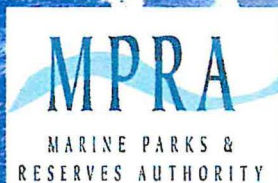


**A FRAMEWORK
for the
REVIEW OF THE NINGALOO MARINE PARK
MANAGEMENT PLAN (STATE WATERS)
and
CONSIDERATION OF ADJACENT PROPOSED MARINE
CONSERVATION RESERVES**

FEBRUARY 2003

MARINE PARKS AND RESERVES AUTHORITY



MARINE PARKS AND RESERVES AUTHORITY

DRAFT BROAD VISION STATEMENT¹

Ningaloo – protected for you.

DRAFT ACTION STATEMENT¹

Ningaloo is special. It combines outstanding natural diversity and beauty with unspoiled wilderness.

KEY OBJECTIVES FOR NINGALOO MARINE PARK

Conservation

To protect the rare and fragile stretch of coral reef that is Ningaloo.

People

To encourage care, enjoyment and appreciation of Ningaloo.

KEY STRATEGIES FOR NINGALOO MARINE PARK

Conservation

Manage impacts for no adverse effects on the biodiversity and ecosystems of Ningaloo.

People

Promote community involvement, education, nature appreciation and research of Ningaloo.

¹ The development of the 'Broad vision statement' and the 'Action statement' will be completed following consultation with the community.

MARINE PARKS AND RESERVES AUTHORITY

Major Functions are:

- *To have vested in it marine reserves and relevant land;*
- *To have care, control and management of marine reserves and relevant land;*
- *To develop policies in regard to marine conservation;*
- *To advise the Minister for Environment and Heritage;*
- *To audit the implementation of marine reserve management plans by the Department of Conservation and Land Management*

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT

Major Marine Functions are:

- *To manage marine reserves and relevant land;*
- *To be responsible for the conservation and protection of marine flora and fauna throughout the State;*
- *To assist the Marine Parks and Reserves Authority;*
- *To advise the Minister for Environment and Heritage;*
- *To implement management plans for the conservation and protection of marine flora and fauna.*

**PROCESS TO REVIEW THE MANAGEMENT PLAN
FOR
NINGALOO MARINE PARK
AND
EXTENSIONS TO THE MARINE RESERVE SYSTEM**

Major Steps:

- 1. Collate and assess all relevant ecological and social information.**
- 2. Formulate MPRA framework paper.**
- 3. Seek views of the community, the Coral Coast Parks Advisory Committee and key stakeholders.**
- 4. Formulate draft management plan and indicative management plans for the extensions to the marine reserve system.**
- 5. MPRA review of draft plans and advice to Minister For Environment and Heritage.**
- 6. Minister For Environment and Heritage seeks approval of the Minister For State Development and the Minister for Agriculture, Forestry and Fisheries to release the draft plans for public comment.**
- 7. Minister For Environment and Heritage releases plans for public comment for three months.**
- 8. Public submissions are reviewed by the MPRA.**
- 9. Draft plans are modified (if appropriate) and finalised.**
- 10. MPRA provides advice to Minister for Environment and Heritage.**
- 11. Minister for Environment and Heritage seeks statutory approvals of the Minister for State Development and Minister for Agriculture, Forestry and Fisheries for the Ningaloo Marine Park Management Plan and approvals to facilitate boundary amendments and/or new reserves recommended in the planning process.**
- 12. Cabinet consideration of proposals and resources for management.**
- 13. Management Plan approved and new boundaries/reserves gazetted.**

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1 BACKGROUND

The Ningaloo Marine Park (NMP) was gazetted as an A-class *marine park* in 1987, and is vested in the Marine Parks and Reserves Authority (MPRA). A management plan for the Park was approved in 1989 and in accordance with the *Conservation and Land Management Act 1984* (CALM Act), is now being reviewed. The review process is overseen by the MPRA and co-ordinated by the Department of Conservation and Land Management (the Department). Over the past two years the Department has collated and assessed a comprehensive range of bio-physical and social information much of which was not available when the current management plan was formulated in the late 1980s. The Department will now be commencing a planning process to review the management arrangements for the Park in accordance with changes in the scientific knowledge and community attitudes. These revised arrangements will be formulated in consultation with the local and wider community and expressed in the 'new' management plan. As part of this process, consideration will also be given to extending the marine reserve system immediately to the north and south of the existing Park.

2 INTRODUCTION

Ningaloo Reef, stretching approximately 290 km from Northwest Cape to Red Bluff, is located in the Ningaloo Marine Bioregion (ANZECC, 1998). The reef is the largest fringing coral reef in Australia and is a national marine conservation icon. The NMP extends approximately 260 km from Northwest Cape to Amherst Point and currently includes about 90% of the Ningaloo Reef. The NMP incorporates both State and adjacent Commonwealth waters. The NMP is part of a network of marine protected areas being established by the Government of Western Australia as part of Australia's National Representative System of Marine Protected Areas.

The Department is the primary manager of NMP (State Waters). Environment Australia (EA) is responsible for the management of NMP (Commonwealth Waters). The Western Australian Department of Fisheries (DoF) is responsible for management of commercial and recreational fishing in NMP. The Commonwealth waters of the Park are currently managed under a Memorandum of Understanding between the Department, DoF and EA.

Several management plans relevant to the NMP have been recently released and others will be released in 2003. The plan of management for the NMP (Commonwealth waters) was released in 2002 (Environment Australia, 2002). Public submissions to a draft *Fisheries Environmental Management Plan for the Gascoyne Region* (DoF, 2002) have been collected and *A Five-Year Management Plan for Recreational Fishing in the Gascoyne Region* (DoF, 2001) is due for release by the DoF in early 2003 and will come into effect on 1 July 2003.

Three other planning processes, relevant to the management of the NMP, are underway and include the review of the Cape Range National Park, consideration of the Northwest Cape/Ningaloo area for World Heritage listing and the planning process to develop the *Carnarvon-Ningaloo Coast Regional Strategy*. None of the above planning processes are within the jurisdiction of the MPRA and hence are not addressed specifically in this paper. The consideration of the Northwest Cape/Ningaloo area for World Heritage listing will be a separate process undertaken by the Department. The process will be conducted in accordance with the guidelines for nomination of properties for consideration for listing on the World Heritage List as determined by the World Heritage Committee of UNESCO. The *Carnarvon-Ningaloo Coast Regional Strategy* planning process is being undertaken by the Department for Planning and Infrastructure (DPI), in consultation with the Department and other key stakeholders, and is addressing several issues that are relevant to the future management of the Park. Of particular relevance is the future vesting, management and use of the adjoining coastal lands. The development of the NMP draft management plan will take account of the emerging outcomes of the review of the Cape Range National Park Management Plan, the World Heritage listing process and outcomes of the Carnarvon-Ningaloo Coast Regional Strategy.

This paper has been developed by the MPRA to assist the review of the NMP Management Plan (State Waters). The paper also provides guidance for the consideration of proposals for marine conservation reserves immediately to the north and south of the existing Park. The Department will conduct a consultative process, on behalf of the MPRA, to develop a draft management plan for the existing Park, and indicative management plans for the proposed adjacent marine conservation reserves. The consultative process will involve liaison with the major stakeholders that have an interest in the management of these important areas. The community-based Coral Coast Parks Advisory Committee (CCPAC) will have a key role in the discussion of important local issues during the development of the management plan.

The framework provides the Department, the CCPAC and the key community stakeholders with guidance as to the broad direction the MPRA believe the planning process should take. The paper also identifies the key issues that are likely to arise in the planning process and the MPRA's view on these issues.

The paper comprises two parts:

- Part A: the management issues in relation to the review of the NMP management plan.
- Part B: the options for reservation of the areas north (Muiron and Sunday Island Group), and south (the southern extent of Ningaloo Reef to Red Bluff) of the existing marine park.

3 PART A – MANAGEMENT OPTIONS FOR THE NMP

3.1 VISION STATEMENT

The Ningaloo Reef and associated coral reef communities are of local, national and international significance. As Australia's largest fringing coral reef ecosystem and containing many endangered species such as turtles and dugong as well as the world-renowned whale shark aggregations, this area is Western Australia's premier marine conservation icon. The conservation significance of the reef was formally acknowledged by the Western Australian Government in 1987 with the declaration of the NMP. The vision statement broadly reflects these natural values and the aspirations of the local and wider community with regard to the conservation, use and management of the Ningaloo Reef.

Vision Statement

The marine flora and fauna, habitats, sediment, and water quality of the Ningaloo Marine Park will be in the same or better condition than in the year 2003 and the Park's cultural and indigenous heritage values will be fully protected from adverse human impacts. The marine park will be considered to be an important ecological and social asset by the local, national and international community.

3.2 STRATEGIC OBJECTIVES

The Government of Western Australia is establishing a network of multiple-use marine conservation reserves as part of the National Representative System of Marine Protected Areas. The state Marine Protected Areas program implements the principle thrust of the Government's 1998 policy document *New Horizons - The Way Ahead In Marine Conservation And Management* which is "... to have one comprehensive reserve system under the Conservation and Land Management Act 1984".

The specific objectives of the marine conservation reserve system, as stated in *New Horizons*, are:

- to preserve representative and special ecosystems in the marine environment; and
- to put a formal management framework in place to ensure the various uses of marine conservation reserves are managed in an equitable, integrated and sustainable manner.

The CALM Act states that a *marine park* is established "... for the purpose of allowing only that level of recreational and commercial activity which is consistent with the proper conservation and

restoration of the natural environment, the protection of indigenous flora and fauna and the preservation of any feature of archaeological, historic or scientific interest”.

Within the above policy and legislative context, the proposed **strategic objectives** for the NMP can be defined as:

Conservation

- To maintain the marine biodiversity of the Park.
- To maintain ecosystem structure and function of the Park.

Science and Education

- To promote education, nature appreciation and scientific research in the Park.

Public Participation

- To promote and develop community involvement in management of the Park.

Recreational Uses

- To facilitate and manage recreational activities in the Park within an equitable and ecologically sustainable framework.

Commercial Uses

- To facilitate, manage and, where appropriate, assist in the management of commercial activities in the Park within an equitable and ecologically sustainable framework.

The strategic objectives of the Park can only be achieved in conjunction with other statutory and non-statutory management measures both within and adjacent to the Park. These management measures include a suite of complimentary management practices including community co-operation, fisheries management, wildlife management, pollution control, environmental impact assessment and maritime transport and safety measures.

3.3 ECOLOGICAL AND SOCIAL VALUES

The conservation of marine biodiversity and the management of human uses are the major objectives for the NMP. These generic terms need to be defined operationally to be useful in a management context. This is achieved by identifying the key ecological and social values of the Park and setting management objectives in relation to these values.

Ecological values are the intrinsic physical, chemical, geological and biological characteristics of an area. The key ecological values are identified according to their biodiversity significance and their importance in maintaining the structure and function of the ecosystem. The identified ecological¹ values include:

- Species and communities that have special conservation status (e.g. loggerhead turtles, dugong);
- key species endemic to the Park (if known);
- key structural components of the ecosystem (e.g. coral, macro-algae and mangrove communities);
- exploited species and communities (e.g. whale sharks, manta rays and targeted fish populations); and
- key physical-chemical components of the ecosystem (e.g. water and sediment quality and geomorphology).

Social values are the major cultural, aesthetic, recreational and economic uses of the area. Social values may be either 'passive'² (e.g. wilderness or seascape values) or 'active'³ (e.g. fishing, tourism) uses. 'Passive' social values are treated, for conservation planning purposes, as quasi-ecological values because these 'uses' do not impact on the natural environment in the same way as the 'active' social values do. By contrast the 'active' social values are those activities that have potential to impact on the ecological values.

The ecological and social values are listed as part of Tables 1 and 2.

3.4 MANAGEMENT TARGETS AND OBJECTIVES

The conservation of marine biodiversity and sustainable management of human activities in the marine environment of Western Australia are achieved by identifying the management goals (i.e. targets and objectives) and then applying appropriate management strategies to achieve these goals.

Management **targets** for the ecological and the 'passive' social values represent the desired 'end points' or 'outcomes' of management. The targets should be quantitative, time bound and expressed spatially. Ecological targets will be set as either the 'natural state' or some acceptable departure from the 'natural state'. The target provides a specific benchmark to assess the success or otherwise of management action within the life of the management plan.

Management targets for the ecological and the 'passive' social values of the NMP are outlined in Table 1.

¹ Ecological values refer to indigenous marine flora and fauna.

² Uses that are not a threat to ecological values.

³ Uses considered as potential threats to ecological values.

Table 1: Management targets for the ecological values of NMP

ECOLOGICAL VALUES	MANAGEMENT TARGETS
Geo-morphology	1. No change of seabed structural complexity as a result of human activity in the Park. 2. No change of coastal landform structure as a result of human activity in the Park.
Water and sediment quality	No change in water and sediment quality of all reserve waters from 'background' ⁴ levels, as per the environmental quality management framework referred to in the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC & ARMCANZ, 2000), as a result of human activities in the Park.
Coral Communities	1. No loss of coral diversity as a result of human activity in the Park. 2. No loss ⁵ of living coral biomass as a result of human activity in the Park.
Invertebrate Communities (other than coral communities)	1. No loss of invertebrate diversity as a result of human activity in the Park. 2. No loss ⁵ of protected invertebrate species abundance as a result of human activity in the Park. 3. No loss ⁵ of invertebrate species abundance in sanctuary zones as a result of human activity in the Park. 4. Management targets for abundance of target invertebrate species to be determined in consultation with the Department of Fisheries and peak bodies.
Intertidal sand or mudflat communities	1. No loss of intertidal sand/mudflat community diversity as a result of human activity in the Park. 2. No loss ⁵ of intertidal sand/mudflat community abundance as a result of human activity in the Park.
Macroalgal and seagrass communities	1. No loss of macroalgae/ seagrass diversity as a result of human activity in the Park. 2. No loss ⁵ of macroalgae/ seagrass biomass as a result of human activity in the Park.
Mangrove communities	1. No loss of mangrove diversity as a result of human activity in the Park. 2. No loss ⁵ of mangrove biomass as a result of human activity in the Park.
Coastal communities	1. No loss of coastal community diversity as a result of human activity in the Park. 2. No loss ⁵ of coastal community biomass as a result of human activity in the Park apart from areas where development has been approved by an appropriate authority.
Seabirds	1. No loss of seabird diversity as a result of human activity in the Park. 2. No loss of seabird abundance as a result of human activity in the Park.
Finfish	1. No loss of finfish diversity as a result of human activity in the Park. 2. No loss ⁵ of protected finfish species abundance as a result of human activities in the Park. 3. No loss ⁵ of finfish species abundance in the sanctuary zones as a result of human activity within the Park. 4. Management targets for abundance of target finfish species to be determined in consultation with the Department of Fisheries and peak bodies.
Manta Rays	No loss of manta ray abundance as a result of human activity in the Park.
Whale sharks	No loss of whale shark abundance as a result of human activity in the Park.
Cetaceans	1. No loss of cetacean diversity as a result of human activity in the Park. 2. No loss of cetacean abundance as a result of human activity in the Park.
Turtles	1. No loss of turtle diversity as a result of human activity in the Park. 2. No loss of turtle abundance as a result of human activity ⁶ in the Park.
Dugong	No loss of dugong abundance as a result of human activity ⁶ in the Park
'PASSIVE' SOCIAL VALUES	MANAGEMENT TARGETS
Indigenous Heritage	Maintenance of indigenous heritage values, as identified by the Department of Indigenous Affairs
Maritime Heritage	Maintenance of maritime heritage values, as identified by the WA Maritime Museum
Seascapes	Maintenance of amenity values of designated seascapes ⁷ in the Park
Wilderness	Maintenance of amenity values of designated wilderness ⁷ in the Park

⁴ 'Background' conditions are determined from 'undisturbed' reference sites.

⁵ In this context "No loss of abundance or biomass..." excludes losses due to a minor, transient or accidental nature. This qualification does not apply to seabirds, marine reptiles, marine mammals, whale sharks and manta rays (except as a result of unavoidable accidents).

⁶ Sustainable indigenous take of turtle and dugong is permitted.

⁷ Seascapes, wilderness and beaches values for the NMP will be determined by the MPRA/DCLM, in consultation with the CCPAC and key stakeholders, via public consultation processes.

From conservation planning perspectives most of the 'active' social values are considered primarily as threatening processes and, secondarily, as legitimate human uses of NMP. As such, the management objectives of the 'active' social values identify the primary aims of management and reflect the statutory purposes of the CALM Act. Management objectives for the 'active' social values are outlined in Table 2.

Table 2: Management objectives for the 'active' social values of NMP

'ACTIVE' SOCIAL VALUES	MANAGEMENT OBJECTIVES
Coastal Use	1. To ensure that coastal uses are managed in a manner that is consistent with maintenance of the Park's values. 2. To maintain the ecological values of the Park that are important for coastal use. 3. To ensure management of the coastal portion of the Park is integrated with the management of adjacent coastal lands.
Recreational fishing	1. To ensure that, in collaboration with the community and the Department of Fisheries, recreational fishing in the Park is managed in a manner consistent with maintenance of the Park's values. 2. To maintain the ecological values of the Park that are important to recreational fishing. 3. Cooperate with the community and the Department of Fisheries to maintain quality recreational fishing opportunities in the Park.
Water sports	1. To ensure water sports are managed in a manner that is consistent with maintenance of the Park's values. 2. To maintain the ecological values of the Park that are important to recreational users.
Marine Nature-based tourism	1. To ensure that marine nature-based tourism is managed in a manner that is consistent with maintenance of the Park's values. 2. To maintain the ecological values of the Park that are important to the tourism industry. 3. Cooperate with the industry to maintain a viable tourism industry in the Park.
Scientific research	1. To promote the use of the Park for marine ecological and social research. 2. To ensure ecological and social research is ethical and ecologically sustainable. 3. To maintain the ecological values of the Park that are important for scientific research.
Education	1. To promote the use of Park for marine education and nature appreciation. 2. To ensure that the education programs are ethical and ecologically sustainable. 3. To maintain the ecological values of the Park that are important for marine education and nature appreciation.
Commercial fishing	1. To ensure that, in collaboration with the industry and the Department of Fisheries, commercial fishing activities in the Park are managed in a manner consistent with maintaining the Park's values. 2. To maintain the ecological values of the Park that are important to commercial fisheries. 3. Cooperate with the industry and the Department of Fisheries to maintain a viable commercial fishing industry in the Park.
Petroleum activities	To ensure that, in collaboration with the petroleum industry and the Department of Mineral and Petroleum Resources, petroleum industry activities in the Park are managed in a manner that is consistent with maintenance of the Park's values.

MPRA POSITION: That the Department prepares a draft management plan for the NMP, consistent with the MPRA:

- Vision statement;
- Strategic objectives;
- Identified ecological and social values; and
- Management targets for ecological and 'passive' social values and management objectives for 'active' social values.

3.5 MANAGEMENT STRATEGIES

The pristine nature and accessibility of NMP are key attractions to the local and wider community. These features also result in the area being highly vulnerable to over-exploitation. A central long-term strategy to protect the ecological and social values of the NMP is to continue to build a strong partnership between the community and the Government. Community stewardship of this area will be promoted through education and nature appreciation programs and via active public participation in the management of the marine park. The appropriate legal, scientific, financial and operational frameworks will continue to be implemented by Government to support this collaborative approach.

The vision, strategic objectives, management targets and management objectives, outlined above, provide the focus for the development of specific management actions in the revised management plan. These actions are achieved by applying the appropriate balance of seven generic management strategies. These are:

- Development and maintenance of an appropriate administrative framework (i.e. legal (including statutory zones), financial, human and operational requirements);
- Education and interpretation;
- Public participation;
- Direct management intervention (i.e. proactive (preventative) or reactive (restorative));
- Surveillance and enforcement;
- Research; and
- Monitoring.

The development of key elements of specific management strategies, including the statutory zones, will be undertaken in consultation with key stakeholders and the wider community. Specific strategies relating to education, public participation, research, etc will be formulated by the MPRA/Department in the development of the management plan/s. Public comment will be sought before the management plan/s is finalised.

3.6 ZONING SCHEME

A key element of the administrative framework needed to ensure the conservation of biodiversity and sustainable human use in the NMP is the implementation of a statutory zoning scheme. A zoning scheme utilising a suite of zoning categories allows for the protection of the ecological values (e.g. by restricting certain activities) while providing a mechanism to manage human uses within the Park (e.g. by separating conflicting uses). Of particular ecological importance is the establishment of sanctuary (or 'no take') zones (Roberts and Hawkins, 2000; Colman and Simpson, 1999). Sanctuary zones, of appropriate size and location, are a key part of the management 'tool-box', not only for the conservation of marine flora and fauna within the zones but also to conserve marine biodiversity and help prevent over-exploitation of fish stocks in areas of the Park where fishing is permitted (i.e. via the protection of spawning sites and through 'reseeding' and spill-over effects). Recreational fishing is still a major attraction for many visitors to the Gascoyne region and remains the major extractive activity in the NMP. As such, recreational fishing is a potential threat to the conservation of the Park's biodiversity and needs careful management if this activity is to be compatible with the conservation objectives of NMP. Recent research in NMP by Westera *et al.* (in review) reinforces other national and international studies which demonstrate the ecological implications of removing 'top-end' predatory fish on the surrounding ecosystem. Ensuring appropriately designed and sited sanctuary zones for future protection of the Park's values is, therefore, a key element in the review of management arrangements for the NMP.

The current zoning scheme was adopted in 1989 as part of the existing management plan (Figure 1; Table 3). At that time there was a limited understanding of the ecology of NMP and of the configuration, size and location of sanctuary zones needed to protect the biodiversity of the Park. Furthermore, fishing was the main reason most visitors came to the area and, as such, there was significant opposition from recreational fishers to the establishment of 'no fishing' zones. The

combination of limited scientific understanding and entrenched opposition from a major user group resulted in a compromise sanctuary zone scheme being adopted for the 1989-1999 management plan (i.e. 10 % of the Park (State Waters)). In comparison there are presently no sanctuary zones in the Commonwealth Waters of the Park. The existing sanctuary zones are not representative of all of the habitats/communities of the Park and are most poorly represented in areas of high historical and current recreational fishing pressure (i.e. in the northern part of the Park and deeper waters outside the lagoon; Figure 3). Furthermore, the current sanctuary zone scheme does not meet currently accepted scientific criteria as developed for the Representative Areas Program for the Great Barrier Reef (Day *et al.*, 2000). The percentage of existing sanctuary zones is well below the percentage recommended by scientists to ensure the long-term protection of coral reef ecosystems and the services they provide (e.g. 30-50% of the total area of a bioregion recommended by the Townsville Declaration on Coral Reef Research and Management JCU, 2002). Since the late 1980s, the scientific understanding of the Park has advanced significantly (c.f. Bancroft and Davidson, 2000; D'Adamo and Simpson 2001; Bancroft and Davidson, 2001; Wilson and Taylor 2001; Bancroft, 2002), annual visitor numbers have more than doubled and the major activities of the Park have changed from fishing to passive (i.e. non-extractive) recreation and tourism (Wood and Dowling, 2002).

Table 3: Areas and percentages of different zone types in Ningaloo Marine Park (State Waters).

ZONE	AREA (ha.)	Percentage of NMP
Sanctuary Zone	21875	10
General Use Zone	148792	66
Recreation Zone	54701	24
Not zoned: HWM + 40m 'coastal strip'	566	<0.3

As such, the existing sanctuary zone scheme in NMP needs to be assessed in light of these changes. This issue remains of central importance to the long-term ecological integrity of NMP and, to some degree, the longer-term economic viability of the Gascoyne region.

3.6.1 Analysis of the Current Sanctuary Zones

Ecological

A review of the existing zoning scheme of the NMP has been conducted to identify the degree to which the existing sanctuary zones satisfy the principles of adequacy and representativeness in relation to currently accepted scientific standards. The conclusions of this review indicate that the current zoning of the Park is deficient in the following aspects:

- Deep water habitats seaward of the reef crest are not represented;
- The filter-feeding communities and limestone reef habitats north-east of the North West Cape to Point Murat area are not represented;
- The area of the Park adjacent to the Jurabi Coastal Park is not represented; and
- Most of the existing sanctuary zones do not meet minimum recommended dimensions in terms of size, as described by the guidelines developed by the Scientific Steering Committee for the Representative Areas Program of the Great Barrier Reef World Heritage Area (Day *et al.*, 2000).

Social

Consideration of potential amendments to the zoning scheme of the Park will be undertaken through the CCPAC and key stakeholders utilizing a community consultation process and will seek to minimize impacts on current and proposed usage of the Park (see social criteria in Day *et al.*, 2000).

Matters for consideration will include the following:

- Community aspirations for the future management of NMP;
- Recreational fishing;
- Recreational activities (surfing, diving, shore-based recreation, etc);

- Commercial pressures (long-lining, coastal tourism development etc);
- Separation of conflicting uses;
- Regional planning strategies; and
- Patterns of existing and proposed land use and development.

3.6.2 Options to Review the Sanctuary Zones

The statutory purpose of a *marine park* (see section 3.2) highlights the primacy of ecological considerations over social issues in establishing a management framework. As such a review of the zoning within the NMP must primarily consider the ecological requirements while giving due consideration to the social values of the marine park.

The MPRA have considered the following options for the review of zoning the waters of the Park:

- OPTION 1** No change to the existing Park zoning scheme;
- OPTION 2** Amend the zoning scheme based solely on ecological criteria; or
- OPTION 3** Consult with key users and stakeholders to develop amendments to the zoning scheme that address ecological deficiencies whilst considering impacts on key social values.

The review of the zoning scheme of the Park will also consider the terrestrial coastal strip contained within the boundary of the Park (i.e. HWM plus 40 m).

MPRA POSITION: That a revised zoning scheme be developed in consultation with key stakeholders and the CCPAC addresses the ecological requirements, whilst considering the key social values of the Park (i.e. Option 3).

3.7 MANAGEMENT OF MOORINGS

The management of mooring and anchoring is a key issue in managing the increasing boat use of the Park. Indiscriminant mooring and anchoring, as well as inappropriately sited or designed moorings, can damage sensitive marine communities. Conversely, properly planned mooring areas and well-designed moorings will help minimise mooring and anchoring damage. A joint MPRA/Department Mooring Policy, endorsed in 2002, requires the Department to prepare a Mooring Plan for each marine conservation reserve. Each mooring plan will address the following issues:

- Identification of areas where moorings (both existing and potential moorings) are acceptable and/or necessary from an environmental, safety and equity perspective;
- Determination of mooring capacities. Capacities will be determined by the Department in collaboration with the Department of Planning and Infrastructure; and
- Identification of areas where moorings will not be permitted.

A program, funded by the Natural Heritage Trust's National Moorings Program and the Department, to install 25 public moorings in NMP is currently underway and should be completed by mid-2003.

MPRA POSITION: That a Mooring Plan for the Park be developed, in consultation with key stakeholders, as part of the revised NMP management plan.

3.8 MANAGEMENT OF THE TERRESTRIAL COMPONENT OF THE PARK

The 40 m strip of land above high water mark (HWM) adjacent to the pastoral stations of Ningaloo, Cardabia and Warroora is part of the NMP. The effective management of the terrestrial portion of NMP, and the Park in general, requires the close co-operation of the lease holders of adjoining pastoral stations as land access to much of the Park is through these stations. The coastal portion of these pastoral leases must also be managed sympathetically with the coastal land of NMP.

Camping has been permitted on these stations for many decades and the 'Ningaloo experience' is a cherished and important part of Western Australian's coastal heritage. However, some of the more popular areas of the Park and the coastal portion of the adjoining pastoral leases have become seriously degraded. Campsite numbers have doubled over the past ten years and use of these coastal areas is projected to increase significantly over the next decade. The increased popularity of this region as a holiday destination is fueling demand for large (e.g. Coral Coast Marina Development) and small (e.g. eco-lodges) coastal developments. A 'coastal road', from Gnaraloo Bay to Coral Bay, has been suggested to facilitate better public access to the southern part of Ningaloo Reef. This proposal has the potential to generate a significant increase in use along this coastline, which would in turn cause considerable impact on the adjoining marine environment.

These trends and infrastructure proposals will, if implemented, have significant implications for the management of the NMP, particularly the terrestrial and nearshore areas of the Park, over the next ten years. In recognition of the need to manage the coastal 'strip' for conservation, recreation and tourism and to control land access and land-based threats (e.g. fox predation of turtle nests) to NMP, the Western Australian Government, in late 2002, advised the lease holders of Ningaloo, Cardabia, Warroora, Gnaraloo and Quobba stations that, when their current leases expire in 2015, the coastal 'strip' will not be included in the new pastoral lease agreements. The boundaries of this coastal strip will be negotiated over the two years following this notification. The future vesting and management of this coastal strip will be a key issue in the development of the Carnarvon-Ningaloo Coast Regional Strategy. This planning process has commenced and will run in parallel with the NMP management plan review process.

MPRA POSITION: That the review address issues of coastal management in consultation with key stakeholders and ensure that the broader planning processes for adjacent coastal areas take into account the protection of the Park's coastal and marine values.

3.9 RECREATIONAL FISHING

Recreational fishing is still a major attraction for many visitors to the Gascoyne region and is the major extractive activity in the NMP. As such, recreational fishing is both economically and socially important to the region as well as, potentially, the major threat to the Park's biodiversity. Careful management of this activity is needed if it is to be compatible with the conservation objectives of NMP. In the past recreational fishing in NMP was managed under Park specific arrangements by the DoF. Under new arrangements to be implemented by the Minister for Fisheries on 1 July 2003, recreational fishing in NMP will be managed as part of a regional management framework. Whether this regional approach is, in itself, adequate to manage the greater pressure on targeted fish stocks in the Park, compared to other parts of the region, requires careful consideration.

Recent studies by Westera *et al.* (in review) have shown that fishing pressure has significantly reduced the size and abundance of some popular target fish species in areas of the Park where fishing is permitted compared to adjacent sanctuary zones. As a result of these changes in fish populations, algal assemblages and invertebrate communities in sanctuary zones are also different than in adjacent 'fished' areas of the Park. Recent reductions in recreational fishing bag limits for the Gascoyne region reflect a growing concern about the health of recreational fish stocks in this area. However, these traditional fisheries management approaches, in the absence of license limits and/or enforceable 'quotas' (as recently introduced in the Shark Bay Marine Park for pink snapper), are unlikely, in the face of increasing fishing pressure, to be sufficient to ensure the continued viability of target fish stocks in NMP. This could potentially lead to catastrophic declines in target fish populations similar to pink snapper in Shark Bay Marine Park. This would not only have significant flow-on ecological impacts on NMP but also could have potentially significant longer-term economic impacts on the Gascoyne region through loss of tourism revenue. As such, the management of recreational fishing is a critical element of the review of management arrangements for NMP.

MPRA POSITION:

That the current management arrangements for recreational fishing in NMP be reviewed, including the option of seasonal closures during spawning periods for selected species.

3.10 COMMERCIAL FISHING

Limited commercial fishing occurs within the NMP. Commercial fishing is not permitted in the sanctuary and recreation zones. Commercial fishing is permitted in general use zones, however in NMP there is further restrictions imposed including the total prohibition on commercial aquarium and specimen shell collecting and a restriction under the FRM Act for wetline fishing between Tantabiddi and Point Maud (see Figures 1 & 2). As such commercial fishing in NMP is limited to trawling in a small area of the Park within Exmouth Gulf, wetlining in the general use zone north of Tantabiddi and south of Point Maud, and some limited commercial netting.

The 2002 Plan of Management (Commonwealth Waters) of NMP excludes commercial fishing but permits recreational fishing (Environment Australia, 2002). The new management arrangements within the Commonwealth waters of NMP have significant implications for the management (particularly surveillance and enforcement issues) of commercial fishing in the state waters of the Park.

MPRA POSITION:

- That commercial aquarium collecting and specimen shell collecting remains a prohibited activity in NMP.
- That existing arrangements for other commercial fishing practices in NMP be considered in the review.

3.11 RECREATION AND TOURISM

Visitors to NMP have more than doubled over the past decade and this trend is set to continue. This is creating a demand for commercial tour operators and for recreational facilities, often in the same location. The Department administers commercial tour operators in NMP under either E class (restricted) or T class (non-restricted) licenses. Currently there are 66 commercial operators in the Park (i.e. 31 E class and 35 T class licenses) operating mainly from Tantabiddi, Bundegi and southern Bills Bay, adjacent to the Coral Bay townsite. The Department's *Marine Tour Operator Handbook* provides guidance to current and future operators in the Park. The demand from tour operators to access NMP is increasing rapidly both in the current major areas of activity and in other areas of the Park.

Approval processes for commercial activities involve a proposal-by-proposal assessment based on environmental, safety and equity criteria by the Department, endorsement by the MPRA and approval by the Minister for Environment and Heritage. Although the management plan for the Park provides a broad prescription for the management of the tourism industry at a park level, there is often a need for a more detailed plan at the site level to deliver the required outcomes.

MPRA POSITION: That the review include an assessment of the need for more detailed site planning of current and projected recreation and tourism nodes in NMP.

3.12 CORAL BAY BOATING STRATEGY

The increasing demand to use the waters of southern Bills Bay, adjacent to the Coral Bay townsite, by a variety of recreational and commercial users has resulted, over the past decade, in environmental damage, unacceptable risks to public safety and conflicts over real and perceived inequities. Southern

Bills Bay is part of the Mauds Sanctuary Zone within NMP and Coral Bay is the most popular site for visitors to access the Park. The MPRA acknowledged the problems in Bills Bay and requested the Department develop and implement a strategy, in consultation with the local community and stakeholders, to address the above issues as a matter of urgency. To assist and guide the Department, the MPRA released a policy statement in 2001 outlining specific objectives to be achieved by the strategy.

The Coral Bay Boating Strategy (CBBS) is an interim strategy pending the approval and construction of a small boat facility to be built in the vicinity of the Coral Bay townsite. Once this proposal is implemented most of the current boating activity in southern Bills Bay will be relocated to this site. The CBBS has now been endorsed by the MPRA and approved by the Minister for Environment and Heritage and is currently being implemented by the Department. In the event the small boat facility is not built the situation in southern Bills Bay will be reassessed.

MPRA POSITION: That the Department continues to implement the Coral Bay Boating Strategy as an interim strategy to address the issues in southern Bills Bay.

3.13 PETROLEUM INDUSTRY

Current Government policy prohibits petroleum drilling and development within the NMP. Seismic exploration is permissible in the NMP subject to assessment by the Environmental Protection Authority.

MPRA POSITION: That existing arrangements for the petroleum industry in the Park remain the same.

4 PART B - PROPOSED MARINE CONSERVATION RESERVES ADJACENT TO THE NMP

The Marine Parks and Reserves Selection Working Group Report (MPRSWG, 1994) recommended 70 locations around the State as candidate areas for consideration as marine conservation reserves, including two locations that lie adjacent to the northern and southern boundaries of the NMP (Figure 1). These are:

- The Muiron and Sunday islands group in the northern part of Exmouth Gulf and
- the southern extension of the Ningaloo Reef to Red Bluff.

The consideration of these two areas as part of the marine conservation reserve system will be undertaken as part of the review of the NMP Management Plan. The proposed study areas are shown in Figure 1. This paper summarises the key ecological and social values of both locations and provides broad options for boundaries and reserve system categories. The process to reserve these areas would require the development of an *Indicative Management Plan* and a *Notice of Intent* as required under the CALM Act.

4.1 MUIRON AND SUNDAY ISLANDS

4.1.1 Ecological Values

The waters surrounding the Muiron and Sunday islands lie close to the intersection of the Ningaloo, Pilbara Nearshore and Pilbara Offshore marine bioregions (ANZECC, 1998), a situation that is unique along the Western Australian coastline. Hutchins *et al.* (1996) describe the marine environment of the Muiron Islands as ... *one of the most diverse – geomorphologically and faunistically speaking – regions in Western Australia*. Although similar in some ways to the northern part of the Ningaloo Reef, the Muiron and Sunday islands also have habitats and communities more commonly found in the Pilbara waters further north. This unusual mixture of flora and fauna warrant their inclusion into the statewide system of marine reserves.

The Muiron Islands are conservation reserves jointly vested in the Conservation Commission and the Shire of Exmouth. The inclusion of the water surrounding the Muiron Islands in the marine reserve system will complement the conservation and management of these islands.

4.1.2 Social Values

The reefs around the Muiron Islands are intensively used by recreational fishers and divers. Most travel to the islands from Exmouth. A small area on the western side of the Muiron Islands has been closed to all fishing under the *Fish Resources Management Act 1994*. Commercial prawn trawling occurs in Exmouth Gulf and the lower half of the study area lies within the northern boundary of the Exmouth Gulf Managed Prawn Fishery (Figure 2). Trawling occurs to within approximately one kilometer south of the Muiron Islands. The shallow waters around the Muiron Islands are popular destinations for dive tourism companies operating out of Exmouth. The waters surrounding these islands are becoming popular for surfing, and camping on the islands is increasing.

The geological formations underlain by the waters around the Muiron and Sunday islands are considered to be of 'high prospectivity' by the petroleum industry. The tenements cover this area are leased by Apache Energy Ltd., who retain a strong interest in this location with a number of wells having produced encouraging results for petroleum and gas. The high usage of this area has significant potential for conflict and marine reservation of this area is needed to ensure the environment is protected and human use is managed sustainably.

4.1.3 Options for Reservation

The options for reservation are:

Inclusion into NMP

All current sustainable commercial and recreational interests could potentially be accommodated in the event this area was incorporated into the NMP. However, the inclusion of the Muiron and Sunday islands area into the NMP may result in the extension of the existing Government policy prohibiting petroleum drilling and development within the NMP to this area. Given the high prospectivity of this area, this option is unlikely to be supported by the petroleum industry or the Minister for State Development if the existing Government policy position was extended to cover this area.

Established as a separate marine park

The reservation of this area as a *marine park*, independent of NMP would not necessarily preclude any of the current recreational or commercial uses, including petroleum activities, from the area. Commercial uses would, however, be excluded from any recreational zone established while all extraction activities would be excluded from sanctuary zones. Petroleum activities would be permissible in other zones, subject to EPA assessment.

Established as a marine management area

The reservation of this area as a *marine management area* could accommodate all existing sustainable commercial and recreational uses. A range of zones under section 62 of the CALM Act could provide the necessary zoning options. The Minister for State Development has indicated his preference for this area to be established as a *marine management area*.

MPRA POSITON: That the Muiron - Sunday Island area be added to the reserve system and consideration be given as to the most appropriate marine conservation reserve category and zoning.

4.2 THE SOUTHERN EXTENSION OF THE NINGALOO REEF

The existing NMP does not encompass the southern extent of the Ningaloo Reef ecosystem. In recognition of this omission, the MPRSWG recommended the area south of the existing Park boundary to Gnarlaloo Bay as a proposed extension to the existing Park with the intent of including the entirety of the Ningaloo Reef structure within the NMP. Recent benthic habitat mapping by the Department has shown that Ningaloo Reef extends south of Gnarlaloo Bay to Red Bluff. In accordance with the intent of the MPRSWG Report (1994) the agreed study area has been extended to include the area of State Waters to Red Bluff (Figure 1).

4.2.1 Ecological Values

The reef to the south of the existing Park boundary is narrower, closer to the shore and less continuous than further north. The continental shelf is broader in this southern section of the reef, hence the tropical autumn-winter influence of the shelf-edge Leeuwin Current is less pronounced than further north. In summer, this southern section is influenced more by the cooler northward flowing Ningaloo Current than areas further north. Commensurate with these physical and oceanographic differences, the habitats and reef communities in this southern area of the reef have greater warm-temperate affinities than the more sub-tropical northern parts of Ningaloo Reef. For example, temperate species such as the western rock lobster, *Panulirus cygnus*, and the baldchin grouper, *Choerodon rubescens*, are relatively common in the southern part of the Ningaloo Reef compared to the northern areas. Similarly, their tropical counterparts the painted lobster, *Panulirus ornatus*, and the tusk fish, *Choerodon schoenleinii*, are common in the north but are relatively uncommon in the southern part of Ningaloo Reef. Because of the limited public access to much of this coastline, the area is relatively undisturbed. Reservation of the southern extension of Ningaloo Reef would increase the representativeness of the existing Park and facilitate the conservation and management of the Ningaloo Reef as a complete ecosystem.

4.2.2 Social Values

The absence of public access to Coral Bay via Gnaraloo Station has resulted in relatively fewer visitors to this section of Ningaloo Reef over the past three or four decades with most visitors to Ningaloo Reef choosing to access the reef at locations further north. However, camping sites mainly for surfers and, more recently, for recreational fishers have been established on Quobba Station (i.e. at Red Bluff) and Gnaraloo Station (i.e. Three-Mile Well) since the late 1970s/early 1980s. Over the past decade significant recreational fishing pressure has occurred at these sites and off Gnaraloo Bay.

Plans are currently underway for a proposed coastal road from the Gnaraloo homestead north to Coral Bay. An increase in access will lead to a significant increase in visitation and the associated pressure on natural resources where, at present, a relatively pristine environment exists. The reservation of this area represents an opportunity to establish a management regime prior to any increase in user pressure on the natural system. Without established management in place, this area could be degraded rapidly once public access is improved.

Some commercial fishing occurs in these waters with boats from both Coral Bay and Carnarvon using the area. The southern Ningaloo Reef area is a popular surfing location with numerous world-class breaks along the coast. Whilst leading to little direct impact on the marine environment, coastal degradation associated with access and use of the area for camping would need to be considered in any management plan prepared for the area. There are no existing petroleum tenements over this area.

4.2.3 Options for Reservation

This area has important ecological values and contains some of the most pristine areas of Ningaloo Reef because of the limited public access in the past. Given the balance of the ecological and social values, *marine park* is clearly the most appropriate category for the reservation of this area.

MPRA POSITION: That the southern extension of the Ningaloo Reef, including all state waters extending from the southern boundary of the existing park to Red Bluff, be reserved as 'marine park' and added to the Ningaloo Marine Park and that appropriate zoning in this area be considered.

5 FIGURES

FIGURE 1. NINGALOO MARINE PARK ZONING AND STUDY AREAS FOR MARINE CONSERVATION RESERVES ADJACENT TO THE NINGALOO MARINE PARK

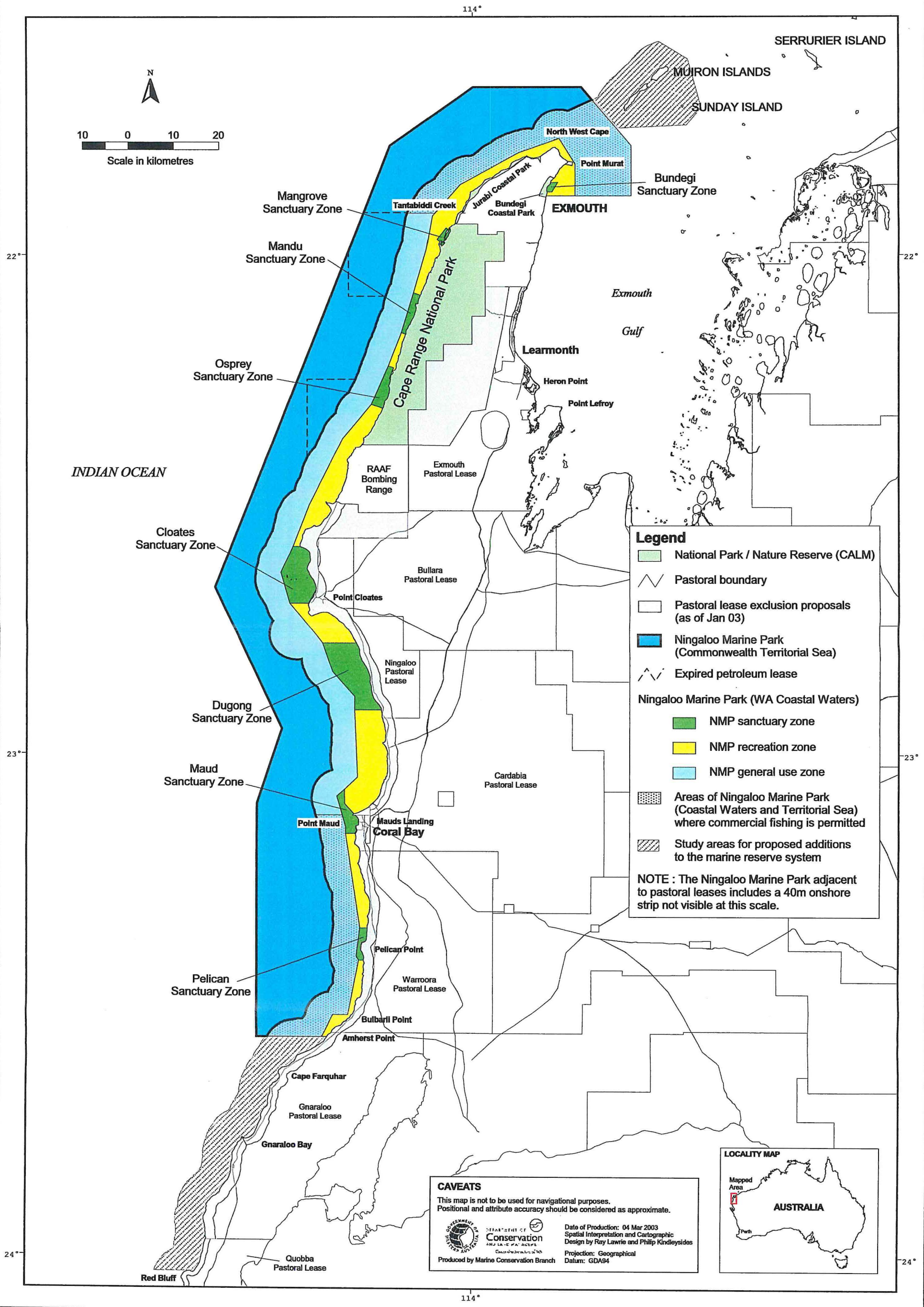
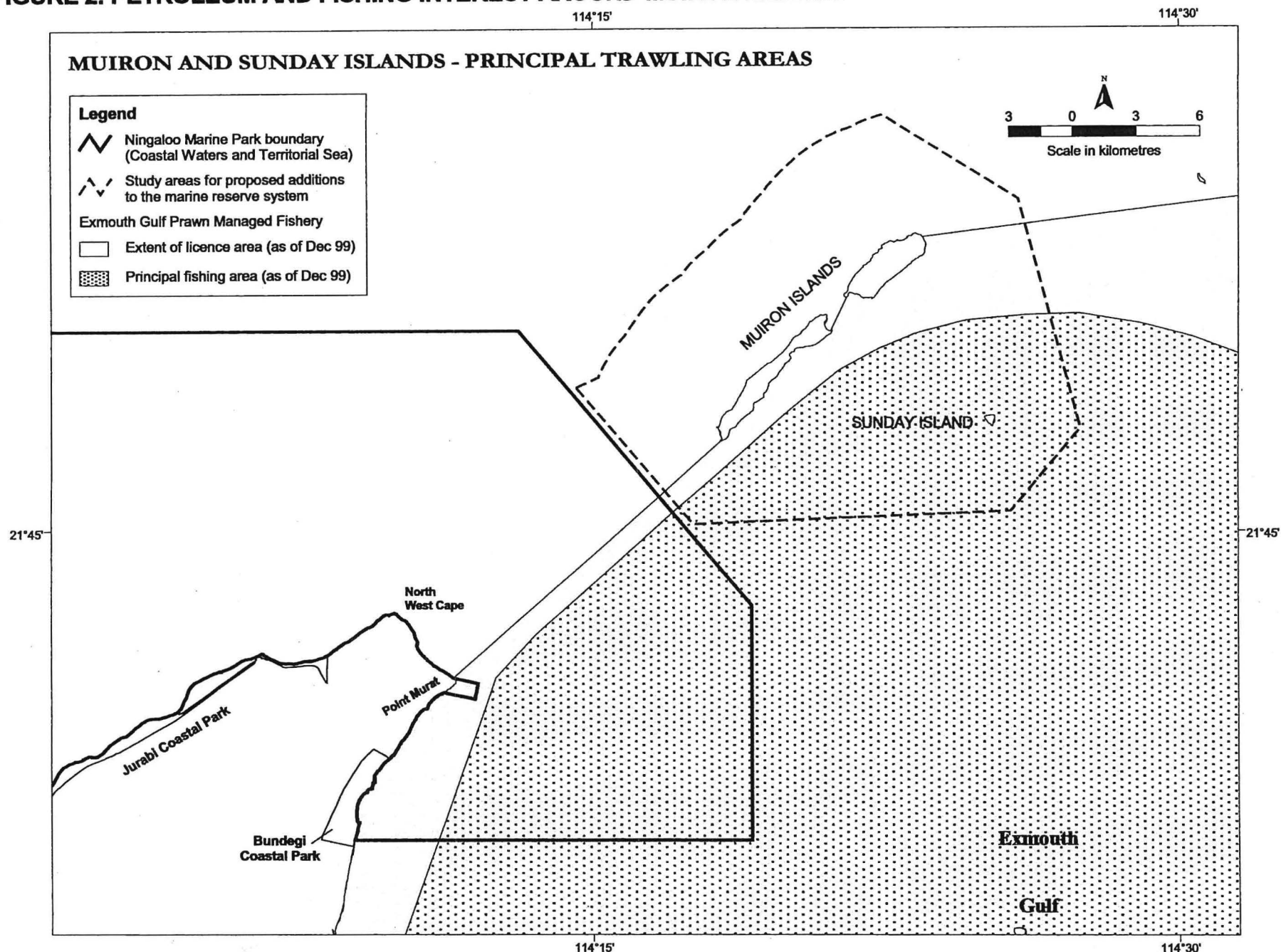


FIGURE 2. PETROLEUM AND FISHING INTEREST AROUND MUIRON ISLANDS



CAVEATS

These maps are not to be used for navigational purposes. Positional and attribute accuracy should be considered as approximate.

Date of Production: 11 Feb 2003
 Spatial Interpretation and Cartographic Design by Ray Lawrie and Philip Kindleysides

Projection: Geographical
 Datum: GDA94

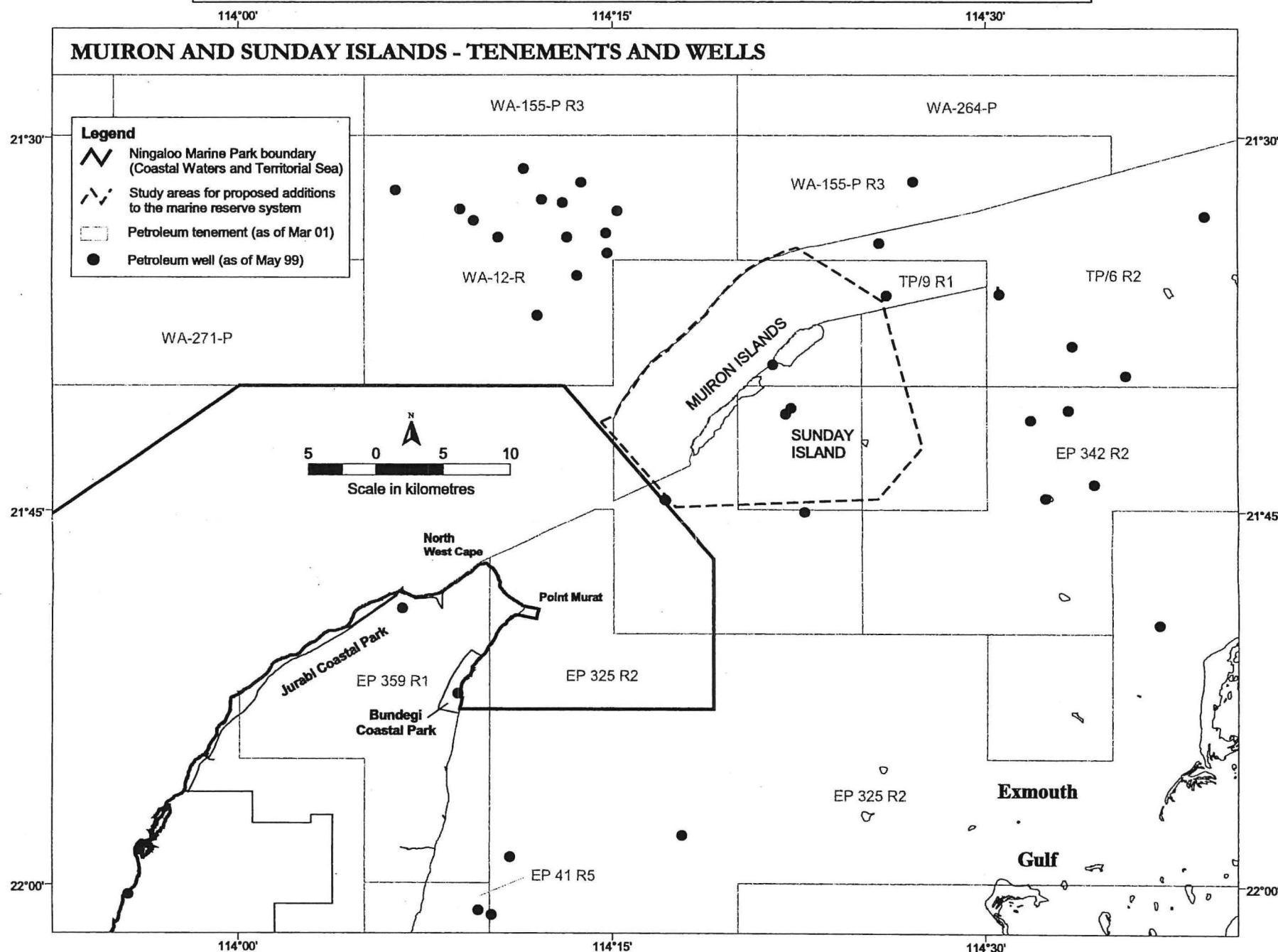
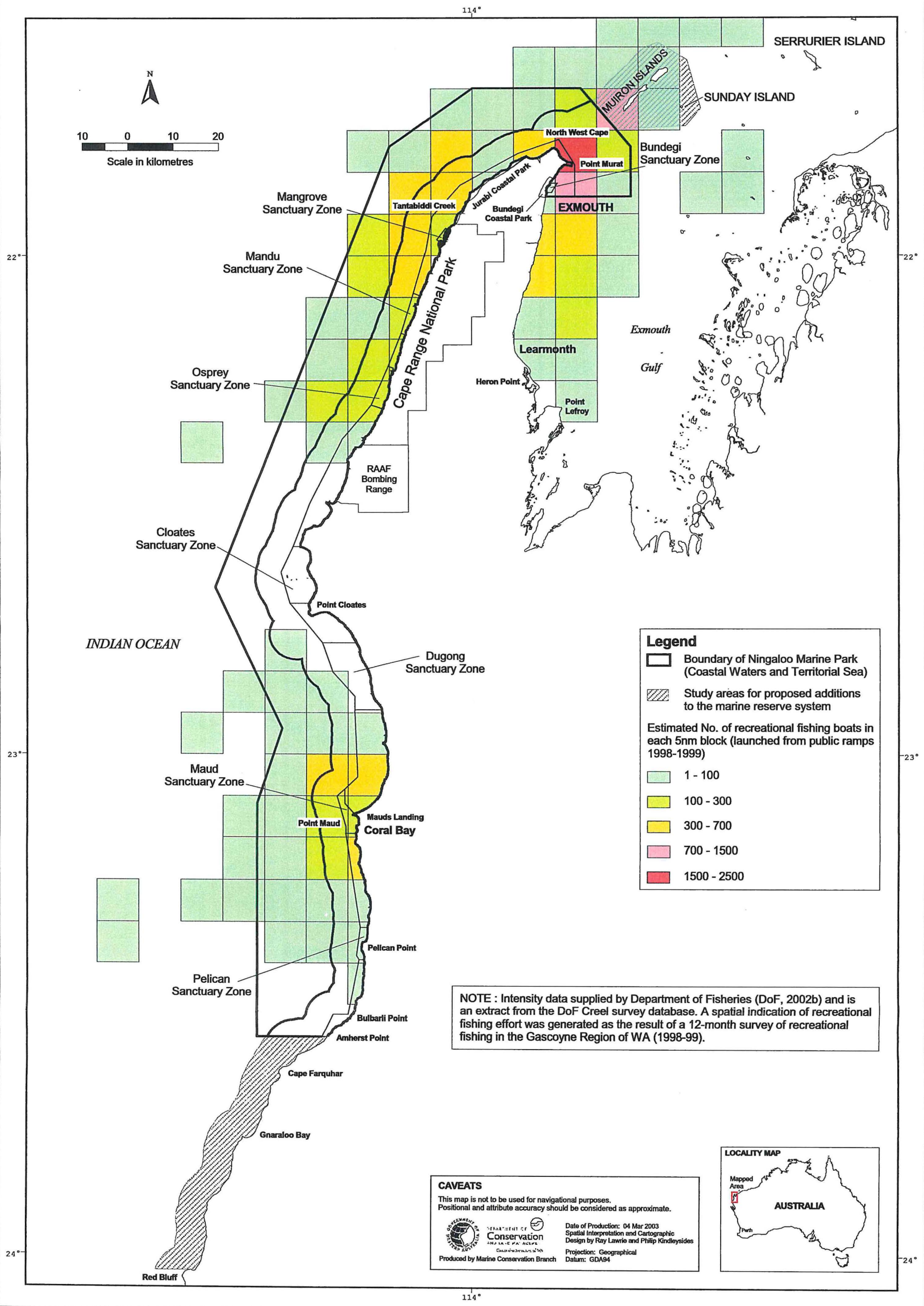


FIGURE 3. RECREATIONAL FISHING INTENSITY IN THE NINGALOO MARINE PARK



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7 APPENDIX

APPENDIX: PERMISSIBLE USES WITHIN MARINE CONSERVATION RESERVES

Marine Management Area	Marine Park				Marine Nature Reserve
	General Use Zone	Special Purpose Zone	Recreational Zone	Sanctuary Zone	
Petroleum Drilling and Oil Production *					
Mining					
Commercial Fishing					
Aquaculture					
Pearling					
Recreational Fishing					
Recreation and Tourism					

* Existing Government Policy precludes petroleum drilling for exploration and production in the NMP.