A FRAMEWORK FOR THE ADVISORY COMMITTEE FOR THE PROPOSED DAMPIER ARCHIPELAGO/CAPE PRESTON MARINE CONSERVATION RESERVE

DRAFT

Marine Parks and Reserves Authority

August 2000

1. Introduction

The Advisory Committee for the proposed Dampier Archipelago/Cape Preston marine conservation reserve (hereafter referred to as the Advisory Committee) has been established to facilitate the development of a proposal for a marine conservation reserve in the Dampier Archipelago/Cape Preston Study Area. The Advisory Committee, which was appointed by the Minister for the Environment in June 2000, has an important "public interest' role in facilitating broad community input into the planning process for the proposed reserve, considering all community interests and ensuring the reserve reflects community aspirations for future management of the area. In this document, *community* includes the general public, both local and statewide, industry, and all special interest groups (e.g. fishing, tourism, diving). The main role of the Advisory Committee is to facilitate community and stakeholder input into the planning and establishment of the Dampier Archipelago/Cape Preston marine conservation reserve well before the reserve is created. The Advisory Committee will assist CALM in making recommendations to the Minister for the Environment, via the Marine Parks and Reserves Authority (MPRA). This will take the form of an indicative management plan that will make specific recommendations on the reserve proposal and outline how the area should be managed over a ten- year period.

The MPRA and the Ministers for the Environment, Fisheries and Mines have approved a study area for the Dampier Archipelago/Cape Preston proposal (Attachment 1). This study area represents the area that the Advisory Committee will consider in respect of the marine conservation reserve proposal. Notwithstanding this, the Advisory Committee could recommend the addition of areas outside the study area, however this would only be considered if there was a very clear need identified by the Advisory Committee. This document has been produced to assist and to provide guidance to the Advisory Committee in its consideration of the proposal. It provides a broad MPRA-endorsed framework that identifies important issues that should be considered in the planning of a marine conservation reserve that will ensure it is ecologically sound and provides for sustainable management of human activities in an equitable and integrated manner. The framework is designed to assist the Advisory Committee to achieve a practical outcome in a realistic time frame.

2. Background

The Government is implementing a representative system of marine conservation reserves as outlined in the New Horizons (1994, 1998) policy documents. This policy provides the flexibility to provide for a range of recreational and commercial uses in marine conservation reserves whilst ensuring the maintenance of the conservation values. The implementation of this system will broadly follow the framework recommended by the Marine Parks and Reserves Selection Working Group report entitled *A Representative Marine Conservation Reserve System for Western Australia* that was released in 1994. Reserves that are declared under the CALM Act 1984 will form part of the National Representative System of Marine Protected Areas (NRSMPA). The NRSMPA forms the Australian component of a global system of marine protected areas being developed by nations all around the world as a key strategy in implementing the United Nations International Convention on Biological Diversity.

The Marine Parks and Reserves Authority is a statutory body established in 1997 under the CALM Act. CALM Act marine conservation reserves (i.e. marine nature reserves, marine parks and marine management areas) are vested (i.e.'owned') with the MPRA and the MPRA is required to audit CALM's implementation of management plans once the reserves are established. The MPRA has members from a diverse background including conservation, fishing, industry and science. The MPRA is responsible for overseeing the preparation of management plans for marine conservation reserves and in the case of Dampier Archipelago/Cape Preston area, will consider the recommendations of the Advisory Committee before making a recommendation to Government. The Marine Parks and Reserves Scientific Advisory Committee was also established in 1997 by the Minister for the Environment to provide advice to the Minister and the MPRA. The Committee

comprises scientists from the non-government sector, CSIRO and Australian Institute of Marine Science, local universities, CALM, the WA Museum and Fisheries WA.

The state waters surrounding Dampier Archipelago/Cape Preston area have significant conservation, recreation, commercial and cultural values. The wide range of natural influences on the area has developed a variety of habitats and a corresponding highly diverse marine flora and fauna. The area is Australia's largest (by tonnage) port, supports large scale mining and petroleum industries and is important area for pearling. It has significant recreational importance for the local and wider Pilbara communities. Marine tourism is currently limited but the area has significant potential for this industry and is likely to expand rapidly over the coming decade.

3. Roles of the MPRA, CALM and the Advisory Committee as they relate to the establishment of marine conservation reserves

The Marine Parks and Reserves Authority
The MPRA's role, amongst other things, is to:

- oversee the development of marine conservation reserve policy and management plans and their implementation;
- provide leadership and direction to the Advisory Committee established to consider the Dampier Archipelago/Cape Preston marine conservation reserve proposal through:
  - this framework;
  - regular feedback to the Advisory Committee during the process; and
  - a MPRA member having observer status at Advisory Committee meetings.
- review the indicative management plan and provide advice to the Minister through a section 14 report on the proposal.

CALM
CALM's role is to:

- promote and facilitate the development of management arrangements that will ensure the conservation of marine biodiversity and the management of human usage within an integrated, sustainable and equitable framework;
- provide the executive support for the Advisory Committee;
- provide the technical background for the Advisory Committee in terms of the areas conservation and social values and management considerations;
- coordinate the public participation program;
- facilitate appropriate input from Government agencies;
- facilitate out of Advisory Committee liaison and negotiations; and
- facilitate the necessary approvals to facilitate the publication of a Notice of Intent (NOI).

The Advisory Committee
The Advisory Committee's role is to:

- assist CALM in the planning of a marine conservation reserve in the Dampier Archipelago/Cape Preston area;
- provide advice to ensure that the indicative management plan includes appropriate management strategies that will protect the ecological and social values of the area and that take account of community aspirations for management of the area;
- provide advice on proposed reserve type, boundaries and reserve class; and
- provide community input into the development of an indicative management plan (see Section 5) through consultation with the community.

Individual Advisory Committee Members

Advisory Committee members have a very important and sometimes difficult role. Given the broad range of community interests, there is need for members to take an expansive view of issues rather than a narrow personal or sectoral view. Members have been chosen for their knowledge and expertise and general standing in the community and as such they are expected to take a considered position of the issues and actively promote balanced outcomes. The outcomes of this process should be in the community's long-term interest and members need to work towards this goal.

The responsibilities of individual members include:

- observing the Advisory Committee Code of Conduct (see Attachment II)
- seeking and considering the views of the broader community in Advisory Committee deliberations;
- contributing in a positive manner to the development of management options;
- ensuring they are fully informed of community opinion; and,
- working collaboratively with other Advisory Committee members towards consensus decisions on areas of conflict.

4. Values of the Study Area

This section briefly summarises the ecological and social values of the area. More detailed information on the values can be found in the *Dampier Archipelago/Cape Preston - Regional Perspective 2000.*

4.1 Ecological Values

Habitat Diversity

The study area is centrally located within the Pilbara Nearshore bioregion and is broadly representative of all habitats, which occur in the bioregion. Benthic habitat mapping of the study area has identified 16 major habitat classifications, ranging from rocky shores and mangals to coral reef communities and offshore pelagic habitats. The predominant nearshore habitat is low relief, macro-algae dominated limestone reef and areas of silt, giving way to sand habitats 5-10 km off the coast. Due to high sediment loads, coral reef communities are sparse and restricted mainly to offshore island areas.

Mangroves

An important habitat type along the coastline and some of the islands within the study area are the mangrove communities. Six species of mangroves are present in the study area, mostly inhabiting intertidal flats in embayments where low energy conditions and high sedimentation rates provide a gently sloping tidal mudflat environment that is suitable for mangroves to live. Mangroves provide important nursery areas for juvenile fish and crustaceans

Coral Reefs

The study area has a high diversity of hermatypic (reef building) corals (229 recorded species), a reflection of the wide variety of substrata and oceanic conditions which influence the distribution and structure of coral communities. Coral communities in the area are generally in a good condition. However projected increases in the recreational use and commercial development of the study area has the potential to negatively impact on these communities.

Macroalgae and Seagrass

Macroalgal communities are found extensively in the study area and are important primary producers. Brown algae are the most abundant of the major algal groups, with green algae and red algae also being conspicuous. Six species of seagrass have been recorded from the study area, but rather than forming extensive beds, seagrasses in the Study Area are interspersed with the macroalgae and are a relatively minor component of the primary producers of the area. Plant communities provide a home to a variety of invertebrates and fishes, whilst seagrasses are a food source for turtles and dugongs.

High Biodiversity

The diversity of habitats in the study area results in a correspondingly high species diversity and abundance. Up until the current Woodside-sponsored Western Australian Museum biological survey of the study area, limited surveys had largely been confined to the coral and fish fauna. Despite this limitation the number of species recorded from the area include six species of seagrass, 98 species of seabirds and shorebirds, 37 algal species, 229 species of hermatypic coral, 600 species of fishes, 184 shell species and 126 crustacean species. In addition, the study area is home to 193 species of echinoderms, which is the highest recorded diversity in Western Australia.

Preliminary results from the Museum survey indicate a very rich diversity of marine flora and fauna. An example of the emerging results is that before the current study by the Museum only 14 species of sponge had been recorded. Since the 1998 survey the number of sponge species from the study area has risen to 165 (Jane Fromont, personal communication).

Significant Wildlife

The study area is significant for marine wildlife. The region supports green, loggerhead, flatback, leatherback and hawksbill sea turtles, which all breed in the area except the leatherback turtle. Tropical Western Australia is the only large remaining area in the entire Indian Ocean where a large population of hawksbill turtles exist. Rosemary Island, in the Dampier Archipelago, is by far the largest hawksbill turtle rookery in the State and therefore the most important . Forty one species of seabirds also nest on the islands and the extensive mud flats, intertidal reefs and saltmarshes are used by 57 species of shore birds during their annual migrations between Australia and South East Asia. A variety of whales and dolphins (three-toothed species and 4 species of baleen whales) have been reported in the area. Humpback whales are commonly seen as a result of their northern and southern migration routes passing through the Study Area. Some recent evidence suggests that the Dampier Archipelago is a major resting area for mothers and calves on their southern migration. Dugong occur in the area but do not appear to be abundant.

4.2 Social Values

Aboriginal Heritage

Aboriginal people have inhabited the Dampier Archipelago, Burrup Peninsula and adjacent coastal areas for thousands of years and their rock engravings make up what has been described as the oldest and finest outdoor indigenous art gallery in the world. A vibrant Aboriginal culture remains today and local communities continue to use the region for fishing and hunting. There are currently four Native Title claims lodged over the study area.

European Heritage

The study area has a rich European history, with the Dampier Archipelago first being charted by the Dutch East India Company in 1628, and the earliest recorded European landing being in 1699 when William Dampier used the sheltered waters for an anchorage for the vessel *Roebuck*. Whaling and turtle industries operated in the area for many years and the harvesting of pearl shells has taken place since the late 1800's.

Commercial Fishing

The major commercial fishing activities in the study area are prawn and fish trawling, trapping and wetlining, with vessels operating out of the ports of Dampier, Onslow and Port Samson however the majority of the commercial fishing activity occur outside the Study Area. The Onslow Prawn Managed Fishery and the Nickol Bay Prawn Managed Fishery have an estimated annual value of $1.2–1.4 million and $1.6–2 million respectively. The Pilbara finfish industry involves trawl, line and trap fishing and has an estimated annual value of $10.3 million. The North Coast Shark Fishery, currently with 8 operators is worth approximately $0.6 million.

Pearling & Aquaculture

There are three existing or proposed pearling leases (for *Pinctada maxima*) and four existing or proposed aquaculture leases in the study area. To support pearling activities, shorebased buildings and

structures have been constructed on Dolphin and West Lewis Island. The study are also has the potential to support other forms of aquaculture such as for the production of algae and red claw crayfish.

Recreational Fishing

Pilbara coastal towns have the highest rate of private vessel ownership in Australia.. however small boat launching locations are limited in the Study Area. Recreational fishing is a popular past time with fishers targeting marlin, sailfish, mackerel and other pelagic species in offshore waters while coral trout, spangled emperor, black snapper and trevally are popular target species on the reefs of the Dampier Archipelago. Shore-based fishers target bream and trevally. In addition, recreational fishers target prawns, and crabs and tropical rock lobster and spearfishers take coral trout, snapper and cod.

Watersports

Visitors to the area can participate in recreational fishing, swimming, diving and snorkelling, as well as surface water sports such as sailing, surfing, waterskiing, jetskiing, sea kayaking and windsurfing.

Marine Nature-based Tourism

The coastal and island scenery, beautiful beaches and abundant coral reefs, together with the warm climate, sheltered conditions, abundant wildlife and close proximity to areas of significant Aboriginal and European cultural heritage, create a highly attractive setting for a wide range of tourism activities. The value of tourism in the Pilbara region is estimated at $59.5 million and approximately 543,000 visitors use the Karratha Tourist Bureau each year.

Petroleum & Mining

The Pilbara mining industry accounts for approximately 50% of the State's mineral production. The Port of Dampier is a major exporting base for the mining and petroleum products from the area being the busiest Port in Australia by the number of ships. The Dampier Port is the major place for the export of LNG by Woodside and of iron ore produced by Hamersley Iron. The operations of these two companies within the study area are administered under State Agreement Acts. There are major oil and gas exploration and production sites within 60km of Karratha and 3 petroleum leases overlap the western boundary of the study area. There are also a number of proposals for new port facilities in the area associated with mining operations in the area.

Salt

Salt production is a major industry in the area with an annual production of 7.7 million tonnes worth approximately $60 million. Fifty percent of this production is exported to Japan through the Dampier Port, the remainder exported to Asia, Europe, America and, to a lesser extent Africa. The Dampier salt operation is covered by a State Agreement Act

5. The Planning Process

Although the Advisory Committee is a central part of the public participation process, there is a need for consultation with community groups and institutional stakeholders. These include the local tourism industry, local mining and petroleum companies, Recfishwest, Pearl Producers Association, Western Australian Fishing Industry Council and the Australian Petroleum Production and Exploration Association and State and local government organisations. Figure 1 broadly details the marine conservation reserve planning process as it relates to the Advisory Committee.

To facilitate effective communication between the advisory committee and the broader community, CALM has developed a document called a *consultation partnership* for each key stakeholder group. This document outlines how the collective views of key stakeholder groups (e.g. commercial fishing, conservation, tourism etc) can be obtained so as to ensure that the advisory committee is aware of the full range of community opinion on issues. Given that the committees are non-representative, the effective communication with groups outside of the committee process is particularly important in securing an outcome that is broadly supported by the community.

The MPRA will be kept informed of progress made by the Advisory Committee throughout the process to keep abreast of key issues and to facilitate feedback to the Advisory Committee on the proposal.

BROAD OUTLINE OF THE PLANNING PROCESS TO THE NOTICE OF INTENT STAGE AND ROLE OF THE ADVISORY COMMITTEE

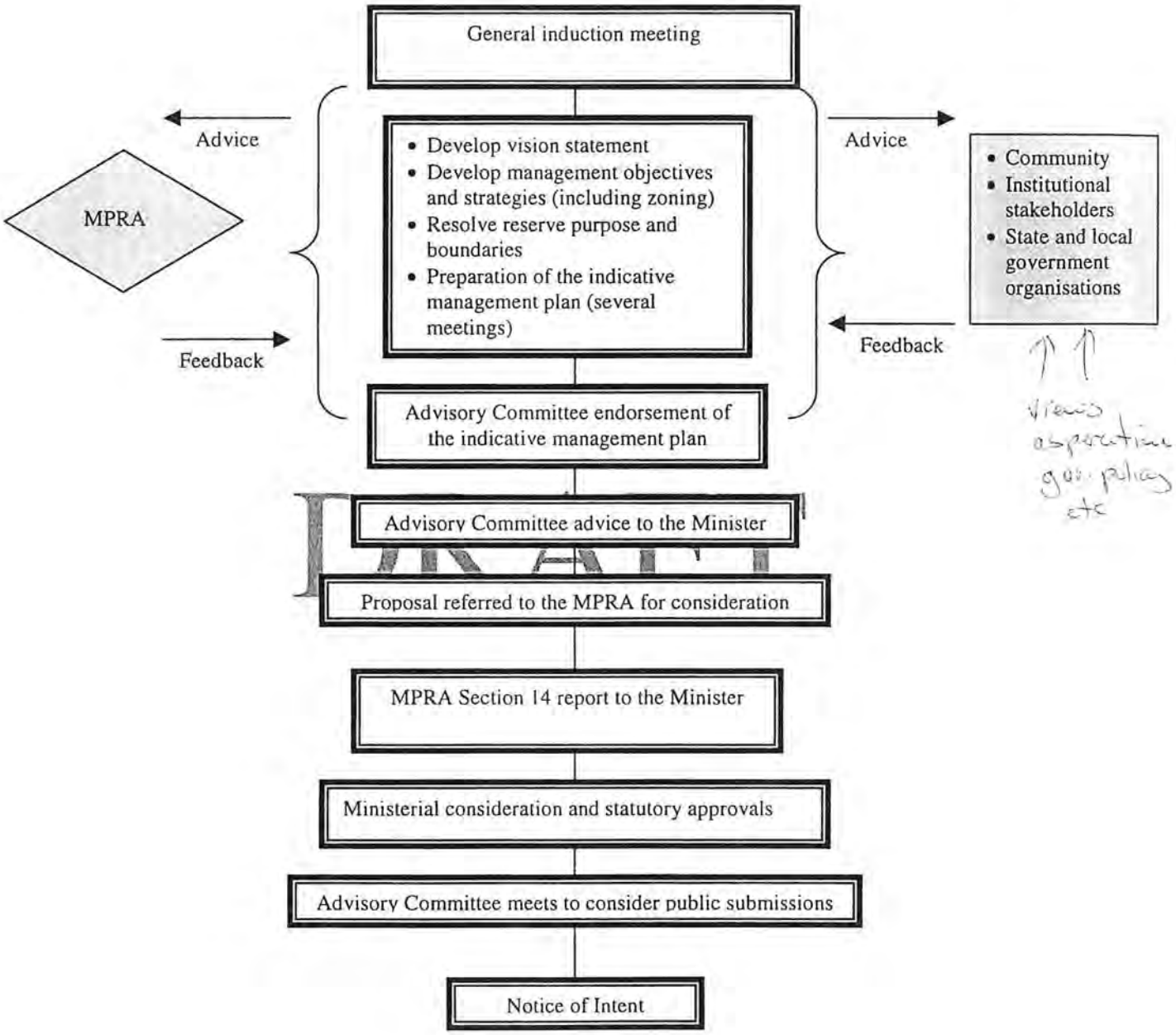


Figure 1: Broad outline of the planning process to the notice of intent stage and role of the advisory committee.

6. Principles for Developing the Marine Conservation Reserve Proposal

The Western Australian Government, as outlined in the *New Horizons* policy, and the MPRA are committed to the development of a comprehensive, adequate and representative (CAR) system of marine conservation reserves under the CALM Act. A structured multiple-use marine conservation system has two primary objectives:

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

The statewide system is part of the part of the National Representative System of Marine Protected Areas (NRSMPA) currently being established by the Commonwealth, State and Territory Governments. The NRSMPA is also being developed to be consistent with the principles of *comprehensiveness*, *adequacy* and *representativeness*. These are defined below.

Comprehensiveness
The NRSMPA will include the full range of ecosystems recognised at an appropriate scale within and across each marine bioregion.

Adequacy
The NRSMPA will have the required level of reservation to ensure the ecological viability and integrity of populations, species and communities.

Representativeness
Those marine areas that are selected for inclusion in MPA's should reasonably reflect the biotic diversity of the marine ecosystems from which they derive.

The Pilbara proposals will, if declared, be within the Pilbara Nearshore (PIN) and Pilbara Offshore (PIO) marine bioregions and contribute significantly to the statewide system of marine conservation reserves and to the NRSMPA.

6.1 Reserve Purpose, Class and Boundaries

The determination of the reserve purpose, class and boundaries is a very important aspect of the advice of the Advisory Committee to the Minister and the MPRA. The reserve purpose, class and boundaries recommended should be appropriate for the area given the mix of conservation values and social uses and the type of management envisaged for the area. The purpose should also allow sufficient flexibility for management to respond to future changes in use or threats to the conservation values (i.e. statutory zoning provisions in the *marine park* reserve category would allow for the separation of conflicting uses).

Purpose
There are three categories of marine conservation reserve available under the CALM Act. These are *marine nature reserve, marine park* and *marine management area.*

Marine Nature Reserve
The purpose of a marine nature reserve shall be for:

- the conservation of restoration of the natural environment;
- the protection, care and study of indigenous flora and fauna; and
- the preservation of any feature of archaeological, historic or scientific interest.

Marine Park
The reservation of a marine park shall be 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.

Marine Management Area
The preservation of a marine management area shall be for the purpose of managing and protecting the marine environment so that it may be used for conservation, recreational, scientific and commercial purposes.

Reserve Class
Marine conservation reserves can be gazetted as A Class or not A Class under the CALM Act. The classification does not affect how the management of the reserve but it does affect its legal status or tenure i.e ,it determines the process that is required to amend the boundaries and purpose of a reserve once established. The purpose and boundaries of a marine conservation reserve classified as A Class can only be amended with the support of both houses of Parliament. A reserve classified as a 'not-A Class' reserve can, subject to the concurrence of the Minister for Fisheries and the Minister for Mines, be cancelled or the reserve boundaries altered to reduce the area of the reserve, by order of the Governor.

All existing CALM Act marine conservation reserves in Western Australia are A Class reserves. The classification of most future marine conservation reserves in Western Australia is likely to be as A-Class reserves.

Developing Boundaries of the Proposed Reserve
In considering proposed boundaries it is important to evaluate the conservation significance and the nature and level of human use of the study area in relation to the objectives of the marine conservation reserve system (state above). Specific consideration should be given to the areas that:

- contribute to the maintenance of essential ecological processes or life-support systems (e.g. source of larvae for downstream areas and major areas of primary production);
- contribute to ecological integrity–i.e. the degree to which the area, either by itself or in association with other protected areas, encompasses a complete ecosystem;
- preserve genetic diversity (i.e. is diverse or abundant in species terms);
- include all major marine habitats;
- contain habitat for rare or endangered species;
- contain nursery areas;
- contain feeding or breeding areas;
- contain rare or unique habitat for any species;
- are relatively unaltered (or natural) or have not been subjected to significant human-induced change; and
- are important for scientific research and monitoring.

In general, areas of high conservation value (using the above criteria) should be included irrespective of the level of multiple use. Areas of relatively low conservation value that are primarily used for commercial purposes, particularly industrial activities, generally would not be included in a proposed marine conservation reserve, as the environmental management of these areas are usually adequately addressed under the Environmental Protection Act. Areas of relatively low conservation value and low human pressure should be included if there are practical management reasons for this (e.g. keeping boundaries simple) or where the inclusion of the provides better representation of a particular habitat Figure 2).

1300	6. Social Values of the Area		
	6.1 Regional economic overview (importance in a statewide context)	*Fran Stanley*	
	6.2 Commercial Fishing, Aquaculture & Pearling	*Derek Blackman, FWA* *Greg Trenberth*	
	6.3 Dampier Port	*Brad Williamson - DRD*	
	6.4 Industrial/Mining/Petroleum	*Derek Blackman - FWA*	
	6.5 Recreational Fishing	*B. Burke - Dept Sport & Recreation*	
	6.6 Other Recreation	*Noel Parkin*	
	6.7 Tourism 6.8 Indigenous values		90 min
1430	7. Putting a proposal together 7.1 what are the components 7.2 reserve purpose, class & boundaries 7.3 management plan	*A. Hill*	30 min
1500	Afternoon tea		30 min
1530	7. Putting a proposal together (continued) 7.4 Development of a vision 7.4 MPRA Strategic Objectives 7.5 Discussion of operational objectives 7.6 Committee input to the process	*A. Hill*	30 min
1600	8. Vision for the study area	*A. Hill*	30 min
1630	9. Field trip arrangements	*F. Stanley*	5 min
1635	10. Next meeting	*Chair*	5 min
1640	Close/Refreshments		

Stephen van Keeuwen

ADVISORY COMMITTEE FOR THE PROPOSED DAMPIER ARCHIPELAGO/CAPE PRESTON MARINE CONSERVATION RESERVE

INAUGURAL MEETING 22-23 August 2000
CALM KARRATHA OFFICE

AGENDA

22 August 2000			
0900	1. Introduction and Welcome 1.1 Introductions of committee members and CALM personnel 1.2 Code of Conduct 1.3 Distribution of Committee members contact details 1.4 Rules, housekeeping (when to have meetings etc) 1.5 D. McCallum PhD Proposal 1.6 Attendance of T. Swetman- DEP consultant 1.7 Itinerary & agenda	*Chair*	45 min
0945	2. 2.1 An MPRA Perspective 2.2 Overview of existing marine conservation reserves in Western Australia- an international, national and state perspective	*Ian Finlay* *C. Simpson/I. Finlay*	5 min 10 min
1000	Morning tea		30 min
1030	3. Specific outcomes/objectives of the committee 3.1 planning process 3.2 Non-representative: importance of consultation outside of the committee and consultation partnerships 3.3 MPRA framework 3.4 Overview of planning for and management of the North West Shelf	*A. Hill*	40 min
1110	4. Ecological Values of the Area 4.1 Regional ecological overview (importance in a statewide context) 4.2 Oceanography 4.3 Habitats 4.4 Marine wildlife/biological diversity	*C. Simpson*	30 min
1140	5. Public Participation Program 5.1 Broad public participation process/consultation process 5.2 Issues Analysis	*S. Osborne*	20 min
1200	Lunch		60 min

A GENERALISED GUIDE TO DETERMINING BOUNDARIES OF A MARINE CONSERVATION RESERVE

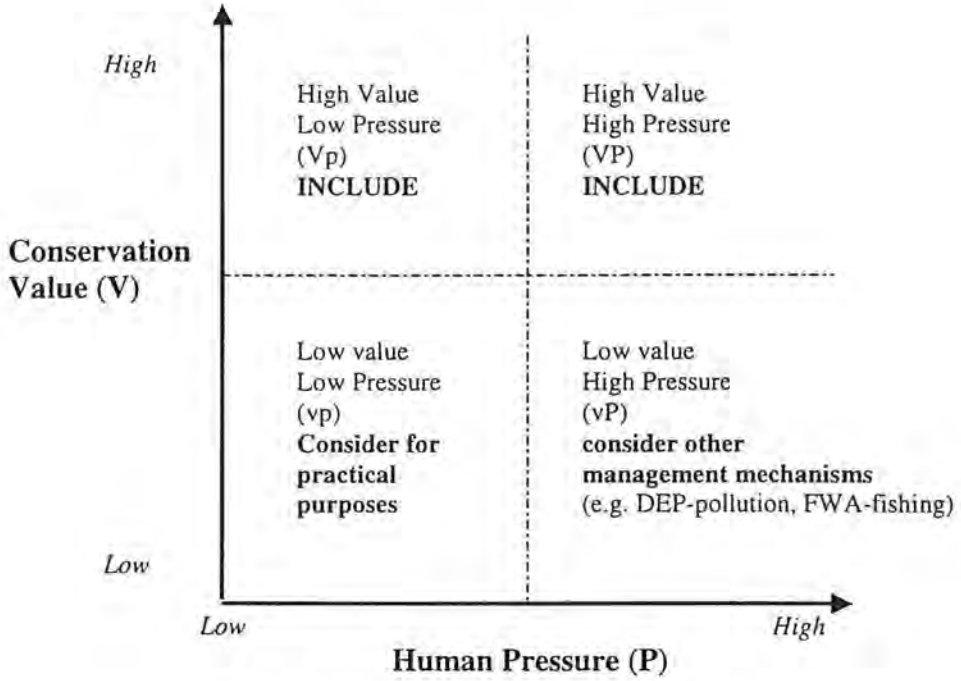


Figure 2: A generalised guide to determining boundaries of a marine conservation reserve

Practical Management Considerations

It is important that boundaries recommended by the Advisory Committee are practical from both a management and user perspective.

From a management perspective boundaries should be as simple as much as possible. For example it is preferable to have one reserve than to have a large number of smaller reserves. This is because boundaries are likely to (depending on the management plan) represent a change in the types of activities that can occur in the reserve and the manager must define and communicate this boundary to the user, and then ensure compliance. As such, the greater the number of boundaries the greater the management complexity and enforcement effort.

From a user perspective, simple boundaries are easier to determine if they are 'over the line or not'. The use of physical features for boundaries is a useful method as this makes it easier to communicate to the public and easier for them to determine their position in relation to boundaries on the water. The use of straight lines is preferred. The use of arcs or distances from a certain point makes it more difficult for users to determine if they are in or out of an area. Where straight lines are used, east-west or north-south lines are preferred, as this makes it easier for boat owners with GPS to determine their location in relation to the boundary. Artificial markers can also be used to identify boundaries.

6.2 The Indicative Management Plan

When the Advisory Committee has identified the most appropriate class and boundaries for the reserve, the next step is to develop management objectives and strategies for the area. The appropriate purpose and zoning scheme will develop from this part of the planning process. The management scheme should aim to provide for the maintenance of the conservation values and, as far as is practical, the maintenance of existing human uses of the area within an integrated, equitable and ecologically sustainable framework.

Strategic objectives of marine conservation reserves

The strategic objectives of the proposed Dampier Archipelago Marine Conservation Reserve are:

Conservation

- To maintain the marine biodiversity of the area.
- To maintain key ecological processes and life support systems (i.e. ecosystem structure and function).

Recreational Uses

- To facilitate and manage a diverse range of recreational activities within an equitable and ecologically sustainable framework.

Commercial Uses

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

Science & Education

- To promote education, nature appreciation and scientific research.

The strategic objectives of the reserve cannot be achieved in isolation from other statutory and non-statutory management measures both within and external to the reserve. Thus the management of the marine reserve must be seen as part of a complementary suite of management practices that include fisheries management, marine wildlife management, pollution control, environmental impact assessment and maritime transport and safety measures. All contribute in varying degrees to achieving the strategic objectives of the reserve.

Operational objectives of marine conservation reserves

The broad operational objectives of the reserve relate:

- to managing the major human pressures on the ecological values;
- to ensuring that existing and future uses of the park do not significantly impact on the ecological and other social values;
- to facilitating, where appropriate, recreation and commercial activities; and
- to promoting education, marine nature appreciation and scientific research.

Generic Management Strategies

There are five generic management strategies that applicable to the management of marine conservation reserves. These are:

- the development of an appropriate administrative framework;
- research and monitoring;
- education & interpretation;
- surveillance & enforcement; and
- public participation.

Administrative framework

The overall process of establishing a marine conservation reserve must include the development of an appropriate administrative framework to ensure the reserve can be managed effectively over the long-term. This framework should include both statutory considerations such as reserve purpose, class and boundaries (outlined above), a suitable zoning scheme and appropriate regulations as well as resource considerations in human, financial and infrastructure/plant terms. Although resources considerations are not the responsibility of the Advisory Committee, it is an issue of importance to the planning process in that it influences the relative emphasis placed on the generic strategies outlined in this

section. For example, in reserves where surveillance & enforcement is logistically difficult and expensive (e.g. remote reserves such as the Rowley Shoals Marine Park), education & interpretation and public participation strategies become the primary management tools.

The development of an appropriate zoning scheme is a key element of the planning process. Zones are used to separate incompatible activities, clearly indicate management priorities (e.g. *sanctuary* and *recreation* zones) and indicate priority purposes (i.e. *special purpose* zones) for particular areas of the reserve. Zoning, particularly zones that totally or partially prohibit extractive activities (i.e. *sanctuary, recreation* and some types of *special purpose* zones), can also be established as a precautionary measure to provide a level of management 'insurance' in the event that the adaptive management approach (outlined in this section) is inadequate. Obviously the lower the confidence in the adaptive management approach, the greater the need for 'insurance'. The best approach will generally be one that uses an appropriate balance of both 'insurance' and adaptive management approaches.

Integrated management is another important element of the management of marine reserves. Although CALM is the lead management agency in respect to marine conservation reserves, there is a number of other State and local government agencies, the Dampier Port Authority and private companies that have significant roles in the environmental management of particular activities, within and adjacent to, the proposed reserve in the Dampier Archipelago/Cape Preston area. The reserve planning process should ensure any new management arrangements for the area consider existing arrangements in a way that promotes better integration of the management effort of all of the above interests.

Research & monitoring

Effective management requires an adequate knowledge and understanding of the marine ecosystem in question and an appreciation of the potential short-term and long-term impacts of human activities on the conservation values and uses of the ecosystem. Without this information it is impossible to allocate resources to the most pressing problems and to assess whether management is achieving its objectives.

As such, a plan for a marine reserve should provide research and monitoring strategies that:

- gain knowledge and understanding of the functioning of the ecosystem;
- understand the nature, trends and implications of human activities on the marine environment; and
- monitor and assess the 'health' of the marine ecosystem.

To achieve these objectives there will need to be areas of the proposed reserve that are not significantly influenced by human activities. This will allow a proper understanding of the ecosystem to be developed in an essentially 'natural' state. Similar areas will also be needed for comparison with areas subjected to intense usage if the impacts of this usage are to be understood.

Education & interpretation

Marine conservation reserves are community assets and as such there should be a major emphasis on encouraging community involvement in the management of the reserve once it is established. This will only come about when the local community understand and appreciate the importance of the conservation values of the area, recognise that a wide variety of human activities are compatible, if properly managed, with the conservation objectives of the reserve and appreciate why particular management strategies have been implemented. As such, the planning process for a marine reserve must include a comprehensive set of education and interpretation strategies to ensure the above information is available. The management emphasis of the reserve, once established, should be on education and public involvement rather than on regulation and enforcement. Public education and information programs will promote community ownership of the reserve and greatly facilitate achievement of management objectives.

Surveillance & enforcement

Notwithstanding the emphasis on education and interpretation, the planning process must also ensure adequate strategies are included in the plan that provide an appropriate level of surveillance &

enforcement of management controls in the reserve. This should be done in a way as to promote integration between Government marine management and regulatory agencies (i.e. CALM, FWA and DoT) and to promote efficient use of public resources and avoid duplication and community confusion of Government processes.

Public Participation
On-going public involvement in the management of marine conservation reserves is essential. The plan should provide strategies to facilitate effective public input and involvement in day to day management of the reserve once it is established. Community-based management advisory committees ensure the community can influence decisions relating to management of the area. The plan should also consider opportunities for positive and practical involvement of the community in management activities such as monitoring, education programs and involvement with local schools and educational institutions. These strategies will assist management of the reserve whilst also involving the community and thereby increasing local community knowledge and ownership of the reserve.

6.3 Structure of the Indicative Management Plan

The ultimate output of the planning process will be an ***indicative management plan*** wholly or conditionally endorsed by the Advisory Committee for the proposed marine conservation reserve. The CALM Act requires that an indicative management plan be released for public comment for a period of three months to allow an opportunity for the public to provide comment on the proposal and to assess the level of community support for the proposal. The indicative management plan for the proposed marine conservation reserve must contain;

- the reserve boundaries;
- the reserve purpose and class of the reserve (i.e. A class or not-A class);
- how the area will be managed (i.e. management objectives, strategies, performance indicators and targets);
- relevant maps and the proposed zoning scheme (if appropriate); and
- a performance assessment framework that will allow effective auditing of the plan's effectiveness in managing the human impacts on the conservation values of the reserve.

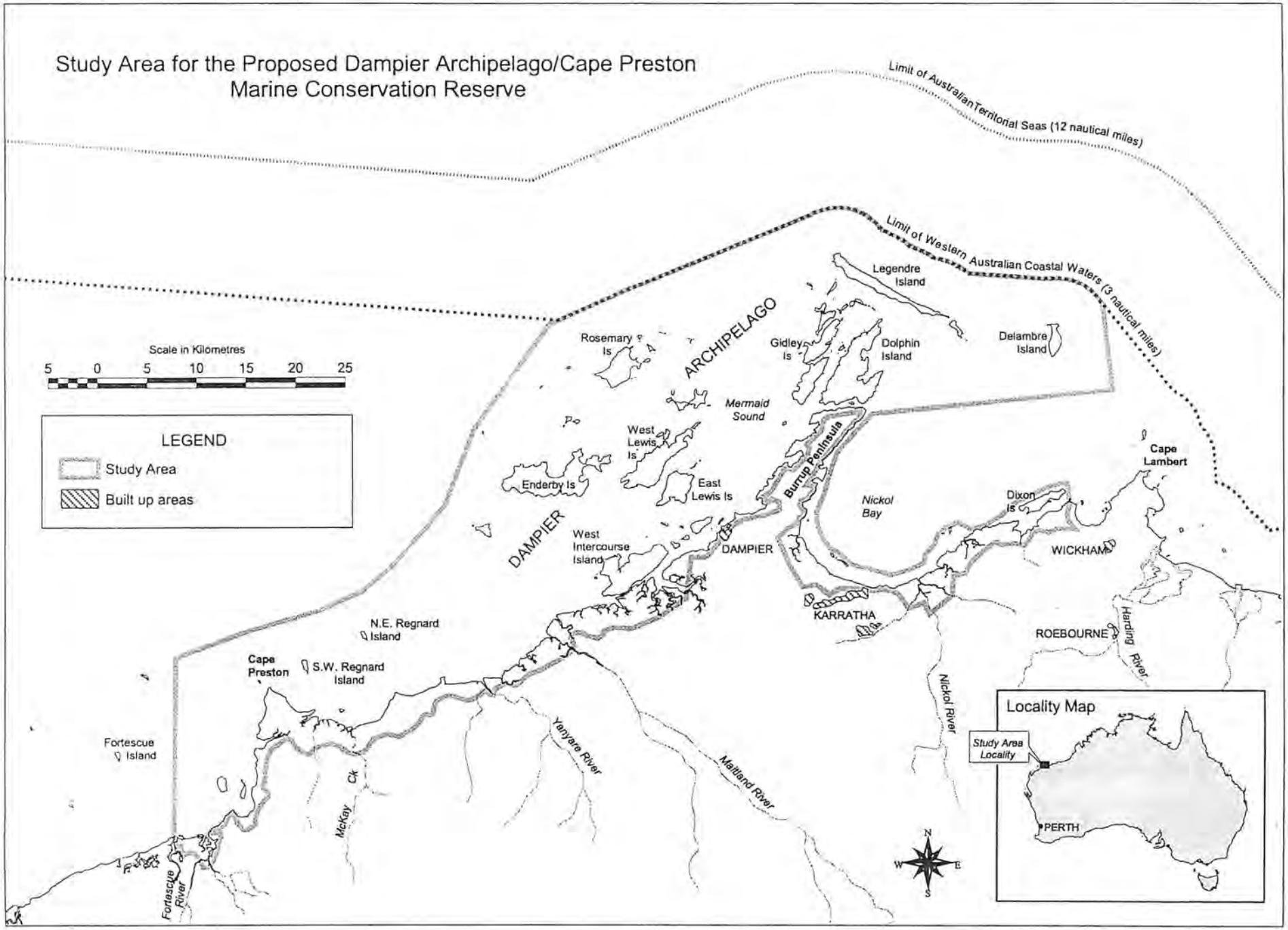
Structure
The structure of the indicative management plan will include:

- Introduction
- Strategic objectives and vision
- Summary of the ecological and social values of the area
- Management frameworks
- Description of management issues relevant to the area
- Management of the ecological values of the area
- Management of the social values of the area
- Generic management strategies
  - *Administration*
  - *Education and interpretation*
  - *Public participation*
  - *Research and monitoring*
  - *Surveillance and enforcement*
- Performance assessment

Approach
The indicative management plan should contain objectives and strategies that are realistic, achievable and measurable. These should be developed on the basis of a risk assessment approach. This means

that available resources and management effort will be directed towards managing those human activities that most threaten the key ecological values of this ecosystem.

Attachment I. Study Area


Study Area for the Proposed Dampier Archipelago/Cape Preston Marine Conservation Reserve
Limit of Australian Territorial Seas (12 nautical miles)
Limit of Western Australian Coastal Waters (3 nautical miles)
Scale in Kilometres
5 0 5 10 15 20 25
LEGEND
Study Area
Built up areas
Legendre Island
Rosemary Is
ARCHIPELAGO
Gidley Is
Dolphin Island
Delambre Island
Mermaid Sound
West Lewis Is
East Lewis Is
Enderby Is
Burrup Peninsula
Cape Lambert
Nickol Bay
Dixon Is
DAMPIER
West Intercourse Island
DAMPIER
WICKHAM
KARRATHA
ROEBOURNE
Harding River
N.E. Regnard Island
Cape Preston
S.W. Regnard Island
Nickol River
Yanyarie River
Maitland River
McKay Ck
Fortescue Island
Fortescue River
Locality Map
Study Area Locality
PERTH
N
W
E
S