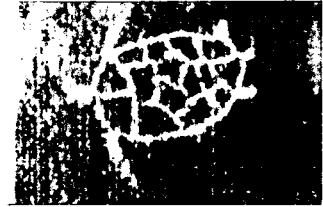




Government of
Western
Australia



DAMPIER ARCHIPELAGO/BURRUP PENINSULA

National Heritage, Rock Engravings and Industry
Frequently Asked Questions. Printed on 29 June 2007

INTRODUCTION

The Western Australian Government acknowledges the significance of the Aboriginal heritage, natural and economic values of the Dampier Archipelago and the Burrup Peninsula (Murujuga). In response to the likelihood of a National Heritage Listing over at least parts of the Archipelago, the State is working with the Federal Government to develop a Bilateral Agreement and accredited Management Arrangement that protects the important heritage values and provides for the State to manage major projects and the associated approvals process. In the interim, existing State Government management and regulatory processes provide protection for the heritage values of the Burrup area, including consultation with the local Aboriginal community and the provision of advice from the Aboriginal Cultural Material Committee. New developments will be closely monitored by the State Government and they will require referral to the Commonwealth if they might have a significant impact on the area's National Heritage values.

The Department of Indigenous Affairs is developing an Indigenous Heritage Management Plan that will ensure the ongoing protection and management of the heritage values of the entire Dampier Archipelago. The Department of Environment and Conservation (DEC) works closely with the Department of Indigenous Affairs in dealing with heritage protection and is responsible for managing DEC protected areas¹ such as National Parks, Marine Parks and Nature Reserves, within the National Heritage place jointly with the traditional custodians, to protect heritage and natural values.

¹ The World Conservation Union (IUCN) has an ongoing program to promote the establishment and effective management of a worldwide representative network of terrestrial and marine protected areas. The existing and proposed terrestrial and marine conservation and recreation reserves of the Burrup Peninsula and Dampier Archipelago vested in the Conservation Commission and Marine Parks and Reserves Authority and managed by the Department of Environment and Conservation are in accord with the objectives of the IUCN's protected areas program.

The State Government believes this cooperative approach between governments, the community and landholders is the preferred and most effective way to recognise and manage, protect and promote the area's National Heritage values.

Under the Burrup and Maitland Industrial Estates Agreement with the local Aboriginal people, and under the local town planning scheme, 52 per cent of the Burrup Peninsula from Searipple passage to the western limit of the Dampier Salt lease is zoned for industry (about 20 per cent of the Dampier Archipelago). This will not be expanded.

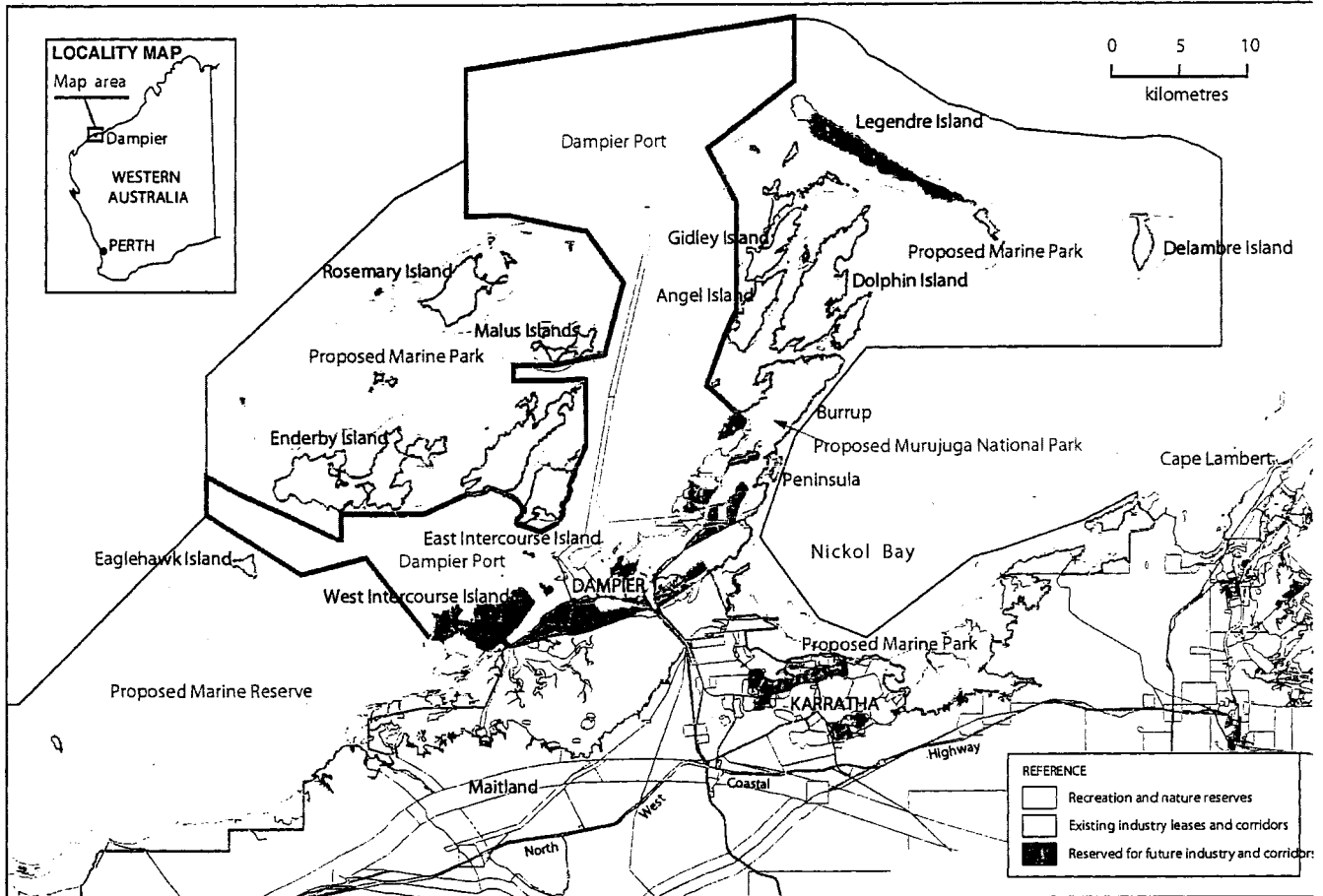
Land within the industrial zone may not be fully impacted as the footprint of the industrial development and conditions of *Aboriginal Heritage Act (Western Australia) 1972* Section 18 approvals may result in the prevention of the destruction of areas of heritage value.

The Pilbara region is rich in natural gas, iron ore and a range of other minerals. In 2006, the value of minerals and petroleum in the Shire of Roebourne was \$14.6 billion, around 30.1 per cent of the value of minerals and petroleum produced in the State. This accrued significant royalties to the State and Federal economies. The long term sustainability of communities in the Karratha, Roebourne and Wickham area is dependent on the resources industry in the region, which is expected to continue to grow over the coming years. State legislation protects the area's heritage by only allowing industry to continue and expand in restricted areas. Tourism is a growing industry in the area that capitalises on the natural and cultural heritage values of the region and is taking an increasing role in employment in the region.

There are many misconceptions about the cultural heritage values, the risks to those values and management arrangements to protect them. This document provides answers to some commonly asked questions.



DAMPIER ARCHIPELAGO



Q 1: What are the important heritage, environmental and economic values of the area and what is their significance?

National Heritage values of the area and their significance

- The Dampier Archipelago is rich in Aboriginal heritage sites. It has been listed because of its remarkable rock engravings and concentration of standing stone arrangements.
- The rock engravings include depictions of human figures and faces, human figures with combined human and animal characteristics, animals including thylacines (Tasmanian Tiger), kangaroos, whales, fish, emus and turtles.
- The range and number of rock engravings indicates that the area is arguably the richest rock engravings region in Australia.
- While no inventory of the rock engravings has been done, it is estimated that the area contains upwards of 100,000 rock engravings and some say possibly up to 1,000,000 rock engravings, the oldest of which are estimated to be more than 10,000 years old.

- Other Aboriginal heritage sites within the area include middens, artefact scatters, quarries and grinding patches.
- The area has been assessed by the Australian Heritage Council to meet five of the eight criteria under the *Environment Protection and Biodiversity Conservation Act 1999*.
- The area's National Heritage values are based on:
 - o The area's significant, diverse and abundant range of rock engravings.
 - o The rock engravings providing an unusual and outstanding visual record of human occupation and endeavour.
 - o Evidence of similar styles and motifs between the coastal region and inland arid Australia.
 - o The remarkable diversity of styles, motifs and subject matter within the rock engravings.
 - o Outstanding diversity and antiquity of engraved human forms and complex scenes showing human activity.

- o The rare and exceptional concentration and diversity of standing stones, stone circles and stone pits and arrangements.
- o The area's ability to contribute to understanding of the nation's cultural history through the chronology of archaeological sites.
- The Dampier Archipelago is significant as an outstanding and unique visual record of human occupation and endeavour over at least 10,000 years.

Environmental values of the Dampier Archipelago and the Burrup

Proposed Murujuga National Park

- Murujuga comprises rocky scree that varies in colour from orange red to deep purple. The coastal strip comprises sandy beaches, rocky shores, saline mudflats and areas of mangrove swamp. Spinifex hummock grasslands dominate, with emergent shrubs and open low woodland. Most trees are found in gullies, gorges and creeklines or in rock pockets.
- The peninsula has a richer diversity of wildlife than any equivalent sized area of the Pilbara, with 32 mammal species (four introduced), 168 birds (one introduced) and 60 reptiles and frogs.
- The threatened Pilbara olive python (*Liasis olivaceus barroni*), Rothschild's rock-wallaby (*Petrogale rothschildi*), an undescribed species of planigale and two undescribed reptiles, both belonging to the *Lerista muelleri* complex, are of particular interest and significance.

Proposed Dampier Archipelago Marine Park

- The waters of the proposed Marine Park are relatively pristine, and are host to extremely varied marine habitats, which include algae-covered limestone reefs, coral reefs, beaches and rocky shores.
- The marine plants and animals are predominantly tropical, with a number of regionally endemic species.
- Soft sediment habitats generally support a species-rich invertebrate fauna—an important food source for migratory birds. Coral and fish species are also diverse.
- Mangrove areas support many invertebrate species, and provide nursery areas or shelter for vertebrates. Green, hawksbill, loggerhead and flatback turtles all nest and feed on the islands/waters within the archipelago.

- Under the State's *Wildlife Conservation Act 1950* the turtles are listed as rare fauna that are likely to become extinct and are classified as threatened fauna under the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999*.

Proposed islands of the Dampier Archipelago National Park

- The islands form a chain of 42 unspoilt coastal islands, islets and rocks.
- Many of the islands feature steep rock piles, mangroves and sandy beaches.
- Aboriginal cultural values like those that occur on the mainland also occur in great numbers on some of the islands along with non-Aboriginal heritage values, eg old pastoral ruins.
- Mammals such as Rothschild's rock-wallaby, northern quoll and water rat are present on the islands.
- Marine turtles (green, loggerhead flatback and hawksbills) nest on the islands. Rosemary Island supports the largest hawksbill rookery in the Indian Ocean. The area is also a significant rookery site for many species of seabirds.
- The islands will be zoned for recreation (camping day use) and conservation of the important natural and cultural values.

Economic values of the Burrup Peninsula Industries and its significance

- The Burrup Peninsula is Western Australia's, and arguably Australia's, most important strategic industrial area due to its proximity to significant petroleum and iron ore resources. The Burrup industries contribute an exceptional amount of income to the State and national economy and have the capacity to maintain and increase that contribution well into the future. It is estimated that developers have already invested in excess of \$35 billion in industrial developments on the Burrup. The following summary figures demonstrate the significance of the area:
- In 2006, the value of minerals and petroleum in the Shire of Roebourne was \$14.6 billion, around 30.1 per cent of the value of minerals and petroleum produced in the State (Table 1 - DoIR Digest 2006²).
- In 2005, Western Australia accounted for 70 per cent of Australia's national crude oil and condensate production.

² DoIR Western Australian Mineral and Petroleum Statistics Digest 2006 at <http://www.doir.wa.gov.au/documents/StatisticsDigest/statsdigest2006.pdf>

- The value-added data for the WA resources industry were estimated to be 31.7 per cent (\$37,734 million) of the 2005-06 WA GSP (ABS 2006³). The Shire of Roebourne's output underpins approximately almost 10 per cent of the State's Gross State Product.
- Trade to and from the Port of Dampier reached 118.7 million tonnes for 2006. It is one of the largest tonnage ports in Australia (DPA 2006⁴). Dampier Port exported approximately \$14 billion worth of resources (dollar values estimated using interpreted prices based upon Table 1 in DoIR 2006⁵) including:
 - o Iron ore exports were 97.2 million tonnes with an estimated worth of \$5.7 billion.
 - o LNG exports were 12.3 million tonnes with an estimated worth of \$4.7 billion.
 - o Condensate exports were 3.5 million tonnes with an estimated worth of \$2.6 billion.
 - o LPG exports were 1.2 million tonnes with an estimated worth of \$836 million.
 - o Salt exports were 3.4 million tonnes with an estimated worth of \$76.6 million.
- The Port of Dampier will continue to grow over the next five years to be handling cargo in excess of 180 million tonnes with a projected trade value of almost \$20 billion.
- In 2006, Pilbara Iron (including Cape Lambert exports) produced 150 million tonnes of iron ore and paid \$411 million in royalties to the State.⁵
- Employment for 2005-06 based on Woodside Energy, Pilbara Iron and Dampier Salt operations totalled approximately 4978 (Average Number of Persons Employed in the WA Minerals and Petroleum Industries, DoIR 2006¹). (Note: The actual Pilbara figures may be less as in this case the Woodside figures include other operations in the State.)

Q 2: How will the local Aboriginal people be involved?

The rock engravings are of great importance to the Ngardangarli. The rock engravings remind them of stories, customs and knowledge of their land and resources. It plays an important part in the education of their children and is a tangible link to the events and people of the past. It confirms their status as the first people of Australia and is something they are very proud of.

³ ABS Western Australian Statistical Indicators publication 1367.5, Dec 2006 at: <http://144.53.252.30/AUSSTATS/abs@.nsf/DetailsPage/1367.5Dec%202006?OpenDocument>

⁴ Dampier Port Authority Cargo Statistics 2006 at: http://www.dpa.wa.gov.au/cargo_statistics.asp

⁵ 2006 Sustainable Development Report at: <http://www.pilbarairon.com/sd.asp>

The Aboriginal custodians have formed the Murujuga Park Council involving the Department of Environment and Conservation (DEC) to manage the proposed Murujuga National Park. The key direction from the Murujuga Park Council is:

- To protect and preserve sites/stories of cultural and natural significance;
- To ensure involvement of the Aboriginal community and culture in the development and management of the Burrup Conservation Reserve;
- To provide Aboriginal employment and training opportunities on country;
- To tell a "story" of Aboriginal connection to country; and
- To provide compatible recreation and commercial opportunities.

The function of the Murujuga Park Council is to develop policy with DEC on matters of importance to Aboriginal custodians and to provide direction and input into the management of the area. The Murujuga Park Council will also recommend the final Management Plan to government.

The DEC and the Murujuga Park Council are committed to working together to care for the proposed Murujuga National Park. The Murujuga Park Council is made up of representatives from three Aboriginal custodian groups being the Ngarluma Yindjibarndi, the Wong-goo-tt-oo and the Yaburara Mardudhunera.

Q 3: Will the cultural values of the area be managed to a world-class standard to ensure their protection?

- A Cultural Values Advisory Group (CVAG) has been set up to ensure the heritage values of the Murujuga and the broader Dampier Archipelago are managed to world-class standards, using best practice methods and approaches.
- The group is made up of internationally recognised experts in the field of rock art, cultural heritage, rock art evaluation and appropriate management.
- CVAG will provide expert advice to government agencies and the Aboriginal custodians (in particular the Murujuga Park Council) on cultural values management, as well as facilitate the communication of this information between management groups and the general public.
- Working as part of a team, with government agencies and Aboriginal groups, CVAG will evaluate the Aboriginal cultural values of the area and provide advice on the rock engravings and its appropriate management.

Q 4: What are the management plans for the area?

There are a number of plans already in place, as well as plans that are in the process of being implemented, as the region and its associated needs evolve.

Land Use Planning

- The Burrup Peninsula Land Use Plan and Management Strategy (BPLUPMS) adopted by State Cabinet in 1996 provides the overarching policy for land use planning on the Burrup.
- The BPLUPMS provided the basis for the Shire of Roebourne Town Planning Scheme No. 8 (April 2003) and provides the statutory basis for the land use and it controls and regulates land development for the area.
- The Burrup and Maitland Industrial Estate Agreement (BMIEA) signed in 2003 with the local Aboriginal groups, further defines the areas to which industry is restricted.

Heritage and Environmental Management

- The Department of Indigenous Affairs (DIA) is preparing an Indigenous Heritage Management Plan (IHMP), the draft of which will go out for public comment. The IHMP will take a holistic and inclusive approach that will see Aboriginal heritage protection and management of significant heritage sites, as well as important contiguous cultural landscapes, placed at the forefront of future management strategies for the entire Dampier Archipelago. A proactive and integrated heritage protection and management approach is the focal point of the IHMP. While the interaction between development and heritage must continue to be addressed, the issues associated with increased tourism and public recreation must also be taken into greater consideration. Ultimately, the IHMP will seek to balance the needs of industry, recreation and tourism while preserving and maintaining the outstanding heritage values of the region.
- The Department of Environment and Conservation (DEC) is responsible for DEC protected area⁶ management, biodiversity conservation and environmental regulation across the State, including the issuing of industry licenses to operate. In relation to the Burrup Peninsula and the broader Archipelago DEC protected area, management includes:

- Murujuga National Park (proposed) to be finalised in September 2007.
- Dampier Archipelago Marine Park (proposed) to be finalised August 2007.
- Islands of the Dampier Archipelago National Park (proposed) to be finalised in September 2007 (the islands are currently Nature Reserves and Recreation Reserves).
- The management plans associated with these areas have undergone community consultation (with both Aboriginal and non Aboriginal communities), over a number of years.

Murujuga National Park Management Plan

- The Burrup and Maitland Industrial Estates Agreement provides for 4,913 ha of freehold land on the Burrup Peninsula to be vested in the Murujuga Aboriginal Corporation then leased back to the State for joint management by the Department of Environment and Conservation and the Murujuga Park Council.
- A draft Burrup Peninsula Conservation Reserve Management Plan has received public comment and now is being finalised. It addresses the protection of Aboriginal heritage values, biological and landscape values while encouraging Aboriginal enterprises. The National Heritage Listing of the area will be recognised in the final plan.
- The Plan discusses options for the establishment of a visitor centre as a "visitor hub" and providing opportunities for rock art viewing with access for wheelchairs.
- The Plan's objectives for management of cultural heritage values within the Reserve are summarised as follows:
 - Ngarda-ngarli (made up of the traditional owners of the Ngarluma/Yindjibarndi, Yaburara/Mardudhunera and Wong-goo-tt-oo groups) cultural heritage values are protected and promoted at the highest standard and in accordance with the wishes of Ngarda-ngarli.
 - Recording of rock engravings and other archaeological features across the reserve and the recording of Ngarda-ngarli knowledge and stories occur as a priority.
 - The proposed Burrup Peninsula conservation areas are recognised nationally and internationally for their heritage values.

⁶ The World Conservation Union (IUCN) has an ongoing program to promote the establishment and effective management of a worldwide representative network of terrestrial and marine protected areas. The existing and proposed terrestrial and marine conservation and recreation reserves of the Burrup Peninsula and Dampier Archipelago vested in the Conservation Commission and Marine Parks and Reserves Authority and managed by the Department of Environment and Conservation are in accord with the objectives of the IUCN's protected areas program.

- The Plan also addresses a range of measures to provide for long-term protection of the area's natural resources. These include:
 - Minimising erosion, rehabilitating impacted areas and protecting waterways.
 - Minimising adverse impacts on landscapes.
 - Conserving native flora and fauna, particularly threatened and other priority species.
 - Maintaining fire diversity and protecting fire sensitive ecosystems.
 - Zoning for public use including access for vehicles, boat launching, walking tracks and visitor interpretation and accommodation facilities.

Islands of the Dampier Archipelago National Park Management Plan

Most of the islands of the Dampier Archipelago are managed as nature reserves and recreation reserves, vested in the Conservation Commission of Western Australia.

- Many of the islands resemble the adjacent mainland and Burrup Peninsula with steep rugged cliffs, large rock piles, valleys, beaches and coastal sand plains.
- The islands are home to native mammals (12 species), birds (102 species), reptiles (41 species), amphibians (2 species of frog) and a diverse invertebrate fauna.
- The islands provide important undisturbed nesting and refuge sites for sea birds and shore birds.
- Of particular interest are the Mangrove Kingfisher and Pilbara Olive Python that are included under State and Federal rare faunal lists.
- It is intended that these reserves will be incorporated into the islands of the Dampier Archipelago National Park totalling over 13,800 ha.

Aboriginal Heritage Act Honorary Wardens

- DEC rangers and staff already competent in environment and heritage management will soon have further training by the DIA to become Honorary Wardens under the Aboriginal Heritage Act.

Q 5: What will be the implications of a Heritage Listing on the DEC Protected (Conservation) Areas?

- The purpose of establishing protected areas⁷ in Western Australia is consistent with the requirements of National Heritage Listing.
- If the place is on State or private land, it can be further protected by the Commonwealth where it has the appropriate Constitutional power to do so. In the case of Aboriginal heritage places on the National Heritage List, the Commonwealth has the power to protect them irrespective of land tenure. In other cases, places may be protected under State legislation (through a bilateral agreement). Management plans are required for all places listed. Management plans prepared by the State for protected areas within the heritage place, are consistent with the requirements.
- The Budj Bim National Heritage Landscape at Lake Condah in Victoria's south-west was one of the first three places to be listed on the National Heritage List in July 2004 and provides a good example of the approaches that can be adopted.

Q 6: Do we have an inventory of the rock art?

- There is no comprehensive inventory of rock engravings on the Dampier Archipelago, however the DIA maintains a Register of Aboriginal Sites, including rock engravings, under section 38 of the *Aboriginal Heritage Act 1972 (AHA)*. The DIA has some funding to do further archaeological inventory studies over the archipelago and hopes to begin this work soon. Preliminary work is underway on the development of a collaborative partnership between government, industry and the traditional custodians of the Dampier Archipelago, including the Burrup Peninsula (Murujuga).
 - It will be designed to document the extent, distribution and significance of the cultural values of the concentration of rock engravings of the Archipelago.
 - Aboriginal involvement will be critical to the success of the program and will be woven into the structure of the research projects.

⁷ The World Conservation Union (IUCN) has an ongoing program to promote the establishment and effective management of a worldwide representative network of terrestrial and marine protected areas. The existing and proposed terrestrial and marine conservation and recreation reserves of the Burrup Peninsula and Dampier Archipelago, vested in the Conservation Commission and Marine Parks and Reserves Authority and managed by the Department of Environment and Conservation, are in accord with the objectives of the IUCN's protected areas program.

- o Research projects will focus on the cultural values within National Heritage place, including the Murujuga National Park, Dampier Archipelago National Park and the Dampier Archipelago Marine Park.

Q 7: What are the Environmental Impact and Heritage Assessment Processes for a project in a National Heritage Place?

- Development proposals that may have a significant impact on the National Heritage values should be referred to the Commonwealth Minister for the Environment and Water Resources to confirm whether there is a need for formal environmental impact assessment.
- Western Australia has a bilateral agreement with the Commonwealth that provides for the EPA to conduct such an assessment on the Commonwealth's behalf. The Commonwealth Minister however, would have the final decision. In such cases, the State would normally also assess the project and the State Ministers responsible for environment and heritage would have to give approval as well. The EPA decisions are informed by the decisions of the Minister for Indigenous Affairs in regard to Aboriginal heritage matters.
- The proposed assessment process is illustrated in the diagram below.

- In addition, negotiations are underway with the Commonwealth to develop an accredited approval Bilateral Agreement to allow the State to consider the range of nationally environmentally significant matters as part of its normal approvals, in order to avoid duplication of environmental impact approvals processes.
- The State envisages this to be the best process to enable heritage and industry to continue to co-exist.

Q 8: What are the benefits flowing to the Aboriginal groups under the Burrup Agreement and Maitland Industrial Agreement?

The Approved Body Corporate (ABC)

- The Registrar of Aboriginal Corporations incorporated the ABC on 19 April 2006 as the Murujuga Aboriginal Corporation. The Murujuga Aboriginal Corporation receives funding of \$100,000 per annum for four years.

Additional Monies

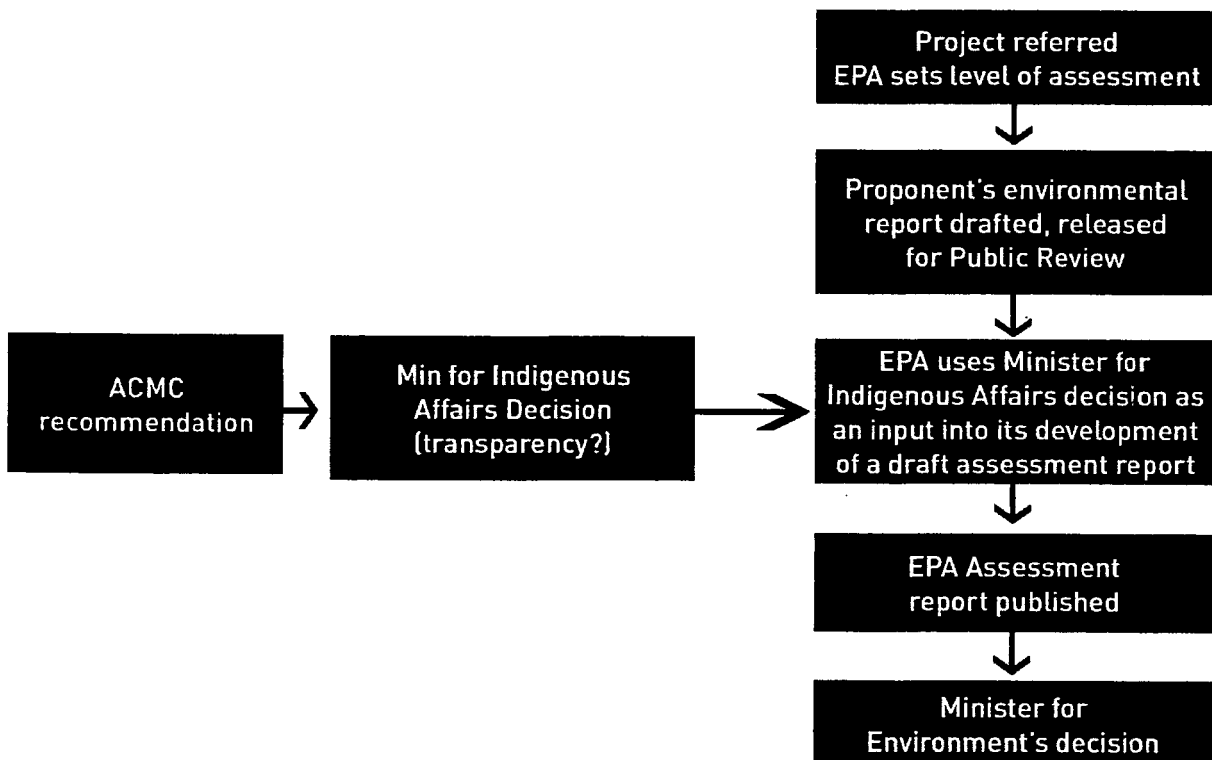
A range of payments is provided for under the BMIEA, including:

- \$4 million transferred to the Murujuga Aboriginal Corporation on 27 July 2006.

PROPOSED ASSESSMENT UNDER BILATERAL AGREEMENT

Assessment of Indigenous Heritage

Assessment of all matters of NES



- Financial benefit from industrial development through ongoing rental payments from companies and employment opportunities.
- Under the Agreement, the State transfers 5 per cent of the value of developed residential or commercial lots within specific areas of land in Karratha.

Non-industrial land

- The Agreement requires the State to transfer the non-industrial land (4913ha of the area of the Burrup Peninsula) to the Murujuga Aboriginal Corporation as Freehold title, which would then be jointly managed as National Park with the DEC. This cannot take place until 21 days after an approved native title decision has been handed down or, if appeals are made, it is not until 28 days after the final decision is made or the appeal is rejected. The Full Federal Court handed down its decision, rejecting the appeals on 7 June 2007. The parties have 28 days from 7 June 2007 to seek leave to appeal to the High Court.
- The area has been surveyed and markers placed delineating the Burrup Non-Industrial Land for registration purposes.
- The State has prepared a draft Management Plan for the lands to be transferred to the Murujuga Aboriginal Corporation. The draft report was released for public comment in July 2006. Work is ongoing toward completion of the plan.
- On transfer of freehold title:
 - o \$450,000 per annum is available for five years for the joint management of the Burrup Non-Industrial Land by DEC and Murujuga Aboriginal Corporation;
 - o \$5,500,000 is available for construction of the Burrup Non-Industrial Land Buildings; and
 - o \$2,500,000 is available for construction of the Burrup Non-Industrial Land Infrastructure.

Education and Training

- The Department of Education and Training is seeking tenders for an Employment Service Provider, to identify available Aboriginal persons and contractors and endeavour to secure relevant employment, and is in negotiations with the Murujuga Aboriginal Corporation to provide interim services.
- The Burrup Agreement provides for \$150,000 in funding (two payments of \$75,000 each) to the Murujuga Aboriginal Corporation for the support of students in realising their education ambitions.

Cultural site identification surveys

- Cultural site identification surveys of six areas within the Burrup Industrial Estate are being undertaken to ensure information is recorded about the rock engravings. Storage of the information must be secure and publicly accessible (subject to cultural and/or gender restrictions).

Air Quality and Rock Art Study

- The State has organised and funded a minimum four-year study into the effects of industrial emissions on rock engravings within and in the vicinity of that part of the Industrial Estate, which is on the Burrup Peninsula. This is discussed in detail in question 14 and 15.

Q 9: Will the industrial area be expanded?

- No. Under the Burrup and Maitland Industrial Estates Agreement with the local Aboriginal people, and under the local town planning scheme, 52 per cent of the Burrup Peninsula from Searipple passage to the western limit of the Dampier Salt lease is zoned for industry (about 20 percent of the Dampier Archipelago). This does not mean that the full area zoned for industry will be disturbed. To date, much of the industrial-zoned land remains undisturbed.
- Project footprints are designed to avoid disturbance to heritage material, natural drainage and sensitive vegetation communities, wherever possible. Construction and earthworks are also generally designed to use the flattest available land and to avoid rocky uplands and gullies. Apart from these environmental considerations, this is also done to minimise construction costs. This is also effective in minimising disturbance to rock engravings, as rock engravings are generally, but not exclusively, located in the narrow gullies and massive rock piles of the area.
- Any unavoidable disturbance to Aboriginal heritage sites is possible only with the permission of the Minister for Indigenous Affairs who, having regard to the general interest of the community, bases his/her decision on the advice from the Aboriginal Cultural Material Committee (ACMC). The ACMC bases its advice to the Minister on consideration of the heritage survey findings. These heritage surveys are conducted by heritage professionals with participation by Aboriginal people with cultural knowledge of the area.

Q 10. Why do we need to have export based industries on the Burrup?

- The Western Australian coastline offers very few locations that provide safe harbour, access to deep water, existing infrastructure and available natural gas.
- North West Shelf gas is piped ashore on the Burrup. The port precinct of Dampier provides deepwater access for export, shelter from seasonal storms and cyclones, and existing infrastructure to support shipping operations and offshore production rigs.
- Most of the commodities produced on the Burrup are exported. The costs of getting product to the port are borne by the project and must be minimised to ensure profitability. For this reason export projects are located as close as possible to the export facilities.
- Gas transmission costs add to the cost of gas used in chemical processes or as fuel. The further the distance that gas is transported, the more cost is charged for transmission. As can be imagined, this means every joule of gas used by a project is more expensive the further it is from the gas source. Some major projects use tens to hundreds of terajoules of gas everyday in continuous processes. Most projects find that operating costs including feedstock costs must be minimised to allow profitable operation over the life of the project, typically greater than 25 years.

Q 11: One source suggests up to 25 per cent of Dampier Archipelago rock engravings have been destroyed. Is this true?

- No. Although the rock engravings on the Burrup and the islands of the Dampier Archipelago have not undergone a full inventory, the Western Australia Department of Indigenous Affairs estimates actual damage is less than 5 per cent.

Q 12: What is acid rain and is it true it exists on the Burrup?

- Acid rain can be defined as rainfall with a pH of less than 5.6. Carbon dioxide in the air naturally dissolves in rainfall to make a very dilute carbonic acid with a pH of about 5.6. However, natural sources of acidity in air such as naturally occurring organic acids produce rainfall acidity which can vary widely. For example, the CSIRO in the Alligator River region of the Northern Territory recorded a rainfall pH range of 3.6 – 5.2. Other researchers in reviewing the composition of rainfall in remote locations in the world advised that Katherine in the Northern Territory had a pH range of 4.6 to 5.4.

- CSIRO analysis of rainfall over the Burrup Peninsula during three periods from April to July 2005 show a pH range of 4.6 to 5.2, which is within the naturally occurring range.

Q 13: Are acids only deposited in rain?

- Acids, whether of natural or human-induced origin, can be deposited in a wet form as wet deposition, in rain, dew, fog, snow etc., or in dry form as particles or gases adhering to surfaces called dry deposition. Together they are called acid deposition. In a low rainfall environment such as the Burrup Peninsula, acid deposition will be dominated by dry deposition, not wet deposition.
- Acid deposition has the potential to have adverse effects on plants, animals, ecosystems and objects of cultural or historical importance. Whether adverse effects occur because of acid deposition depends on the level of acidity of the deposition and the buffering capacity of the receiving environment or object.

Q 14: What are levels of acid deposition on the Burrup?

- The State Government commissioned a four-year scientific study under the independent Burrup Rock Art Monitoring Management Committee (chaired by Professor Frank Murray of Murdoch University) to investigate the potential for industrial emissions to impact on rock engravings.
- The Commonwealth Scientific and Industrial Research Organisation (CSIRO) has been commissioned by the Committee to conduct independent measurements of wet and dry deposition on the Burrup Peninsula and elsewhere to assess levels of acid deposition. The rate of acid deposition fluxes was measured at five sites by calculating the wet and dry deposition of all nitrogen and sulphur species in the gas and aqueous phases. This included nitrogen dioxide, sulphur dioxide, nitric acid and ammonia gases and ammonium ion, nitrate ion and sulphate in rainwater. The total acid deposition fluxes were an average 48 per cent higher than background at sites adjacent to the industrial areas. The CSIRO report advised that "although the enhancement of acid deposition fluxes from the background to the industrial areas is observable it is small [CSIRO, 2006a]".
- The rainfall was dominated by sodium and chloride, typical of marine salts. Between 69-85 per cent of the acid deposition consisted of dry deposition due to the low rainfall. This monitoring is continuing and all reports are being made available to the public via the Department of Industry and Resources' website.

Q 15: Are these levels of acid deposition likely to affect the rock art?

- This research is continuing but the CSIRO report found that acid deposition levels that cause harmful effects on soils would be some ten times more than the observed deposition fluxes at the Burrup recording sites (CSIRO, 2006a).
- Rock engravings are being monitored by CSIRO with reports being provided on the Department of Industry and Resources' website since measurements commenced in 2004. No changes have been observed.⁸

Q 16: Have there been investigations into the incidence of pollution-caused health issues in the area? It has been said that the North West Shelf gas plant emits a number of dangerous toxins. How dangerous are these emissions?

- Public health monitoring across Western Australia is the responsibility of the Health Protection Group of the Western Australia Department of Health. This work has not indicated any above average increase in pollution-related disease in the Pilbara. This means for example, that leukaemia and breast cancer rates in the Pilbara are the same as for elsewhere in the State.
- Department of Health monitoring has shown exposure of people to any emissions in the district is low.
- Emissions are within Environmental Protection Authority (EPA) plant licence conditions. The North West Shelf gas plant has achieved an International Standards Organisation (ISO14001) certification for its environmental practices.
- Air quality is generally good, comparable to the outer suburbs of Perth and better than many other urban centres.

Q 17: Who will monitor industry emissions on the Burrup Peninsula and how will they be monitored?

- The Department of Environment and Conservation regulate industry emissions under the *Environmental Protection Act 1986*. An environmental licence now includes an Environmental Assessment Report, which identifies whether an emission is significant and requires a licence condition for management or can be managed by other means.
- For example, emissions of oxides of nitrogen (NOx) from oil and gas industry located on the Burrup are managed through a licence condition, which limits the amount that can be emitted. For dust emission from iron ore ports, a regulator-community-industry group involving DEC meets bi-annually to ensure that dust management includes ongoing efforts to control and reduce dust.

Q 18: Some people suggest heavy industry on the Burrup should be relocated to the Maitland Heavy Industrial Estate. Can this be done?

- Unfortunately, Maitland is not an easy option for investors or for government because of cost, timing and heritage impact issues.
- In November 2004 the then Minister for State Development, in an answer to a question on notice in the Parliament of Western Australia noted the following cost estimates to develop Maitland:

Road to link Dampier Road with a crossing to West Intercourse Island (WII):	\$40M
Causeway and bridge sections for road crossing to WII:	\$53M
Port facilities to include dredged channel and single liquids Berth:	\$100M
Access to port facilities at WII from Maitland:	\$66M
TOTAL:	\$259 M

- o This would provide basic access from the Maitland area to the port for export of product. It does not include additional basic or specific infrastructure services required by industry (e.g. power supply; gas supply; waste disposal; the provision of any additional service corridors; or cooling, process and potable water). There is no surplus capacity in existing infrastructure services in the area.

⁸ References

CSIRO 2006a. Burrup Peninsula Air Pollution Study. CSIRO, Melbourne.

Available for download from: <http://www.doir.wa.gov.au/investment/1EB312D3F310448991BB09F4F18B74CB.asp>

CSIRO 2006b. Field studies of rock art appearance. CSIRO, Melbourne.

Available for download from:

<http://www.doir.wa.gov.au/investment/1EB312D3F310448991BB09F4F18B74CB.sp>

1EB312D3F310448991BB09F4F18B74CB.sp

- o Since then, SMEC consultancy has conducted a comparative study of northern industrial sites. Using assumptions about 'standard' projects, SMEC estimates a figure of \$479 million for Maitland's development. This amount is heavily caveated because any 'real' development would necessitate different assumptions about costs, subject to requirements and detailed design of individual projects.
- The aforementioned SMEC report is three years old and since then associated costs would have significantly increased.
- Export-based projects cannot locate to Maitland until the port infrastructure is developed. Development time would be around four years – effectively this would have to be developed without a proponent as very few proponents can afford to wait this long.
- Many Maitland supporters decline to mention that West Intercourse Island has significant heritage issues of its own, which the State would need to address before any future port development on the island could occur.

Q 19: What are the major companies operating on the Burrup and what do they produce?

North West Shelf Venture (NWSV)

- The historic cost of investment to date in the North West Shelf project's onshore, offshore and shipping facilities alone is approximately \$19 billion (DoIR Prospect 2006⁹).

Liquefied Natural Gas (LNG)

- The 4.2 million tonnes per annum fourth train is also Australia's largest single LNG production unit (DoIR 2006¹). On completion of Train 5 in 2008, the project's capacity will lift to about 16.3 million tonnes a year, making it one of the biggest LNG plants in the world (DoIR 2006¹).
- In total, petroleum royalties from the NWSV project (including from oil, condensate and gas production, as well as LNG) are expected to increase to around \$800 million a year after LNG train 5 is commissioned, with the State receiving around \$520 million and the Commonwealth receiving around \$280 million under the current royalty sharing arrangements.

- The NWSV project has paid approximately \$6.15 billion in royalties up until June 2006, \$4.02 billion to the State and \$2.13 billion to the Commonwealth (by addition of current figures to those from NHL submission March 2006¹⁰).

Condensate

- The largest producer of condensate in Western Australia is Woodside, operating the top four condensate fields for 2005, all in the North West Shelf area. Goodwyn, Echo Yodel, Perseus, Athena, and North Rankin total 36.0 MMbbl, which account for around 97 percent of the total condensate production from Western Australia (DoIR Oil and Gas Review 2006¹¹).

Woodside Pluto

- Woodside, operators of the NWSV LNG project, may also develop the Pluto gas field, estimated at 3.5 trillion cubic feet. Capital expenditure on the Pluto project will be between \$6 and \$10 billion.
- A final investment decision on the project is expected in mid 2007 (DoIR, Prospect Magazine, March-May 2007¹²). The LNG facility on the Burrup Peninsula is expected to produce five to seven million tonne of LNG per annum (DoIR 2006¹).

Pilbara Iron

In 2006, Pilbara Iron produced 150 million tonnes of iron ore and paid \$411 million in royalties to the State. Rio Tinto Iron Ore is the world's second largest producer of iron ore and recognised as a leading Australian exporter. Pilbara Iron has contributed to the extension of the Dampier Port to 140Mt capacity to a value of US \$690 million. The extensions are estimated for completion by the end of 2007 (Rio Tinto, 2006)¹³.

Dampier Salt

Dampier Salt is the world's largest exporter of solar salt, primarily serving customers in Asia. In 2006, Dampier Salt produced about 8.3 million tonnes of salt (Rio Tinto 2006¹⁴).

⁹ DoIR, Prospect Magazine, June-August 2006 at: <http://www.doir.wa.gov.au/documents/investment/ProspectJune2006.pdf>

¹⁰ Western Australian Government Submission to the Australian Heritage Council: National Heritage List Nomination of the Dampier Archipelago/Burrup Peninsula, March 2006, at:

http://www.doir.wa.gov.au/documents/investment/WAGov_submission_to_the_Australian_Heritage_Council.pdf

¹¹ Western Australian Oil and Gas Review 2006 at:

http://www.doir.wa.gov.au/documents/mineralsandpetroleum/WA_Oil_Gas_Review_2006.pdf

¹² DoIR, Prospect Magazine, March-May 2007 at:

http://www.doir.wa.gov.au/documents/investment/Prospect_March07.pdf

¹³ 2006 Sustainable Development Report at:

<http://www.pilbarairon.com/sd.asp>

¹⁴ Rio Tinto website, accessed 19 June 2007, at:

http://www.riotinto.com/whatweproduce/salt_3767.asp

Q 20: Now that the area is included in the National Heritage List, will I still be able to launch my boat at the Withnell Bay boat ramp to go boat and beach fishing throughout the Archipelago?

- Established boat launching and beach fishing in an area affected by a National Heritage Listing should not be affected. The reason for this is that there would be no further land disturbance other than what has already been experienced.

Q 21: Now that the area is included in the National Heritage List, will public access to Conzinc Bay be established?

- Access to Conzinc Bay would not be affected at its current level but upgrading of the access would need to consider the implications on the National Heritage values of increased numbers of people visiting the northern Burrup Peninsula. This matter is being considered with the finalisation of the Burrup Conservation Reserve management plan.

Q 22: Will Heritage listing affect the proposed Dampier Marina?

- The proposed Dampier Marina is expected to be outside the National Heritage Listed area.

Q 23: Will recreational access to the Heritage Listed area be further restricted?

- Access to the area will change and be managed to ensure the remarkable cultural heritage values of the Burrup Peninsula and the broader Dampier Archipelago are protected. The community will be informed about changes to access in protected areas.¹⁵

¹⁵ The World Conservation Union (IUCN) has an ongoing program to promote the establishment and effective management of a worldwide representative network of terrestrial and marine protected areas. The existing and proposed terrestrial and marine conservation and recreation reserves of the Burrup Peninsula and Dampier Archipelago vested in the Conservation Commission and Marine Parks and Reserves Authority and managed by the Department of Environment and Conservation are in accord with the objectives of the IUCN's protected areas program.

A program of track rationalisation for the proposed Murujuga National Park is currently being developed.

- Access for recreation, tourism, education and research within these areas is generally unrestricted, although subject to permit in some instances. Commercial and recreational fishing will not be permitted in the *Sanctuary Zones* of Marine Parks nor will other extractive or damaging uses such as aquaculture, exploration drilling, oil and gas extraction, dredging, or waste disposal. The proposed sanctuary zones of the Dampier Archipelago Marine Park make up less than 7 per cent of the total area of the marine park.

Q 24: Will recreational fishing be permitted within the Heritage Listed area?

- Yes. The waters of the Dampier Archipelago below low water mark are not included in the National Heritage Place, apart from which, recreational fishing is permitted in heritage listed places.
- Sanctuary zones within the proposed Dampier Archipelago Marine Park are no take areas designed to conserve environmental values for future generations. The proposed sanctuary zones currently make up less than approximately 7 per cent¹⁶ of the total area of the proposed marine park.

Q 25: Will the State nominate the Dampier Archipelago to the World Heritage List?

- The National Heritage values of the area have now been recognised. The State is focused primarily on the implementation of heritage and environment management initiatives and on the development of an accredited bilateral agreement and agreed management arrangement in order that the Commonwealth can delegate decision making to the State.

¹⁶ Note that this may change when the boundaries are finalised.

Further information

For further information, visit our website:

www.doir.wa.gov.au/burruprockart

www.doir.wa.gov.au/burruprockart/monitoringresults



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