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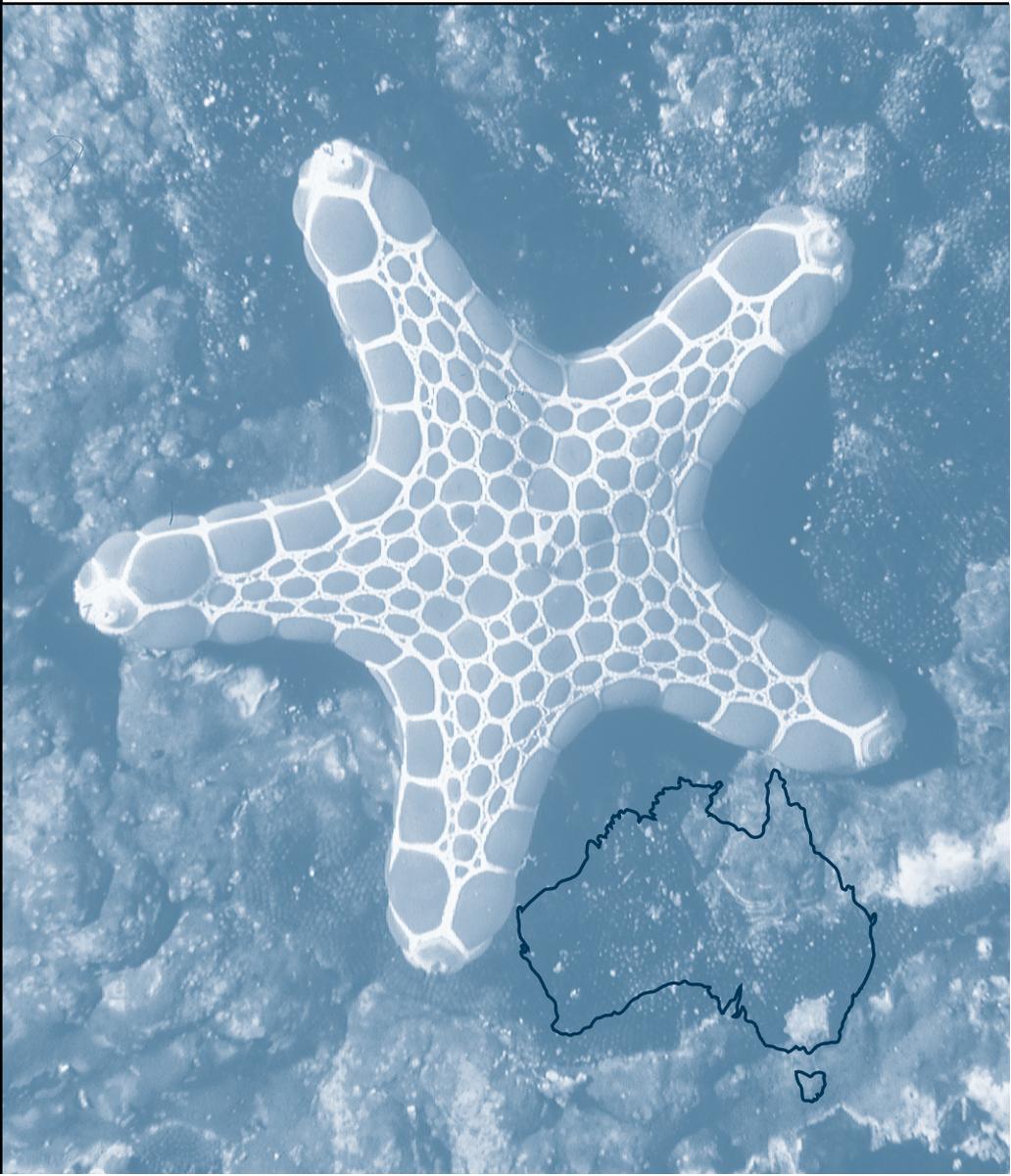
Strategic Plan of Action for the National Representative System of Marine Protected Areas:

A Guide for Action by Australian Governments

ANZECC Task Force on
Marine Protected Areas

July 1999

AUSTRALIAN AND NEW ZEALAND
ENVIRONMENT AND CONSERVATION COUNCIL



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Strategic Plan of Action for the
National Representative System
of Marine Protected Areas:

*A Guide for Action by
Australian Governments*

Including the *Guidelines For
Establishing the National Representative
System of Marine Protected Areas*
(Appendix 2)

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PREFACE

This Strategic Plan of Action (the Plan) is one of a suite of documents developed cooperatively by the Australian and New Zealand Environment and Conservation Council (ANZECC) Task Force on Marine Protected Areas (TFMPA) to assist and promote the development of the National Representative System of Marine Protected Areas (NRSMPA). The other documents are the *Interim Marine and Coastal Regionalisation for Australia* (IMCRA Technical Group 1998) and the *Guidelines for Establishing the National Representative System of Marine Protected Areas* (ANZECC TFMPA 1998). These two documents are referred to as IMCRA and the *Guidelines*.

The *Guidelines*, included in full in Appendix 2, deal with key aspects of the establishment of marine protected areas, including the roles and responsibilities for the NRSMPA and use of criteria for identification and selection of marine protected areas.

This Plan sets out actions to achieve the goals of the NRSMPA. It also provides a guide to understanding the NRSMPA by defining it in the context of the array of existing mechanisms and agreements that promote the conservation of Australia's marine biodiversity.

The Plan concentrates on the establishment of the NRSMPA, including performance assessment for the System, and a set of actions that reflect both national intention and government priorities. The Plan does not provide a comprehensive discussion of management issues but recognises that appropriate management is essential to the achievement of the goals. Further consideration of management issues for the NRSMPA is identified as an ongoing role for TFMPA.

There was a public comment period on a draft Plan from 1 November 1998 to 18 December 1998. Relevant comments and suggestions that were received were incorporated into this version of the Plan. The Plan will remain current until reviewed.

Progress will be reviewed each year against annual work programs, with a major review of the Plan to be held after three years. Under ANZECC direction, the TFMPA will have carriage of the work programs and the review of the Plan.

The benefits of the Plan include:

- confirmation of the goals and principles that apply to the NRSMPA;
- prioritisation of different aspects of protected area development;
- assistance in meeting obligations under international treaties;
- encouragement of cross-jurisdictional cooperation and collaboration;
- facilitation of integration with other relevant national strategies; and
- confirmation of political commitments to resourcing the NRSMPA.

Unless otherwise stated, the use of the term 'marine protected area' (MPA) in the Plan refers to the MPAs that comprise the NRSMPA.

USING THE PLAN

PART ONE PLAN OF ACTION

– sets out the prioritised actions derived through the planning process. It identifies responsibility and establishes a timetable for delivery of the actions. The background to the actions is in Part Four.

PART TWO UNDERSTANDING THE NRSMPA

– explains some of the history and the international and national context of the NRSMPA. It lists goals and principles and discusses a number of related marine management issues.

PART THREE CURRENT STATUS OF THE NRSMPA

– explains the established bioregional planning framework, provides an analysis of existing MPAs by IMCRA bioregion and describes how the States, Northern Territory and Commonwealth are building the NRSMPA.

PART FOUR DELIVERING THE NRSMPA

– analyses the main issues in delivering the system and lists the actions under these issues.

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SUMMARY

The conservation of marine biodiversity and the maintenance of ecological processes are recognised nationally and internationally as being best achieved through strategic regional planning that provides for the establishment and effective management of a representative system of MPAs and the complementary sustainable management of adjoining waters. In Australia, as a key component of this approach, the Commonwealth, State and Northern Territory Governments are cooperatively developing the NRSMPA.

The primary goal of the NRSMPA is to establish and manage a comprehensive, adequate and representative system of MPAs to contribute to the long-term ecological viability of marine and estuarine systems, maintain ecological processes and systems, and protect Australia's biological diversity at all levels.

The NRSMPA also has secondary goals: to promote integrated ecosystem management; to manage human activities; to provide for the needs of species and ecological communities; and to provide for the recreational, aesthetic, cultural and economic needs of indigenous and non-indigenous people, where these are compatible with the primary goal.

This Plan sets out the actions required to achieve the goals of the NRSMPA and provides background information to assist in the understanding of the system and the processes required for its development. The Plan is organised into four parts.

Part One – Plan of action lists the priority actions required to develop the NRSMPA and the staging of the actions over the three-year life of the Plan. The actions reflect both national and jurisdictional priorities, and are organised under six major headings: Establishing a comprehensive, adequate and representative system; Information requirements; Involvement of stakeholders; Classifying marine protected areas; Managing the NRSMPA; and Performance assessment. For each action, details of implementation arrangements and an indicative timetable have been proposed.

Part Two – Understanding the NRSMPA introduces the NRSMPA through a discussion of the existing cooperative mechanisms and the international and national contexts for the MPA system. Appendix 2 reproduces the Goals of the NRSMPA, Characteristics of the NRSMPA, and Principles for developing the NRSMPA in the *Guidelines for Establishing the NRSMPA* (ANZECC TFMPA 1998), a companion document to this Plan. The final text for these sections was agreed following a period of public comment on the *Guidelines* in May–July 1998.

Part Three – Current status of the NRSMPA provides important background information on the *Interim Marine and Coastal Regionalisation for Australia* (IMCRA) framework. IMCRA is the bioregional framework for the planning and management of the NRSMPA. It is an ecosystem-based regionalisation that provides the first layer in a broad ecological planning framework, with potential to identify gaps and set priorities for the delivery and evaluation of programs to enhance the NRSMPA. A preliminary gap analysis has been carried out at the national level to illustrate the process that may be used. The resultant map (Map 2) showing the percentage coverage of MPAs within IMCRA regions, highlights the lack of MPAs in many regions.

Part Three also includes a summary of the current and future strategies for development of MPAs for each jurisdiction. More detailed information on organisational arrangements, planning processes and relevant legislation for each jurisdiction is included in Appendix 5.

Part Four – Delivering the NRSMPA is a discussion of priority issues in the development of the NRSMPA. It provides the context for the actions described in detail in Part One - Plan of Action, under the same six major headings.

ACRONYMS

ANZECC	Australian and New Zealand Environment and Conservation Council
ANZLIC	Australia New Zealand Land Information Council
CALM	Department of Conservation and Land Management (WA)
CAMBA	China-Australia Migratory Bird Agreement
CAPAD	Collaborative Australian Protected Areas Dataset
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DNRE	Department of Natural Resources and Environment (Vic)
DUAP	Department of Urban Affairs and Planning (NSW)
EA	Environment Australia (Commonwealth Department of the Environment and Heritage)
ECC	Environment Conservation Council (Victoria)
ESD	Ecologically sustainable development
GBRMP	Great Barrier Reef Marine Park
GBRMPA	Great Barrier Reef Marine Park Authority
IGAE	Intergovernmental Agreement on the Environment
IMCRA	Interim Marine and Coastal Regionalisation for Australia
IUCN	World Conservation Union (formerly known as the International Union for the Conservation of Nature)
JAMBA	Japan-Australia Migratory Bird Agreement
MCFFA	Ministerial Council on Forestry, Fisheries and Aquaculture
MPA	Marine protected area
NPWS	National Parks and Wildlife Service (NSW)
NRSMPA	National Representative System of Marine Protected Areas
PWCNT	Parks and Wildlife Commission of the Northern Territory
SoE	State of Environment
SOMER	State of Marine Environment Reporting
TFMPA	Task Force on Marine Protected Areas
UNEP	United Nations Environment Program
UNESCO	United Nations Educational, Scientific and Cultural Organisation

PART ONE

PLAN OF ACTION

DELIVERING THE NATIONAL REPRESENTATIVE SYSTEM OF MARINE PROTECTED AREAS – A COMPREHENSIVE, ADEQUATE AND REPRESENTATIVE SYSTEM

1.1 DECIDING PRIORITIES

Thirty-four actions have been identified as important in the current three-year program to establish the NRSMPA. The actions that have emerged through the strategic planning process for the NRSMPA reflect both national and jurisdictional priorities. Background information on the development and further explanations of the actions are provided in Part Four of the Plan, which should be read in conjunction with the actions. In addition to the actions identified in the Plan, each jurisdiction will continue to carry out core functions related to the development and management of MPAs.

Where possible, actions will be carried out using existing resources. Jurisdictions may choose to provide additional funding for specific action/s where the action is a high priority. There will be funding opportunities for national projects through the Marine Protected Areas Program, a Commonwealth funding program. Where possible, delivery or completion dates and milestones are identified for the actions. Actions may be specific to the NRSMPA, or essential to the NRSMPA and also supportive of national programs. They include ecosystem mapping, stakeholder understanding and indigenous interests.

A staged approach has been adopted to the initiation of actions and to the inclusion of the results of ongoing tasks in the NRSMPA. The staged approach is based on:

- completion of current activities;
- gap analysis, followed by activities leading to the filling of gaps in the bioregional coverage;
- priorities established within jurisdictional strategies; and
- resource availability.

Table 1 presents ongoing actions in italics across the three stages. The stage where the actions appear in bold identifies when the results or products of these actions will be incorporated into the strategic plan process. First-stage actions form the first year's work program under the Plan. Milestones for the first year are shaded in the action list in section 1.3, Actions.

Yearly reviews will be undertaken to assess progress. Progress between stages will be dependent on the success of actions and the level of resources provided by the jurisdictions responsible for implementing the actions. Where there are overlapping or consequential actions, these will be managed accordingly. A number of actions will be ongoing beyond the three-year period dealt with in detail by this Plan.

TABLE 1 : STAGING OF ACTIONS

First stage	Second stage	Third stage
Understanding comprehensiveness (1)	Harness community knowledge (12)	Data collection standards (7)
<i>Baseline data collection (16)</i>	<i>Baseline data collection (16)</i>	Baseline data collection (16)
Understanding adequacy (2)	Harness industry knowledge (13)	Comparable databases (19)
Understanding representativeness (3)	Provincial level regionalisation (15)	Resource needs for database establishment/management (20)
Vulnerable ecosystems (4)	Enhancing taxonomic capacity (17)	Analysis of information programs (21)
<i>Maintaining core datasets (18)</i>	Maintaining core datasets (18)	<i>Maintaining core datasets (18)</i>
<i>Stakeholder understanding (22)</i>	Stakeholder understanding (22)	<i>Stakeholder understanding (22)</i>
<i>Information availability (23)</i>	Information availability (23)	<i>Information availability (23)</i>
Identifying priorities for candidate MPAs (5)	Joint management arrangements (28)	Analysis of IUCN categories (24)
Ecosystem mapping (6)	<i>Ecosystem mapping (6)</i>	<i>Ecosystem mapping (6)</i>
<i>Indigenous interests (29)</i>	Indigenous interests (29)	<i>Indigenous interests (29)</i>
Review methods for ecosystem mapping (8)	Models of industry cooperative management (30)	Application of IUCN categories (25)
Rapid assessments (9)		IUCN category reporting (26)
Threat analysis research (10)		Nationally consistent nomenclature (27)
Apply threatening processes analysis (11)		Best practice management planning (31)
Oceans Policy (14)	<i>Oceans Policy (14)</i>	<i>Oceans Policy (14)</i>
MPA performance assessment (32)	<i>MPA performance assessment (32)</i>	<i>MPA performance assessment (32)</i>
Bioregion performance reporting (33)	<i>Bioregion performance reporting (33)</i>	<i>Bioregion performance reporting (33)</i>
NRSMPA performance assessment (34)	<i>NRSMPA performance assessment (34)</i>	<i>NRSMPA performance assessment (34)</i>
14 actions	10 actions	10 actions

Numbers in brackets refer to the number of the action in section 1.3 and Part Four of the text.

Italics indicate an ongoing action. The stage where the actions appear in **bold** identifies when the results or products of these actions will be incorporated into the strategic plan process.

1.2 IMPLEMENTATION AND REVIEW OF THE STRATEGIC PLAN OF ACTION

The Plan will be implemented following agreement by State, Territory and Commonwealth agencies, and approval by ANZECC. Annual work programs to reflect the stages are being developed by the Task Force on Marine Protected Areas (TFMPA). TFMPA will provide annual reports to ANZECC and will review and report to ANZECC on the progress of the Plan as a whole after three years.

The actions are complex and interrelated. In addition, the jurisdictions are at varying stages of development and progress for components of the NRSMPA. Consequently, implementation of actions for the NRSMPA will vary across the jurisdictions depending on capacity and stage of development. Action groups will be formed by TFMPA to undertake the actions as required. The progress of the individual actions, and time-lines for subsequent actions, will be reviewed and assessed by TFMPA against each year's workplan. Progress across jurisdictions will be contingent on available resources.

1.3 ACTIONS TO IMPLEMENT THE NATIONAL REPRESENTATIVE SYSTEM OF MARINE PROTECTED AREAS

Action	Implementation	Timetable
ESTABLISHING A COMPREHENSIVE, ADEQUATE AND REPRESENTATIVE SYSTEM [SECTION 4.1]		
<p>1. Understanding comprehensiveness A study will be carried out to determine how to assess comprehensiveness for the NRSMPA. Activities related to the gap analysis of comprehensiveness will be advanced, including using IMCRA and the Collaborative Australian Protected Areas Dataset [CAPAD].</p> <p>[Links to Actions 32–34]</p>	<ul style="list-style-type: none"> Commonwealth (EA) in collaboration with all jurisdictions. Additional resources may be required. 	<ul style="list-style-type: none"> Define and agree objectives of study by May 1999. Commence study by July 1999. Report to TFMPA by September 1999. Ongoing implementation of agreed outcomes. Gather and collate updated information for gap analysis by October 1999. Complete gap analysis at national level by December 1999.
<p>2. Understanding adequacy A study will be carried out to determine how to assess adequacy for the NRSMPA. It will include an assessment on viable MPA size, the role of scientific reference areas, and targets.</p> <p>[Links to Actions 32–34]</p>	<ul style="list-style-type: none"> Commonwealth (EA) in collaboration with all jurisdictions. Additional resources may be required. 	<ul style="list-style-type: none"> Define and agree objectives of study by May 1999. Commence study by July 1999. Report to TFMPA by September 1999. Ongoing implementation of agreed outcomes.
<p>3. Understanding representativeness A study will be carried out to determine how to assess representativeness for the NRSMPA.</p> <p>[Links to Actions 32–34]</p>	<ul style="list-style-type: none"> Commonwealth (EA) in collaboration with all jurisdictions. Additional resources may be required. 	<ul style="list-style-type: none"> Define and agree objectives of study by May 1999. Commence study by July 1999. Report to TFMPA by September 1999. Ongoing implementation of agreed outcomes.
<p>4. Vulnerable ecosystems Assessments and mapping of rare, vulnerable and endangered marine ecosystems will be carried out, in association with an analysis of threatening processes.</p> <p>[Links to Action 5]</p>	<ul style="list-style-type: none"> All jurisdictions. Additional resources may be required. 	<ul style="list-style-type: none"> Initial assessments by end 1999. Ongoing ecosystem assessments. Input to ongoing MPA identification and selection processes.

Action	Implementation	Timetable
<p>5. Identifying priorities for candidate MPAs Identify national and regional candidate areas for establishing MPAs based on information from Actions 1–4 and 10–11.</p> <p>[Links to Actions 1–4 and 10–11]</p>	<ul style="list-style-type: none"> • Commonwealth (EA) in collaboration with all jurisdictions. • Additional resources may be required. 	<ul style="list-style-type: none"> • List of national priority IMCRA regions to TFMPA by December 1999. • Interim lists of regional priorities for MPA declaration to TFMPA by mid-2000. • Ongoing annual reporting of priority MPA lists. • Ongoing input of national and regional priorities to the MPA identification and selection process.
INFORMATION REQUIREMENTS AND MANAGEMENT [SECTION 4.2]		
INFORMATION REQUIREMENTS		
<p>6. Ecosystem mapping Continue ecosystem mapping and biodiversity assessment work. These data will also be used in future refinement of IMCRA.</p>	<ul style="list-style-type: none"> • All jurisdictions. • Additional resources may be required. 	<ul style="list-style-type: none"> • Ongoing systematic surveys. • Progress on local-scale ecosystem mapping, including national overview, by end 2000. • Substantial progress on site-scale mapping by end 2001.
<p>7. Developing data collection standards Cross-jurisdictional cooperation to develop comparable standards for data collection.</p> <p>[Links to Actions 16 and 19]</p>	<ul style="list-style-type: none"> • Commonwealth (EA) in collaboration with all jurisdictions. • Additional resources may be required. 	<ul style="list-style-type: none"> • Review and analyse current methodologies by early 2001. • Report to TFMPA by mid-2001. • Agreed standards by late 2001. • Ongoing implementation of agreed standards.
<p>8. Review methods for ecosystem mapping Review methods for mapping ecosystems for the NRSMPA and develop an operational definition of ecosystem.</p> <p>[Links to Actions 1–3]</p>	<ul style="list-style-type: none"> • Commonwealth (EA) in collaboration with all jurisdictions. • Additional resources may be required. 	<ul style="list-style-type: none"> • Define and agree objectives of study by May 1999. • Commence study by July 1999. • Report to TFMPA by September 1999. • Agreement on an operational definition of ecosystem by end 1999.
<p>9. Rapid assessment methodology To identify the areas of highest priority for addition to the NRSMPA, suitable rapid assessment methods will be analysed.</p>	<ul style="list-style-type: none"> • Commonwealth (EA) in collaboration with all jurisdictions. • Additional resources may be required. 	<ul style="list-style-type: none"> • Review and assess existing methodologies by end 1999. • Conduct case study and analyse by mid-2000. • Rapid assessment method/s will be presented by end 2000.

Action	Implementation	Timetable
<p>10. Threat analysis research Conduct study into threats to marine ecosystems and analyse their potential impacts. [Links to Actions 5 and 11]</p>	<ul style="list-style-type: none"> • Commonwealth (EA) in collaboration with all jurisdictions. • Additional resources may be required. 	<ul style="list-style-type: none"> • Review existing information on threats by end 1999. • Identify research needs to address unknown impacts by end 1999. • Ongoing monitoring of existing and new threats.
<p>11. Apply threatening processes analysis Incorporate the analysis of the impacts of threats or threatening processes into gap analyses. [Links to Actions 5 and 10]</p>	<ul style="list-style-type: none"> • Commonwealth (EA) in collaboration with all jurisdictions. • Additional resources may be required. 	<ul style="list-style-type: none"> • Commence consultations on appropriate approach and methodologies by end 1999. • Ongoing incorporation of information on threats into gap analyses.
<p>12. Harness community knowledge Document relevant knowledge of traditional and local communities through a series of targeted mechanisms to ensure relevant processes draw on available information.</p>	<ul style="list-style-type: none"> • Commonwealth (EA) in collaboration with all jurisdictions. • Additional resources may be required. 	<ul style="list-style-type: none"> • In consultation with traditional indigenous stakeholders, develop methodology to address community-based knowledge by end 2000. • In consultation with local community stakeholders, develop methodology to address community-based knowledge by end 2000.
<p>13. Harness industry knowledge Document relevant knowledge of industry and its ongoing information gathering programs through a series of targeted mechanisms. Incorporate into appropriate inventories/databases and make accessible. [Links to Action 18]</p>	<ul style="list-style-type: none"> • Commonwealth (EA) in collaboration with all jurisdictions. • Additional resources may be required. 	<ul style="list-style-type: none"> • In consultation with industry, commence audit of data (metadata) by early 2000. • Report to TFMPA by end 2000. • Develop data agreements with industry to obtain access by early 2001. • Ongoing maintenance of data agreements.
<p>14. Oceans Policy Develop linkages for the NRSMPA within the Regional/Marine Planning framework. [Links to Action 15]</p>	<ul style="list-style-type: none"> • Commonwealth (EA) in collaboration with all relevant jurisdictions. • Additional resources may be required. 	<ul style="list-style-type: none"> • Identify linkages by end 1999. • Ongoing input to Regional Marine Planning process.
<p>15. Provincial level regionalisation Review Oceans Policy provisional Large Marine Ecosystem (LME) regionalisation and relationship with IMCRA. [Links to Action 14]</p>	<ul style="list-style-type: none"> • Commonwealth (EA) in collaboration with all relevant jurisdictions. • Additional resources to be provided under Oceans Policy implementation. 	<ul style="list-style-type: none"> • Review relationship between Oceans Policy LME/domain classification and IMCRA pelagic and demersal provinces by early 2000. • Input to initial LME national regionalisation and boundaries by mid-2000.

Action	Implementation	Timetable
<p>16. Baseline data collection Continue baseline data collection. Promote public funding of research organisations for baseline data collection, including developing cost-effective methodologies. [Links to Actions 7 and 19]</p>	<ul style="list-style-type: none"> Commonwealth (EA) in collaboration with all jurisdictions. Additional resources may be required. 	<ul style="list-style-type: none"> Ongoing baseline data collection. Review research needs by early 2001. Input to research priorities by mid-2001 and ongoing.
<p>17. Enhancing taxonomic capacity Identify gaps in marine taxonomic capacity and prepare a report recommending actions to address the gaps.</p>	<ul style="list-style-type: none"> Commonwealth (EA) in collaboration with all jurisdictions. Additional resources may be required. 	<ul style="list-style-type: none"> Define and agree objectives of study, in consultation with museums and universities, by February 2000. Commence study by mid-2000. Report to TFMPA by mid-2001. Implementation of recommendations to commence by late 2001 and be ongoing.
INFORMATION MANAGEMENT		
<p>18. Maintaining core datasets Continued commitment by all jurisdictions to regular updating of national datasets, databases (including further refinement and maintenance of CAPAD), and metadata directories. [Links to Action 23]</p>	<ul style="list-style-type: none"> Commonwealth (EA) and all jurisdictions. Additional resources may be required. 	<ul style="list-style-type: none"> CAPAD updated and available through the Internet (Australian Coastal Atlas) by early 2000. Ongoing update of datasets.
<p>19. Comparable databases Develop and apply standards to improve comparability of databases related to MPAs across jurisdictions to enhance information sharing across the NRSMPA. [Links to Actions 7 and 16]</p>	<ul style="list-style-type: none"> Commonwealth (EA) in collaboration with all jurisdictions. Additional resources may be required. 	<ul style="list-style-type: none"> Review and assess existing data standards by early 2001. Report to TFMPA with recommendations by mid-2001. Agreed standards by end 2001
<p>20. Resource needs for database establishment and management Assess resource requirements for data input and database management and commit extra resources if required.</p>	<ul style="list-style-type: none"> All jurisdictions. Additional resources may be required. 	<ul style="list-style-type: none"> Annual reporting commencing 2001, and ongoing.

Action	Implementation	Timetable
INVOLVEMENT OF STAKEHOLDERS [SECTION 4.3]		
<p>21. Analysis of information programs Conduct an analysis of jurisdictions' existing information and education programs to promote information sharing and best practice.</p>	<ul style="list-style-type: none"> Commonwealth (EA) in collaboration with all jurisdictions. Additional resources may be required. 	<ul style="list-style-type: none"> Review and assess existing methodologies by early 2001. Analysis completed and report to TFMPA by mid-2001. Ongoing facilitation of information sharing.
<p>22. Stakeholder understanding Develop a dialogue with stakeholders, regarding ecological and socio-economic values, and strategic and political processes involved in the selection and declaration of MPAs.</p>	<ul style="list-style-type: none"> Commonwealth (EA) in collaboration with all jurisdictions. Additional resources may be required. 	<ul style="list-style-type: none"> Develop process with stakeholder consultation by early 2000. Report to TFMPA recommending process by mid-2000. Commence implementation of process by late 2000.
<p>23. Information availability Where national directories and databases exist, ensure that advice of their existence and availability is distributed widely (including through the Internet, Australian Coastal Atlas, Blue Pages). [Links to Action 18]</p>	<ul style="list-style-type: none"> Commonwealth (EA). Additional resources may be required. 	<ul style="list-style-type: none"> Identify stakeholders and distribution mechanisms by early 2000. Initial distribution by mid-2000. Ongoing distribution of information.
CLASSIFYING MARINE PROTECTED AREAS [SECTION 4.4]		
IUCN PROTECTED AREA MANAGEMENT CATEGORIES		
<p>24. Analysis of IUCN protected area management categories Analyse the application of the IUCN protected area management categories in the Australian marine context. [Links to Action 25]</p>	<ul style="list-style-type: none"> Commonwealth (EA) in collaboration with all jurisdictions. Additional resources may be required. 	<ul style="list-style-type: none"> Define and agree scope of Action by early 2001. Report to TFMPA by mid-2001.
<p>25. Application of IUCN protected area management categories Develop TFMPA process for consistent application of categories for inclusion in CAPAD.</p>	<ul style="list-style-type: none"> Commonwealth (EA) in collaboration with all jurisdictions. Additional resources may be required. 	<ul style="list-style-type: none"> Assess the existing application of categories across jurisdictions by mid-2001. Report to TFMPA recommending consistent approach by end 2001. Implement consistent application process from 2002.
[Links to Actions 24 and 26]		

Action	Implementation	Timetable
<p>26. IUCN protected area management category reporting Annual reporting of IUCN categories, including for internal zonings for relevant MPAs. [Links to Action 25]</p>	<ul style="list-style-type: none"> Commonwealth (EA) in collaboration with all jurisdictions. Additional resources may be required. 	<ul style="list-style-type: none"> Annual reporting ongoing.
<p>NOMENCLATURE</p>		
<p>27. Nationally consistent nomenclature Develop nationally consistent definitions for MPAs to reflect their objective, management intent and rationale for permissible activities, which can progressively lead to consistent nomenclature. [Links to Actions 24 and 25]</p>	<ul style="list-style-type: none"> Commonwealth (EA) in collaboration with all jurisdictions. Additional resources may be required. 	<ul style="list-style-type: none"> Review of national and international nomenclature by early 2001. Report to TFMPA by mid-2001. Report on consistent nomenclature by end 2001.
<p>MANAGING THE NRSMPA [SECTION 4.5]</p>		
<p>28. Joint management arrangements Examine current joint cross-jurisdictional management arrangements to identify best practice elements.</p>	<ul style="list-style-type: none"> Commonwealth (EA) in collaboration with all jurisdictions. Additional resources may be required. 	<ul style="list-style-type: none"> Review and assess existing arrangements by mid-2000. Report to TFMPA by end 2000.
<p>29. Indigenous interests Develop strategies in association with indigenous peoples to enhance their participation in the NRSMPA.</p>	<ul style="list-style-type: none"> Commonwealth (EA) in collaboration with all jurisdictions. Additional resources may be required. 	<ul style="list-style-type: none"> Develop methodology to address indigenous interests by early 2000. Draft strategies developed by end 2000. TFMPA endorsement by mid-2001. Ongoing implementation of strategies.
<p>30. Models of industry cooperative management Develop models for industry involvement in, and contribution to, the monitoring and management of MPAs.</p>	<ul style="list-style-type: none"> Commonwealth (EA) in collaboration with all jurisdictions. Additional resources may be required. 	<ul style="list-style-type: none"> Framework developed in cooperation with industry by mid-2000. Application of model within selected MPAs by early 2001.

Action	Implementation	Timetable
<p>31. Best practice management planning Examine national and international best practice models of protected area management, including multiple use management principles.</p>	<ul style="list-style-type: none"> • Commonwealth (EA) in collaboration with all jurisdictions. • Additional resources may be required. 	<ul style="list-style-type: none"> • Review and assess existing management practices by early 2001. • Determine benchmarking best practice program by mid-2001. • Report to TFMPA including recommendations by end 2001. • Ongoing implementation of program.
<p>PERFORMANCE ASSESSMENT [SECTION 4.6]</p>		
<p>32. MPA performance assessment Each jurisdiction will develop and implement a performance assessment system, including performance indicators, that is consistent with the nationally agreed reporting framework.</p> <p>[Links to Actions 1-3]</p>	<ul style="list-style-type: none"> • Commonwealth (EA) in collaboration with all jurisdictions. • Additional resources may be required. 	<ul style="list-style-type: none"> • Commence consultations with jurisdictions by April 1999. • Operational framework agreed by end 1999. • Performance indicators developed for agreed case studies by mid-2000. • First performance assessment of case studies by end 2000. • Ongoing annual reporting and refinement.
<p>33. Bioregion performance reporting Each jurisdiction will develop and aggregate performance information (consistent with the nationally agreed reporting framework).</p> <p>[Links to Actions 1-3]</p>	<ul style="list-style-type: none"> • Commonwealth (EA) in collaboration with all jurisdictions. • Additional resources may be required. 	<ul style="list-style-type: none"> • Develop reporting schedule by end 1999. • Annual reporting commenced by early 2000. • Ongoing annual reporting.
<p>34. NRSMPA performance assessment Report on agreed national set of performance indicators, drawn from all jurisdictions.</p> <p>[Links to Actions 1-3]</p>	<ul style="list-style-type: none"> • Commonwealth (EA) in collaboration with all jurisdictions. • Additional resources may be required. 	<ul style="list-style-type: none"> • Develop system-level process-based performance indicators by end 1999. • Ongoing development of outcome-based performance indicators. • Annual reporting commenced by early 2001. • Ongoing annual reporting.

PART TWO

UNDERSTANDING THE NRSMPA

Australia is the world's largest island. It has some of the most diverse, unique and spectacular marine life in the world. Its marine environment includes extensive coral reefs in the tropical north, rocky shores in the temperate south, sandy beaches, seagrass beds, mangrove forests, the open ocean, seamounts, and the habitats of the continental shelf and slope.

Biological diversity is the variety of all life forms – the different plants, animals and micro-organisms, the genes they contain, and the ecosystems of which they form a part. The conservation of marine biodiversity and the maintenance of ecological processes are recognised nationally and internationally as being best achieved through strategic regional planning that provides for the establishment and effective management of a representative system of MPAs, and the complementary sustainable management of adjoining waters. This Plan deals with the protected areas system component of such an approach.

The NRSMPA is being established within a bioregional framework that identifies marine regions across jurisdictional boundaries. The framework recognises the interconnectivity of marine systems, allowing for the marine environment to be understood and planned for on an ecosystem basis.

2.1 HOW THE NRSMPA IS BEING ESTABLISHED

The NRSMPA is a national system of MPAs that contains representative samples of Australia's marine ecosystems. The NRSMPA consists of MPAs in Commonwealth, State and Northern Territory waters and some associated coastal and intertidal areas. The NRSMPA is being developed cooperatively by government agencies responsible

for conservation, protection and management of the marine environment. Individual MPAs are declared under the appropriate legislation for each jurisdiction.

ANZECC/TFMPA

The ANZECC Task Force on Marine Protected Areas (TFMPA) provides the mechanism for States, the Northern Territory, the Commonwealth and relevant scientific organisations to coordinate activities and collaborate on policy development and projects for the NRSMPA. Details of membership by organisations are provided in Appendix 1.

The current membership of TFMPA includes direct representation of conservation management agencies from all relevant Australian governments and of resource management agencies from most jurisdictions. The role of each of the TFMPA members is to act as a two-way information conduit for the stakeholders that they represent, including other interested government agencies, industry, and community groups, indigenous and non-government groups.

Jurisdictions

Cross-jurisdictional cooperation is an essential element in achieving the NRSMPA. The Commonwealth Government and the Governments of each of the States and the Northern Territory are the principal administrative players involved in the establishment of MPAs. Within some jurisdictions, local government may be involved in coastal planning for, and management of, MPAs. Ultimately, the decision to declare an MPA is made by the responsible Minister, or Ministers, in each jurisdiction.

Guidelines for Establishing the NRSMPA

A process for establishing the NRSMPA is set out in the *Guidelines for Establishing the National Representative System of Marine Protected Areas* (ANZECC TFMPA 1998). The roles of the different jurisdictions and broad criteria for the identification and selection of MPAs are presented. The *Guidelines* document is complementary to the Plan and is included in full in Appendix 2.

2.2 INTERNATIONAL AND NATIONAL CONTEXT

Development of an NRSMPA fulfils Australia's international responsibilities and obligations as a signatory to the Convention on Biological Diversity (UNEP 1994) and the major components of the Jakarta Mandate developed under that Convention. The NRSMPA also provides a means of meeting obligations under the Convention on Migratory Species (Bonn Convention) and responsibilities under bilateral agreements for migratory birds (JAMBA and CAMBA). It also supports the World Conservation Union (IUCN) World Commission on Protected Areas program of promoting the establishment and management of a global representative system of MPAs (Kelleher et al. 1995).

Australia's commitment to the protection of marine biodiversity and ecological processes, and the sustainable use of marine resources is addressed at a national level under the Intergovernmental Agreement on the Environment (Commonwealth of Australia 1992a). It is implemented through the actions developed under national strategies such as the *National Strategy for Ecologically Sustainable Development* (Commonwealth of Australia 1992b) and the *National Strategy for the Conservation of Australia's Biological Diversity* (Commonwealth of Australia 1996). The establishment of a national system of protected areas is a key responsibility and obligation under these conventions and strategies.

2.3 AUSTRALIA'S OCEANS POLICY

Australia's Oceans Policy (Commonwealth of Australia 1998) was launched by the Commonwealth in December 1998 and provides a framework for the integration of environmental, economic, social and cultural ocean uses. The Oceans Policy established the broad principles and management approaches necessary to achieve ecologically sustainable development of Australia's oceans. At the core of the Oceans Policy is a move to integrated and ecosystem-based planning and management which will be binding on all Commonwealth agencies and will be delivered through development of Regional Marine Plans based on large marine ecosystems.

Identification of priorities and measures to meet conservation requirements will be included under each Regional Marine Plan. As far as possible, future representative marine protected area proposals under the Commonwealth component of the NRSMPA will be developed as part of the Regional Marine Planning process. Areas of known outstanding conservation significance will, however, continue to be assessed for protection in accordance with existing processes.

The Oceans Policy proposes the primary vehicle for Commonwealth-State consultation on the implementation of the Oceans Policy is ANZECC, in consultation with a range of other ministerial councils. The development of the Regional Marine Planning process will require integration with other national oceans-related initiatives such as the NRSMPA.

2.4 OTHER BIODIVERSITY CONSERVATION MECHANISMS

The NRSMPA exists in the context of a range of national and State/Territory mechanisms to achieve biodiversity conservation. The broader range of conservation mechanisms includes:

- species-specific conservation of marine biota;
- regulation and management of marine resource use;
- promotion of the principles and practice of ecologically sustainable development;
- reduction and management of pollution;

- management of the impacts of developments that affect the marine environment; and
- other marine managed areas operating at a range of scales across the marine environment for a variety of primary purposes.

2.5 GOALS OF THE NRSMPA

The primary goal of the NRSMPA is to establish and manage a comprehensive, adequate and representative system of MPAs to contribute to the long-term ecological viability of marine and estuarine systems, to maintain ecological processes and systems, and to protect Australia's biological diversity at all levels.

The following **secondary goals** are designed to be compatible with the primary goal:

- To promote the development of MPAs within the framework of integrated ecosystem management;
- To provide a formal management framework for a broad spectrum of human activities, including recreation, tourism, shipping and the use or extraction of resources;
- To provide scientific reference sites;
- To provide for the special needs of rare, threatened or depleted species and threatened ecological communities;
- To provide for the conservation of special groups of organisms – for example, species with complex habitat requirements or mobile or migratory species, or species vulnerable to disturbance and which may depend on reservation for their conservation;
- To protect areas of high conservation value including those containing high species diversity, natural refugia for flora and fauna and centres of endemism;
- To provide for the recreational, aesthetic and cultural needs of indigenous and non-indigenous people.

2.6 CHARACTERISTICS OF THE NRSMPA

ANZECC has adopted the IUCN definition (IUCN 1994) of 'protected area' to apply to marine protected areas as follows:

An area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means.

Key characteristics distinguish the MPAs that form the NRSMPA from other marine managed areas. They are that each MPA:

- has been established especially for the conservation of biodiversity (consistent with the primary goal);
- can be classified into one or more of the six IUCN protected area management categories (Appendix 3), reflecting the values and objectives of the MPA;
- must have secure status which can only be revoked by a Parliamentary process; and
- contributes to the representativeness, comprehensiveness or adequacy of the national system.

The MPA may incorporate areas ranging from highly protected areas to sustainable multiple-use areas accommodating a wide spectrum of human activities.

2.7 PRINCIPLES FOR DEVELOPING THE NRSMPA

Development of the NRSMPA is based on the following principles:

- **Regional framework:** *The Interim Marine and Coastal Regionalisation for Australia* (IMCRA) provides the national and regional planning framework for developing the NRSMPA, with ecosystems used as the basis for determining representativeness.
- **Comprehensiveness:** The NRSMPA will include the full range of ecosystems recognised at an appropriate scale within and across each 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 MPAs should reasonably reflect the biotic diversity of the marine ecosystems from which they derive.
- **Highly protected areas:** The NRSMPA will aim to include some highly protected areas (IUCN Categories I and II) in each bioregion.
- **Precautionary principle:** The absence of scientific certainty should not be a reason for postponing measures to establish MPAs to protect representative ecosystems. If an activity is assessed to have a low risk of causing serious or irreversible adverse effects, or if there is insufficient information with which to assess fully and with certainty the magnitude

and nature of the effects, decision making should proceed in a conservative and cautious manner.

- **Consultation:** The processes of identification and selection of MPAs will include effective and high-quality public consultation with appropriate community and interest groups, to address current and future social, economic and cultural issues.
- **Indigenous involvement:** The interests of Australia's indigenous peoples should be recognised and incorporated in decision making.
- **Decision making:** Decision-making processes should effectively integrate both long-term and short-term environmental, economic, social and equity considerations.

(Text in sections 2.5, 2.6 and 2.7 is reproduced from the *Guidelines*, refer to Appendix 2).

PART THREE

CURRENT STATUS OF THE NRSMPA

3.1 INTERIM MARINE AND COASTAL REGIONALISATION FOR AUSTRALIA

The Interim Marine and Coastal Regionalisation for Australia (IMCRA Technical Group 1998) has established the bioregional framework for the planning and management of the NRSMPA. IMCRA is a series of maps and descriptions that identify regions with biological and physical characteristics distinct from those elsewhere in Australia. IMCRA maps regions at two different scales: at a regional scale (or meso-scale referring to distances of 100s to 1000s of kilometres, refer to Map 1), and at a provincial scale (greater than 1000s of kilometres).

IMCRA is an ecosystem-based regionalisation that provides the first layer in a broad ecological planning framework. Within this framework, more detailed information on ecosystems, communities and/or species distributions can be used to assist decision making across or within a bioregion. These decision-making processes are carried out by State, Northern Territory and Commonwealth agencies for their respective jurisdictions and require some cross-jurisdictional consultation where proposed MPAs cross jurisdictional boundaries.

An understanding of the patterns of biodiversity, particularly habitat biodiversity, is essential for identifying an ecologically or biogeographically representative system of protected areas. It is also essential in defining scaled ecological units for holistic, integrated ecosystem management. IMCRA will help identify gaps and set priorities for the delivery and evaluation of programs to enhance the NRSMPA. Biological variation at the habitat scale or micro-scale is also important in selecting candidate areas for MPAs.

IMCRA was developed through the collaborative efforts of State, Northern Territory and Commonwealth marine conservation and research

agencies. It was endorsed by ANZECC in June 1998 to be a key element of the Strategic Plan of Action for NRSMPA. IMCRA is recognised as an interim regionalisation as it will be further refined over time.

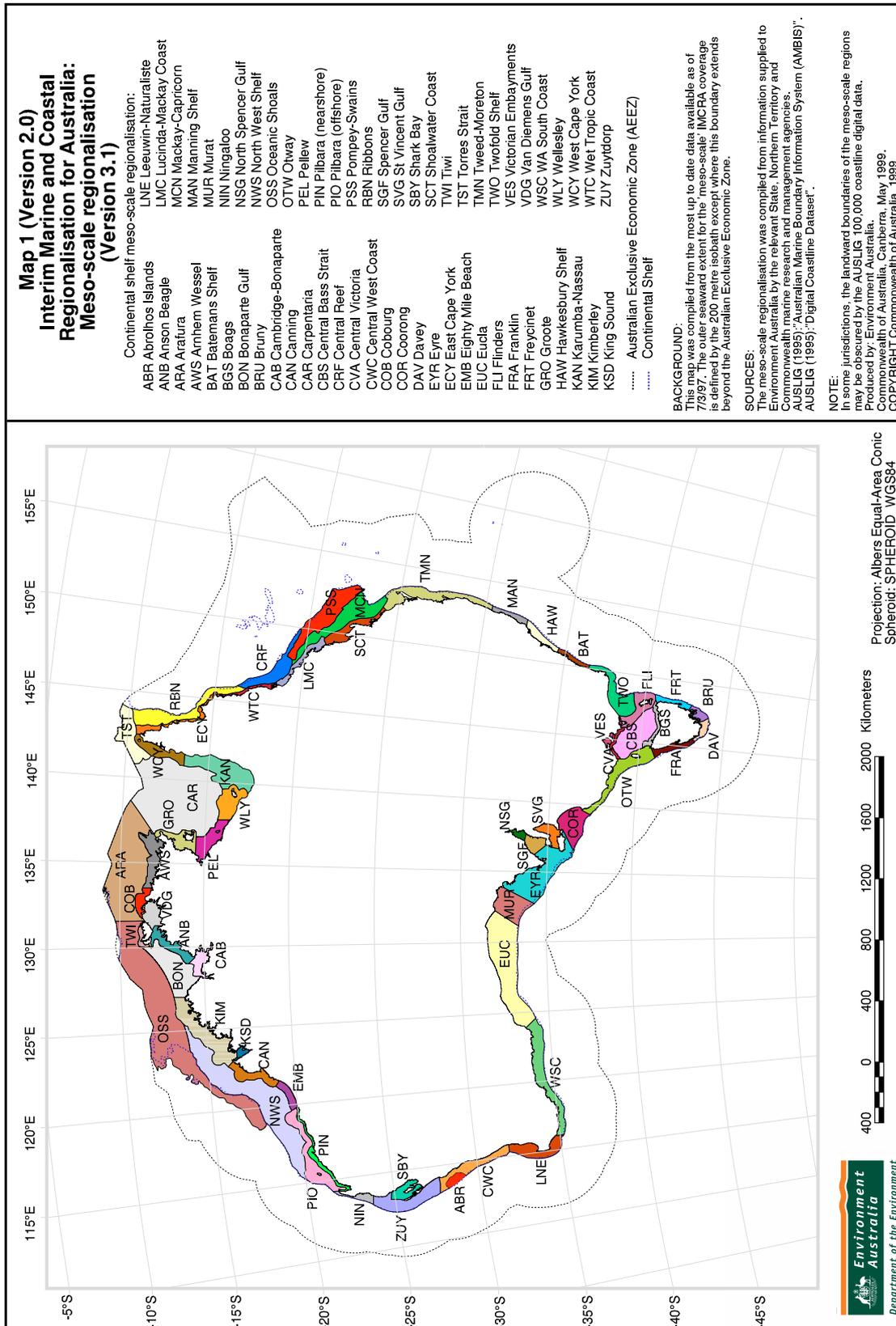
Jurisdictions are using the IMCRA framework for a variety of marine and coastal programs and issues, for example, national state of environment reporting, environmental indicators, criteria for environmental impact assessment, and criteria for selecting MPAs.

3.2 MARINE PROTECTED AREAS BY BIOREGIONS

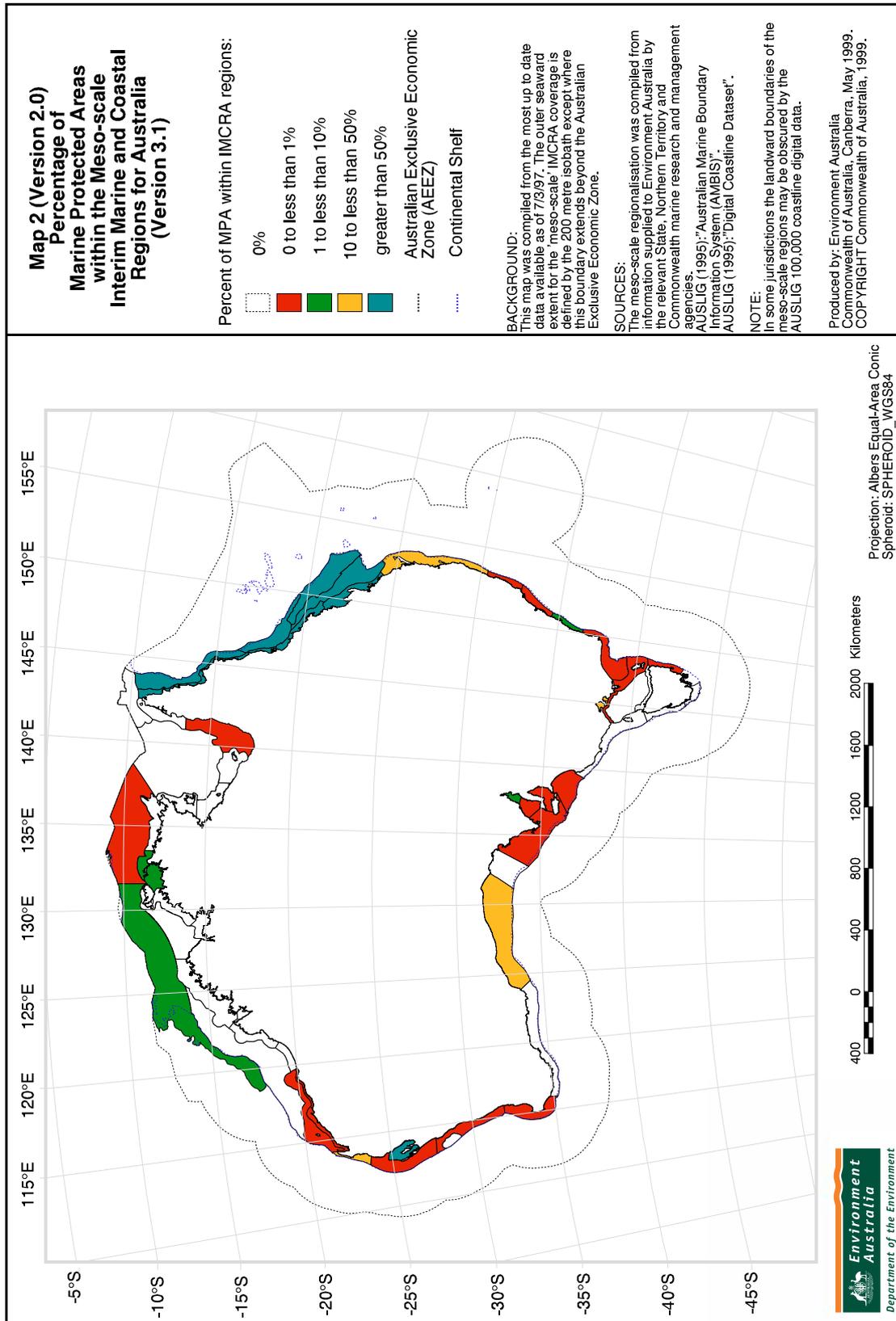
To assist in determining national and regional priorities in the development of the NRSMPA, a preliminary gap analysis has been carried out at the national level. The analysis compares information on the distribution of IMCRA meso-scale regions and the distribution of marine protected areas, drawn from the Collaborative Australian Protected Areas Database (Cresswell and Thomas 1997) and supplementary information provided by the State and Northern Territory Governments. A summary of the results of the analysis is presented in Map 2. The data used for the analysis are presented by IMCRA regions in Appendix 4. Note that due to the paucity of some data, the results should be considered as illustrative.

The shading in Map 2 represents the percentage coverage of MPAs within the IMCRA meso-scale regions. The five distinct categories range from no protected areas in a specific IMCRA bioregion to a category representing $\geq 50\%$ coverage. The total IMCRA meso-scale bioregionalisation encompasses some 2.2 million sq km. The shaded areas contain MPAs with a total area of about 0.28 million sq km, or 12.5% of the total area.

MAP 1: IMCRA MESO-SCALE REGIONALISATION



MAP 2: PERCENTAGE COVERAGE OF MPAS WITHIN IMCRA MESO-SCALE REGIONS



In general, Map 2 demonstrates that there are imbalances that need to be addressed in the present distribution of MPAs across Australia's marine environment. For example, 21 bioregions have no marine protected areas, 21 bioregions have protected areas with a coverage of less than 1% and five bioregions have MPAs with a coverage of more than 1% but less than 10%. Two of these bioregions, Cobourg and Van Diemen Gulf, have protected areas with a coverage of slightly less than 10%.

There are also 11 bioregions that contain very large MPAs, with a total area of approximately 0.26 million sq km, which make up over 92% of the total area of MPAs. These are found in a narrow band on the north-east tropical coast (the Great Barrier Reef Marine Park) the Great Australian Bight (State and Commonwealth components of the Great Australian Bight Marine Park), and the Western Australian coast (Shark Bay Marine Park and Ningaloo Marine Park). The Great Barrier Reef Marine Park is unique in that it encloses eight bioregions and extends beyond the meso-scale regionalisation. The Shark Bay and Ningaloo Marine Parks cover about 50% of their respective bioregions. The Tweed–Moreton, Victorian Embayments and Eucla bioregions each have protected areas that cover more than 10% of their bioregion.

While many bioregions contain MPAs, most protected areas are very small and the few large MPAs contribute disproportionately to the total protected area (Appendix 4).

The 60 IMCRA bioregions (2.2 million sq km) (Map 1) cover a small proportion of Australia's Exclusive Economic Zone. The area of the zone, which includes External and Antarctic Territories, is approximately 11 million sq km (the Territories account for approximately 4.5 million sq km). Details of the MPAs outside the IMCRA meso-scale regions are presented in Appendix 4. They include portions of the Great Barrier Reef Marine Park and MPAs within the External Territories. Again these MPAs are found mostly in the tropical zones of Australia's marine environment.

3.3 STATE, NORTHERN TERRITORY AND COMMONWEALTH COMPONENTS

The roles and responsibilities of the Commonwealth, State and Northern Territory jurisdictions are described in the *Guidelines* (Appendix 2). While the planning and reporting framework for the NRSMPA is based on biogeographical regions, the delivery mechanisms for MPAs are provided at the jurisdictional level.

The following sections summarise current and future strategies for the development of MPAs for each jurisdiction. Jurisdictions are presented in alphabetical order. Appendix 5 contains more detailed information on organisational arrangements, planning processes and relevant legislation for each jurisdiction.

Commonwealth

The Commonwealth Government has given a commitment to expand Australia's existing system of marine protected areas in Commonwealth waters. In September 1997, the Minister for the Environment and Heritage announced the Government's intention to develop an accelerated program, pursuing a number of new parks. This commitment was reaffirmed through *Australia's Oceans Policy* (Commonwealth of Australia 1998) which identified the need to protect marine biodiversity through Regional Marine Planning, including through MPAs in a multiple-use framework.

Environment Australia is currently undertaking the development of MPAs through a Commonwealth-endorsed strategy. A comprehensive and long-term Marine Protected Areas Strategy for Commonwealth waters, which links to the development of the NRSMPA, is being developed. Focus is being placed not only on the establishment of new MPAs, but on ensuring that a representative system of reserves is developed. Existing Commonwealth MPAs are concentrated in Australia's tropical waters. The Commonwealth is looking to broaden the agenda to include areas in Australia's temperate and sub-Antarctic waters.

New South Wales

The enactment of the *Marine Parks Act 1997* established a Marine Parks Authority that comprises the heads of New South Wales Fisheries, NSW National Parks and Wildlife Service and the NSW Premier's Department. On behalf of the Marine Parks Authority, NSW Fisheries and the NSW NPWS are cooperatively developing a Framework for the Establishment of a Representative System of Marine Protected Areas for NSW.

The Marine Parks Authority has proposed that progressive bioregional assessments investigate and map ecosystem units over the next three years. These assessments will form the basis for choosing potential marine parks and other MPAs. Regional and local assessment will be based on the *Guidelines*.

Northern Territory

The *Northern Territory Parks Masterplan* (PWCNT 1997) calls for the formulation and progressive establishment of an optimal marine park system. A proposal for development of a Northern Territory MPA strategy is currently being prepared. The Northern Territory MPA strategy will, among other things, identify candidate MPAs and threatening processes. At present, rapid assessment techniques (including sonar, benthic grabs, and remote sensing) are being developed to assist in the collection of baseline data.

As 84% of the Northern Territory coastline is adjacent to Aboriginal land, development of marine park proposals will require extensive consultation with the Land Councils and Aboriginal communities and resolution of claims made under the *Aboriginal Land Rights (Northern Territory) Act 1976* (Commonwealth). It is proposed that two consultative committees be established: the Marine Parks Community Advisory Committee, and the Marine Parks Scientific Advisory Committee.

Queensland

Queensland is currently developing a strategy for MPAs that will complement and enhance the existing reserve system. The strategy will include

a framework for the identification and declaration of future MPAs, representative of the range of marine ecosystems within Queensland. The framework will have regard to conservation of marine biodiversity and protection of rare and endemic species and communities, as well as broad-scale habitat and ecosystem protection.

In the short term, declarations of marine parks on eastern Cape York Peninsula and at Trinity Inlet near Cairns will be completed. Subsequently, proposals will be prepared for the Gulf of Carpentaria and for areas on the east coast not adequately protected in the current system of marine parks.

Concepts for the protection of marine areas in Torres Strait will be investigated in cooperation with Torres Strait Islander representative bodies, with a view to the implementation of marine conservation measures in a culturally relevant context.

South Australia

Existing MPAs in South Australia are not the outcome of a deliberate strategy to represent marine biodiversity. Each MPA was created for a specific purpose, mainly in relation to single species protection, fisheries habitat protection and fisheries management. *Our Seas and Coasts: a marine and estuarine strategy for South Australia* (South Australian Government 1998) endorses a representative system of MPAs, based on IMCRA methodology in South Australian waters, including a target of an MPA system by 2003. South Australia recognises the commitments made under other protocols and agreements and will continue to work towards its contribution to the NRSMPA.

Tasmania

The existing MPA strategy for Tasmania is the *Joint Policy for the Establishment and Management of Marine Reserves in Tasmania* (Tasmanian Government 1990). The strategy represented a major government initiative in this area, and has formed the backbone of the Tasmanian marine reserves strategy up to the present time. The 1990 strategy is being updated.

MPA proposals currently under development follow the objectives of the existing strategy.

Various interest groups have proposed seven additional sites for MPAs around the Tasmanian coast. These are currently awaiting assessment.

Victoria

Victoria is committed to the establishment of a representative system of MPAs, which is a priority action of the *Victorian Coastal Strategy* (Victorian Coastal Council 1997). The process being used by the Victorian Government to deliver a representative system of MPAs is the Marine, Coastal and Estuarine Investigation being undertaken by the Environment Conservation Council. By June 2000, the Council will recommend to Government: priorities for the establishment of a representative system of MPAs; protection options for significant environmental values; and options for the sustainable use of marine, coastal and estuarine areas. The system will be based on the consideration of biological, social and economic criteria.

The Marine, Coastal and Estuarine Investigation is concurrent with development of the NRSMPA. In particular, Victoria has adopted the IMCRA bioregional approach to delineating the hierarchy

of ecosystems. IMCRA is recognised in Victoria's biodiversity strategy (DNRE 1997) as a fundamental bioregional planning tool for the establishment of a representative system of MPAs, and as a framework for setting bioregional priorities for biodiversity management in general.

Western Australia

The Western Australian Government has released its strategy, *New Horizons – the way ahead in marine conservation and management* (CALM 1998). The principal thrust of the marine conservation effort is to have one comprehensive marine reserve system under the *Conservation and Land Management Act 1984*.

There are five key elements in the strategy: a statewide report in 1994 identifying about 70 areas as candidates for reservation; establishment of the Marine Parks and Reserves Authority, supported by a specialist Scientific Advisory Committee; adoption of a three-tiered approach to marine conservation reserve categories (Marine Nature Reserves, Marine Parks and Marine Management Areas); extensive assessment, consultation and planning prior to reserve establishment; and specific guidelines for fishing, aquaculture, pearling, mining and petroleum interests and their access to reserves.

PART FOUR

DELIVERING THE NRSMPA

The issues discussed here represent current priorities for developing the NRSMPA.

4.1 ESTABLISHING A COMPREHENSIVE, ADEQUATE AND REPRESENTATIVE SYSTEM

Consistent with the *National Strategy for the Conservation of Australia's Biodiversity* (Commonwealth of Australia 1996), the NRSMPA will be based on the principles of comprehensiveness, adequacy and representativeness. These principles are discussed below and build on the forest reserve criteria (Commonwealth of Australia 1997) and the National Reserve System scientific guidelines (Commonwealth of Australia 1999b) for terrestrial areas.

Comprehensiveness

This principle requires that the NRSMPA samples the full range of marine ecosystems across the marine environment. However, the wide variation in marine ecosystems in Australian waters makes effective consideration of comprehensiveness on a national scale difficult.

Marine ecosystems and marine communities, together with their environmental descriptors, are commonly used as surrogates for biodiversity and as a basis for planning a comprehensive reserve system, for example, the National Reserve System. For the purposes of the NRSMPA, an ecosystem classification should use a mappable unit derived by spatial classification of abiotic and biotic data.

In order to achieve the most rapid and significant improvements in the NRSMPA the main priority aim should be to address comprehensiveness, that is, to ensure that adequate samples of the full range of nationally recognised marine ecosystems are represented in the system of MPAs.

This is best done in the first instance by addressing the key gaps in comprehensiveness at the national scale using the *Interim Marine and Coastal Regionalisation of Australia* (IMCRA Technical Group 1998) as the national and regional planning framework (refer to section 3.2, Marine protected areas by bioregions).

ACTION

1. Understanding comprehensiveness

A study will be carried out to determine how to assess comprehensiveness for the NRSMPA. Activities related to the gap analysis of comprehensiveness will be advanced, including using IMCRA and the Collaborative Australian Protected Areas Dataset (CAPAD).

[Links to Actions 32–34]

Adequacy

This principle addresses the question of what level of reservation will ensure viability and integrity of populations, species and communities. Where data on the viability of populations are available they should be incorporated in determining the adequacy of a reserve proposal and in assessing the reserve system.

No precise data exist for determining criteria for adequacy, although recent work in Tasmania (Barret and Edgar 1998) and overseas may be useful. The understanding is that the chances of long-term survival increase with increased proportions of marine populations or ecosystems reserved and appropriately managed. The degree of risk varies with different species and with the degree of modification or degradation beyond the reserve.

Replication of ecosystems across the range of geographic, environmental and biotic domains must also be considered. Replication is essentially insurance against the loss of natural values due to events outside the control of managers (such as a major marine pollution event, severe invasion of exotic species or even negative affects of climate change) which may significantly reduce or negate the usefulness of a particular reserve for its specified purposes. Implicit in the maintenance of biodiversity is the need to sustain ecological processes and functions and provide for the maintenance of natural patterns of speciation and extinction. This factor also needs consideration in determining adequacy.

Other important adequacy considerations include the degree of sympathetic management of adjacent marine areas and land areas where relevant. Factors operating in surrounding areas that are particularly relevant to determining the adequacy of the reserve system are threatening processes such as pollution, introduced pests and diseases.

ACTION

2. Understanding adequacy

A study will be carried out to determine how to assess adequacy for the NRSMPA. It will include an assessment on viable MPA size, the role of scientific reference areas, and targets.

[Links to Actions 32–34]

Representativeness

This principle is designed to ensure that the diversity within each marine ecosystem is sampled within the NRSMPA.

By reserving representative ecosystems within the NRSMPA, it is assumed that many marine species will be protected within the MPAs. However, some marine species, particularly marine fauna, have habitats that cover large areas that may not be closely related to ecosystem boundaries defined for other purposes. Information on species

distribution, as well as information on ecosystems, should be used in reserve design.

It is also not necessary to ensure that every species that occurs within a marine ecosystem is reserved within that ecosystem. Many species may be well represented in several regions and it may not be necessary to distort reserve boundaries to ensure that they are reserved in each ecosystem occurrence.

The principle of representativeness implicitly requires that the MPA system also include those marine ecosystems that are rare, vulnerable or endangered. A representative approach, which will identify areas 'typical' of their surroundings at a chosen scale, may also encompass unique, distinct or 'atypical' areas (for example, spawning areas, nursery sites or breeding locations). However, a representative approach will not specifically identify these important or unique sites; such aspects must also be considered in the NRSMPA. Under the adequacy principle it was also identified that the degree of risk increases with the degree of degradation or modification of the ecosystem.

ACTION

3. Understanding representativeness

A study will be carried out to determine how to assess representativeness for the NRSMPA.

[Links to Actions 32–34].

4. Vulnerable ecosystems

Assessments and mapping of rare, vulnerable and endangered marine ecosystems will be carried out, in association with an analysis of threatening processes.

[Links to Action 5]

5. Identifying priorities for candidate MPAs

Identify national and regional candidate areas for establishing MPAs based on information from Actions 1–4 and 11–12.

[Links to Actions 1–4 and 10–11]

4.2 INFORMATION REQUIREMENTS AND MANAGEMENT

Adequate, accessible information is required for sound decision making. Across the NRSMPA, information is required for the purposes of establishing, managing and assessing the performance of MPAs and the system as a whole. This section concentrates on the information required to establish MPAs and management of that information. The nature of the information needed for performance assessment and reporting is discussed under section 4.6, Performance assessment. Often the same baseline data will be used for decision making for the establishment of new MPAs, management of existing MPAs and performance assessment.

4.2.1 Information requirements

The assessment of an area proposed for an MPA requires information on biodiversity (including ecosystem mapping), ecological processes, conservation status, biogeographic characteristics, social interests (including data relating to indigenous and non-indigenous values), economic interests (including existing and potential uses), and threatening processes.

This information is used in applying the following criteria for identification and selection of MPAs:

Identification	Selection
representativeness	economic interests
naturalness	indigenous interests
biogeographic importance	social interests
comprehensiveness	scientific interests
ecological importance	practicality/feasibility
international or national importance	adequacy
uniqueness	– vulnerability assessment
productivity	– replication

The above criteria are extracted from the *Guidelines* (Appendix 2). The list is not exhaustive. For the NRSMPA, biodiversity and environmental criteria are the primary criteria for identifying national and regional priorities and candidate areas. Social, cultural and economic criteria are applied primarily in the selection of MPA sites from the candidate areas. In practice, criteria from each list may be used at any stage in the processes of identification and selection, as appropriate.

As it is not always possible to collect the optimal level of information required for decision making, it is necessary to prioritise information collection and analysis. A number of the actions address this issue by seeking a commitment to extra resources, developing cost-effective methodologies such as rapid assessment, and harnessing existing information from alternative sources.

While generally the collection of data for the establishment of the NRSMPA is the responsibility of jurisdictions, a better understanding of requirements across the NRSMPA and the sharing of available data and data collection methodology will assist in developing the system.

As ecosystems form the basis of planning and management for the NRSMPA, it is important to develop agreed standards for ecosystem mapping for the NRSMPA within the IMCRA framework. This will assist in assessing the comprehensiveness, adequacy and representativeness of the NRSMPA.

Under the Oceans Policy, integrated and ecosystem-based planning and management will be delivered through development of Regional Marine Plans, based on large marine ecosystems for Australia's oceanic areas. Linkages between the NRSMPA and IMCRA and the Oceans Policy need to be established.

ACTION

6. Ecosystem mapping

Continue ecosystem mapping and biodiversity assessment work. This data will also be used in future refinement of IMCRA.

7. Developing data collection standards

Cross-jurisdictional cooperation to develop comparable standards for data collection.

[Links to Actions 16 and 19]

8. Review methods for ecosystem mapping

Review methods for mapping ecosystems for the NRSMPA and develop an operational definition of ecosystem.

[Links to Actions 1–3]

9. Rapid assessment methodology

To identify the areas of highest priority for addition to the NRSMPA, suitable rapid assessment methods will be analysed.

10. Threat analysis research

Conduct study into threats to marine ecosystems and analyse their potential impacts.

[Links to Actions 5 and 11]

11. Apply threatening processes analysis

Incorporate the analysis of the impacts of threats or threatening processes into gap analyses.

[Links to Actions 5 and 10]

12. Harness community knowledge

Document relevant knowledge of traditional and local communities through a series of targeted mechanisms to ensure relevant processes draw on available information.

13. Harness industry knowledge

Document relevant knowledge of industry and its ongoing information gathering programs through a series of targeted mechanisms. Incorporate into appropriate inventories/databases and make accessible.

[Links to Action 18]

14. Oceans Policy

Develop linkages for the NRSMPA within the Regional Marine Planning framework.

[Links to Action 15]

15. Provincial level regionalisation

Review Oceans Policy provisional Large Marine Ecosystem (LME) regionalisation and relationship with IMCRA.

[Links to Action 14]

16. Baseline data collection

Continue baseline data collection. Promote public funding of research organisations for baseline data collection, including developing cost-effective methodologies.

[Links to Actions 7 and 19]

Biodiversity assessment

To aid a better understanding of the information requirements for the NRSMPA, this section is presented as an illustration of some major issues.

As the conservation of biodiversity is the primary goal of the NRSMPA, the assessment of biodiversity is an essential component in the development of the NRSMPA and applies to the identification and selection processes, management planning and performance assessment. There is a wide variation in the biodiversity information currently available to jurisdictions. Issues of resourcing and accessibility of areas influence the priorities for information gathering and therefore the capacity of jurisdictions to address issues of comprehensiveness, representativeness and adequacy.

IMCRA can be used in the systematic assessment of whether regions have available adequate data and information for biodiversity assessment. This assessment might show, for example, that some regions have adequate physical data but inadequate biological data. Such information could be used to schedule a program of regional surveys to fill these data and information gaps.

While the collection of biodiversity data in the marine environment is generally labour and resource intensive, all jurisdictions have existing programs to address data deficiencies. It is important that data needs are identified and prioritised following assessment of existing data and that collection is carried out through carefully targeted and designed research or surveys. In the context of the NRSMPA, to maximise the usefulness of biodiversity data, it is important that there be some consistency in the collection, analysis and utilisation of these data.

There are some difficulties affecting the interpretation of biodiversity data that need to be addressed. These include the poor knowledge of the taxonomy of many species and the lack of knowledge of the conservation status of most species.

ACTION

17. Enhancing taxonomic capacity

Identify gaps in marine taxonomic capacity and prepare a report recommending actions to address the gaps.

4.2.2 Information management

The coordinated compilation, maintenance and appropriate dissemination of information is essential for the development and management of the NRSMPA. Relevant information on existing and proposed MPAs must be included in any national marine data program. In particular, spatial or geographic information, such as the data that underpin marine resource management, must be included in any system developed for the collection and management of data for the NRSMPA. The importance of the coordination of marine data management is identified in *Australia's Marine Science and Technology Plan* (Commonwealth of Australia 1999a).

The *Marine Science and Technology Plan* was developed to improve knowledge of Australia's marine jurisdictions. The Plan identifies needs and priorities in marine science, technology and engineering. Commonwealth, State and Territory agencies involved in the development of the NRSMPA are key users of this knowledge base and are identifying ways to improve collaboration between research agencies and users of research.

Aspects of marine data management which need to be addressed across the NRSMPA include:

- an agreed definition of standards for collection;
- quality issues;
- storage;
- accessibility;
- adoption of established data-management protocols as appropriate;
- transfer compatibility for exchange across jurisdictions; and
- mechanisms to coordinate and further the above.

Recently, the Australia New Zealand Land Information Council (ANZLIC) endorsed a *Policy Statement on Spatial Data Management* (ANZLIC 1999), which sets out principles for the responsible management of data. The policy further develops those objectives of the Intergovernmental Agreement on the Environment which required that ANZLIC make environmental data more accessible and improve arrangements to avoid duplication and overlap. Processes for the NRSMPA should be consistent with the ANZLIC principles.

As a starting point, many existing marine data management systems operating at the State level can provide useful input to the development of the NRSMPA. The Commonwealth Environmental Resources Information Network manages a number of national initiatives. The National Marine Information System, the Australian Coastal Atlas, the Marine and Coastal Data Directory of Australia (the Blue Pages) and the Collaborative Australian Protected Areas Dataset (CAPAD), are all managed to improve the organisation and accessibility of marine data.

Recently, the National Land and Water Resources Audit instigated the development of a National Vegetation Information System, which will provide for easily accessible and nationally consistent data on the extent, type and condition of Australia's terrestrial vegetation. To complement the National Vegetation Information System, marine vegetation information is being compiled by Environment Australia. All relevant data will be made accessible through the Australian Coastal Atlas and metadata available through the Blue Pages.

CAPAD, the nationally coordinated dataset of information on marine and terrestrial protected areas, aims to provide information on all Australian protected areas including location, size and IUCN protected area management categories. The dataset uses a set of core attributes that was agreed by agencies involved and is designed to be updated as new spatial data are made available. There is an agreed process in place for jurisdictions to report on protected area establishment to update CAPAD. It is intended that CAPAD will be accessible via the Internet as a distributed dataset.

ACTION

18. Maintaining core datasets

Continued commitment by all jurisdictions to regular updating of national datasets, databases (including further refinement and maintenance of CAPAD), and metadata directories.

[Links to Action 23]

19. Comparable databases

Develop and apply standards to improve comparability of databases related to MPAs across jurisdictions to enhance information sharing across the NRSMPA.

[Links to Actions 7 and 16]

20. Resource needs for database establishment and management

Assess resource requirements for data input and database management and commit extra resources if required.

4.3 INVOLVEMENT OF STAKEHOLDERS

For the purposes of the Plan a 'stakeholder or stakeholder group is any individual or group who may be involved in, affected by, or expresses a strong interest in, the management of a particular resource or area' (Claridge and Claridge 1997).

The early involvement and active participation of direct and indirect users of the marine environment is crucial to the successful development, implementation and management of MPAs. All jurisdictions are committed to appropriate consultation with stakeholder groups throughout the development and implementation of the NRSMPA. Stakeholder groups include a variety of government agencies or authorities, commercial users (including the fishing, mining and tourism industries, shipping and ports), non-commercial users (such as recreational fishers, divers, and researchers), community groups, including indigenous and non-government groups, and residents of adjoining

population centres. To facilitate the continued involvement of stakeholders from MPA development stages through to implementation and management, effective and efficient consultative processes need to be developed and adopted.

4.3.1 Identifying stakeholders and their issues

The *Marine Industry Development Strategy* (AMISC 1997) identified that, in the case of all marine industries, there are common users of the marine environment Australia-wide. This is also the case for many non-industry stakeholder groups.

A smaller subset of the identified stakeholders will be involved where a proposed MPA is located away from the coast and associated populations; for example, some distance offshore in Commonwealth waters. Although some of the specific stakeholders will vary from case to case, there are commonalities in the types of stakeholders and the types of issues and concerns. There are benefits for stakeholders in sharing information across the jurisdictions. There may be potential gains for agencies in the various jurisdictions in sharing experiences and developing consistent methods for consultation.

The roles of the different stakeholder groups in MPA development and subsequent management will vary. Those who have some level of dependence on a resource or a long association with an area, for example, may know and value an area differently to those who do not, but who still have an interest in the way an area is used and managed (Claridge and Claridge 1997).

Identifying all stakeholders who may be involved in or affected by MPA development and/or management, and the suite of issues that relate to them, is an essential process for all jurisdictions in the development of the NRSMPA.

4.3.2 Principles for consultation and negotiation with stakeholders

There are differences in the processes the various jurisdictions follow during stakeholder consultation, due in part to statutory requirements.

Despite the differences, commonalities in stakeholder consultation have been identified:

- recognition of the importance of stakeholder engagement throughout the MPA process from pre-declaration to management;
- commitment to the provision of sufficient information to all stakeholders to allow informed input on MPA proposals;
- provision of opportunities for face to face discussion with stakeholders in a mutually acceptable location (this is particularly important for indigenous stakeholders);
- acceptance of the value of expertise and knowledge within the stakeholder community, for example, customary and historic use of an area by indigenous and industry stakeholders; and
- representation of key stakeholders on community advisory committees (where established) to facilitate local involvement in MPA development.

4.3.3 Education, training and development

Education, training and development can provide all parties, stakeholders and managers with an awareness of environmental and ethical values, and with desirable skills. Other benefits include engendering a sense of stewardship and increasing the ability of stakeholders to provide informed contributions. Equally important is the need for managers to have a good understanding of the concerns and values of stakeholders.

Prior to the identification of the training, education and development requirements of individual stakeholders, it is necessary to identify the existing knowledge base and views of those stakeholders. Historically, some stakeholders have experienced barriers to their involvement in the MPA development process. A common problem experienced by many stakeholder groups is access to information.

ACTION

21. Analysis of information programs

Conduct an analysis of jurisdictions' existing information and education programs to promote information sharing and best practice.

22. Stakeholder understanding

Develop a dialogue with stakeholders, regarding ecological and socio-economic values, and strategic and political processes involved in the selection and declaration of MPAs.

23. Information availability

Where national directories and databases exist, ensure that advice of their existence and availability is distributed widely (including through the Internet, Australian Coastal Atlas, Blue Pages).

[Links to Action 18]

The categories are not designed to drive the development of protected area systems, but to provide an international system of categorisation to facilitate understanding. They are not a commentary on management effectiveness and should be interpreted with flexibility at national and regional levels. MPAs should be established to meet objectives consistent with national or regional goals and needs and only then be assigned an IUCN category according to the agreed management objectives.

Each MPA in the NRSMPA has an IUCN category nominated by the jurisdiction that established the MPA. Under zoning arrangements within MPAs, separate categories can be assigned to each zone, while the MPA as a whole will be listed in CAPAD under the category relating to its primary management objective. In accordance with the international requirements of the IUCN, Australia will continue to report only one category for each MPA. For domestic purposes, annual reporting of individual categories for zones within an MPA is appropriate to give a more comprehensive assessment of the management arrangements.

It is intended that TFMPA and the Commonwealth play a coordinating role in ensuring consistency in interpretation and application of IUCN categories at the stage that the MPA is nominated for inclusion in CAPAD.

A draft handbook (ANCA 1996) was produced to provide interpretation of the categories for the particular circumstances that apply in Australia. While an attempt has been made in the draft handbook to consider the application of the categories in the marine environment, further work is necessary to increase understanding of how IUCN categories apply to Australian MPAs.

4.4 CLASSIFYING MARINE PROTECTED AREAS

Consistent classification of MPAs would assist in better understanding of the NRSMPA for stakeholders and managers.

4.4.1 IUCN protected area management categories

The World Conservation Union (IUCN) developed, and in 1994 adopted, a set of six protected area management categories which are applied to both terrestrial and MPAs (IUCN 1994). Definitions and objectives for each category, ranging from strict nature reserve to managed resource protected areas, are included in Appendix 3. The categories imply a gradation of human intervention but are not an hierarchical structure as they all contribute to biodiversity conservation. Consistent with the IUCN definition of protected areas as adopted by the NRSMPA, MPAs across all management categories must be formally established primarily for biodiversity conservation.

ACTION**24. Analysis of IUCN protected area management categories**

Analyse the application of the IUCN protected area management categories in the Australian marine context.

[Links to Action 25]

25. Application of IUCN protected area management categories

Develop TFMPA process for consistent application of categories for inclusion in CAPAD.

[Links to Actions 24 and 26]

26. IUCN protected area management category reporting

Annual reporting of IUCN categories, including for internal zonings for relevant MPAs.

[Links to Action 25]

Jurisdictions are required to use the IUCN's categories for national reporting on the NRSMPA for CAPAD. The use of the IUCN categories across jurisdictions allows consistent reporting irrespective of the names of the MPAs. Realistically, jurisdictions are unlikely to change to a consistent nomenclature in the short term, given that existing names are enshrined in legislation. The most achievable outcome in the short term is to seek agreement on nationally consistent definitions for MPAs, with a long-term aim to achieve consistent nomenclature.

ACTION**27. Nationally consistent nomenclature**

Develop nationally consistent definitions for MPAs to reflect their objective, management intent and rationale for permissible activities, which can progressively lead to consistent nomenclature.

[Links to Actions 24 and 25]

4.4.2 Nomenclature

Agencies responsible for protected areas have a variety of names for MPAs and these are not applied consistently across jurisdictions. *Terrestrial and Marine Protected Areas in Australia* (Cresswell and Thomas 1997) lists 11 different names for MPAs. Names used include Marine National Park, Marine Reserve, and Marine and Coastal Park.

The fact that the same name may mean different things in different states and countries, and that a different name may be used to describe the same category of protected area, has led to confusion and a lack of clarity about the basis for reservation and management intent. It is for this reason that the *National Strategy for the Conservation of Australia's Biological Diversity* (Commonwealth of Australia 1996) proposed an action to:

ensure that the range of protected area types has consistent nomenclature and associated management requirements, in keeping with the World Conservation Union's (IUCN) classification of protected areas.

4.5 MANAGING THE NRSMPA

The Plan does not deal in detail with management issues for the NRSMPA. Management of MPAs is primarily the concern of the jurisdictions, but TFMPA recognises that there is an ongoing need to share information and develop performance assessment for management of the NRSMPA. Management of marine areas within Australia's jurisdictions is often challenging and is made more difficult by factors such as the unpopulated nature of much of Australia's coastline, the difficulties and costs of managing a large and remote area, and the need for specialist equipment and trained field staff.

Australia's marine environment is economically very important. Access for resource users, whether commercial or recreational, extractive or non-extractive, needs to be considered and appropriately managed. For the NRSMPA, access to the resources of an MPA should be considered in the context of the potential impact of all uses and potential uses on the defined biodiversity conservation values of the MPA and the management objectives. Allowable uses should be

confined to those that do not compromise the defined biodiversity values and management objectives. The potential exists for partnerships and co-management arrangements consistent with principles for ecologically sustainable development and multiple-use management. The application of these concepts to marine areas has been refined during the development of Australia's Oceans Policy.

As discussed in section 3.1, Interim Marine and Coastal Regionalisation of Australia, IMCRA bioregions are used as the planning basis for achieving a representative, comprehensive and adequate system of MPAs. The distribution and classification of MPAs across bioregions will be consistent with the primary goal of the NRSMPA and will be determined by a full and transparent assessment of biodiversity conservation, economic, social and cultural values and management objectives as outlined in the *Guidelines*.

Ongoing management of the NRSMPA needs to ensure that, as far as practicable, all the essential elements of ecological diversity of marine communities remain adequately protected in perpetuity. However, marine planning and the nature of human activities are never static. A wide variety of changes can and do occur, such as changes in: technology, community expectations, environmental and natural processes, and management or political arrangements. Adaptive management is therefore essential to cope with such changes.

4.5.1 Ecologically sustainable development

The *National Strategy for Ecologically Sustainable Development* (Commonwealth of Australia 1992b) defines ecologically sustainable development as 'using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained and the total quality of life, now and in the future, can be increased'.

If the decision is made to allow resource use within an MPA on the basis that the biodiversity conservation values will not be compromised, the principles of ecological sustainability must apply. The management arrangements developed for individual MPAs may require higher standards of

management of resource use than may otherwise apply to the use or activity. This may be required so the activity does not compromise the primary goal of the MPA. A commercial fishery that is managed generally in accordance with ecologically sustainable development principles could be allowed within the MPA but may be subject to more comprehensive management arrangements; for example, arrangements relating to gear type or catch limits.

4.5.2 Ecosystem approach to management

An ecosystem approach to management provides for a consistent management framework for the maintenance of ecological integrity. It provides for a variety of uses while maintaining a focus on the condition of an ecosystem as a whole as the benchmark for management decision making. IMCRA is the ecosystem-based regionalisation that provides the first layer in a broad ecological planning framework for the NRSMPA.

In an oceans context, an ecosystem approach to management differs from species-based management in that the combined effects of all uses of an area are examined, and their acceptability evaluated using a full range of ecological indicators, not just a single species indicator. Different levels of change to the ecosystem elements and processes will be acceptable in specific areas of ocean, depending on the likely effects of permitted uses and other pressures such as land-based pollution.

Ecosystem management should specifically address the fluid or 'connected' nature of the marine environment, that is, the wide dispersal of organisms and pollutants by currents. Consideration of the likely effects on an MPA, and the implementation of mechanisms to cope with those effects, is the responsibility of the planning agencies at the time of selection of an MPA and is an ongoing requirement for management agencies.

An ecosystem-based management framework can be used both inside and outside MPAs. It will permit the broad principles embodied in

ecologically sustainable development to be consistently applied in all ocean areas, regardless of the uses. Across the NRSMPA, uses of marine resources, other than conservation, are likely to be more constrained than in other areas. The focus for the NRSMPA will be on how a variety of uses can be accommodated within an individual MPA.

4.5.3 Managing uses

Four fundamental principles for multiple-use management have been developed for general application to the marine environment and the selection and management of MPAs. They are:

- maintenance of ecosystem integrity;
- wealth generation and resource use;
- equity; and
- participatory framework for decision making (Sainsbury et al. 1997).

In consultations with stakeholders, the application of these principles can assist in reaching a negotiated outcome. For an MPA, once it is ascertained that resource use is compatible with the primary objective of the MPA, the multiple-use management principle 'maintenance of ecosystem integrity' is considered to have greater weight in the consideration process, reflecting the primary goal of the NRSMPA.

There is a range of human activities that may potentially occur within an MPA. Uses within MPAs can range from relatively low-impact activities, such as swimming, to extractive resource use, such as fishing. For these activities to continue, it must be demonstrated that they are consistent with the primary objective of an MPA. Highly protected areas (that is, 'no take' areas) within MPAs are increasingly being recognised by the community and resource users as means to contribute to the ecologically sustainable use of Australia's marine environment.

Given the range of processes for dealing with management issues, stakeholders have a right to know what principles and processes will apply in discussions relating to MPAs, and that they will be

involved in any process involving areas of interest to them. This way, clear and robust processes can be carried out and community involvement can be maximised. Any proposal for an MPA should involve consultation with stakeholders at the earliest stages of consideration (refer to section 4.3, Involvement of stakeholders).

Any system of protected areas needs to be accepted and supported by the stakeholders if it is to succeed in its primary purpose of biodiversity conservation. The recognition of social, cultural and economic considerations relating to proposed protected areas is fundamental to the process of determining a system. Resources need to be allocated to appropriate assessment processes to understand current and potential uses of any nominated area. Then processes dealing explicitly with those uses and any related costs or benefits need to be agreed with stakeholders.

4.5.4 Joint arrangements

Currently within the NRSMPA there are joint management arrangements between the Commonwealth and some States where MPAs have been declared across jurisdictional boundaries. Further development of the NRSMPA is likely to result in additional MPAs with joint management arrangements involving various jurisdictions. Developing elements of a best practice model to be applied in different circumstances would assist in ongoing management and evaluation.

ACTION

28. Joint management arrangements

Examine current joint cross-jurisdictional management arrangements to identify best practice elements.

Cooperation with indigenous communities

Historically, there has been little or no formal involvement of Aboriginal people in MPA management. However, many Aboriginal peoples and Torres Strait Islanders around Australia

continue to have a strong affiliation with and attachment to coastal and marine environments (Smyth 1996). Planning for and management of MPAs should acknowledge these links and account for them where possible.

There are a number of initiatives emerging, particularly across Northern Australia, which are providing opportunities to explore the development of cooperative management arrangements which take account of indigenous interests and involve Aboriginal peoples and Torres Strait Islanders in the management of marine areas. In the Torres Strait, indigenous communities have been managing terrestrial and marine resources and are actively engaged in consultation processes in developing strategies for co-management of traditional marine estates.

The Cobourg Peninsula Marine Park in the Northern Territory is the first Australian MPA to be formally managed jointly by Aboriginal people or custodians and a government conservation agency. Recent Commonwealth and Queensland discussions concerning multiple-use strategic planning for the southern Gulf of Carpentaria provide an example of a bioregion in which to consider developing a case study with indigenous communities.

Aboriginal peoples and Torres Strait Islanders form the local community across much of Australia's northern and north-western coastlines. This situation provides particular opportunity to share knowledge and resources for effective marine management, including surveillance and enforcement.

These circumstances, and indigenous interests elsewhere in Australia, also provide opportunities to develop innovative and effective ways to manage the marine environment generally and MPAs in particular. The existing enforcement capacity of government agencies is often over-extended in remote areas. In these and other areas there may be potential employment opportunities for indigenous communities involving formal management responsibility for coastal and marine protection.

ACTION

29. Indigenous interests

Develop strategies in association with indigenous peoples to enhance their participation in the NRSMPA.

Cooperation with industry

Many Commonwealth MPAs are remote, yet subject to threatening processes, such as illegal fishing and collecting, and potential pollution events. Environment Australia has developed effective cooperative arrangements with some other Commonwealth government departments for the management and monitoring of remote MPAs.

The potential exists for arrangements with industries, such as the fishing and petroleum industries and commercial tour operators, to assist in surveillance and some other management activities.

ACTION

30. Models of industry cooperative management

Develop models for industry involvement in, and contribution to, the monitoring and management of MPAs.

4.5.5 Management planning

The ANZECC Working Group on National Parks and Protected Areas Management has undertaken substantial work on best practice management of protected areas (ANZECC 1997). A review of this and other relevant national and international work will aid the better understanding of management issues for the NRSMPA.

ACTION

31. Best practice management planning

Examine national and international best practice models of protected area management, including multiple use management principles.

4.6 PERFORMANCE ASSESSMENT

Performance assessment of any system is required to evaluate its effectiveness in meeting goals and objectives and, if necessary, to assist in the identification of ways to increase its effectiveness. Performance assessment of the NRSMPA is a tool to report on the system to both managers and stakeholders. Effective performance assessment will help to focus activities on the goals that have been agreed for the NRSMPA.

In Australia, there are a range of environmental reporting frameworks that use indicators. They include *Australia: State of the Environment 1996* (State of Environment Advisory Council 1996), *Our Sea, Our Future: Major findings of the state of the marine environment report* (SOMER) (Zann 1995), Organisation for Economic Cooperation and Development (OECD) reports, Australian Heritage Commission audits, and the Montreal Process reporting for forests.

The State of the Environment (SoE) reporting model uses a variety of physical, chemical, biological and socioeconomic indicators that describe the state or condition of the environment, the pressures on the environment and the institutional response to these pressures. Recently, Ward et al (1998) and Saunders et al (1998) identified core marine and estuarine environmental indicators for SoE reporting which may be also suitable as NRSMPA performance indicators.

To achieve effective performance assessment of the NRSMPA, the Best Practice Model, identified by the ANZECC Working Group on National Parks and Protected Area Management in its Benchmarking and Best Practice Program (ANZECC 1997), has been adopted. This model focuses on the development of outcome-based performance indicators which are strongly linked to the goals and objectives sought by managers and stakeholders.

4.6.1 Performance assessment elements

Nationally consistent performance assessment of the NRSMPA will do the following:

- identify key targets (for example, using comprehensiveness, adequacy and representativeness) to reflect goals (both for process and outcome based assessments);

- determine appropriate information needs necessary at appropriate spatial levels (that is, at MPA, bioregional or national levels) and temporal scales;
- assess the suitability of indicators developed under other reporting models, and establish appropriate links to performance assessment initiatives in SoE reporting, Oceans Policy, and Marine, Science and Technology Plan, and so on;
- develop and apply suitable performance indicators;
- develop cost-effective monitoring programs;
- determine reporting responsibilities (agencies, reporting frequency, format, audience and dissemination medium); and
- develop a feedback mechanism to improve performance of the NRSMPA.

In identifying the key targets it will be important to use nationally agreed and harmonised interpretations of comprehensiveness, adequacy and representativeness for the NRSMPA. The targets will need to be determined and progressively refined through assessments of the environmental values, including in relation to the relative impact or risk of threatening processes. To underpin this, research will be needed inside and outside MPAs.

To provide information on long-term trends as well as existing conditions, the performance assessment framework must be adaptive and flexible enough to cater for changing conditions, goals and evolving delivery mechanisms.

4.6.2 Performance indicators

Performance assessment requires the development of performance indicators, which are quantitative or qualitative measures and which can demonstrate trends over time. Performance indicators are measures to gauge the extent to which targets (that is, desired outcomes) are achieved. The choice and application of performance indicators require careful consideration. In particular, the performance indicators and the development of associated monitoring programs to report against the indicators (that is, frequency and scale), must be cost-effective. There are limits to what can be done through indicators. To avoid unrealistic expectations, these limits need to be identified and articulated.

Performance indicators may be based on either processes or outcomes. The process-based indicators relate to assessing the organisational efficiency of processes that achieve the results; for example, the degree of compliance to the *Guidelines*. Outcome-based indicators measure results or the degree to which an environmental goal has been met and could include whether a bioregion contains representative samples of major ecosystems within MPAs.

4.6.3 Level of performance assessment

For the NRSMPA, performance assessment reporting is required at three interrelated spatial scales. These are at the individual MPA level, the bioregion level, and at the level of the system as a whole. The responsibility for reporting is different for each level.

The assessment of individual MPAs is the responsibility of the jurisdiction in which the MPA is declared. Bioregional reporting requires jurisdictional and cross-jurisdictional reporting. The responsibility for performance assessment of the whole NRSMPA concerns all jurisdictions, and is coordinated by TFMPA.

It is important to note that several performance assessment and performance indicator elements are generic across all three levels. These elements are nested, with the greatest degree of detail found at the individual MPA level.

Consistent processes developed for performance assessment at the individual MPA level will allow for the collection, analysis and reporting of performance assessment for the system at any level through appropriate aggregation, that is, for the system as a whole or at the bioregional level.

Individual MPA level

Each MPA is declared against a legislative framework. Specific aims and management intentions or objectives are described in the plan of management for the MPA. Plans of management are derived through processes of public

participation that should assist in determining the performance indicators and audience for performance assessment of individual MPAs.

Each MPA is unique in size and in the composition of its ecosystem(s) and species. Also, the management intentions and approaches differ between jurisdictions. Recognising these factors, the following process describes the development of a performance assessment framework with performance indicators at the MPA level. The performance indicators developed will be for the purpose of managing and reporting on each MPA. The methodology to report nationally on these indicators is presented under section 4.6.4, Reporting frequency and format.

Note that the components may be conducted concurrently. The collection of baseline data may have been carried out, in part, as a component of the selection process and may precede the other components listed.

Framework for developing performance indicators at MPA level

Each jurisdiction will develop and implement a performance assessment system that is consistent with the nationally agreed reporting framework. The framework would include a number of steps, such as:

- Derive strategic objectives and goals for the MPA which reflect management intentions and enabling legislation.
- Translate goals and objectives into sets of distinct MPA standards, targets or thresholds.
- Assess and monitor the condition of the environmental values in relation to the impact of threatening processes inside and outside the MPAs.
- Select appropriate indicators to measure the degree to which individual MPA targets are being achieved.
- Collate and assess existing biological, physical and socioeconomic baseline information for individual MPAs and identify gaps in this information.

- Design and implement a baseline data gathering exercise to sufficiently fill in the gaps.
- Design and implement a monitoring program in tandem with the choice of performance indicators.
- Develop a reporting mechanism on each MPA's performance, using existing processes established by marine management agencies where possible.
- the degree to which comprehensiveness, adequacy and representativeness have been achieved; and
- the degree of effectiveness of cross-jurisdictional planning and management arrangements within bioregions.

ACTION

32. MPA performance assessment

Each jurisdiction will develop and implement a performance assessment system, including performance indicators, that is consistent with the nationally agreed reporting framework.

[Links to Actions 1–3]

Bioregional level

ANZECC has adopted IMCRA as the bioregional framework for planning and reporting on the NRSMPA. The development and use of performance indicators is an integral aspect of this framework. The effectiveness and progress of the NRSMPA will need to be reported at the bioregional level. To enable national reporting, a core of consistent performance indicators will be agreed by TFMPA and applied across the System at the bioregional level.

Actions to initiate performance assessment for use at the bioregional level would focus on preparing reports on the type of information indicated below.

Performance reporting at bioregional level

Each jurisdiction will develop and aggregate performance information (consistent with the nationally agreed reporting framework). Indicators for the bioregional level will include:

- the number of MPAs present in a bioregion;
- the area covered by the MPAs;
- the IUCN protected area management categories;
- the degree to which comprehensiveness, adequacy and representativeness have been achieved; and
- the degree of effectiveness of cross-jurisdictional planning and management arrangements within bioregions.

ACTION

33. Bioregion performance reporting

Each jurisdiction will develop and aggregate performance information (consistent with the nationally agreed reporting framework).

[Links to Actions 1–3]

NRSMPA level

The performance assessment of the NRSMPA must measure the degree to which the agreed system-level goals have been achieved.

In process-based indicator terms, realistic stages and time frames should be set, considering the complexity of the objectives and the resources available to each jurisdiction and to TFMPA. This would allow performance to be measured against time frames. Outcome-based indicators are crucial at the system level. These will be developed or derived by aggregating MPA-level and bioregion-level indicators to create system-level indicators. The Commonwealth will conduct this element of the process for TFMPA with the input of jurisdictions.

Performance reporting at NRSMPA level

TFMPA will report on the agreed national set of performance indicators, drawn from all jurisdictions. Specific actions include:

- Develop a framework for adapting and analysing MPA-level indicators for use at the NRSMPA level.
- Develop and agree on minimum standards for monitoring programs relating to agreed performance indicators.

- Assess whether these processes lead to sufficient information to assess performance nationally and identify deficiencies.
- Further develop elements of performance assessment as necessary by tracking national and international developments.
- Expand and maintain policy links with other national processes, for example, Oceans Policy, the Australia's Marine Science & Technology Plan and the Marine Industry Development Strategy.

ACTION

34. NRSMPA performance assessment

Report on agreed national set of performance indicators, drawn from all jurisdictions.

[Links to Actions 1–3]

4.6.4 Reporting frequency and format

To facilitate the adoption of performance assessment into agency planning cycles, it is envisaged that performance reporting will be conducted on an annual basis (against annual work plans) through TFMPA.

Each jurisdiction will provide information on performance indicators developed and implemented for each MPA for the purposes of analysis and reporting for the NRSMPA. This reporting should group performance indicators within the framework described above.

Audience

The audience for reporting includes the community, stakeholders, governments, MPA managers and ANZECC. A process needs to be developed that links appropriate sets of performance indicators to each audience group.

Key elements in reporting performance assessment to audience groups include:

- Identify the needs of each audience group.
- Identify suitable media to disseminate information and linking into information management and education training and development actions.

4.6.5 Monitoring programs

Monitoring programs designed to provide data for the assessment of performance measures can differ from more traditional monitoring programs. The indicators must first be determined and tested to establish whether they are cost-effective, achievable and appropriate.

Long-term monitoring programs should be developed, where possible, in conjunction with existing data gathering efforts established within agencies for SoE-type reporting, Oceans Policy, Australia's Marine Science & Technology Plan and other relevant purposes.

The key elements in developing monitoring programs for performance indicators are:

- Identify appropriate operational standards that define the scale aspects of measurement, including sampling designs, equipment needed, and data reduction approaches.
- Identify necessity and the type of baseline monitoring within and outside MPAs.
- Identify where further research is required before indicators can reasonably be reported against.

APPENDIX 1

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ANZECC

Guidelines for Establishing the
National Representative System
of Marine Protected Areas

ANZECC Task Force on Marine Protected Areas

December 1998

AUSTRALIAN AND NEW ZEALAND
ENVIRONMENT AND CONSERVATION COUNCIL



The *Guidelines* have been developed by the following agencies for the Australian and New Zealand Environment and Conservation Council (ANZECC):

New South Wales	National Parks and Wildlife Service NSW Fisheries
Northern Territory	Parks and Wildlife Commission
Queensland	Department of Environment and Heritage
South Australia	Department of Environment, Heritage and Aboriginal Affairs Primary Industries and Resources, South Australia
Tasmania	Department of Primary Industries, Water and Environment
Victoria	Department of Natural Resources and Environment
Western Australia	Department of Conservation and Land Management
Commonwealth	Environment Australia Commonwealth Scientific and Industrial Research Organisation Great Barrier Reef Marine Park Authority Department of Agriculture, Fisheries and Forestry Department of Industry, Science and Resources Australian Institute of Marine Science.

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Foreword

The *Guidelines for Establishing the National Representative System of Marine Protected Areas* (NRSMPA) have been prepared to assist government agencies in the development of the NRSMPA and to assist stakeholders in the understanding of this process. The *Guidelines* is one of a suite of documents which have been developed cooperatively by the Task Force on Marine Protected Areas of the Australia and New Zealand Environment and Conservation Council (ANZECC) to assist in and promote the development of the NRSMPA. The other documents are the *Strategic Plan of Action for the NRSMPA* (ANZECC TFMPA 1998) and the *Interim Marine and Coastal Regionalisation for Australia* (IMCRA Technical Group 1998) otherwise known as IMCRA.

It is recognised that State, Territory and Commonwealth agencies have existing processes which, when applied in the context of a consistent national approach as set out in the *Guidelines*, will assist in the progressive development and understanding of a national system of marine protected areas.

A public comment period on an earlier draft version of the *Guidelines* was held from 20 May 1998 to 17 July 1998. Relevant comments and suggestions received have been incorporated into this version of the *Guidelines*. This version of the *Guidelines* will remain current until reviewed.

Unless otherwise stated, the use of the term marine protected area (MPA) in the *Guidelines* refers to the MPAs that comprise the NRSMPA.

Using the Guidelines

Part One – Understanding the NRSMPA sets out the goals, principles and outcomes of the NRSMPA including a discussion of which MPAs are included in this national system.

Part Two – Establishing the NRSMPA outlines a process for the collaborative development of the NRSMPA, the roles of the different jurisdictions, and the criteria for identification and selection of MPAs, for inclusion in the NRSMPA.

Part Three – Evaluating the NRSMPA discusses the evaluation process for the NRSMPA.

Part One – Understanding the NRSMPA

1.1 Introduction

Australia is the world's largest island. It has some of the most diverse, unique and spectacular marine life in the world. Its marine environment includes extensive coral reefs in the tropical north, rocky shores in the temperate south, sandy beaches, seagrass beds, and mangrove forests, the open ocean, seamounts and the habitats of the continental shelf and slope. The diversity and productivity of Australia's seas provide vital social and economic benefits. Australians depend on marine resources for income, employment, food, recreation and many other uses. Continuation of these benefits over the long term will require that marine biodiversity is conserved and resources used sustainably.

Australia is committed to the protection of marine biodiversity and ecological integrity, and the sustainable use of marine resources, through the goals and principles of ecological sustainable development (ESD). This commitment has been ratified through Australia's international responsibilities and obligations under the *Convention on Biological Diversity* (UNEP 1994), and addressed at a national level by the States and Territories under the *Intergovernmental Agreement on the Environment* (IGAE) (Commonwealth of Australia 1992a). It is implemented through the actions of national strategies such as the *National Strategy for Ecologically Sustainable Development* (Commonwealth of Australia 1992) and the *National Strategy for the Conservation of Australia's Biological Diversity* (Commonwealth of Australia 1996). The establishment of the National Representative System of Marine Protected Areas (NRSMPA) also supports the program of the World Conservation Union (IUCN) World Commission on Protected Areas (WCPA) to promote the establishment of a global representative system of marine protected areas (MPAs).

Australia's Oceans Policy – An Issues Paper (Commonwealth of Australia 1998a) emphasises the need to employ an integrated approach to marine management employing a range of mechanisms for the best protection of Australia's marine environment. These *Guidelines* refer to one part of this approach which is the establishment of a representative system of marine protected areas. This approach is widely

regarded, both nationally and internationally, as one of the most effective mechanisms for protecting biodiversity but should be seen in the context of a set of complementary and integrated conservation mechanisms. Some of the other mechanisms for marine biodiversity conservation include legislation and management for the conservation of individual marine species, reduction and management of marine pollution and the declaration and management of other marine managed areas.

While protected areas have assisted in the protection of Australia's terrestrial ecosystems for over a century, the formal conservation of Australia's marine environments and their resources is a relatively recent phenomenon.

In 1991 the Commonwealth Government initiated a long term marine conservation program to ensure the conservation and sustainable use of Australia's marine and estuarine environments. A key component of this initiative was a commitment to expand Australia's existing marine reserve system through the establishment of a NRSMPA. The establishment of a national system is a key responsibility and obligation under the conventions and strategies listed above.

In 1998 the Commonwealth Government, through the Oceans Policy process, provided strong support for the development of the NRSMPA.

While utilisation decisions made over the last two hundred years have foreclosed some options for the inclusion of many ecological communities in the reserve system, especially in the terrestrial reserve system, Australia still has the opportunity for a truly representative system of MPAs. The NRSMPA represents an exciting opportunity to progressively develop a reserve system, based on the best available scientific information, for the conservation of Australia's biodiversity and the wise use of marine resources.

The NRSMPA is being developed cooperatively by the Commonwealth, State and Northern Territory agencies responsible for conservation, protection and management of the marine environments.

Definition of a Marine Protected Area

ANZECC has adopted the IUCN definition of a 'protected area' to apply to MPAs as follows:

"An area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means." (IUCN 1994)

This definition has been recently endorsed by the Commonwealth Government, ANZECC and the Ministerial Council on Forestry, Fisheries and Aquaculture for use in a variety of protected area contexts. It is the definition used for a protected area in the *Interim Scientific Guidelines for Establishing the National Reserve System* (Commonwealth of Australia 1997).

For the purposes of the NRSMPA, the term 'marine protected area' (MPA) has been adopted in preference to other terminology such as 'Marine and Estuarine Protected Area' to standardise the terminology across jurisdictions.

1.2 What is the National Representative System of Marine Protected Areas?

The NRSMPA forms part of an integrated strategy for marine conservation and management. The NRSMPA is a national system of MPAs which aims to contain a comprehensive, adequate and representative sample of Australia's marine ecosystems. The NRSMPA consists of MPAs in Commonwealth, State and Territory waters and some associated intertidal areas.

Within the broad framework of integrated management of ocean uses, there are a number of ways to manage marine areas that benefit biodiversity conservation. Area management operates at a range of scales across the marine environment for a variety of primary purposes. Included in these managed marine areas are the MPAs that together form the NRSMPA and the many marine managed areas that are not included in the NRSMPA. Examples of the types of marine managed areas that are not included in the NRSMPA are some indigenous protected areas, some areas established to protect fish habitats, and some areas under cooperative management arrangements with industry. Biosphere Reserves, established under the UNESCO Man and the Biosphere Program, contribute to biodiversity

conservation and core areas could be included in the NRSMPA as protected areas.

The commitment to the primary goal of biodiversity conservation means that MPAs within the NRSMPA provide a higher level of protection than is generally achieved in surrounding waters.

By considering the different forms of marine managed areas together, the valuable contributions to biodiversity conservation made by all these mechanisms can be recognised and validated. The other major advantage of this grouping is the potential for performance indicators for marine biodiversity to be developed and applied across the range of marine managed areas. The lack of detailed knowledge of the marine environment makes it difficult to quantify the benefits that different forms of area management may achieve. The establishment of good baseline data for all marine managed areas, and the development of performance indicators that relate to that data, will assist in improving the conservation of biodiversity and ecologically sustainable management of the marine environment.

While recognising the importance of other marine managed areas and other mechanisms for the conservation of Australia's marine biodiversity, these *Guidelines* relate specifically to the NRSMPA.

1.3 Goals of the NRSMPA

The primary goal of the NRSMPA is to establish and manage a comprehensive, adequate and representative system of MPAs to contribute to the long-term ecological viability of marine and estuarine systems, to maintain ecological processes and systems, and to protect Australia's biological diversity at all levels.

The following secondary goals are designed to be compatible with the primary goal:

- To promote the development of MPAs within the framework of integrated ecosystem management;
- To provide a formal management framework for a broad spectrum of human activities, including recreation, tourism, shipping and the use or extraction of resources, the impacts of which are compatible with the primary goal;
- To provide scientific reference sites;
- To provide for the special needs of rare, threatened or depleted species and threatened ecological communities;
- To provide for the conservation of special groups of organisms, eg species with complex habitat requirements or mobile or migratory species, or species vulnerable to disturbance which may depend on reservation for their conservation;
- To protect areas of high conservation value including those containing high species diversity, natural refugia for flora and fauna and centres of endemism;
- To provide for the recreational, aesthetic and cultural needs of indigenous and non-indigenous people.

1.4 Which MPAs are included in the NRSMPA?

Key characteristics define the MPAs that form the NRSMPA, as compared to the other marine managed areas. They are that the MPA:

- has been established especially for the conservation of biodiversity (consistent with the primary goal);
- is able to be classified into one or more of the six IUCN Protected Area Management Categories (see Appendix) reflecting the values and objectives of the MPA;
- must have secure status which can only be revoked by a Parliamentary process; and
- contributes to the representativeness, comprehensiveness or adequacy of the national system.

The MPA may incorporate areas ranging from highly protected areas to sustainable multiple use areas accommodating a wide spectrum of human activities. MPAs are declared under appropriate Commonwealth, State and Territory legislation. Broadly speaking, in Australian waters the States and Northern Territory have responsibility for the management of the waters three nautical miles seaward from the territorial sea baseline. For much of the Australian coast the territorial sea baseline equates to the low water mark but can be up to 60 nautical miles offshore in some areas. The Commonwealth generally is responsible from three nautical miles to 200 nautical miles or the limit of the Australian Exclusive Economic Zone.

It is the role of the relevant State, Territory or Commonwealth agency to determine the IUCN category (or categories) for MPAs in their jurisdiction. The Commonwealth will play a coordinating role, with the ANZECC Task Force on Marine Protected Areas, in ensuring consistent interpretation and application of IUCN categories at the stage that information is provided for inclusion in the Collaborative Australian Protected Areas Dataset (CAPAD). If there is uncertainty as to whether an MPA meets the requirements for inclusion in the NRSMPA, a similar process will apply.

1.5 Principles for Developing the NRSMPA

Development of the NRSMPA is based on the following principles:

Regional framework: *The Interim Marine and Coastal Regionalisation for Australia (IMCRA)* provides the national and regional planning framework for developing the NRSMPA, with ecosystems used as the basis for determining representativeness.

Comprehensiveness: The NRSMPA will include the full range of ecosystems recognised at an appropriate scale within and across each 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 MPAs should reasonably reflect the biotic diversity of the marine ecosystems from which they derive.

Highly protected areas: The NRSMPA will aim to include some highly protected areas (IUCN Categories I and II) in each bioregion.

Precautionary principle: The absence of scientific certainty should not be a reason for postponing measures to establish MPAs to protect representative ecosystems. If an activity is assessed as having a low risk of causing serious or irreversible adverse impacts, or if there is insufficient information with which to assess fully and with certainty the magnitude and nature of impacts, decision making should proceed in a conservative and cautious manner.

Consultation: The processes of identification and selection of MPAs will include effective and high-quality public consultation with appropriate community and interest groups, to address current and future social, economic and cultural issues.

Indigenous involvement: The interests of Australia's indigenous people should be recognised and incorporated in decision making.

Decision making: Decision making processes should effectively integrate both long term and short term environmental, economic, social and equity considerations.

1.6 Outcomes of the NRSMPA

The goals of the NRSMPA relate primarily to the conservation of biodiversity and sustainable and equitable management of human usage. However, the MPAs that make up the NRSMPA may also protect and manage many other important geological, archaeological, historical and cultural attributes. The outcomes listed apply to the national system of MPAs as a whole and not necessarily to each individual MPA within the system.

The outcomes of the NRSMPA will include:

- protection for Australia's marine biological diversity and marine ecological processes;
- protection and management of significant geological, archaeological, historical and cultural sites;
- recognition and protection of indigenous cultural and heritage values;
- management of certain marine areas and species by indigenous communities in accordance with traditional cultural practices and affiliations;
- a focus for research and training;
- monitoring the environmental effects of human activities, including the direct and indirect effects of development and adjacent land use practices;
- establishment of reference sites for scientific studies, including sites for long-term environmental monitoring;
- education of the community about the environment, attributes and appropriate uses of MPAs to develop a sense of stewardship and associated responsibility;
- protection of the natural aesthetic values of marine protected areas for the educational, recreational and spiritual benefit of the community;
- facilitation of the restoration of degraded marine ecosystems; and
- protection and management of habitats of significance to the life cycles of economically important species including propagation areas.

Part Two – Establishing the NRSMPA

2.1 The Development of the NRSMPA

The agreed approach to developing the NRSMPA emphasises the use of scientific data in the classification and identification of areas. It is recognised that information on a range of attributes for many areas is not complete. In these cases the best available information will be used.

The process for the establishment of the individual MPAs which comprise the NRSMPA is outlined below. Some of these steps may be carried out concurrently. Appropriate consultation with stakeholders will be carried out at various stages of the process. Broadly, an initial process of identification of candidate areas is carried out which is then followed by selection of MPA sites from these candidate areas.

- Step 1** Gather baseline data, including ecosystem mapping.
- Step 2** Identify a list of candidate areas within IMCRA regions to represent major ecosystems, using identification criteria (Table 1).
- Step 3** Identify threatening processes.
- Step 4** Identify gaps in the representation of ecosystems in existing MPAs within each IMCRA region.
- Step 5** Develop national and regional priorities.
- Step 6** Develop additional criteria for identification and selection of MPAs if required.
- Step 7** Select sites for MPAs from the candidate areas, using selection criteria (Table 1) and any other additional criteria developed in Step 6.
- Step 8** Assess feasibility of potential MPAs and negotiate new protected areas.
- Step 9** Establish MPAs and initiate management, including evaluation and review.

Developing national priorities

The development of national priorities for declaration of new MPAs will be based on the assessment of gaps in the comprehensiveness of the NRSMPA using IMCRA and CAPAD. The Commonwealth will coordinate the national gap analysis using IMCRA regions, and based on information provided by the jurisdictions. Following the gap analysis national priorities will be developed with cross-jurisdictional cooperation and agreement.

Developing regional priorities

The development of regional priorities is being predominantly carried out by State and Territory agencies for their waters and the Commonwealth for Commonwealth waters. This process will use gap analysis as well as analysis of values, threatening processes and other factors including socio-economic considerations and other criteria listed as selection criteria in Table 1.

As appropriate biodiversity information becomes available, agencies will identify conservation priorities and candidate areas within regions. Cross-jurisdictional cooperation will be required where IMCRA regions cross State, Territory and Commonwealth boundaries. Data exchange will be facilitated and coordinated by the Commonwealth.

The roles of the jurisdictions in the establishment of the NRSMPA

State, Northern Territory and Commonwealth Agencies

The roles of the Commonwealth, States and Northern Territory for the declaration of MPAs for waters under their jurisdiction, are outlined below.

For the NRSMPA each jurisdiction will:

- provide input to national gap analysis by conducting gap analyses based on MPA coverage within IMCRA regions;
- carry out regional gap analyses to develop regional priorities relating to MPA selection;
- contribute to the marine component of CAPAD;
- identify areas and select MPAs for addition to the NRSMPA;
- report on implementation of the NRSMPA to ANZECC, through the Task Force on Marine Protected Areas; and
- review and further develop IMCRA, as appropriate.

For each MPA each jurisdiction will:

- assess relative ecological and socio-economic values;
- assess threatening processes;
- identify management objectives and intentions;
- consult with adjacent and other relevant jurisdictions;
- consult with stakeholders, including consideration of industry, displacement and compensation issues;

- declare MPAs for addition to the NRSMPA;
- manage MPAs under their jurisdiction;
- determine IUCN protected area management categories for MPAs proposed for addition to the NRSMPA; and
- ensure proposals for declaration and management of MPAs are consistent with the full range of Australia's international obligations.

Additional Commonwealth actions

To facilitate the progress of the NRSMPA, the Commonwealth will also:

- contribute to funding to State and Territory agencies for projects leading to the declaration of MPAs;
- coordinate the future development of IMCRA;
- coordinate other technical products which are required to underpin the development of the NRSMPA, eg the marine component of CAPAD;
- assist with the development of national priorities through gap analysis;
- facilitate cross-jurisdictional cooperation and exchange of information;
- coordinate strategic planning for the NRSMPA including establishment guidelines; and
- ensure national consistency in the interpretation of the application of the IUCN protected area management categories to the NRSMPA, using the ANZECC Task Force on Marine Protected Areas in an advisory role.

2.2 Criteria for the Identification and Selection of Marine Protected Areas

Criteria for identification and selection of MPAs are presented in Table 1. The list is not exhaustive.

The criteria listed refer to the identification of candidate areas for the NRSMPA and selection of sites for MPAs. For the NRSMPA, biodiversity and environmental criteria are the primary criteria for the identification of candidate areas. Sound biodiversity and other baseline data are essential to ensure that decision making is underpinned by good science. Social, cultural and/or economic criteria are applied primarily in the selection of MPA sites from the candidate areas. In practice, jurisdictions may apply some of the selection criteria at an earlier stage in the identification phase, eg socio-economic considerations. Environmental criteria and social, cultural and economic criteria should be considered as layers in the decision making process, with criteria from each list able to be used at any stage in the processes of identification and selection as appropriate.

Vulnerability assessment is part of both the identification and selection processes. In the identification phase, vulnerability can be related to natural processes. In the selection phase vulnerability to human actions and threatening processes should be used to prioritise the selection of sites for MPAs.

The selection and declaration processes are carried out by State, Territory and Commonwealth agencies for their jurisdictions. Some cross-jurisdiction consultation will be required where proposed MPAs cross jurisdiction boundaries. Flexibility of application of the criteria will be required due to the variety of legislative and management frameworks within the States, Northern Territory and the Commonwealth, and the individual circumstances relating to specific sites. A potential MPA site may meet one or many of the listed criteria. Depending on the objectives for the site, one or more criteria may be considered to have greater 'weight' in the consideration process.

The criteria are generally derived from Kelleher and Kenchington (1992) and Thackway (1996).

2.3 Implementation and Evaluation of the Guidelines

These *Guidelines* will be implemented following agreement by State, Territory and Commonwealth agencies, and approval by ANZECC.

There will be an ongoing process of feedback from agencies and stakeholders which will be used to determine when a revision of the *Guidelines* is necessary. The revision process will be closely linked to the review process for the Strategic Plan of Action for the NRSMPA, a companion document to the *Guidelines*.

Table 1 Criteria to be used as a basis for the identification and selection of MPAs

IDENTIFICATION

Representativeness

Will the area:

- represent one or more ecosystems within an IMCRA bioregion, and to what degree;
- add to the representativeness of the NRSMPA, and to what degree.

Comprehensiveness

Does the area:

- add to the coverage of the full range of ecosystems recognised at an appropriate scale within and across each bioregion;
- add to the comprehensiveness of the NRSMPA.

Ecological importance

Does the area:

- contribute to the maintenance of essential ecological processes or life-support systems;
- contain habitat for rare or endangered species;
- preserve genetic diversity ie is diverse or abundant in species;
- contain areas on which species or other systems are dependent, eg contain nursery or juvenile areas or feeding, breeding or resting areas for migratory species;
- contain one or more areas which are a biologically functional, self-sustaining ecological unit.

International or national importance

- Is the area rated, or have the potential to be listed, on the world or a national heritage list or declared as a Biosphere Reserve or subject to an international or national conservation agreement.

Uniqueness

Does the area:

- contain unique species, populations, communities or ecosystems;
- contain unique or unusual geographic features.

Productivity

- Do the species, populations, or communities of the area have a high natural biological productivity.

Vulnerability assessment

- Are the ecosystems and/or communities vulnerable to natural processes.

Biogeographic importance

- Does the area capture important biogeographic qualities.

Naturalness

- How much has the area been protected from, or not been subjected to, human induced change.

Table 1 Criteria to be used as a basis for the identification and selection of MPAs**SELECTION***Economic interests*

Does the site:

- make an existing or potential contribution to economic value by virtue of its protection, eg for recreation or tourism, or as a refuge or nursery area, or source of supply for economically important species;
- have current or potential use for the extraction of or exploration for resources;
- have importance for shipping and/or trade;
- have usage by traditional users including commercial fishers;
- have value due to its contribution to local or regional employment and economic development.

Indigenous interests

Does the site:

- have traditional usage and/or current economic value;
- contain indigenous cultural values;
- have native title considerations.

Social interests

- Does the site have existing or potential value to the local, national or international communities because of its heritage, cultural, traditional aesthetic, educational, recreational, or economic values.

Scientific interests

- Does the site have existing or potential value for research or monitoring.

Practicality/feasibility

Does the site:

- have a degree of insulation from external destructive influences;
- have social and political acceptability, and a degree of community support;
- have access for recreation, tourism, education;
- have compatibility between an MPA declaration generally and existing uses;
- have relative ease of management, and compatibility with existing management regimes.

Vulnerability assessment

- Is the site vulnerable and susceptible to human induced changes and threatening processes.

Replication

- Will the site provide replication of ecosystems within the bioregion.

Part Three – Evaluating the NRSMPA**3.1 Evaluation**

The effectiveness of the NRSMPA will be monitored by the Commonwealth with assistance from the States and the Northern Territory. The processes for monitoring and reporting for the NRSMPA, including details of performance assessment, are presented in the Strategic Plan of Action for the NRSMPA. This is a collaborative process involving the Commonwealth, the States and the Northern Territory through ANZECC.

Glossary

<i>Adequacy</i>	The maintenance of the ecological viability and integrity of populations, species and communities.	<i>Ecosystem</i>	A dynamic complex of plant, animal and microorganism communities and their non-living environment interacting as a functional unit (Convention on Biological Diversity, 1992).
<i>ANZECC</i>	Australian and New Zealand Environment and Conservation Council, a Ministerial Council representing all jurisdictions.	<i>Endemic</i>	Restricted to a specified region or site.
<i>Baseline</i>	The territorial sea baseline is the line from which the seaward limits of Australia's maritime zones are measured.	<i>Exclusive Economic Zone (EEZ)</i>	The area between the lines 12 nautical miles and 200 nautical miles seaward of the territorial sea baselines. In this area, Australia has the right to explore and exploit living and non-living resources, and the concomitant obligation to protect and conserve the marine environment.
<i>Biodiversity</i>	The variety of life forms: the different plants, animals and micro-organisms, the genes they contain, and the ecosystems they form. It is usually considered at three levels: genetic diversity, species diversity and ecosystem diversity.	<i>IMCRA</i>	The Interim Marine and Coastal Regionalisation for Australia is an ecosystem based classification for marine and coastal environments. It provides ecologically based regionalisations at the meso-scale (100-1000 km) and at a provincial scale (greater than 1000s km).
<i>CAR reserve system</i>	A system of protected areas that addresses the comprehensiveness, adequacy and representativeness (CAR) of all its component ecosystems.	<i>Inshore</i>	The near coastal waters extending from the coastline and estuaries out to 3 n miles, which is the boundary of the State and Territory waters.
<i>CAPAD</i>	Collaborative Australian Protected Areas Dataset	<i>IUCN</i>	The World Conservation Union (formerly known as the International Union for the Conservation of Nature).
<i>Comprehensiveness</i>	Includes the full range of ecosystems recognised at an appropriate scale within and across each bioregion.	<i>Naturalness</i>	The extent to which an area has been protected from, or has not been subjected to human induced change.
<i>Condition</i>	The current state of ecosystems compared to what would be considered pristine.		
<i>Conservation</i>	The protection, maintenance, management, sustainable use, restoration and enhancement of the natural environment.		

<i>Protected Area, Marine Protected Area</i>	An area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means (IUCN 1994).	<i>Viability</i>	The likelihood of long-term survival of the example/population of the particular ecosystem or species under consideration.
		<i>Vulnerability</i>	The predisposition of an area to a threatening process.
<i>Replication</i>	The principle that if more than one sample of an ecosystem is reserved across its geographic range this will decrease the likelihood that chance events will cause the ecosystem to decline.		
<i>Representativeness</i>	Those marine areas that are selected for inclusion in reserves should reasonably reflect the biotic diversity of the marine ecosystems from which they derive.		
<i>State waters</i>	Australia's Offshore Constitutional Settlement established Commonwealth, State and Territory jurisdictions over marine areas. States generally have primary jurisdiction over marine areas to 3 n miles from the baseline. These waters are termed State waters for the purpose of this report.		
<i>Territorial sea</i>	The area of sea adjacent to Australia which extends beyond its land territory and internal waters. Australia's territorial sea extends 12 n miles from the baseline.		
<i>Threatened species and/or ecological communities</i>	A species or ecological community that is vulnerable or endangered.		
<i>Threatening processes</i>	The dominant limiting factors and constraints to the on-going conservation of biodiversity.		

Appendix

Summary of IUCN Guidelines for Protected Area Management Categories

Category Ia *Strict Nature Reserve: Protected Area managed mainly for science*

Area of land and/or sea possessing some outstanding or representative ecosystems, geological or physiological features and/or species, available primarily for scientific research and/or environmental monitoring.

Category Ib *Wilderness Area: Protected Area managed mainly for wilderness protection*

Large area of unmodified or slightly modified land and/or sea, retaining its natural character and influence, without permanent or significant habitation, which is protected and managed so as to preserve its natural condition.

Category II *National Park: Protected Area managed mainly for ecosystem conservation and recreation*

Natural area of land and/or sea, designated to (a) protect the ecological integrity of one or more ecosystems for this and future generations, (b) exclude exploitation or occupation inimical to the purposes of designation of the area and (c) provide a foundation for spiritual, scientific, educational, recreational and visitor opportunities, all of which must be environmentally and culturally compatible.

Category III *Natural Monument: Protected Area managed for conservation of specific natural features*

Area containing one or more specific natural or natural/cultural feature which is of outstanding value because of its inherent rarity, representative or aesthetic qualities or cultural significance.

Category IV *Habitat/Species Management Area: Protected Area managed mainly for conservation through management intervention*

Area of land and/or sea subject to active intervention for management purposes so as to ensure the maintenance of habitats and/or to meet the requirements of specific species.

Category V *Protected Landscape/Seascape: Protected Areas managed mainly for landscape/seascape conservation and recreation*

Area of land, with coast and seas as appropriate, where the interaction of people and nature over time has produced an area of distinct character with significant aesthetic, cultural and/or ecological value, and often with high biological diversity. Safeguarding the integrity of this traditional interaction is vital to the protection, maintenance and evolution of such an area.

Category VI *Managed Resource Protected Areas: Protected Area managed mainly for the sustainable use of natural ecosystems*

Area containing predominantly unmodified natural systems, managed to ensure long term protection and maintenance of biological diversity, while providing at the same time a sustainable flow of natural products and services to meet community needs.

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APPENDIX 3

SUMMARY AND OBJECTIVES OF IUCN PROTECTED AREA MANAGEMENT CATEGORIES

CATEGORY IA STRICT NATURE RESERVE: PROTECTED AREA MANAGED MAINLY FOR SCIENCE

Area of land and/or sea possessing some outstanding or representative ecosystems, geological or physiological features and/or species, available primarily for scientific research and/or environmental monitoring.

Objectives:

- to preserve habitats, ecosystems and species in as undisturbed state as possible;
- to maintain genetic resources in a dynamic and revolutionary state;
- to maintain established ecological processes;
- to safeguard structural landscape features or rock exposures;
- to secure examples of the natural environment for scientific studies, environmental monitoring and education, including baseline areas from which all avoidable access is excluded;
- to minimise disturbance by careful planning and execution of research and other approved activities; and
- to limit public access.

CATEGORY IB WILDERNESS AREA: PROTECTED AREA MANAGED MAINLY FOR WILDERNESS PROTECTION

Large area of unmodified or slightly modified land and/or sea, retaining its natural character and influence, without permanent or significant habitation, which is protected and managed so as to preserve its natural condition.

Objectives:

- to ensure that future generations have the opportunity to experience understanding and enjoyment of areas that have been largely undisturbed by human action over a long period of time;
- to maintain the essential natural attributes and qualities of the environment over the long term;
- to provide for public access at levels and of a type which will serve best the physical and spiritual well-being of visitors and maintain the wilderness qualities of the area for present and future generations;
- to enable indigenous human communities which are living at low density and in balance with the available resources to maintain their lifestyle.

CATEGORY II NATIONAL PARK: PROTECTED AREA MANAGED MAINLY FOR ECOSYSTEM CONSERVATION AND RECREATION

Natural area of land and/or sea, designated to:

- protect the ecological integrity of one or more ecosystems for this and future generations;
- exclude exploitation or occupation inimical to the purposes of designation of the area; and
- provide a foundation for spiritual, scientific, educational, recreational and visitor opportunities, all of which must be environmentally and culturally compatible.

Objectives:

- to protect natural and scenic areas of national and international significance for spiritual, scientific, educational, recreational or tourist purposes;
- to perpetuate, in as natural a state as possible, representative examples of physiographic regions, biotic communities, genetic resources, and species, to provide ecological stability and diversity;
- to manage visitor use for inspirational, educational, cultural and recreational purposes at a level that will maintain the area in a natural state or near natural state;
- to eliminate and thereafter prevent exploitation or occupation inimical to the purposes of designation;
- to maintain respect for the ecological, geomorphologic, sacred and aesthetic attributes which warranted designation; and
- to take into account the needs of indigenous people, including subsistence, in so far as these will not adversely affect the other objectives of management.

CATEGORY III NATURAL MONUMENT: PROTECTED AREA MANAGED FOR CONSERVATION OF SPECIFIC NATURAL FEATURES

Area containing one or more specific natural or natural/cultural features which are of outstanding value because of inherent rarity, representative or aesthetic qualities or cultural significance.

Objectives:

- to protect or preserve in perpetuity specific outstanding natural features because of their natural significance, unique or representational quality, and/or spiritual connotations;
- to an extent consistent with the foregoing objective, to provide opportunities for research, education, interpretation and public appreciation;

- to eliminate and thereafter prevent exploitation or occupation inimical to the purpose of designation; and
- to deliver to any resident population such benefits as are consistent with the other objectives of management.

CATEGORY IV HABITAT/SPECIES MANAGEMENT AREA: PROTECTED AREA MANAGED MAINLY FOR CONSERVATION THROUGH MANAGEMENT INTERVENTION

Area of land and/or sea subject to active intervention for management purposes so as to ensure the maintenance of habitats and/or to meet the requirements of specific species.

Objectives:

- to secure and maintain the habitat conditions necessary to protect significant species, groups of species, biotic communities or physical features of the environment, where these require specific human manipulation for optimum management;
- to facilitate scientific research and environmental monitoring as primary activities associated with sustainable resource management;
- to develop limited areas for public education and appreciation of the characteristics of the habitats concerned and of the work of wildlife management;
- to eliminate and thereafter prevent exploitation or occupation inimical to the purposes of designation; and
- to deliver such benefits to people living within the designated areas as are consistent with the other objectives of management.

**CATEGORY V PROTECTED
LANDSCAPE/SEASCAPE: PROTECTED
AREA MANAGED MAINLY FOR
LANDSCAPE/SEASCAPE CONSERVATION
AND RECREATION**

Area of land, with coast and seas as appropriate, where the interaction of people and nature over time has produced an area of distinct character with significant aesthetic, cultural and/or ecological value, and often with high biological diversity. Safeguarding the integrity of this traditional interaction is vital to the protection, maintenance and evolution of such an area.

Objectives:

- to maintain the harmonious interaction of nature and culture through the protection of landscape and/or seascape and the continuation of traditional land uses, building practices and social and cultural manifestations;
- to support lifestyles and economic activities which are in harmony with nature and the preservation of the social and cultural fabric of the communities concerned;
- to maintain the diversity of landscape and habitat, and of associated species and ecosystems;
- to eliminate where necessary, and thereafter prevent, land uses and activities that are inappropriate in scale and/or character;
- to provide opportunities for public enjoyment through recreation and tourism, appropriate in type and scale to the essential qualities of the areas;
- to encourage scientific and educational activities that will contribute to the long-term wellbeing of resident populations and to the development of public support for the environmental protection of such areas; and
- to bring benefits to, and to contribute to the welfare of, the local community through the provision of natural products (such as forest and fisheries products) and services (such as clean water or income derived from sustainable forms of tourism).

**CATEGORY VI
MANAGED RESOURCE PROTECTED
AREAS: PROTECTED AREA MANAGED
MAINLY FOR THE SUSTAINABLE USE OF
NATURAL ECOSYSTEMS**

Area containing predominantly unmodified natural systems, managed to ensure the long-term protection and maintenance of biological diversity, while providing a sustainable flow of natural products and services to meet community needs.

Objectives:

- to protect and maintain the biological diversity and other natural values of the area in the long term;
- to promote sound management practices for sustainable production purposes;
- to protect the natural resource base from being alienated for other land-use purposes that would be detrimental to the area's biological diversity; and
- to contribute to regional and national development.

Source: IUCN (1994).

APPENDIX 4

OCCURRENCE OF MARINE PROTECTED AREAS IN IMCRA REGIONS

IMCRA meso-scale bioregion	Code	Area (sq km)	Area of MPAs (sq km)	% of bioregion as MPA
Abrolhos Islands	ABR	6,645	0	0
Anson Beagle	ANB	20,499	2.79	< 0.01
Arafura	ARA	154,999	0.91	< 0.01
Arnhem Wessel	AWS	27,439	0	0
Batemans Shelf	BAT	6,175	222.03	3.60
Boags	BGS	8,271	0	0
Bonaparte Gulf	BON	41,656	0	0
Bruny	BRU	7,288	1.12	0.02
Cambridge–Bonaparte	CAB	14,962	0	0
Canning	CAN	20,015	0	0
Carpentaria	CAR	228,965	0	0
Central Bass Strait	CBS	50,331	0	0
Central Reef	CRF	31,389	31,370	99.94
Central Victoria	CVA	4,378	17	0.38
Central West Coast	CWC	26,186	94	0.36
Cobourg	COB	10,294	999	9.70
Coorong	COR	31,972	0.65	<0.01
Davey	DAV	6,794	0	0
Eyre	EYR	72,165	36	0.05
East Cape York	ECY	14,535	12,189	83.85
Eighty Mile Beach	EMB	9,724	0	0
Eucla	EUC	111,115	11,545	10.39
Flinders	FLI	16,916	119	0.70
Franklin	FRA	10,364	0	0
Freycinet	FRT	8,079	19.38	0.24
Groote	GRO	19,440	0	0
Hawkesbury Shelf	HAW	11,424	6.45	0.06
Karumba–Nassau	KAN	55,998	335	0.60
Kimberley	KIM	76,977	0	0
King Sound	KSD	4,200	0	0
Leeuwin–Naturaliste	LNE	26,575	64	0.24
Lucinda–Mackay Coast	LMC	15,634	14,954	95.65
Mackay–Capricorn	MCN	54,967	54,967	100.00
Manning Shelf	MAN	7,682	0.75	0.01
Murat	MUR	35,587	0	0
Ningaloo	NIN	7,339	3,497	47.65
North Spencer Gulf	NSG	4,448	78	1.76
North West Shelf	NWS	153,970	0	0

IMCRA meso-scale bioregion	Code	Area (sq km)	Area of MPAs (sq km)	% of bioregion as MPA
Oceanic Shoals	OSS	246,404	7,404	3.00
Otway	OTW	37,331	0	0
Pellew	PEL	25,506	0	0
Pilbara (nearshore)	PIN	13,861	68	0.49
Pilbara (offshore)	PIO	41,492	240	0.58
Pompey–Swains	PSS	56,374	56,374	100.00
Ribbons	RBN	47,830	42,592	89.05
Spencer Gulf	SGF	11,875	0.54	< 0.01
St Vincent Gulf	SVG	12,838	58	0.45
Shark Bay	SBY	14,071	8,730	62.04
Shoalwater Coast	SCT	20,655	18,224	88.23
Tiwi	TWI	5,105	0	0
Torres Strait	TST	36,233	0	0
Tweed–Moreton	TMN	42,713	6,321	14.80
Twofold Shelf	TWO	32,198	0.98	< 0.01
Victorian Embayments	VES	3,370	365	10.83
Van Diemen Gulf	VDG	17,011	1,268	7.45
WA South Coast	WSC	47,311	0	0
Wellesley	WLY	27,274	57	0.21
West Cape York	WCY	21,664	0	0
Wet Tropic Coast	WTC	6,000	4,539	75.65
Zuytdorp	ZUY	38,954	1.15	< 0.01
Totals		2,221,469	276,757	12.46
IMCRA PROVINCES (PROPOSED)				
Australian Antarctic Province	AAP	11,795,552	0	0
Sunda Province (a) Christmas Island	SunP (a)	416,572	0	0
Sunda Province (b) Cocos (Keeling) Islands	SunP (b)	475,054	2	0
Kerguelen Province	KergP	NA	0	NA
Macquarie Province	MacP	0	0	0
Norfolk Province (a) Norfolk Island	Norfp (a)	2,119,278	0	0
Norfolk Province (b) Lord Howe	Norfp (b)	NA	0	NA
Norfolk Province (c) Elizabeth and Middleton Reefs	Norfp (c)	NA	188	NA
Totals		NA	190	NA
OTHER COMMONWEALTH MPAS				
Great Barrier Reef (not in meso-scale regions)	NA	3,424,479	NA	NA
Coringa–Herald	NA	NA	885	NA
Lihou Reef	NA	NA	843	NA
Totals		NA	1728	NA

Note: NA = Not available.

Due to paucity of some data the results should be considered as illustrative.

APPENDIX 5

ORGANISATIONAL ARRANGEMENTS, PLANNING PROCESSES AND RELEVANT LEGISLATION FOR EACH JURISDICTION

The information included in the following sections is based on the current uncertain situation with regard to what MPAs are included in the NRSMPA. Some MPAs referred to may not be a part of the NRSMPA once the set of characteristics of an MPA (refer to section 2.6, Characteristics of the NRSMPA) is applied. Jurisdictions are listed in alphabetical order.

COMMONWEALTH

Background

The Commonwealth Government has given a commitment to expand Australia's existing system of marine protected areas in Commonwealth waters. In September 1997, the Minister for the Environment and Heritage announced the Government's intention to develop an accelerated program, pursuing a number of new parks. This commitment was reaffirmed through *Australia's Oceans Policy* (Commonwealth of Australia 1998), which identifies the need to protect marine biodiversity, through Regional Marine Planning including through MPAs in a multiple-use framework.

Environment Australia is currently undertaking the development of MPAs through a Commonwealth -endorsed strategy. A comprehensive and long-term Marine Protected Areas Strategy for Commonwealth waters, which links to the development of the NRSMPA, is being developed. Focus is being placed not only on the establishment of new MPAs, but on ensuring that a representative system of reserves is developed. Existing Commonwealth MPAs are concentrated in Australia's tropical waters. The Commonwealth is looking to broaden the agenda to include areas in Australia's temperate and sub-Antarctic waters.

Organisational arrangements for MPAs in Commonwealth waters

Commonwealth MPAs are established under the *National Parks and Wildlife Conservation Act 1975*. The National Parks and Wildlife Conservation Act provides for the establishment of parks and reserves over areas of land or sea where there is a constitutional basis for Commonwealth interest. These areas may be named as National Parks or given some other designation and may only be revoked by a resolution of both Houses of Parliament. Management plans must be prepared and subjected to public comment and scrutiny by both Houses of Parliament.

The legislative mandate supporting the Commonwealth component of the NRSMPA also includes the *Whale Protection Act 1982*, *Endangered Species Protection Act 1992*, *Great Barrier Reef Marine Park Act 1975*, *Antarctic Treaty (Environment Protection) Act 1980*, *Heard Island and McDonald Island Act 1953*, and the *Historic Shipwrecks Act 1976*.

The Director of National Parks and Wildlife is responsible for parks and reserves proclaimed under the National Parks and Wildlife Conservation Act. The Australian National Parks and Wildlife Service is responsible for the management of Commonwealth MPAs, excluding the Great Barrier Reef Marine Park (GBRMP), which is managed by the Great Barrier Reef Marine Park Authority, established under the *Great Barrier Reef Marine Park Act 1975*. The Antarctic Division of the Department of the Environment and Heritage is responsible for administration of the Australian Antarctic Territory and the Territory of Heard Island and the McDonald Islands. The Australian and World Heritage Group of Environment Australia administers the *Historic Shipwrecks Act 1976*.

The Great Barrier Reef Marine Park Act created the GBRMP and includes provisions that:

- enable the control, care and development of the GBRMP (through, for example, zoning plans and plans of management);
- recognise that the GBRMP should allow 'multiple-use' management (note that 'reasonable use' of the GBRMP is a statutory right);
- prohibit drilling and mining, except for research (note that the Act also takes precedence over most other legislation in that area);
- established a single independent Federal agency for management (the GBRMPA);
- established a three-person 'board' (the Authority), which has since been amended to four persons; and
- set out the process for regulations, public involvement in zoning, a Consultative Committee, and so on.

The GBRMP is the world's largest marine protected area (339,750 sq km and over 2000 km long). It extends from Low Water Mark (in most areas) seaward but *does not include* the intertidal areas or islands (they are under State jurisdiction); it also extends up to 3000 feet above sea level. Management of the GBRMP relies heavily on:

- strong cooperation with the State (that is, Queensland) Government through formal agreements, and with various other departments, industry, research institutions and universities (especially through the Co-operative Research Centre);
- complementary legislation for most adjoining State waters; and
- strategic plans, zoning plans and site-specific management plans.

Processes for identification, selection, declaration and management planning

The current candidate areas were selected from an established indicative list of potential MPAs. The areas were selected on the basis of existing information indicating high biodiversity values and their representativeness. The IMCRA coverage for

Commonwealth waters is at a broad scale. IMCRA is being used as a planning framework to determine representativeness at this broad scale. It is intended that, as the Commonwealth MPA strategy develops, the indicative list will be expanded in accordance with the Guidelines. The development of priorities will utilise information from the gap analysis, biodiversity values analysis, as well as information about threatening processes and other attributes.

There are three stages which outline the process for the declaration of MPAs: the pre-declaration process, the process for declaration and the post-declaration process. The Commonwealth Government acknowledges that the involvement and active participation of all users of the marine environment is critical to the successful development, implementation and management of MPAs. There are opportunities for consultation with stakeholders throughout each process.

Pre-declaration process

- Environment Australia (EA) investigates the conservation attributes of the relevant area.
- Informal consultation is initiated with key stakeholders to develop a scope for the proposal.
- A Commonwealth steering committee seeks to agree on a broad set of MPA options for the region, and the consultation process.
- Targeted consultation occurs with stakeholders to negotiate MPA options for the area.
- The Commonwealth steering committee considers options for an MPA.
- A final report is prepared outlining a detailed MPA proposal with management options and zoning arrangements, and is submitted to the Minister for the Environment and Heritage.
- The Minister for the Environment and Heritage consults with relevant Commonwealth ministers.

Process for declaration

- The Director of National Parks and Wildlife (the Director) issues a public notice indicating an intention to recommend the declaration of the protected area.

- The public comment period is open for a minimum of 60 days following publication of the notice.
- The Director submits a report to the Executive Council recommending proclamation through the Minister for the Environment and Heritage.
- The area is proclaimed by the Governor-General in Council.
- The proclamation is Gazetted.

Post-declaration process

- The Director issues a public notice of intention to prepare a plan of management for the area and invites interested persons to make representations on the proposed plan.
- A draft management plan is prepared.
- The draft plan is made public and representations invited from interested people.
- The final plan, together with the public representations and the Director's comments on the representations, is submitted to the Minister for the Environment and Heritage.
- The Minister for the Environment and Heritage accepts the plan (or it is referred back to Environment Australia for refinement).
- The plan of management is laid before both Houses of Parliament; if neither House passes a motion disallowing the plan within 20 sitting days, the plan comes into effect.
- The Minister for the Environment and Heritage issues a public notice as soon as practicable stating that the plan of management has come into operation.

Planning for the GBRMP is not dissimilar to the above process, with only minor differences for the agency involved (GBRMPA) and the statutory obligations. The Great Barrier Reef Marine Park Act provides for statutory plans of management for the following:

- one or more areas of the marine park;
- one or more species within the marine park or within an area or areas of the marine park; or
- one or more ecological communities within the marine park or within an area or areas of the marine park.

NEW SOUTH WALES

Background

The *National Strategy for the Conservation of Australia's Biological Diversity* (Commonwealth of Australia 1996) commits NSW to establishing and managing 'a comprehensive, adequate and representative system of protected areas covering Australia's biological diversity'. This commitment has been incorporated into *Biodiversity – Life's Variety: Draft New South Wales Biodiversity Strategy* (NPWS 1997). The strategy sets a performance target of 'a comprehensive, adequate and representative reserve system established for terrestrial (other than forest reserves) and marine ecosystems by 2010'.

On behalf of the Marine Parks Authority, NSW Fisheries and the NSW National Parks and Wildlife Service (NPWS) are cooperatively developing a Framework for the Establishment of a Representative System of Marine Protected Areas for NSW.

The *New South Wales Coastal Policy* (DUAP 1997) calls for the addition of the intertidal zone adjacent to National Parks and other lands reserved under the *National Parks and Wildlife Act 1974*. The NPWS and NSW Fisheries are currently examining the most effective means of achieving the reservation of these lands.

New South Wales currently has three marine parks – the Solitary Islands Marine Park, Jervis Bay Marine Park and Lord Howe Island Marine Park – which are declared under the *Marine Parks Act 1997*. The Solitary Islands Marine Park has replaced the former Solitary Islands Aquatic Reserve declared under the *Fisheries Management Act 1994*.

There are seven aquatic reserves declared under the Fisheries Management Act. Another aquatic reserve (Cook Island) has been proposed and is likely to be declared in the near future.

There are nearly 70 MPAs reserved under the National Parks and Wildlife Act within 35 national parks, historic sites or nature reserves. They consist principally of estuarine and intertidal lands but include some marine waters.

Organisational arrangements for MPAs in New South Wales

MPAs can be declared under a number of Acts in New South Wales. The Marine Parks Act has established a Marine Parks Authority that comprises the heads of NSW Fisheries, NPWS and the Premier's Department. The Marine Parks Act requires the Authority to investigate marine areas to develop a comprehensive system of marine parks in New South Wales. Aquatic reserves can be declared under the Fisheries Management Act. MPAs have also been reserved under the National Parks and Wildlife Act.

The National Parks and Wildlife Act provides for the protection of plants and fauna (with fauna defined as mammals, birds, reptiles and amphibians). The Act excludes fish and other aquatic animals (other than fauna) which are covered by the Fisheries Management Act, administered by NSW Fisheries. The NPWS is responsible for protecting cultural heritage, including Aboriginal sites and places.

The *Wilderness Act 1987* provides for the declaration of wilderness areas. There is currently one coastal wilderness area, the Nadgee wilderness area, which includes estuarine lands in its boundaries. There are no marine wilderness areas in NSW, but the Wilderness Act does not preclude them.

Processes for identification, selection, declaration and management planning

The Marine Parks Authority has proposed that progressive bioregional assessments investigate and map ecosystem units over the next three years. These will form the basis for deciding on potential marine parks and other MPAs. Regional and local assessment will be based on the *Guidelines*. The development of methodology to implement these *Guidelines* is the subject of a 1998 Natural Heritage Trust funding proposal.

The pre-declaration and declaration processes under the National Parks and Wildlife Act and the Fisheries Management Act are well established. These include non-statutory processes for consultation with government departments and/or

the public. The pre-declaration and declaration processes for marine parks declared by the Marine Park Authority have not been finalised. The Marine Parks Act sets out the legal declaration process, including reference to the role of the Authority and an Advisory Council in the declaration process. No formal nomination process is required before an assessment may be undertaken.

Marine park zoning planning and operational planning must commence as soon as practicable after the declaration of a marine park. A statutory three-month period of public consultation and public exhibition is required for both zoning and operational plans.

NORTHERN TERRITORY

Background

Little is known about the Northern Territory's marine habitats. Existing databases on marine fish, corals and shellfish are too scant to allow for analysis of the comprehensiveness, adequacy and representativeness of the marine component of the Northern Territory park system. While much has been done to monitor fish stocks and to collect specimens for museums, very few surveys have attempted to document the range of habitats in the seas of the Northern Territory.

The Parks and Wildlife Commission of the Northern Territory (PWCNT) has recently begun to rectify this situation, undertaking surveys in the Darwin region in collaboration with museums and art galleries of the Northern Territory. The deeper waters of the Gulf of Carpentaria have been mapped by the CSIRO.

The Northern Territory currently has a single marine park, Cobourg Marine Park, and two aquatic reserves, Doctors Gully Aquatic Reserve and East Point Aquatic Reserve. A number of terrestrial parks provide significant protection for associated marine elements within their intertidal and estuarine portions. These include Kakadu National Park, Djukbinj National Park, Casuarina Coastal Reserve and the proposed Mary River National Park.

The recently developed *Northern Territory Parks Masterplan* (PWCNT 1997) sets the direction for the future establishment of a comprehensive, adequate and representative system of both terrestrial and marine parks. IMCRA identifies 60 individual regions, including 12 for the Northern Territory. Of the 12 regions in Northern Territory waters, eight are located exclusively within its borders.

Organisational arrangements for MPAs in the Northern Territory

The PWCNT has the powers to declare marine parks or reserves under the Territory Parks and Wildlife Conservation Act. The Department of Primary Industries and Fisheries (DPIF) is able to declare aquatic reserves under the Fisheries Act. A Memorandum of Understanding has been developed between the PWCNT and DPIF outlining management responsibilities between the two agencies in respect of MPAs. In general, PWCNT is responsible for the management of birds, reptiles and mammals, whilst DPIF is responsible for management of all other aquatic life within MPAs.

Cobourg Marine Park was declared under the Territory Parks and Wildlife Conservation Act. The Park is managed by a board established under the *Cobourg Peninsula Aboriginal Land, Sanctuary and Marine Park Act 1996* within the auspices of the Territory Parks and Wildlife Conservation Act and the Fisheries Act. A plan of management is currently being prepared for this park.

Processes for identification, selection, declaration and management planning

The PWCNT in collaboration with DPIF will commence the development of a Northern Territory Marine Conservation Strategy in 1999. The strategy will identify gaps in the knowledge base concerning the marine environment, assess marine ecological values, assess existing and potential threats to those values, and identify candidate MPAs. At present, the PWCNT is developing techniques to enable rapid assessment of the marine environment.

These techniques include the use of sonar, remote sensing and benthic grab techniques. The techniques will be initially trialed at Cobourg Marine Park, then used extensively across Northern Territory waters to obtain data on habitat types within IMCRA regions.

Development of the Northern Territory Marine Conservation Strategy will involve consultation with those government departments with an interest in the marine environment, industry groups such as the fishing and mining industries, Aboriginal groups and other key stakeholders, such as environmental and recreational groups. At present, 84% of the Northern Territory coastline is in Aboriginal ownership.

To facilitate community involvement in the establishment of MPAs and to bring scientific rigour to the selection of MPAs and associated research, two stakeholder committees will be established:

- The Marine Parks Community Advisory Committee will comprise representation from government, the Aboriginal community, major recreational and commercial user groups and community environmental interests. The role of the Community Advisory Committee will be to review the broad processes and procedures of establishment of marine parks and reserves.
- The Marine Parks Scientific Advisory Committee will include representatives of scientific, and management agencies with expertise in marine science and marine resource management. This committee will provide advice concerning the management of MPAs and will be involved in the design and implementation of research and monitoring programs.

QUEENSLAND

Background

Queensland has six marine parks declared under the *Marine Parks Act 1982*. In addition to these marine parks, the Great Barrier Reef Marine Park, declared under the Commonwealth *Great Barrier Reef Marine Park Act 1975*, extends into Queensland coastal waters.

The Queensland Government's approach to declaration of marine parks has been to give highest priority to the implementation of complementary State and Commonwealth zoning for effective protection of the Great Barrier Reef Region. Declaration of the Cape York Marine Park will be the final step in this process. Queensland currently has three marine parks in the Great Barrier Reef Region, namely the Cairns, Townsville–Whitsunday and Mackay–Capricorn Marine Parks.

Other marine parks have been established at Hervey Bay, to facilitate management of whale watching activities, at Woongarra, to protect the nesting habitat of loggerhead turtles and areas of fringing reef, and at Moreton Bay, which is a Ramsar site and is the most intensively used marine area in the State.

Several of Queensland's national parks declared under the *Nature Conservation Act 1992* also extend into the marine environment. There is an extensive system of fish habitat areas, declared under the *Fisheries Act 1994*, which provide for the protection of important fish habitat and nursery grounds.

Queensland is currently developing a Strategy for Marine Protected Areas that will complement and enhance the existing reserve system. The strategy will include a framework for identification and declaration of future MPAs, representative of the range of marine ecosystems within Queensland's waters.

In the short term, declaration of marine parks on eastern Cape York Peninsula and at Trinity Inlet near Cairns will be brought to completion. Subsequently, proposals will be prepared for the Gulf of Carpentaria and for areas on the east coast not adequately protected in the current system of marine parks. Concepts for protection of marine areas in Torres Strait will be investigated in cooperation with Torres Strait Islander representative bodies, with a view to the potential consideration of MPAs in a culturally relevant context.

Organisational arrangements for MPAs in Queensland

The Department of Environment and Heritage is responsible for administration of the Queensland Marine Parks Act, which provides for the establishment of marine parks over tidal lands and waters. The Act also provides for the preparation of zoning plans, which identify appropriate forms of use in different zones within a marine park. In the Great Barrier Reef Region, Queensland marine parks are zoned to complement the zoning of the Great Barrier Reef Marine Park, and the Queensland and Commonwealth Governments have implemented joint management arrangements.

The Queensland Department of Primary Industries is the management authority for fish habitat areas.

Processes for identification, selection, declaration and management planning

The Queensland Strategy for Marine Protected Areas will provide the framework for the identification and selection of candidate areas for MPAs. The framework will have regard to conservation of marine biodiversity and protection of rare and endemic species and communities, as well as broad-scale habitat and ecosystem protection.

The planning of a representative system of MPAs will involve the identification of gaps in the current system and the identification of a list of candidate MPAs. This will involve analysis of the existing system of MPAs within the jurisdictional responsibilities of Queensland having regard to IMCRA.

Identification of a list of candidate MPAs

The Queensland Strategy for Marine Protected Areas will define goals and objectives for the development of a classification system of habitats and ecosystems below the bioregional level as identified in IMCRA. The classification of ecosystems and habitats will involve preliminary habitat mapping in selected bioregions along the coast.

During the planning of an MPA, threatening processes will be evaluated to ensure that the integrity of the marine park is not compromised.

The *Queensland Marine Parks Act 1982* and the *Marine Parks Regulation 1990* outline the statutory requirements for the declaration of marine parks and the development of zoning plans and management plans. The following steps outline the usual process for gazettal of a marine park and approval of a zoning plan:

- Notification by Minister of an ‘area of interest’
- Public input (first round)
- Review of submissions
- Drafting of formal marine park proposal
- Public input (second round)
- Review of submissions
- Formal recommendation to Minister with analysis of submissions
- Legislative drafting
- Cabinet and Governor in Council approval
- Gazettal.

SOUTH AUSTRALIA

Background

Existing MPAs in South Australia are not the outcome of a deliberate strategy to represent marine biodiversity. Each MPA was created for a specific purpose, mainly in relation to single species protection, fisheries habitat protection and fisheries management. The *Marine and Estuarine Strategy for South Australia* (South Australian Government 1998) endorses a representative system of MPAs in South Australian waters. South Australia recognises the commitments made under other protocols and agreements to work towards its contribution to the NRSMPA.

Organisational arrangements for MPAs in South Australia

The Department for Environment, Heritage and Aboriginal Affairs and the Department of Primary Industries and Resources both have the ability to create MPAs with existing legislation. Both agencies work cooperatively in respect to the development of MPAs. The Department for

Environment, Heritage and Aboriginal Affairs has responsibility for the *National Parks and Wildlife Act 1972*, while the Department of Primary Industries and Resources administers the *Fisheries Act 1982*.

Processes for identification, selection, declaration and management planning

A current project is using the IMCRA bioregions and also smaller biounits to identify marine areas of conservation importance for biodiversity protection. These areas will be used as the basis for identifying candidate areas for a representative system of MPAs in SA waters.

The following steps were applied in relation to the establishment of the Great Australian Bight Marine Park. This includes both the Great Australian Bight Marine Park Whale Sanctuary, proclaimed under the Fisheries Act, and the Great Australian Bight Marine Park, proclaimed under the National Parks and Wildlife Act.

- Pre-declaration consultation with community and industry concerning location, intent, size and management of the park through a series of workshops and the formation of a consultative committee.
- Proclamation, initially under the Fisheries Act, to establish a sanctuary at the Head of the Bight and subsequently, under the National Parks and Wildlife Act, to establish a multiple-use marine park with a series of sanctuaries for protection of the Australian Sea Lion.
- Draft management plan prepared.
- Public consultation for a period of three months.
- Drafting of final management plan and resource information document, incorporating public comment.

TASMANIA

Background

The existing MPA strategy for Tasmania is the *Joint Policy for the Establishment and Management of Marine Reserves in Tasmania* (Tasmanian Government 1990). The 1990 joint policy represented a major government initiative

in this area, and has formed the backbone of the Tasmanian marine reserves strategy up to the present time. The 1990 joint policy is currently in the process of being updated.

In September 1991, the first four marine reserves were proclaimed under the existing joint policy, all on the east coast of Tasmania and totalling 2,050 ha (Maria Island, Governor Island, Tinderbox and Ninepin Point). Two new MPA proposals currently under development for Port Davey/Bathurst Harbour and the Kent Group of islands also follow the objectives of the 1990 joint policy.

Priorities for consideration as part of Tasmania's MPA strategy include:

- preparation of proposals for representative MPAs in those bioregions which are as yet not represented in the marine reserve system;
- evaluation of MPA proposals received by the peak fishing bodies (the Tasmanian Fishing Industry Council and the Tasmanian Amateur Sea Fishermen's Association), other stakeholder bodies and the public;
- ongoing consultation with stakeholder groups, particularly fishing groups, and the organisation of workshops and seminars to exchange ideas and information on issues such as bioregionalisation and fish propagation;
- declaration of the waters around Macquarie Island as a marine reserve, covering the Insular Antarctic biogeographic region;
- reviewing the reserve boundaries of the Maria Island Marine Reserve to make it a fully representative marine reserve for the Freycinet bioregion;
- more detailed mapping of nearshore and offshore marine habitats, following on from the almost-completed 1:100,000 nearshore habitat mapping project; and
- continuation of the monitoring programs in the existing marine reserves, to assess biological changes resulting from reserve declaration and protection from fishing.

Organisational arrangements for MPAs in Tasmania

Marine reserves are managed jointly by the Parks and Wildlife Service of the Department of Environment and Land Management, under the

National Parks and Wildlife Act 1970, and the Marine Resources Division of the Department of Primary Industry and Fisheries, under the *Living Marine Resources Management Act 1995*.

The Department of Environment and Land Management is responsible for the protection of marine creatures such as seals and seabirds, reservation, interpretation, enforcement and day-to-day management. Day-to-day management responsibility rests with rangers on adjacent terrestrial national parks. The Department of Primary Industries and Fisheries is responsible for the conservation of fish, fishing regulations and enforcement, and also undertakes monitoring and research. The Marine Police, together with Fisheries officers, are responsible for the enforcement of prohibitions regarding the taking of fish from marine reserves. The duties are undertaken as part of the general functions of the Marine Police and are not identified separately.

Processes for identification, selection, declaration and management planning

Tasmanian nearshore waters have been divided into eight major marine bioregions in IMCRA. Diving surveys of all the major shallow reef areas are conducted to identify bioregions based on differences between the communities of reef plants and animals. Surveys of other marine habitats and communities have also been undertaken or are underway. For example, estuaries around Tasmania have been recently surveyed and comprehensive surveys of seabirds and seals have been undertaken.

Selection of representative areas

Within each bioregion, the survey results are examined to identify the most suitable sites for representative MPAs. Ideally, representative areas should:

- include a large range of habitats;
- if adjacent to land, have their surrounding shorelines and watersheds already protected from human impacts;
- have a total coastal length of at least 10 km;

- have a history of minimal commercial and recreational fishing; and
- lack other human impacts.

These criteria have been proposed for adoption as the basis for selecting the two current representative MPAs in Tasmania. The first three criteria (which are biological and environmental criteria) are basic to the requirements of a representative MPA. In reality, it is unlikely that a proposed site will fit all five criteria. Social and economic factors also need to be considered and incorporated. Decisions on actual boundaries and management policies for a reserve will be made after, and with consideration of, public consultation on the reserve proposal.

Pre-declaration process

The pre-declaration process involves extensive consultation with stakeholders before the proposal is released for public consultation.

Declaration process

Under the Living Marine Resources Management Act, all draft proposals allow 30 to 90 days for public consultation, then they are declared by the Minister. Under the National Parks and Wildlife Act, proposals have to be approved by both Houses of Parliament. MPAs may be declared under both Acts and it is proposed that, where relevant, future MPAs will be declared under both Acts.

Management Planning

Under the National Parks and Wildlife Act, a management plan is prepared after declaration, with a minimum of 30 days allowed for public consultation following the placement of advertisements in relevant newspapers. The Minister makes the final decision. Under the Living Marine Resources Management Act, the management planning process is the declaration process.

VICTORIA

Background

The *Victorian Coastal Strategy* (Victorian Coastal Council 1997) includes as a priority 'to establish and manage a representative system of MPAs and

coastal parks and reserves'. Victoria's biodiversity strategy (DNRE 1997) includes a key management approach 'to establish a comprehensive, adequate and representative reserve system of marine parks'.

The development of Victoria's existing MPA system has taken place over the past 20 years, beginning with the establishment of five small marine reserves in southern Port Phillip Bay in 1979. Since then, seven additional MPAs have been established, one in northern Port Phillip Bay and the remainder in south Gippsland.

In 1991, the Land Conservation Council commenced an investigation of Victoria's marine, coastal and estuarine environment. A descriptive report was published in 1993, followed by proposed recommendations in 1995 and draft final recommendations in 1996. In 1997, the Environment Conservation Council, established under new legislation, replaced the Land Conservation Council. New terms of reference required the Environment Conservation Council to, among other things, make recommendations on a preferred approach and priorities for the progressive establishment of a representative system of marine parks in Victoria.

The Council's February 1998 interim report (Environment Conservation Council 1998) recommended the establishment of a marine park of 17,453 ha at the southern end of Port Phillip Bay, and sought comment on management guidelines and recommendations for marine, coastal and estuarine areas, and principles for the selection and management of marine parks. A full report will be finalised by June 2000, making recommendations for the whole of Victoria's marine, coastal and estuarine areas.

Organisational arrangements for MPAs in Victoria

The Department of Natural Resources and Environment manages MPAs in Victoria under legislation including the *National Parks Act 1975*, the *Fisheries Act 1995* and the *Crown Land (Reserves) Act 1978*. The Department's Parks Program has responsibility for development of a representative protected area network and the provision of natural and cultural resource

management, and visitor and tourism services. Park management services are delivered across Victoria through an agreement with Parks Victoria, the State's primary provider of such services. The Fisheries Program is responsible for the management of commercial, recreational and aquaculture use within the context of ecologically sustainable development. Where such activities continue within MPAs, the Parks and Fisheries Programs will develop cross-program arrangements for management.

Following the Victorian Government's response to the Environment Conservation Council report (see above), the Department of Natural Resources and Environment Parks Program will be responsible for implementation of the recommendations relating to MPAs.

Processes for identification, selection, declaration and management planning

The Environment Conservation Council has responsibility for the identification and selection of MPAs. Potential areas will be identified on the basis of representation of both the IMCRA regions and the habitats and substrate types within these regions. Victoria is carrying out a systematic process to collect baseline data through the Environmental Inventory of Victoria's Marine Ecosystems project. The completion of the ecological classification of soft benthic habitats along the open coast is a priority.

The pre-declaration process for additions to the existing MPA system in Victoria occurs through the Environment Conservation Council's Marine, Coastal and Estuarine Investigation. The process is highly consultative, with four reports to date widely available as a basis for public comment. The Victorian Government will respond to the Council's recommendations, and implementation will be through legislation. Declaration of new areas will generally occur either by amending primary legislation or through subordinate instruments such as Orders of the Governor in Council. The management planning process will include a period of public comment before finalisation of an approved plan for

implementation. Interim Management Statements may be prepared to guide park management until a management plan is prepared; in this case, public comment would not usually be sought.

WESTERN AUSTRALIA

Background

In 1998, the Western Australian Government released the strategy: *New Horizons – The way ahead in marine conservation and management* (CALM 1998). The principal thrust of the marine conservation effort is to have one comprehensive marine reserve system under the Conservation and Land Management Act 1984 (CALM Act). Amendments to the CALM Act and other Acts via the Acts Amendment (Marine Reserves) Act 1997 provide a mechanism to create a world class multiple-use MPA system.

The key elements of the strategy are:

- a Marine Parks and Reserves Authority, in which marine conservation reserves are vested, supported by a specialist Scientific Advisory Committee;
- the adoption of a three-tiered approach to marine conservation reserve categories – Marine Nature Reserves, Marine Parks and Marine Management Areas;
- extensive assessment, community consultation and management planning before a new marine conservation reserve is established;
- specific guidelines for access by industry to the various categories of marine conservation reserves and the zones within those reserves; and
- specific guidelines for fishing, aquaculture and pearling interests in marine conservation reserves.

Western Australia has seven existing marine conservation reserves declared under the CALM Act: Rowley Shoals Marine Park, Ningaloo Marine Park, Shark Bay Marine Park, Hamelin Pool Marine Nature Reserve, Marmion Marine Park, Shoalwater Islands Marine Park and Swan Estuary Marine Park. Currently, a marine conservation

reserve proposal is being developed for the Jurien Bay area on the central west coast.

In December 1997, the State Government announced three new high priority areas for implementation of marine conservation reserves after considering the advice of the Marine Parks and Reserves Authority. The three areas are the Montebello Islands–Barrow Island group, the Dampier Archipelago on the North West Shelf, and the Geographe Bay–Capes–Hardy Inlet region in the south-west of the State.

Organisational arrangements for MPAs in Western Australia

The Department of Conservation and Land Management manages all marine conservation reserves vested in the Marine Parks and Reserves Authority. The Department is also responsible for preparing and implementing management plans for each reserve. Marine conservation reserves may also be established under special legislation, such as the *Rottneet Island Authority Act 1987*.

Fish Habitat Protection Areas can be created under the *Fish Resources Management Act 1994* and are developed and managed by Fisheries Western Australia. In addition, Fisheries Western Australia protects marine resources using a number of instruments which prohibit or limit fishing activities in defined areas to protect valuable marine resources. Fishing, aquaculture and pearling in marine conservation reserves are also under the jurisdiction of Fisheries WA. The Department of Transport is responsible for all boating regulations but mooring controls can be delegated to other agencies.

Mineral and petroleum exploration and production are carried out under several acts administered by the Department of Minerals and Energy. The Environmental Protection Authority assesses, reports and makes recommendations on proposals that may significantly affect the marine environment, including marine conservation reserves. The Department of Environmental Protection assists the Environmental Protection Authority in this process and, in addition, administers pollution control legislation.

Processes for identification, selection, declaration and management planning

A statewide review of the marine environment of Western Australia, entitled *A Representative Marine Reserve System for Western Australia* (CALM 1994, known as the Wilson Report), identified a total of about 70 areas, representing the range of marine ecosystems, as candidates for reservation. The priority areas were identified for further investigation as potential marine conservation reserves. These areas were selected because of the need for conservation management, the increasing pressures of use, and public interest in expanding the marine conservation reserve system.

The Marine Parks and Reserves Authority is in the process of adopting a strategic approach to the establishment of a statewide system of multiple-use reserves. This approach is being developed in a Marine Parks and Reserves Scientific Advisory Committee position paper, which describes the prioritising framework, identifies and briefly outlines the rationale for each criterion, and applies the framework to 20 areas identified in the Wilson Report as a working example.

The processes for pre-declaration, declaration and management planning for marine conservation reserves are set out in the CALM Act. These are summarised below:

- The area is identified and its proposed boundaries determined.
- A comprehensive assessment of the area's biological and economic resources and social values is conducted.
- Community liaison and advisory committees are normally set up to assist in the process, including preparation of an indicative management plan and determination of the various management zones proposed.
- The Marine Parks and Reserves Authority prepares a report on a reservation proposal for the Minister for the Environment.
- An indicative management plan outlining the reserve's proposed management objectives and zones is prepared.

- The Ministers for Fisheries and Mines are provided with a reservation proposal for their consideration and agreement before a notice of intent to reserve the area is published.
- When these steps have been completed, the Minister for the Environment formally publishes a notice of intent to declare a marine conservation reserve and releases the indicative management plan for public comment. (All marine conservation reserve proposals will be subject to a minimum three-month public comment period before a final decision by Government.)
- The Marine Parks and Reserves Authority provides the Minister for the Environment with a report on the public submissions received in response to the reservation proposal and the indicative management plan for the proposed marine conservation reserve.
- The concurrence of the Ministers for Fisheries and Mines is obtained.
- The reserve is created by an Order of the Governor.
- The Minister for the Environment tables in each House of Parliament the order to reserve the new marine reserve. Either House can resolve to disallow a reservation order.

GLOSSARY

Adequacy	The maintenance of the ecological viability and integrity of populations, species and communities.
Biodiversity Biological diversity	The variability among living organisms from all sources, including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes the diversity within species, between species and of ecosystems (UNEP 1994).
Bioregion Biogeographic region	An area defined by a combination of biological, social and geographic criteria, rather than by geopolitical considerations. Generally, a system of related, interconnected ecosystems (Commonwealth of Australia 1996).
Blue Pages	Marine and Coastal Data Directory of Australia
CAMBA	Agreement for the Protection of Migratory Birds and Birds in Danger of Extinction and their Environment between the Government of Australia and the Government of The People's Republic of China (1986).
Comprehensiveness	Includes the full range of ecosystems recognised at an appropriate scale within and across each bioregion.
Community	A group of organisms, both animals and plants, living together in an ecologically related fashion in a defined area or habitat.
Ecologically sustainable development (ESD)	Using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained and the total quality of life, now and in the future, can be increased (Commonwealth of Australia 1992b).
Ecosystem	A dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit (UNEP 1994).
Ecosystem-based management	Management, usually of human activities and their effects, which seeks to identify and address direct and indirect effects on ecosystem components and to integrate planning and management activities across sectors within ecosystem-defined units or areas.
Exclusive Economic Zone (EEZ)	The area between the lines 12 nautical miles and 200 nautical miles seaward of the territorial sea baselines. In this area, Australia has the right to explore and exploit living and non-living resources, and the concomitant obligation to protect and conserve the marine environment.
Guidelines	The <i>Guidelines for Establishing the National Representative System of Marine Protected Areas</i> (ANZECC TFMPA 1998).
Habitat	The place or type of site where an organism or population naturally occurs (UNEP 1994).

Highly protected areas	IUCN Protected Area Management Categories I and II (refer to Appendix 3); also known as ‘no take’ areas.
Indicators	Physical, chemical, biological or socioeconomic measures that can be used to assess natural resources and environmental quality, and that are fundamental to the SoE reporting process.
Interim Marine and Coastal Regionalisation for Australia (IMCRA)	<p>An ecosystem-based classification for marine and coastal environments. It provides ecologically based regionalisations at the meso-scale (100–1000 km) and at a provincial scale (greater than 1000 km).</p> <p><i>IMCRA</i> is the bioregional framework for the planning and management of the NRSMPA.</p>
JAMBA	Agreement for the Protection of Migratory Birds and Birds in Danger of Extinction and their Environment between the Government of Australia and the Government of Japan (1974).
Multiple use management	An approach that aims to achieve integration of an acceptable balance of outcomes across the full range of marine uses.
‘No take’ areas	IUCN Protected Area Management Categories I and II (refer to Appendix 3); referred to in text as highly protected areas.
Protected area/marine protected area (MPA)	An area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means (IUCN 1994).
Ramsar site	A site included in the List of Wetlands of International Importance (the “Ramsar List”). The Convention on Wetlands was signed in Ramsar, Iran, in 1971.
Representativeness	Those marine areas that are selected for inclusion in reserves should reasonably reflect the biotic diversity of the marine ecosystems from which they derive.
SoE (State of Environment) reporting	A tool for providing information on the pressures influencing environmental attributes, the state or condition of these and the responses initiated to counter identified pressures.
State waters	Australia’s Offshore Constitutional Settlement established Commonwealth, State and Territory jurisdictions over marine areas. States generally have primary jurisdiction over marine areas to 3 nautical miles from the baseline. These waters are termed State waters for the purpose of this report.
Surrogate	A surrogate is (usually) an element of biodiversity that is used in management to represent, or substitute for, a more complex element of biodiversity that is more difficult to define or measure. Surrogates may also be indicators when they are used for performance assessment purposes.
Territorial sea	The area of sea adjacent to Australia which extends beyond its land territory and internal waters. Australia’s territorial sea extends 12 nautical miles from the baseline.

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