

Cape Range - Ningaloo World Heritage Nomination

*Presentation to the
Community Consultative Committee*

9 July 2004



Department of
Industry and Resources

KEY CONCERNS

Potential threats to Resources and Industry Development

The World Heritage Values Study Area covers

- **Mining Act 1978**
 - Tenements for exploration and production
 - Temporary Ministerial Reserves
- **Petroleum Act 1967, Petroleum (Sub Merged Lands) Act 1982, Petroleum Pipelines Act 1969**
 - Exploration and production tenements, seabed pipelines and infrastructure
- **Dampier Solar Salt Industry Agreement Act 1967**
- **Onslow Solar Salt Agreement Act 1992**

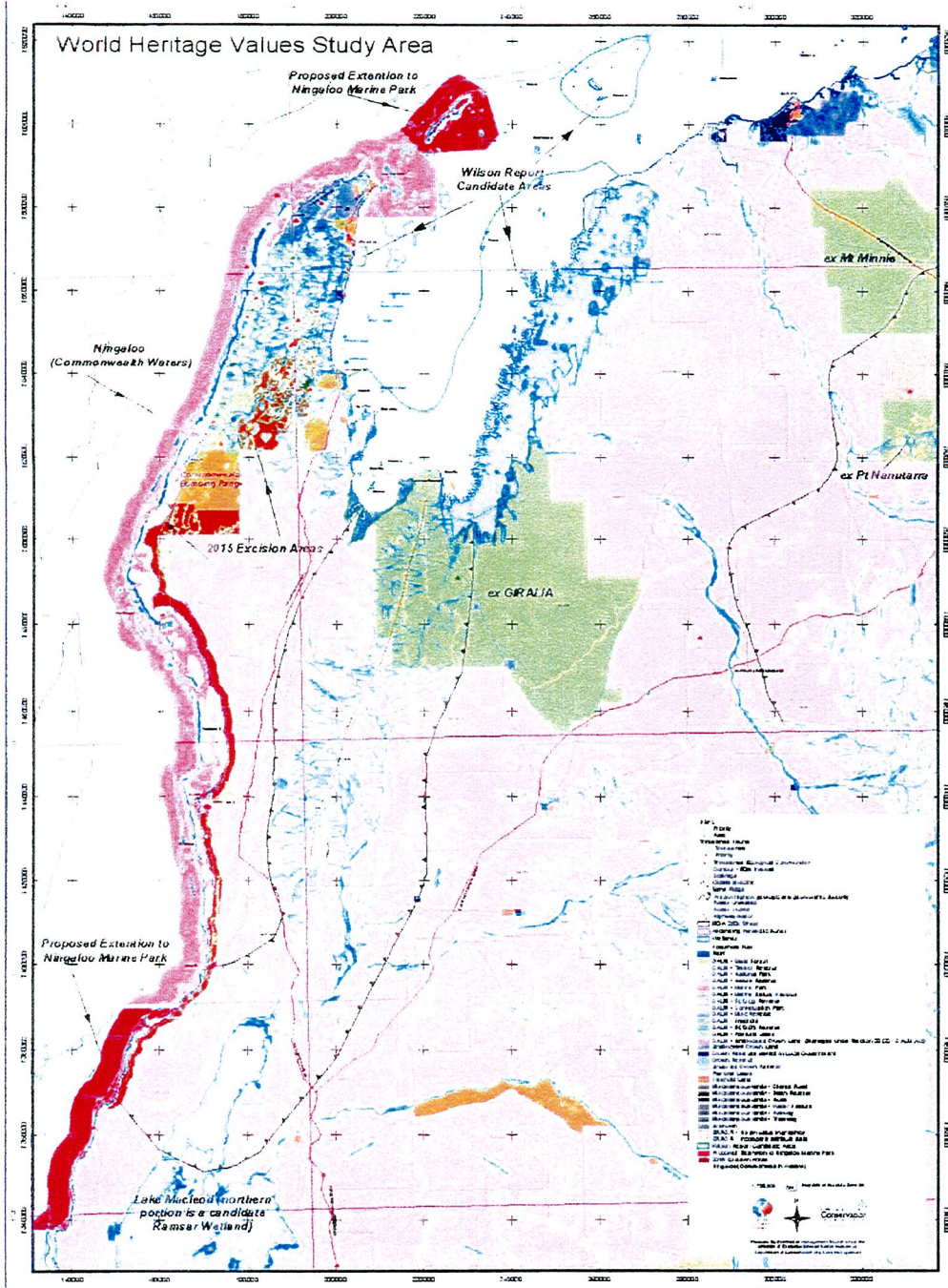


Minerals & Petroleum of State Economic Significance

- *High industrial grade limestone in Cape Range, (Temporary Ministerial Reserve) and identified in draft State Lime Supply Strategy*
- *Existing solar salt production at Onslow and Lake MacLeod. (State Agreement Acts)*
- *Proposed solar salt production east coast of Exmouth Gulf (Temporary Ministerial Reserve)*
- *Significant oil and gas provinces (land and offshore)*
- *Current oil production at Rough Range (Empire Oil)*
- *Other minerals: Gold, silver, copper/lead/zinc, diamonds, tungsten, gypsum, gemstones*

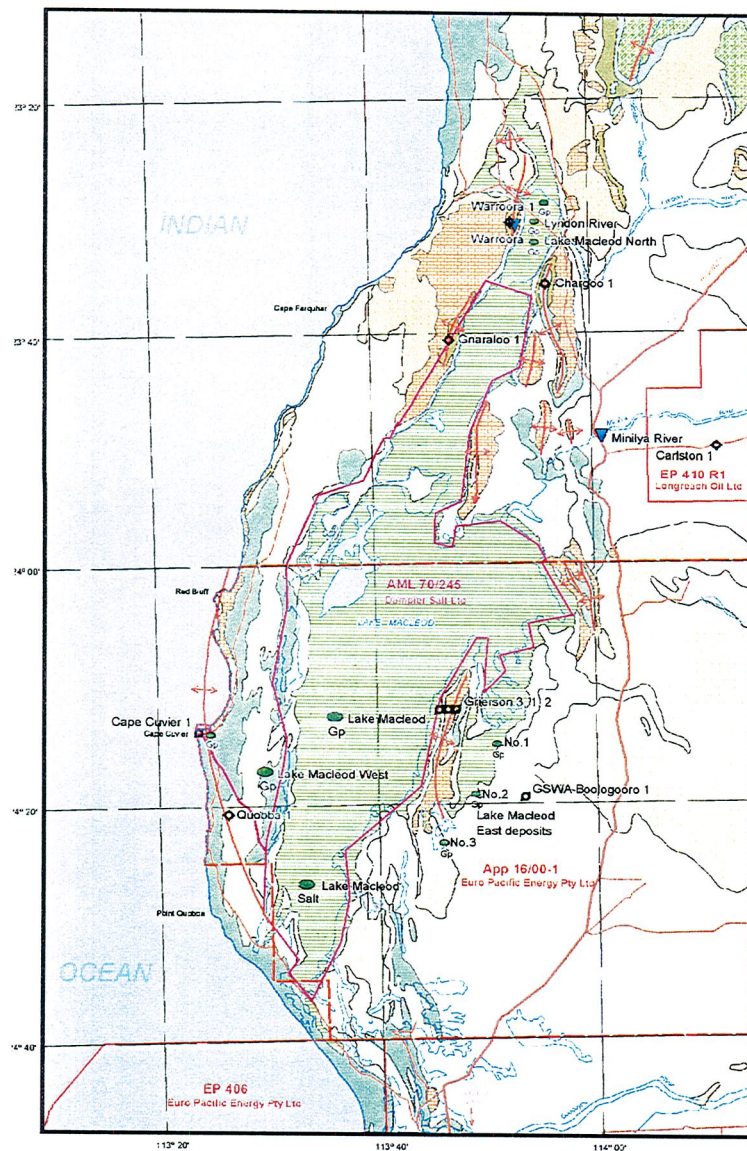


World Heritage Values Study Area



Department of Industry and Resources

Department of
Industry and Resources



RESOURCE POTENTIAL FOR LAND USE PLANNING LAKE MACLEOD AREA

Geology

- Marine carbonate: intertidal and supratidal deposits, minor beach ridge, coastal dune and coastal lake deposits; mostly calcareous, commonly algal bound or coralline
- Eolian carbonate: coastal dune and beach ridge deposits, minor supratidal and coastal lake deposits; mostly calcareous sand and calcarenite
- Lacustrine: coastal saline lake and lake-derived deposits; clay, silt, sand, and gravel, in part evaporitic
- Alluvial dominated: alluvial, diluvial and colluvial deposits; includes groundwater (valley) calcrite where not clearly exposed; commonly shows some eolian reworking
- Eolian: eolian sand plains and dunes; includes residual and reworked areas, and some dune and playa terrain; excludes calcareous coastal dunes
- Calcareous duricrust (calcrete): authigenic limestone, in places omitted to clarify underlying geology
- TREALLA LIMESTONE: calcarenite to calcinudite with coralline limestone; minor calcilutite; high energy shallow marine
- GIRALIA CALCARENITE: calcarenite, commonly ferruginized and/or quartzose; moderate to high energy shallow marine
- CARDAGIA CALCARENITE: calcarenite, and calcilutite with basal greensand, glauconitic in lower part and locally chalky; low to moderate energy marine
- TCOLONIA CALCILUTITE: chalky calcilutite, calcisiltite and calcarenite; low to moderate energy marine
- GEARLE SILTSTONE: benticritic siltstone and radiolaria; minor bedded and secondary gypsum and barite; low energy marine

Mineral deposit

- INDUSTRIAL MINERAL

Resource

- Gypsum (Gp)

Operating mine

- INDUSTRIAL MINERAL

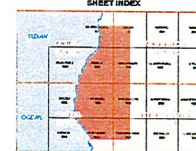
- Gypsum (Gp), salt

- CONSTRUCTION MATERIAL

- Clay, dimension stone, limestone

- Geological boundary
- Fault: anticline
- Fault: plunging anticline
- Major road
- Minor road
- Track
- Watercourse
- Permanent waterbody

- Petroleum Act title applications
- Petroleum Act titles
- Evaporites (Lake Macleod) Agreement Act 1987
- Petroleum exploration well
- Stratigraphic well



DATA DIRECTORY

Title	Data Source	Data Currency	Agency
Geology	Geological Survey of Western Australia	2002	Department of Industry and Resources
Mineral resources	Geological Survey of Western Australia	2002	Department of Industry and Resources
Petroleum resources	Petroleum Resources of Western Australia	2002	Department of Industry and Resources
Evaporites	Evaporites of Western Australia	2002	Department of Industry and Resources
Geological Survey of Western Australia	Geological Survey of Western Australia	2002	Department of Industry and Resources
Geological Survey of Western Australia	Geological Survey of Western Australia	2002	Department of Industry and Resources

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Geological Survey of Western Australia



LAKE MACLEOD AREA RESOURCE POTENTIAL FOR LAND USE PLANNING

Geological Survey of Western Australia

Lake MacLeod - Strategic Resources



Department of
Industry and Resources



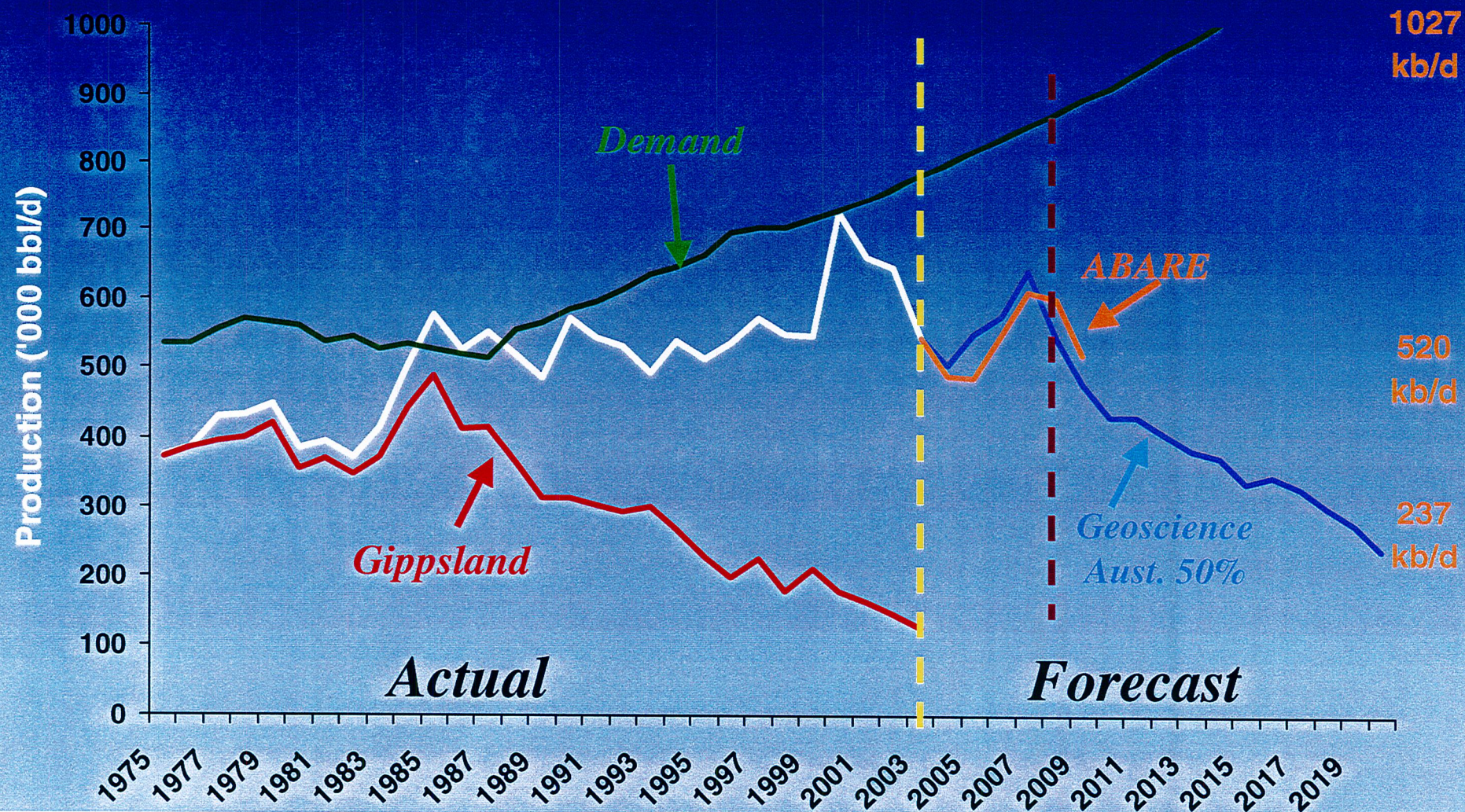
Important Issues

- *Access to Resources*
- *Rights under the Mining and Petroleum Acts*
- *Threats to legally binding obligations under State Agreement Acts*
- *Restrictions on future industrial development in the region - economic growth impacts*
- *Increased reliance on imported crude oil and condensate*
- *Uncertainty of potential to trigger EPBC Act*



Department of
Industry and Resources

Potential Crude Oil and Condensate Production, Supply and Demand



Department of
Industry and Resources



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Attention: Mr Bathgate

NINGALOO - CAPE RANGE WORLD HERITAGE NOMINATION

Thank you for meeting with Mr Ian Briggs, Dr Ivor Roberts, and Ms Victoria Jackson of the Department of Industry and Resources ("DoIR") on 9 July 2004 to discuss the World Heritage Consultative Committee's ("the Committee") role in the above nomination and DoIR interests in this region.

DoIR wishes to advise the Committee of its concern that despite the Department and industry groups engaging CALM late last year and earlier this year seeking clarification of a study area in order to outline possible resources development issues, a map was only provided at the above meeting. This leaves little time to collaborate with the Committee to ensure that the complexities of establishing a World Heritage Area are fully examined and the issues identified and appropriately resolved.

However, at this meeting, DoIR detailed the key resources and industry development interests within the Exmouth region based on a different map provided by the Department of Conservation and Land Management ("CALM") at its presentation to the Chamber of Minerals and Energy (Attachment 1).

Having now seen the proposed nomination study area as endorsed by the Minister for the Environment, ("the Study Area"), DoIR is concerned that, if accepted, it will impose threats to existing resources and industrial developments already formally set aside under specific resources legislation.

Also at this meeting the Committee invited DoIR to provide its initial comments on the "five common questions" together with comments on other questions the Committee raised during its discussion with DoIR. DoIR's responses to these matters are discussed below.

Five Common Questions

1. Does the stakeholder support a nomination based on the study area boundary?

Conditional Support

DoIR supports the intent of establishing a World Heritage Area in this region, but is concerned that the proposed Study Area could threaten key resources and industry development interests within and nearby to it. The process so far seems to have paid little attention to concerns, expressed by DoIR to CALM on numerous occasions, about these matters and the long-term impact on the economic well-being of the Western Australian community,

The location of the boundaries should be based only on protecting the world heritage values in the area. It is apparent, from the tenor of the Committee's discussions with DoIR and of the five questions being put to interested stakeholders, that the Committee is resolute about considering an area for listing that is substantially larger than the Study Area as endorsed by the Minister for the Environment for the purposes of consultation. This has also been evident in earlier presentations made by the Committee's Executive Officer to industry groups at which DoIR was present. It is important that DoIR, as a major stakeholder in this region, is closely consulted with on the Study Area and any changes proposed for its boundaries.

DoIR accepts the Study Area as a basis for full discussion and negotiation towards the development of a World Heritage listing proposal for the area. The basis for this support is that the World Heritage values are those within the Ningaloo Marine Park (excluding the proposed Muiron Islands Marine Management Area) and the Cape Range National Park (including proposed extensions to both parks) and that resources activities can continue to operate in the remainder of the Study Area. The security of granted mining and petroleum tenements and holders' rights to full access to explore for and mine the resources contained therein must be quarantined from the effects of the World Heritage nomination.

DoIR will undertake to provide advice and to have full input into the listing process. I reiterate DoIR's disappointment with the lack of early consultation. The remaining short timeframe may be inadequate for the considered development of a successful World Heritage nomination that does not have serious impacts on the resources sector and the ensuing implications for the West Australian and local economies.

2. If not, what are the issues of concern? Does the stakeholder have any suggestions as to how these concerns might be accommodated within a nomination based on the defined study area?

It is DoIR's view that the terrestrial portion of the defined Study Area does not include natural properties of "outstanding universal values". The area does not contain examples of world-class, outstanding geology or geomorphology.

The geology of the area is typical of the Carnarvon Basin and illustrates geological formations, characteristics and history similar to other sedimentary basins elsewhere in the world. Karst topography and subterranean fauna while being identified as having conservation value, are not unique and occur in limestone deposits throughout the world.

The landscape, particularly along the coastal fringe and Cape Range area is picturesque and DoIR acknowledges that the area needs to be managed to protect this value. The Cape Range National Park and Ningaloo Marine Park adequately serve this purpose. It should be noted that the boundaries of both the Ningaloo Marine Park and the Cape Range National Park, including the proposed extensions, have been developed to protect the important natural values contained in the parks and to consider access to important strategic resources. Mining and petroleum activities are precluded from the parks. Attachment 2 provides further information about the geology of the region.

The Geological Survey of Western Australia ("GSWA") that sits within DoIR is the official custodian for geological information in Western Australia. The GSWA would be pleased to assist the Committee in its evaluation of the uniqueness or otherwise, of the geology and geomorphology of the Study Area under consideration. DoIR would also appreciate being able to review the criteria as established by the Committee for which the area will be nominated.

In addition, there are already lands in the Study Area for inclusion in set aside formerly under the:

- *Mining Act 1978* (tenements for exploration and production, and Temporary Ministerial Reserves).
- *Petroleum Act 1967, Petroleum (Sub Merged Lands) Act 1982.*
- Proposed 5(h) reserves of the *Conservation and Land Management Act 1984* for access to high industrial grade limestone deposits in Cape Range as identified in draft State Lime Supply Strategy and located within Temporary Ministerial Reserves. The area is under granted Exploration Licences and Mining Lease applications.

The Study Area also encompasses significant onshore and offshore oil and gas provinces, over which there are no active tenements, but that may contain significant hydrocarbon resources. DoIR is concerned that the Environmental Protection Authority's advice on the Shark Bay World Heritage area about hydrocarbon industry activities being deemed incompatible with World Heritage values, will set a precedent for the Ningaloo Cape Range proposal.

3. Are there known values outside the defined study area that should be included in the nomination?

DoIR is not convinced that locations as discussed at the meeting that lie outside the Study Area have outstanding universal natural or cultural values that are worthy of inclusion in a proposed World Heritage nomination. DoIR understands that Government's policy position that includes only the North West Cape and Ningaloo Reef may be too small in areal extent to meet the World Heritage criteria for integrity. DoIR would not support a submission that sought to increase the extent of the nomination in order to meet that criterion without a sound scientific basis. DoIR would appreciate being consulted on any proposed additional areas to ensure assessment of threats to access to resources and industry development can be identified by DoIR and for it to report issues to the Committee.

4. Does the stakeholder have concerns about the nomination of a larger area? If so, what are those concerns? If they relate to a specific area, please identify that area.

Yes, as discussed under question one, it is apparent that the Committee is resolute about considering an area for listing that is substantially larger than the Study Area. DoIR is concerned that the Study Area as discussed in its meeting with the Committee could be expanded further eastwards to encompass the east coastal area of Exmouth Gulf, and part or all of Lake Macleod.

There are already lands in the broader area discussed at the meeting as being considered for inclusion in a World Heritage Nomination set aside formerly for resources development activities:

- *Temporary Ministerial Reserves for Solar Salt*
- *Temporary Ministerial Reserves for limestone resources*
- *Dampier Solar Salt Industry Agreement Act 1967*
- *Petroleum Act*, tenements for exploration and production,
- *current oil production at Rough Range (Empire Oil);*

In addition, the area is of significant hydrocarbon and mineral prospectivity that remain untested, poorly tested or being considered for development. These include but are not limited to:

- known gold, silver, copper/lead/zinc, diamonds, tungsten, gypsum, gemstones prospectivity;
- land and sea areas of known petroleum resources but yet to be fully explored such as Rough Range and the Lake Macleod anticline; and,
- proposed solar salt production east coast of Exmouth Gulf within a Temporary Ministerial Reserve.

Other areas may be required for seabed pipelines and associated petroleum industry infrastructure.

5. Are there other issues that the stakeholder would like to draw to the attention of the Consultative Committee?

It is important for the Committee to recognise that apart from the existing statutes formally setting aside mineral and petroleum tenements, State Agreement Act areas and industrial developments, and the rights created; many of the resources covered by the study area are of strategic significance to the State economy, and the well being of the community. For example, the high industrial grade limestone deposits in Cape Range, salt production, and oil and natural gas production.

Australia's consumption of oil and condensate is increasing significantly and now exceeds self-sufficiency. This will increase dependency on imported fuels and has negative implications for Australia's security and balance of payments. The Exmouth sub basin of the Carnarvon basin is recognised as a significant oil province that could make it of greater strategic importance to the State and Commonwealth.

Issues Raised by the Committee

Straits Resources Proposed Solar Salt Production

The Committee enquired about the development of a State Agreement Act for Straits' proposal along the eastern shore of Exmouth Gulf. At this stage, the proposed salt

production project is still being progressed. DoIR considers it is possible that a State Agreement may be entered into.

Proposed Ramsar listing in Lake Macleod Coverage

DoIR understands that Rio Tinto's proposed listing is in its development stage. At this stage, the proposal is focussed on an area that includes the permanent seawater ponds in the northern section of Lake Macleod. DoIR also understands that Rio Tinto has put no final proposal forward.

BHP Billiton Petroleum Line west of Ningaloo Reef

DoIR's online database, which includes both State and Commonwealth petroleum title information, indicates that no active petroleum permits are in the area specified. It may be that the line on the maps shown to the Committee by BHP Billiton Petroleum contained remnant line work from the former WA-24-P exploration permit. Should the Committee require further information regarding this matter, it would be wise seek clarification from BHP Billiton directly.

Additional DoIR Comments

State Sustainability Strategy

DoIR expects that in the development of the proposed listing, the Committee will also implement the State Sustainability Strategy framework and process principles to ensure access to resources and industrial development are appropriately accounted for in its decision making processes.

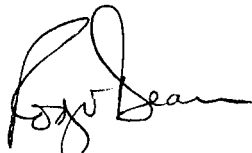
Review of the Project Development Approvals System

Resource development proposals near a world heritage area will automatically trigger the *Environmental Protection and Biodiversity Conservation Act, 1999*. This is contrary to the recommendations of the Review of the Project Development Approvals System of timeliness and the removal of overlap and duplication.

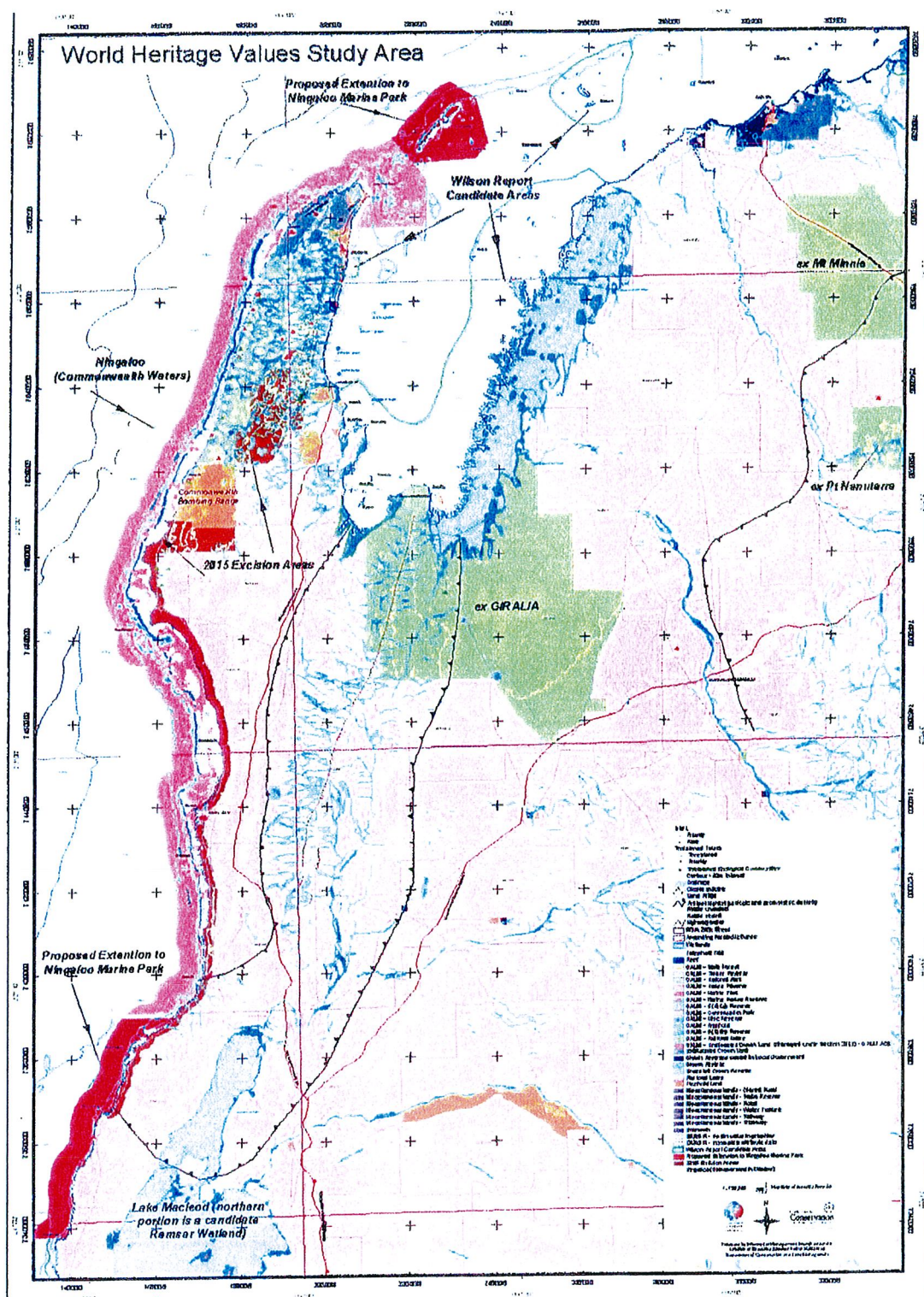
Conditional Support for World Heritage submission

DoIR accepts the Study Area as a basis for full discussion and negotiation towards the development of a World Heritage listing proposal for the area, providing resources development concerns are addressed and the location of the final boundaries is based on sound science and on protecting the world heritage values in the area. DoIR would appreciate being able to review the criteria as established by the Committee for which the area will be nominated.

DoIR does not support the nomination of a larger area, but it is important that DoIR as a major stakeholder in this region, is closely consulted with on the Study Area and any changes proposed for its boundaries.


for
Jim Limerick
DIRECTOR GENERAL

23 July 2004



Comments on the Geology of the Cape Range – Ningaloo Reef Heritage Nomination

- The proposed Cape Range – Ningaloo Reef Heritage Nomination overlies the Carnarvon Basin, an elongated sedimentary basin stretching for a distance of about 1000 km along the western and northwestern coastline of Western Australia. The basin contains a thick sequence (up to 5000 m) of ?Cambrian-Triassic sedimentary strata with a thin Cretaceous-Cainozoic cover. The onshore size of the basin is 115,000 km², while the offshore area is about 535,000 km².
- Within the region of the nomination, the Carnarvon Basin is subdivided into the Gascoyne Platform, and the Merlinleigh and Exmouth Sub-basins. Despite the fact that in 1953 WAPET's first well, Rough Range 1, struck the first flowing oil in Australia's history, the southern part of the region is poorly explored and has limited seismic coverage and regional low-resolution gravity and aeromagnetic surveys. The Geological Survey of Western Australia (part of the Department of Industry and Resources) has published a number of books and maps on the Carnarvon Basin, particularly the Gascoyne Platform, for the purpose of promoting its hydrocarbon potential. The Gascoyne Platform, that includes the area around Lake MacLeod, has only 11 wells deeper than 1000 m.
- In addition to petroleum, the nominated region, together with indicated possible extensions, contain other commodities that are important to the State.
 - Cape Range contains high quality limestone that has been identified in the draft State Lime Strategy as having strategic significance to the State
 - Lake MacLeod is a major producer and exporter solar salt
 - The largest resource of gypsum in Western Australia (estimate at over 1000 million tonnes) is within Lake MacLeod and surrounding area.
 - The region has potential for barite, silver, lead and zinc mineralization.
- Hocking et al (1987) (GSWA Bulletin 133, "*Geology of the Carnarvon Basin Western Australia*") stated that the "MacLeod Region" (that corresponds to the majority of the proposed nomination area) is characterized by a series of variably dissected anticlinal domes separated by low-lying areas infilled by Pleistocene marine and eolian sediments. The domes consist of hard Tertiary limestone and formed through post-Eocene reverse movement on pre-existing faults, which resulted in folding of the limestone. With the exception of Cape Range, the larger anticlines have a breached core, where erosion has cut through the hard limestone cap of the anticline to expose softer underlying limestones. This results in dip-slope ranges surrounding a subdued central etchplain, as in the Giralia and Marilla Anticlines. There is a thicker sequence of resistant limestone in Cape Range and, as a result, deep gorges have formed instead.



Department of
Industry and Resources

Your ref:

Our ref: R0066/200402

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Attention: Angus Hopkins

WORLD HERITAGE NOMINATION, NINGALOO AND CAPE RANGE NATIONAL PARK

The World Heritage Consultative Committee at the 16 September 2004 meeting with representatives from the Department of Industry and Resources ("DoIR") expressed an interest in obtaining additional information in relation to the petroleum and mineral resources of the areas that are likely to be affected by the Committee's recommendations.

Please find enclosed the following reports for your information:

1. Geological Survey of Western Australia, September 2004 (unpublished), Petroleum and mineral resource potential of the nominated Cape Range-Ningaloo World Heritage area.
2. Department of Industry and Resources, 2004; Western Australia, Room to grow your petroleum business.
3. MORY, A. J., IASKY, R. P., and GHORI, K. A. R., A summary of the geological evolution and petroleum potential of the Southern Carnarvon Basin, Western Australia: Western Australia Geological Survey, Report 86.
4. Department of Industry and Resources, 2004, Summary of petroleum prospectivity, onshore Western Australia and State waters.
5. D.J. FLINT and P.B. ABEYSINGHE, Geology and Mineral Resources of the Gascoyne Region, Geological Survey of Western Australia.
6. R.P. IASKY and A.J. MORY, Geology and petroleum potential of the Gascoyne Platform Southern Carnarvon Basin, Western Australia, Geological Survey of Western Australia, Report 69.
7. R.P. IASKY, C. D'ERCOLE, K.A.R. GHORI, A.J. MORY and A.M. LOCKWOOD, Structure and petroleum prospectivity of the Gascoyne Platform Western Australia, Geological Survey of Western Australia, Report 87.
8. R.M. HOCKING, H.T. MOORS and W.J.E. CVAN DE GRAAFF, Geology of the Carnarvon Basin Western Australia, Geological Survey of Western Australia, Bulletin 133.

9. B.H. HARRISON, An evaluation of the mineral potential of the onshore Carnarvon Basin, Geological Survey Record 1984/8.
10. C.J. KOJAN, L.Y. HASSAN AND M.J. FREEMAN, The geology and high grade limestone resource of the proposed Cape Range national park extension, Land Access Unit, Land Access Report – EV109.

Please acknowledge receipt of the above. Should you require further information, please contact me at the Department.



Ian Briggs
GENERAL MANAGER
DEVELOPMENT AND ENVIRONMENTAL POLICY

23 September 2004

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Encl