been assessed against the DEC's 10 principles of clearing, see table below.

<b>Clearing Principles - <i>Environmental Protection Act</i> Section 5</b>	Yes/No
<i>Does the area to be cleared comprise a high level of biological diversity?</i> The proposal is not at variance with this principle as the area proposed to be cleared is highly homogenous and therefore diversity will not be compromised.	No
<i>Does the area to be cleared comprise the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia?</i> The proposal is not at variance with this principle. The DEC has confirmed that the Peregrine Falcon is the only fauna species likely to exist in the project area. Since this species is highly mobile, impact is minimal.	No
<i>Does the area to be cleared include, or is necessary for the continued existence of, rare flora?</i> DEC has confirmed that no Declared Rare or Priority Flora exist within the project area. Therefore, the proposal is not at variance to this principle.	No
<i>Does the area to be cleared comprise the whole or a part of, or is necessary for the maintenance of, a threatened ecological community?</i> The proposal is not at variance to this principle as no Threatened Ecological Communities (TEC's) have been identified within the project area.	No
<i>Is the area to be cleared significant as a remnant of native vegetation in an area that has been extensively cleared?</i> The proposal is not at variance with this principle. Four distinct vegetation communities were identified in the project area (Western Infrastructure, 2002). Subsequent review of native vegetation association data has revealed that none of vegetation communities in the project area are under-represented.	No
<i>Does the area to be cleared exist within, or in association with, an environment associated with a watercourse or wetland?</i> No wetlands or watercourses are expected to be impacted by the proposed works. Therefore, there will be no variance with this principle.	No
<i>Is the clearing of the vegetation likely to cause appreciable land degradation?</i> The proposal is not likely to be at variance to this principle as impacts will be minimised to that which is essential.	No
<i>Is the clearing of the vegetation likely to have an impact on the environmental values of any adjacent or nearby conservation area?</i> The proposed works will not impact on any conservation areas. Therefore, the proposal is not at variance with this principle.	No
<i>Is the clearing of the vegetation likely to cause deterioration in the quality of surface or underground water?</i> The proposal is not likely to be at variance to this principle provided the Contractor adheres to the MRWA requirements and statutory obligations.	No
<i>Is the clearing of the vegetation likely to cause, or exacerbate, the incidence or intensity of flooding?</i> The proposal is not at variance to this principle as the design of the crossings should aim to minimise changes to natural flows and reduce the impact of channel erosion.	No

The Broome-Cape Leveque Road upgrade is expected to be 24.9 kilometres long with a total clearing width requirement of 20 metres. Borrow pits for sand (0.5ha) will occur every kilometre. This makes the total clearing area for construction 62.25 hectares.

All clearing associated with sourcing raw materials, access tracks, drains, establishing a campsite and plant lay-down areas shall be kept to an absolute minimum. Mature and selected trees shall be conserved as far as practicable to provide for faunal habitat and Aboriginal values. The Contractor shall take all precautions necessary to prevent damage to growing trees and shrubs outside the designated areas and to selected trees within areas designated for clearing.

Prior to clearing the Contractor shall mark out clearing limits and certify to MRWA that the clearing areas are clearly defined. Clearing for the road alignment shall be carried out only in the areas shown on the drawings, or as otherwise directed by the Superintendent. All clearing shall comply with **Specification 301: Clearing**. The removal and re-spread of topsoil shall be undertaken in accordance with **Specification 302: Earthworks**.

## 6. ASSESSMENT OF ASPECTS AND IMPACTS

**Table 1: Aspects and Impacts – Broome-Cape Leveque Road Upgrade**

<b>Aspect</b>	<b>Evaluation of Potential Impacts</b>
Air quality	Not relevant to the proposed works. Local air quality assessment is not required for the project since: <ul style="list-style-type: none"> <li>the predicted traffic flow is less than 15,000 vehicles per day;</li> <li>residential and other sensitive receptors are not within 200 meters of the road centre</li> </ul>
Dust	Likely to be a minor issue during earthworks. Standard dust control measures shall be undertaken to minimise dust production during construction.
Fauna	The EPBC Act Protected Matters Report listed 5 threatened species and 9 migratory species likely to occur in the area (Appendix H). DEC confirmed in January 2007 that the Peregrine Falcon is the only threatened species existing within the project area (Appendix H). The Peregrine Falcon is highly mobile and impact from the proposed upgrade is expected to be minimal.
Vegetation – clearing	A total of 62.25 hectares of vegetation is expected to be cleared using the purpose permit. All vegetation types existing in the project area are well represented.
Vegetation – TECs/DRF	No known occurrences of Threatened Ecological Communities, Declared Rare or Priority Flora were recorded by the DEC in the project area in January 2007.
Vegetation – weeds	A total of 8 introduced weed species were recorded in the area ranging from SLK 102 – 205.6 (EAMP, 2002). Consultation with the Department of Agriculture and Food confirms that each of these weed species are common throughout the Greater Dampier Peninsula and risk of spreading is minimal.
Vegetation – dieback	Not an issue given that the project area lies within the Kimberley Region.
Reserves / Conservation areas	No reserves or conservation areas are expected to be impacted by the proposed works.
Heritage (non-indigenous)	A search of the Australian Heritage Places Inventory and Heritage Council of Western Australia databases has indicated that there are no heritage significant listed sites present in the proposed works areas.
Aboriginal heritage	A search of the DIA database identified no known sites of Aboriginal heritage significance. Archaeological investigations undertaken by GHD (2002) confirmed that no archaeological sites exist within the project area.
Surface water/drainage	Consultation with Department of Water has confirmed that the proposed works will not disturb or interrupt any natural drainage and surface run-off patterns (Appendix E).
Wetlands	No wetlands or watercourses will be impacted by the proposed works (Appendix A).
Groundwater	The proposed area lies within the Canning-Kimberley groundwater area. All licenses to drill or abstract water will be approved, current and log books will be maintained in accordance with DoW requirements.
Noise and vibration	No major sensitive local receivers. Construction works would not be expected to significantly contribute to noise levels at the nearest sensitive receivers, provided works are limited to normal working hours. The requirements of the Shire of Broome must be met in respect of noise management and construction working hours.

**Table 1: Aspects and Impacts – Broome-Cape Leveque Road Upgrade**

<b>Aspect</b>	<b>Evaluation of Potential Impacts</b>
Visual amenity	The proposed works will result in minor and short-term visual impacts during construction. Suitable site completion treatments, including landscape planting and rehabilitation, could result in an improvement in local visual amenity.
Public safety and risk	Provided traffic management and signage to Main Roads standards is employed, none of the proposed works present any significant hazards to public safety. The proposed works will serve to enhance public safety by improving road conditions during flooding events.
Hazardous substances	Not relevant to the proposed works.
Contamination	There are no known previous land use activities on or adjacent to the project area that have the potential to create contamination, eg petrol station.
Salinity	There were no visual signs of salinity observed in the project area.
Acid Sulfate Soils	The WAPC's self-assessment (Planning Bulletin 64) indicates that no further soil investigation is required for the project.
Statutory Land Use Planning	As the proposed works is entirely within the existing road reserve, no further amendments would be required to the Local Government Planning Scheme or Region Scheme.

## **7. DECISION TO REFER**

As previously mentioned, the Broome-Cape Leveque Road Section 1 upgrade (SLK 147.3 – 195.8) was referred to the EPA in December 2002 for assessment. As a result of this, the EPA confirmed that the project did not require formal assessment (i.e. Not Assessed – No Advice Given).

This Environmental Review has been undertaken to simply update the information that was collected in the EAMP. Given the scale of the project, the low significance of its impacts to the surrounding environment and the environmental management measures proposed, this project will not require referral to the WA EPA or the Commonwealth DEH.

## **8. ENVIRONMENTAL MANAGEMENT PLAN**

This section of the report (the EMP) has been developed for the project area following the completion of the above sections. The main aims of this EMP is to provide a management plan to assist in minimising the environmental impacts of the activities associated with the proposed works and identify who is responsible for the implementation of the management strategies.

This EMP will only address the actions already listed as well as any site-specific issues that were identified during the Environmental Review. The environmental management measures/conditions in Main Road's Specifications 203, 204, 301, 302 and 304 will be followed where applicable.

The areas that require special management will be addressed in terms of:

- area of management (eg vegetation);
- the timing of the various management requirements;
- the management objectives for each area;
- the management strategies that are necessary to minimise the impact;
- the person/s responsible for implementing the management action; and
- on whose advise or Main Roads requirement.



<b>ENVIRONMENTAL MANAGEMENT PLAN</b>					
Area of management	Timing	Management objective	Management Strategy	Responsibility	Whose advice
<b>Environment Induction</b>	Pre-Construction	Inform all personnel of their environmental and heritage obligations and the management actions/strategies required of them.	Prepare and deliver an Environment Induction (as part of the whole of site induction) to all on-site personnel prior to their commencement of work.	Environment Officer/ Construction Engineer	Environment Officer
<b>Vegetation Clearing</b>	Pre-Construction	Minimise and manage impact on native vegetation both within and outside the project area.	Prior to clearing, the Surveyor is to clearly mark out clearing limits and have them certified by MRWA.	Construction Engineer	MRWA
<b>Vegetation Clearing - Record-keeping</b>	Pre-Construction/ Construction	The project should maintain the required records relating to clearing native vegetation under the purpose permit.	Clearing: <ul style="list-style-type: none"> <li>• a map showing the location where the clearing occurred, recorded in an ESRI Shapefile;</li> <li>• the size of the area cleared (in hectares); and</li> <li>• the dates on which the clearing was undertaken.</li> </ul>	Environment Officer	DEC

ENVIRONMENTAL MANAGEMENT PLAN					
Area of management	Timing	Management objective	Management Strategy	Responsibility	Whose advice
<b>Vegetation – Clearing</b>	Pre-Construction/ Construction	Ensure that the overall objectives of the alignment and construction works are compatible with maintaining and, where possible, enhancing the biological integrity of the surrounding environment and minimising vegetation loss and degradation.	<p>Selection of designs/locations that minimise adverse impacts on the biological environment.</p> <p>All clearing, shall be carried out so as to minimise disturbance to all surrounding vegetation. This includes, but is not limited to clearing for access tracks, drains, camp area, laydown areas, turkey’s nests and bores.</p> <p>Construction works to be undertaken in the dry season to reduce the potential for soil erosion and drainage line siltation due to vegetation removal and heavy rains.</p> <p>Any stockpiled vegetation shall be used during rehabilitation works. Stockpiled vegetation shall be windrowed parallel to the road alignment, not exceeding 2m beyond the limit of the earthworks. The stockpiles shall not exceed 1.5m in height. The topsoil shall be stockpiled in the earthworks corridor or in borrow pits.</p> <p>All clearing shall be done in accordance with Main Roads Specifications:</p> <ul style="list-style-type: none"> <li>• <b>301: Clearing</b></li> <li>• <b>303: Pits &amp; Quarries</b></li> </ul>	<p>Construction Engineer</p> <p>Environment Officer</p>	MRWA

**ENVIRONMENTAL MANAGEMENT PLAN**

Area of management	Timing	Management objective	Management Strategy	Responsibility	Whose advice
<b>Threatened Ecological Communities (TECs), Declared Rare or Priority Flora</b>	Pre-Construction/ Construction	Avoid disturbing, and minimise impact on, any newly identified TECs, Declared Rare or Priority Flora.	Although there is no current evidence of any TECs, Declared Rare or Priority Flora, any new sites identified prior to or during construction works shall be reported to the DEC to determine their significance and management before any works continue/commence at that site.	Environment Officer	DEC
<b>Vegetation - Clearing</b>	Construction	Ensure the retention of as many habitat trees, shrubs and vegetated corridors for fauna as possible, particularly where associated with riparian zones.	Wherever possible, the topsoil storage period will be minimised to prevent reduction in biotic viability. Topsoil will be stored and reused locally rather than transported large distances along the alignment.	Environment Officer	MRWA

**ENVIRONMENTAL MANAGEMENT PLAN**

Area of management	Timing	Management objective	Management Strategy	Responsibility	Whose advice
<b>Weeds</b>	Construction	Prevent and reduce the introduction and spread of weeds.	<p>Control any weed species, if present, within the project area prior to construction to limit the amount of propagative material that may be spread during disturbance.</p> <p>Ensure all machinery/vehicles are clean prior to entering the works area. If a new weed infection is identified within the area, measures to reduce its spread should be established such as vehicle wash/brush-down points.</p> <p>Periodic checks of vehicles entering and leaving the site will also be conducted. Weed infested soil is not to be imported into the works for rehabilitation or fill.</p> <p>Main Roads Specifications applicable:</p> <ul style="list-style-type: none"> <li>• <b>204: Environment</b></li> <li>• <b>301: Clearing</b></li> </ul>	Construction Engineer/ Environment Officer	MRWA

**ENVIRONMENTAL MANAGEMENT PLAN**

Area of management	Timing	Management objective	Management Strategy	Responsibility	Whose advice
<b>Water Courses and Surface Drainage</b>	Pre-Construction/ Construction	Maintain the hydrological regime that exists prior to the construction of the proposal and prevent erosion in areas subject to flooding.	<p>Areas subject to erosion as a result of clearing shall be stabilised and designed to minimise rainfall/runoff impacts.</p> <p>Erosion control procedures, such as revegetation of cut and fill slopes, diversion drains, rock protection for embankment erosion, sediment traps and contour embankment for re-spreading surface water should be applied as necessary.</p> <p>The regular placement of drain blocks is encouraged to assist in slowing water flows and promote the settlement of sediment to reduce scour and movement of solids in water flows.</p> <p>Works should minimise vegetation and soil disturbance to prevent soil movement. Finished works should be left in a stable condition to minimise the risk of scouring.</p> <p>Ensure Main Roads design is followed.</p> <p>Main Roads Specifications applicable:</p> <ul style="list-style-type: none"> <li>• <b>402: Surface Drains</b></li> <li>• <b>405: Drainage Structures</b></li> </ul>	Project Manager/ Construction Engineer	MRWA

**ENVIRONMENTAL MANAGEMENT PLAN**

Area of management	Timing	Management objective	Management Strategy	Responsibility	Whose advice
<b>Water Quality</b>	Construction	<p>Prevent groundwater contamination associated with machinery storage, maintenance, bulk fuel storage and refuelling.</p> <p>Minimise impacts to groundwater associated with wastewater disposal.</p>	<p>Specific areas shall be designated for the storage, maintenance and refuelling of machinery/vehicles. These areas are to be situated on an impermeable surface layer (gravel sheeted as a minimum) and not in close proximity to any watercourses/drainage.</p> <p>Bulk fuels area to be adequately bunded (the bunded area is to contain 110% volume capacity of the largest storage vessel).</p> <p>Sewage and wastewater from the camp shall be dealt with in accordance with the Shire of Broome and Local Government Health Regulations.</p> <p>Any accidental spillage shall be contained and removed as soon as possible by placing contaminated soil into bins or a truck for "off-site" disposal to a site agreed to by the Shire of Broome. Significant spills are to be reported immediately to Main Roads.</p>	Project Manager/ Construction Engineer	MRWA
<b>Water Allocation for Bores</b>	Pre-Construction	Minimise number of bores drilled	The proposed area lies within the Canning-Kimberley groundwater area. All licences to drill or abstract water must be approved, current and log books maintained in accordance with DoW requirements.	Materials Manager	DoW

**ENVIRONMENTAL MANAGEMENT PLAN**

Area of management	Timing	Management objective	Management Strategy	Responsibility	Whose advice
<b>Waste Management</b>	Pre-Construction/ Construction	Ensure that the construction of the proposal is managed to a standard that minimises any adverse impacts on the environment.	<p>Emergency cleanup procedures shall be implemented in the case of any spillage. These will include control of spilled material and removal of contaminated soil to an approved site. Main Roads shall ensure appropriate equipment is available at all times and shall notify the Site Supervisor as soon as possible following a spill.</p> <p>A “sulo bin” will be placed in the machinery maintenance area to collect all used oil filters and hydraulic parts so they can be carted to a site agreed to by the Shire of Broome.</p> <p>Dumping or temporary storage of bitumen, asphalt, concrete or aggregate should only occur at designated depots or controlled hardstands.</p> <p>The project areas, including hardstand areas, will be kept in a tidy manner at all times. All litter on the project will be placed into lidded bins and disposed of at an approved landfill.</p> <p>Waste sump oil collected during machinery/vehicle maintenance shall be stored in 44-gallon drums and carted to Broome for recycling.</p> <p>Main Roads Specification applicable:</p> <ul style="list-style-type: none"> <li>• <b>204: Environment</b></li> </ul>	Project Manager/ Construction Engineer	DEC / Shire of Broome

**ENVIRONMENTAL MANAGEMENT PLAN**

Area of management	Timing	Management objective	Management Strategy	Responsibility	Whose advice
<b>Noise, Vibration</b>	Construction	Minimise noise impacts associated with road works during construction.	<p>Although noise should not be an issue due to the remoteness of the job, there are still several communities to consider. Main Roads will ensure that Noise Regulation Guidelines, as set out by the DEC, will be adhered to.</p> <p>Any complaints regarding noise will be attended to as soon as possible.</p>	Project Manager/ Construction Engineer	DEC/ MRWA
<b>Dust Control</b>	Construction	Minimise potential impacts associated with dust during road upgrade.	<p>Any complaints regarding dust will be attended to as soon as possible.</p> <p>Implement dust control measures such as watering cleared and exposed areas. Ensure water used for dust control is not saline.</p> <p>Main Roads Specification applicable:</p> <ul style="list-style-type: none"> <li>• <b>203: Occupational Safety and Health</b></li> </ul>	Project Manager/ Construction Engineer	MRWA
<b>Fire</b>	Construction	Ensure that the fire risk associated with the construction of the proposal is minimised.	<p>A water tanker will be on site at all times.</p> <p>No fires shall be lit within the project area.</p>	Project Manager/ Construction Engineer	MRWA



<b>ENVIRONMENTAL MANAGEMENT PLAN</b>					
Area of management	Timing	Management objective	Management Strategy	Responsibility	Whose advice
<b>Aboriginal Heritage</b>	Pre-Construction/ Construction	Ensure that there is no unauthorised disturbance to Aboriginal heritage sites during construction.	<p>Ensure Aboriginal heritage is managed in accordance with that agreed to between Main Roads/KLC and the traditional owners in accordance with the Aboriginal Heritage Act 1972.</p> <p>Invite relevant traditional Bardi people to mark any significant trees (<i>Corymbia polycarpa</i>) in sections to be realigned prior to their clearing.</p> <p>Provide relevant communities/administrators with notice of the upgrade works prior to their commencement.</p>	Project Manager/ Construction Engineer/ Environment Officer	KLC / Traditional Owners
<b>Site Management</b>	Pre-Construction	Ensure that the site is managed to ensure that construction of the proposal will have minimal impact upon the surrounding environment.	<p>A formal induction program will be conducted for all personnel prior to commencing work on the site. The program will aim to make them fully aware of all management strategies.</p> <p>Site office and materials storage areas will be located on previously disturbed/designated areas.</p>	Project Manager/ Construction Engineer	MRWA
<b>Traffic risk management during works</b>	Pre-Construction/ Construction	Minimise public risk to as low as reasonably achievable to comply with relevant standards.	A Traffic Management Plan will be developed and implemented for the period of this proposal.	Construction Engineer	MRWA

**ENVIRONMENTAL MANAGEMENT PLAN**

Area of management	Timing	Management objective	Management Strategy	Responsibility	Whose advice
<b>Fauna</b>	Construction/ Post- Construction	Minimise potential impacts to fauna and their habitat.	<p>All site personnel will be informed during the Environment Induction to ensure that any fauna identified within the works area are to be carefully removed and relocated to a suitable site close by.</p> <p>All natural habitat features, including living and dead trees, logs, vegetation, rocks and leaf litter, shall be retained and left undisturbed as far as works allow. Where disturbance is unavoidable these features will be stockpiled and replaced during rehabilitation to restore their ecological value to both flora and fauna.</p>	Construction Engineer/ Environment Officer	DEC

ENVIRONMENTAL MANAGEMENT PLAN					
Area of management	Timing	Management objective	Management Strategy	Responsibility	Whose advice
<b>Rehabilitation</b>	Post-Construction	<p>Leave the project area free from debris.</p> <p>Rehabilitate the project area so that the revegetated area provides a net increase in area of native vegetation at the site.</p>	<p>All waste materials from the development are to be completely removed from the site upon completion of the development. Final clean-up shall be to the satisfaction of the Project Manager.</p> <p>Stockpiled vegetative material will be respread in accordance with the Revegetation Plan.</p> <p>Rehabilitate by resspreading the windrowed topsoil and then the windrowed mulch over the batter slopes and cleared areas. Rehabilitation shall be applied to the following areas:</p> <ul style="list-style-type: none"> <li>• Unused sections of the existing road;</li> <li>• Side and access tracks;</li> <li>• Gravel/borrow pits and turkeys nests;</li> <li>• Construction camp; and</li> <li>• Machinery/vehicle maintenance sites.</li> </ul> <p>Rehabilitation should be undertaken at the earliest time possible following the project areas use.</p> <p>Soil stockpiled for use in rehabilitation should be re-spread as soon as possible to maximize its seed and biotic viability.</p> <p>Main Roads Specifications applicable:</p> <ul style="list-style-type: none"> <li>• <b>204: Environment</b></li> <li>• <b>301: Clearing</b></li> <li>• <b>302: Earthworks</b></li> <li>• <b>303: Pits &amp; Quarries</b></li> </ul>	Construction Engineer/ Environment Officer	MRWA

## 9. REFERENCES


*Beard, J.S. (1979). Vegetation Survey of Western Australia: Kimberley. University of Western Australia Press, Perth.*

*Western Infrastructure (2002). Cape Leveque Road Beagle Bay to Cape Leveque Section Environmental Assessment and Management Plan. Report for MRWA.*

*Gutteridge Haskins and Davey (2002). Report on an Archaeological Investigation of Aboriginal Sites Beagle Bay and Cape Leveque Sections Cape Leveque Road, North of Broome. Report for MRWA.*

## **Appendix A**


### **Wetlands and Watercourses within the Project Area**



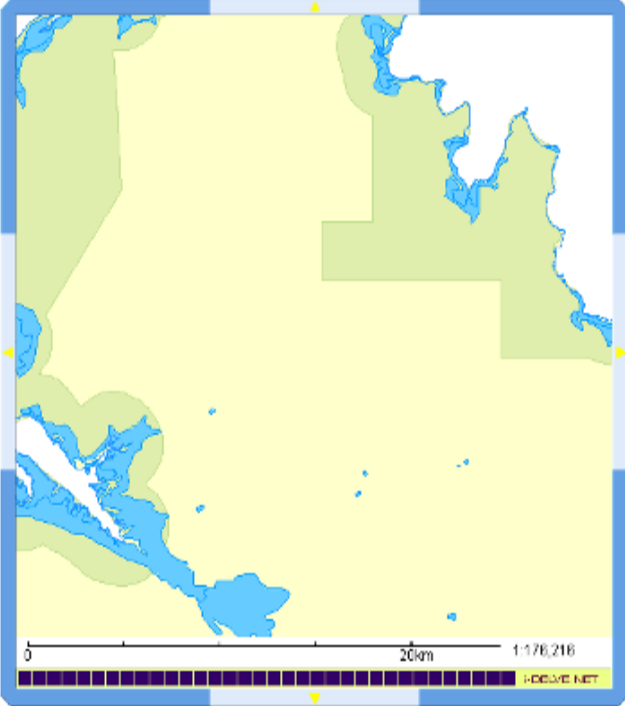
Department of Environment

## Native Vegetation Map Viewer

Welcome Search Metadata Help



- Planning and Database
- Environment
- Clearing Regs - ESA
- Clearing Regs - Schedule
- Clearing Permits
- Inland Waters
- Transportation
- Boundaries
- Location
- Stocky
- Economy



### Welcome

Welcome to the Native Vegetation Map Viewer. This site helps you to identify the following:

- The location of environmentally sensitive areas, as declared by a Notice under section 51B of the Environmental Protection Act 1986.
- Areas where low impact mineral and petroleum activities can NOT occur, as defined under Schedule 1 of the Environmental Protection (Clearing of Native Vegetation) Regulations 2004.

Click on the links below for more information on:

[Environmentally Sensitive Areas](#)

[Low Impact Mineral and Petroleum Activities](#)

[Native Vegetation Disclaimer](#)

Click [here](#) for a quick tutorial on using the Native Vegetation Protection map viewer.

[Policy & Legislation](#)

[Clearing Permits](#)

[Public Reports](#)

## Results from Native Vegetation Map Viewer, January 2007

From: Sinclair, Troy [Troy.Sinclair@dec.wa.gov.au] Sent: Mon 22/01/2007 9:57 AM  
 To: BAETGE Marni (GEnv)  
 Cc:  
 Subject: RE: Wetlands/Watercourses - Broome-Cape Leveque Upgrade

Marni,

There are no wetlands or watercourses within 2km of the road works. The only exception for this is the southern end of the works where you are crossing Kelk Creek near Top Baulk Bore.

The last time I was surveying up that way (3 years ago) I noted at large lined dam constructed for water supply to roadwork's just upstream of the Kelk Creek crossing at z51 489142,8140221. Is this still in use or has it or will it be decommissioned and rehabilitated?

Are there any locations along this route where you will be working away from the road alignments eg borrow pits? As there are some significant sites away from the road in some areas.

Note this is informal advice for your background information and should not be taken as approval for any works by DEC.

Troy

-----Original Message-----  
 From: BAETGE Marni (GEnv) [mailto:marni.baetge@mainroads.wa.gov.au]  
 Sent: Friday, 19 January 2007 11:27 AM  
 To: Sinclair, Troy  
 Subject: Wetlands/Watercourses - Broome-Cape Leveque Upgrade

<<points.pdf>>  
 Troy,

Main Roads Kimberley Region proposes to upgrade the Broome-Cape Leveque Road, situated on the Dampier Peninsula in the Kimberley Region of Western Australia.

A Consultants Report was completed for the area in 2002, identifying significant impacts associated with the proposed upgrade. I would like to update this report to check if any wetland areas or watercourses will be affected by construction works.

## **Appendix B**

### **Department of Environment and Conservation Threatened Flora and Fauna Database Searches**

From: Mia Morley, Mia [Mia.Morley@dec.wa.gov.au]  
To: BAETGE Marni (GEnv)  
Cc:  
Subject: Results of TEC/PEC Search - Broome-Cape Leveque Road Upgrade (MR)  
Attachments: [Conditions of supplying TEC data.doc](#) (36 KB)

Sent: Wed 17/01/2007 4:06 PM

Hi Marni,

I refer to your request of 17<sup>th</sup> January 2007 for information on threatened and priority ecological communities occurring within the search area: -16.6868923, 122.96202795 and -16.8085123, 122.83211005.

A search was undertaken for this area of the Department's Threatened Ecological Communities database. Please note that there are no known occurrences of threatened ecological communities recorded within this boundary.

However there are identified occurrences of the 'Vulnerable' threatened ecological communities known as 'Vine thickets on coastal sand dunes of Dampier Peninsula' and occurrences of the priority ecological communities known as 'Assemblages of Lolly Well Springs wetland complex' and 'Assemblages of Disaster Bay organic mound springs' nearby (within 35 kilometres of the search area). So please keep an eye out for occurrences of these community types within your search boundary.

Attached also are the conditions under which this information has been supplied. The information supplied should be regarded as an indication only of the ecological communities that may be present.

It would be appreciated if any occurrences of threatened or priority ecological communities encountered by you in the area could be reported to this Department to ensure their ongoing management.

Please follow the link below for information on flora, fauna and TEC Search requirements.  
[http://www.naturebase.net/plants\\_animals/watscu/pdf/flora\\_fauna\\_tec\\_searches\\_06.pdf](http://www.naturebase.net/plants_animals/watscu/pdf/flora_fauna_tec_searches_06.pdf)

Regards




**Mia Morley**

Ecologist - TEC Database  
Species and Communities Branch



From: Lullfitz, Ben [Ben.Lullfitz@dec.wa.gov.au]  
To: BAETGE Marni (GEnv)  
Cc:  
Subject: RE: Broome-Cape Leveque Road Upgrade

Sent: Mon 22/01/2007 11:34 AM

Attachments:  DampierPeninsula\_drflist\_220107.doc (24 KB);  DampierPeninsula\_waherb\_220107.dbf (836 B);  DampierPeninsula\_letter\_220107.doc (280 KB)

Hi Marni

Please find attached the results from the Western Australian Herbarium database and DEC's DRF and Priority Flora list for the search you requested in the Dampier Peninsula area. A search was conducted on DEC's Threatened (Declared Rare) Flora database, however no results were retrieved.

The search coordinates used were:

NW Corner 16° 32' S, 122° 40' E

SE Corner 16° 57' S, 123° 08' E

Please refer to the attached letter for the conditions in relation to the supplied information. Feel free to contact me if there are any queries.

Regards

**Ben Lullfitz**

Threatened Flora Database Officer  
Species and Communities Branch  
Department of Environment and Conservation  
Locked Bag 104, Bentley Delivery Centre WA 6983  
Ph (08) 9334 0123 Fax (08) 9334 0278  
ben.lullfitz@dec.wa.gov.au



---

**From:** BAETGE Marni (GEnv) [mailto:marni.baetge@mainroads.wa.gov.au]  
**Sent:** Wednesday, 17 January 2007 10:38 AM  
**To:** Lullfitz, Ben  
**Subject:** Broome-Cape Leveque Road Upgrade

Ben,

From:  Mantle, Kellie [Kellie.Mantle@dec.wa.gov.au]  
To: BAETGE Marni (GEnv)  
Cc:  
Subject:

Sent: Thu 18/01/2007 12:07 PM

Attachments:  conditions.doc (24 KB);  raref\_MainRoads\_Baetge.pdf (24 KB)

Hi Marni

Please find attached the threatened and priority fauna results for the Broome-Cape Leveque Rd area. Within the co-ordinates you provided only the Peregrine Falcon record currently exists in our database. I extended the search area with a 30km buffer to capture some relevant nearby records.

If you have any queries regarding the information supplied please don't hesitate in contacting me.

Thanks  
Kellie

*Kellie Mantle  
Species and Communities Branch  
Department of Environment and Conservation  
Phone (08) 93340579  
Fax (08) 93340278*

## **Appendix C**

### **Australian Heritage Places Inventory, Heritage Council of Western Australia and the Municipal Heritage Inventory Database Searches**

OTHER REGISTER INFORMATION:

**WHAT IS THE STATE REGISTER?  
OTHER HERITAGE LISTS**

There are two different lists you can search.

The **State Register of Heritage Places** recognises a place's value and importance to Western Australia. The State Register includes buildings, structures, gardens, cemeteries, landscapes and archaeological sites and has more than 1,200 places on it. The State Register is managed by the Heritage Council and provides a place with statutory protection to ensure it is conserved into the future.

The entire **Places Database** includes places listed in the State Register as well as those included in a Local Government's Municipal Inventory, the Commonwealth's Register of the National Estate and the National Trust's List of Classified Places. There are more than 17,500 places on the Places Database.

To do a search simply enter the details of the place; select whether you want to search the State Register or the Entire Database; and click the 'Search' button below.

It is important to note that the entry of a place in the State Register of Heritage Places does not make the place available for public access.

If you need further advice on whether a property is heritage listed, please call the Heritage Council on 9221 4177.

SEARCH

HELP

Search In:  State Register of Heritage Places  Entire Database

Place No:

Name Contains:

Street:

Suburb/Town:

Local Govt:

Search logic:

SEARCH

HELP

PLACES DATABASE ACTIONS:

- [QUICK SEARCH](#)
- [ADVANCED SEARCH](#)
- [▶ RESULTS LIST](#)
- [LOCATION REPORT](#)
- [SAVE DATA](#)

**There are no Places matching your search criteria.**

If you'd like to perform a new search, please select a new Places database search, from the menu on the left-hand side.

---

[▲ top of page](#)   [ [disclaimer](#) ]   © copyright 2007 heritage council of western australia

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OTHER REGISTER INFORMATION:

- [WHAT IS THE STATE REGISTER?](#)
  - [OTHER HERITAGE LISTS](#)
-

## **Appendix D**

### **Department of Indigenous Affairs Database Search**



## **Appendix E**

### **Department of Water Sensitive Water Resources Database Search**



-----Original Message-----

From: BARNES Meghan

Sent: Thursday, 25 January 2007 12:20 PM

To: BEATGE Marni

Subject: RE: Sensitive Water Resources - Broome-Cape Leveque Road Upgrade

Hi Marni,

Please find attached the information you requested.

The location of the proposed works itself does not seem to have any significant issues associated with it, obviously depending on the scale and requirements of the works. I went a little further than was requested in line with a statutory referral checklist we do for both stat refs and licence applications. Key issues located on or nearby the proposal area include:

- The area is located in the Canning Kimberley Groundwater Area proclaimed under the Rights in Water and Irrigation Act 1914. as such, any bore construction or abstraction of groundwater from within this area will need to be approved by the Department of Water.
- The area is NOT within a proclaimed Surface Water Area, however the Department would appreciate the right to comment on any proposed developments.
- The Geo Data Lake that lies directly south and south west of the road surrounding Pender Bay and which the Broome Cape Leveque Road crosses over, is listed as an area of inundation indicating that the road may be prone to flooding. However there don't appear to be any classifications for sensitivity or protection associated with the waterbody.
- There are numerous threatened ecological communities located along the coastline but it would be reasonable to expect that the proposed project will have little impact on these. DEC should be contacted for comments in relation to this issue.
- There is a listing of a sighted Threatened Fauna (Bird) on the southern edge of the proposed area. DEC will need to be contacted for further information.
- There are two large system 1 to 5 & 7 to 12 Areas again along the coast at Cape Borda and Deep Water Point. The closest either of these falls to the proposed road upgrade area is approximately 1.5km on my diagram, although the scale was not clear from your map. Again, not knowing the full magnitude of the roadworks, or methods of construction the impact is difficult to judge and it may be worth referring this to DEC for comment.
- There are no PDWSA's within or near the proposed area.

This information is based on the map provided to the Department and the brief description of works.

We would also suggest that you contact DEC for advice about any fauna or flora information and the potential impacts of your project, I have CC'd staff over there to inform them of our comments.

I hope this helps with your query Marni. Please call me if you have any further questions or need clarification of any of the above points on 9166 4112.

Regards

Meghan Barnes

Natural Resource Management Officer  
Department of Water  
Kununurra Office  
pH: 91664112

## **Appendix F**

### **WAPC's Acid Sulfate Soils Mapping**



# Acid Sulfate Soils Applicant Self-Assessment Form



## Important information for applicants

This form need only be completed if there is evidence of significant risk of disturbing acid sulfate soils at this location or having completed Form 1A - Application for approval of freehold subdivision or survey strata you have indicated yes to either question 1 or 2, Acid sulfate soils assessment, section 7.

## Applicant

The applicant is the person with whom the WAPC will correspond and, if the application is approved, the person to whom the approval will be sent.

Full name

Applicant signature  Date

Application property details

## Step 1

If you have previously indicated yes to question 1 or 2 on Form 1A go to Step 2.

Is there evidence of a significant risk of disturbing acid sulfate soils at this location?

The WAPC has published maps showing the levels of risk of acid sulfate soils. The maps are shown on figures 1-11 of planning bulletin no. 64 can be downloaded at [www.wapc.wa.gov.au/Publications/213.aspx](http://www.wapc.wa.gov.au/Publications/213.aspx)

Question 1: Is the land depicted in figures 1-11 of the WAPC's Planning Bulletin No 64 Acid Sulfate Soils as having a high risk of actual acid sulfate soil and potential acid sulfate soil <3m from the surface?  yes  no

Question 2: Is the land located in an area, whether depicted in figures 1-11 or not, where site characteristics and local knowledge lead you to form the view that there is a significant risk of disturbing acid sulfate soils at this location?  yes  no

If yes to either of these questions go to Step 2.

If no to both of these questions then no further investigation is required. Sign this form and submit it with your application together with the written results of the preliminary site assessment.

## Step 2

Are any of the following works proposed, or likely to be carried out, on the land?

Question 3: Are any dewatering works proposed to be undertaken?  yes  no

Question 4: Is the surface elevation  $\leq 5m$  AHD and is excavation of  $\geq 100m^3$  of soil (ie 10 standard dump truck loads) with an excavation depth of  $\geq 2m$  proposed?  yes  no

Question 5: Is the surface elevation  $> 5m$  AHD and is excavation of  $\geq 100m^3$  of soil (ie 10 standard dump truck loads) with an excavation depth of  $\geq 2m$  proposed?  yes  no

If yes to any of these questions go to step 3.

If no to all of these questions no further investigation is required. Sign this form and submit it with your application.

## Step 3

Carry out preliminary site assessment in accordance with Department of Environment and Conservation guidelines.

Note: Copies of documents in the acid sulfate soils guidelines series and further technical advice and information can be obtained from contaminated sites page on the Department of Environment and Conservation's website at <http://www.dec.wa.gov.au>

Question 6: Did the preliminary site assessment reveal the presence of acid sulfate soils?  yes  no

If yes to this questions go to step 4.

If no to this questions then no further investigation is required. Sign this form and submit it with your application together with the written results of the preliminary site assessment.

PTO for information on submissions  
Version: 2.1 (October 2006)

## **Appendix G**

### **Department of Agriculture and Food Advice on Declared Weeds**

Table 4.3 Weed species recorded within proposed road alignment

Species	Common name	No. location recorded	Distribution	Comment
* <i>Passiflora foetida</i>	Stinking passion flower	7	Widespread from the Kimberley to Carnarvon	Common in disturbed areas on river and creek banks
* <i>Stylosanthes hamata</i>	Carribbean stylo	5	Naturalised at Cape Leveque and between Broome and Derby	Also naturalised in N.T. and Qld. This genus cultivated as fodder crop.
* <i>Chloris barbata</i>	Purple top chloris	3	Widespread from the Kimberley to Carnarvon, also N.T and Qld.	Favours road verges, disturbed sites and creeklines
* <i>Cenchrus biflorus</i>	Gallons curse	2	Naturalised in pindan and vine thickets of Broome area and from Derby along Fitzroy River system. Also in N.T. and Qld.	Spiny burrs are troublesome.
* <i>Cenchrus ciliaris</i>	Buffel grass	2	Widespread throughout W.A. Found in all mainland states.	Cultivated as forage grass, but invasive and ultimately replaces native grasses. Tolerant of wide variety of habitats but particularly common at road edges and drainage areas.
* <i>Hyptis suaveolens</i>	-	2	Naturalised in Kimberley Region from Kalumburu southwest to Broome. Also N.T. and Qld.	Favours dry, open situations, along riverbanks, waste areas, roadsides and clearings. Strongly aromatic, almost fetid.
* <i>Gossypium hirsutum</i>	Upland cotton	1	Throughout Kimberley Region.	Previously cultivated in Ord River irrigation area. Found in wastelands, creeks and pindan

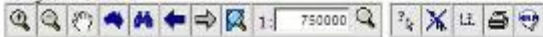
Species	Common name	No. location recorded	Distribution	Comment
<i>*Malvastrum americanum</i>	Spiked Malvastrum	1	Extends from Derby and Kununurra southwards to Carnarvon, scattered records elsewhere. Also N.T., S.A., N.S.W. and Qld.	Possibly toxic to stock. Often on sandy soils, open woodland or grassland, river and creek margins.

## **Appendix H**

### **Department of Environment and Heritage Database Search**


## Map Search

Navigation buttons



Search definition buttons

0 km Buffer Report



Approx. Lat/Long 16° 22' 50" S, 122° 54' 20" E

Click Report or click and drag on the map to select a new search rectangle.  
4 point(s) selected. Approx. area 160.7 square km incl. buffer.

### Three [steps](#) to an environmental report

1. Zoom to an area of interest using the [navigation buttons](#). Tick [layers](#) to display on the map.

- |                                     |  |                       |
|-------------------------------------|--|-----------------------|
| <input type="checkbox"/>            | <a href="#">Protected Areas</a>                | <input type="radio"/> |
| <input checked="" type="checkbox"/> | <a href="#">World Heritage</a>                 | <input type="radio"/> |
| <input type="checkbox"/>            | <a href="#">Australian Heritage</a>            | <input type="radio"/> |
| <input checked="" type="checkbox"/> | <a href="#">Ramsar Wetlands</a>                | <input type="radio"/> |
| <input type="checkbox"/>            | <a href="#">Important Wetlands</a>             | <input type="radio"/> |
| <input type="checkbox"/>            | <a href="#">Forest Agreements</a>              | <input type="radio"/> |
| <input checked="" type="checkbox"/> | <a href="#">Rivers and Lakes</a>               | <input type="radio"/> |
| <input checked="" type="checkbox"/> | <a href="#">Roads</a>                          | <input type="radio"/> |
| <input checked="" type="checkbox"/> | <a href="#">Towns</a>                          | <input type="radio"/> |
| <input checked="" type="checkbox"/> | <a href="#">Cwth Marine Area</a>               | <input type="radio"/> |
| <input type="checkbox"/>            | <a href="#">LGAs</a>                           | <input type="radio"/> |
| <input type="checkbox"/>            | <a href="#">Postcodes</a>                      | <input type="radio"/> |
| <input type="checkbox"/>            | <a href="#">Cadlite</a>                        | <input type="radio"/> |
| <input type="checkbox"/>            | <a href="#">Satellite Image Landsat TM 25m</a> | <input type="radio"/> |

2. Define your area of interest

Select the type of search area using the [search definition buttons](#).

Click on the map to [define the search area](#) (see instructions below the map).

Click on the map to [define the search area](#) (see instructions below the map).

Enter a [buffer distance](#) if required.

3. Click the [report](#) button located above the map to get a complete environmental report.

## EPBC Act Protected Matters Report

25 January 2007 12:05

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Information on the coverage of this report and qualifications on data supporting this report are contained in the [caveat](#) at the end of the report.

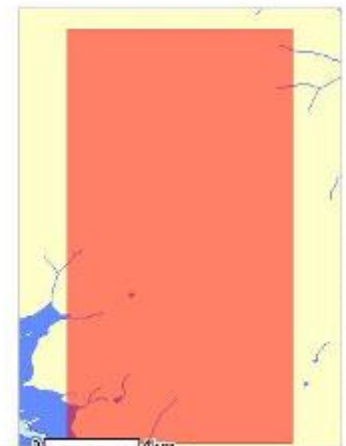
You may wish to print this report for reference before moving to other pages or websites.

The Australian Natural Resources Atlas at <http://www.environment.gov.au/atlas> may provide further environmental information relevant to your selected area. Information about the EPBC Act including significance guidelines, forms and application process details can be found at <http://www.deh.gov.au/epbc/assessmentsapprovals/index.html>

**Search Type:** Area  
**Buffer:** 0 km  
**Coordinates:** -16.6282,122.8503, -16.7901,122.8503, -16.7901,122.9383, -16.628,122.9383



**Report Contents:** [Summary](#)  
[Details](#)  
[Matters of NES](#)  
[Other matters protected by the EPBC Act](#)  
[Extra Information](#)  
[Caveat](#)  
[Acknowledgments](#)





## Summary

### Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance - see <http://www.deh.gov.au/epbc/assessmentsapprovals/guidelines/index.html>.

<b>World Heritage Properties:</b>	None
<b>National Heritage Places:</b>	None
<b><u>Wetlands of International Significance:</u></b> <b>(Ramsar Sites)</b>	1
<b>Commonwealth Marine Areas:</b>	None
<b>Threatened Ecological Communities:</b>	None
<b><u>Threatened Species:</u></b>	5
<b><u>Migratory Species:</u></b>	9

### Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place and the heritage values of a place on the Register of the National Estate. Information on the new heritage laws can be found at <http://www.deh.gov.au/heritage/index.html>.

<b>Commonwealth Lands:</b>	None
<b>Commonwealth Heritage Places:</b>	None
<b>Places on the RNE:</b>	None
<b><u>Listed Marine Species:</u></b>	13
<b>Whales and Other Cetaceans:</b>	None
<b>Critical Habitats:</b>	None
<b>Commonwealth Reserves:</b>	None

### Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

<b>State and Territory Reserves:</b>	None
<b>Other Commonwealth Reserves:</b>	None
<b>Regional Forest Agreements:</b>	None

## Details

### Matters of National Environmental Significance

Wetlands of International Significance [ [Dataset Information](#) ]  
(Ramsar Sites)

[ROEBUCK BAY](#) Within same catchment as Ramsar site

Threatened Species [ [Dataset Information](#) ]      Status      Type of Presence

Threatened Species [ <a href="#">Dataset Information</a> ]	Status	Type of Presence
<b>Birds</b>		
<a href="#">Erythrotriorchis radiatus</a> * Red Goshawk	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Erythrura gouldiae</a> * Gouldian Finch	Endangered	Species or species habitat may occur within area
<a href="#">Rostratula australis</a> * Australian Painted Snipe	Vulnerable	Species or species habitat may occur within area
<b>Mammals</b>		
<a href="#">Dasyurus cristicauda</a> * Mulgara	Vulnerable	Species or species habitat likely to occur within area
<b>Sharks</b>		
<a href="#">Pristis microdon</a> * Freshwater Sawfish	Vulnerable	Species or species habitat likely to occur within area

Migratory Species [ <a href="#">Dataset Information</a> ]	Status	Type of Presence
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Migratory Terrestrial Species	Status	Type of Presence
<b>Birds</b>		
<a href="#">Erythrura gouldiae</a> Gouldian Finch	Migratory	Species or species habitat may occur within area
<a href="#">Haliaeetus leucogaster</a> White-bellied Sea-Eagle	Migratory	Species or species habitat likely to occur within area
<a href="#">Hirundo rustica</a> Barn Swallow	Migratory	Species or species habitat may occur within area
<a href="#">Merops ornatus</a> Rainbow Bee-eater	Migratory	Species or species habitat may occur within area
<b>Migratory Wetland Species</b>		
<b>Birds</b>		
<a href="#">Charadrius veredus</a> Oriental Plover, Oriental Dotterel	Migratory	Species or species habitat may occur within area
<a href="#">Gareola maldivarum</a>	Migratory	Species or species habitat may occur within area
<a href="#">Charadrius veredus</a> Oriental Plover, Oriental Dotterel	Migratory	Species or species habitat may occur within area
<a href="#">Gareola maldivarum</a> Oriental Pratincole	Migratory	Species or species habitat may occur within area
<a href="#">Numenius minutus</a> Little Curlew, Little Whimbrel	Migratory	Species or species habitat may occur within area
<a href="#">Rostratula benghalensis s. lat.</a> Painted Snipe	Migratory	Species or species habitat may occur within area
<b>Migratory Marine Species</b>		
<b>Reptiles</b>		
<a href="#">Crocodylus porosus</a> Estuarine Crocodile, Salt-water Crocodile	Migratory	Species or species habitat likely to occur within area

### Other Matters Protected by the EPBC Act

Listed Marine Species [ <a href="#">Dataset Information</a> ]	Status	Type of Presence
<b>Birds</b>		
<a href="#">Apus pacificus</a> Fork-tailed Swift	Listed - overfly marine area	Species or species habitat may occur within area
<a href="#">Ardea alba</a> Great Egret, White Egret	Listed - overfly marine area	Species or species habitat may occur within area
<a href="#">Ardea ibis</a> Cattle Egret	Listed - overfly marine area	Species or species habitat may occur within area
<a href="#">Charadrius veredus</a> Oriental Plover, Oriental Dotterel	Listed - overfly marine area	Species or species habitat may occur within area
<a href="#">Gareola maldivarum</a> Oriental Pratincole	Listed - overfly marine area	Species or species habitat may occur within area
<a href="#">Haliaeetus leucogaster</a> White-bellied Sea-Eagle	Listed	Species or species habitat likely to occur within area

[Haliaeetus leucogaster](#)  
White-bellied Sea-Eagle

[Hirundo rustica](#)  
Barn Swallow

[Merops ornatus](#)  
Rainbow Bee-eater

[Numenius minutus](#)  
Little Curlew, Little Whimbrel

[Rostratula benchalensis s. lat.](#)  
Painted Snipe

[Sterna albifrons](#)  
Little Tern

**Reptiles**

[Crocodylus johnstoni](#)  
Freshwater Crocodile

[Crocodylus porosus](#)  
Estuarine Crocodile, Salt-water Crocodile

Listed	Species or species habitat likely to occur within area
Listed - overfly marine area	Species or species habitat may occur within area
Listed - overfly marine area	Species or species habitat may occur within area
Listed - overfly marine area	Species or species habitat may occur within area
Listed - overfly marine area	Species or species habitat may occur within area
Listed	Species or species habitat may occur within area
Listed	Species or species habitat may occur within area
Listed	Species or species habitat likely to occur within area

From: Mantle, Kellie [kellie.mantle@dec.wa.gov.au] Sent: Thu 18/01/2007 12:07 PM  
To: BAETGE Marni (G5W)  
Cc:  
Subject:  
Attachments: [conditions.doc](#) (24 KB); [raref\\_MainRoads\\_Baetge.pdf](#) (24KB)

Hi Marni

Please find attached the threatened and priority fauna results for the Broome-Cape Leveque Rd area. Within the co-ordinates you provided only the Peregrine Falcon record currently exists in our database. I extended the search area with a 30km buffer to capture some relevant nearby records.

If you have any queries regarding the information supplied please don't hesitate in contacting me.

Thanks  
Kellie

*Kellie Mantle  
Species and Communities Branch  
Department of Environment and Conservation  
Phone (08) 93340579  
Fax (08) 93340278*

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