

**MARINE MANAGEMENT SUPPORT:
MIDWEST**

**A STRATEGIC FRAMEWORK FOR MARINE RESEARCH
AND MONITORING OF THE SHARK BAY WORLD
HERITAGE PROPERTY**

**A Report of a Workshop held at the University of Notre Dame
Mouat Street, Fremantle**

12-13 February, 1998

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OVERVIEW

Management goals, objectives and strategies for the Shark Bay Marine Park and Hamelin Pool Marine Nature Reserve, which lie within the Property, are detailed in the CALM Shark Bay Marine Reserves Management Plan (CALM, 1996), prepared in liaison with Fisheries WA. Management goals, objectives and strategies for the fish resources and associated social values of the Property are detailed in the Fisheries WA Management Paper for Fish Resources (Fisheries WA, 1996), prepared in liaison with CALM. These management plans outline broad areas of research and monitoring interest but currently there is no apparent basis for prioritising within or between these broad areas. At present, therefore, there is an absence of a clearly defined framework to identify and prioritize marine research and monitoring in the Property. In the absence of an overall framework, projects submitted for World Heritage funding often reflect the professional research interests of the proponents rather than addressing, systematically, the strategic and tactical institutional concerns and requirements of the management agencies. As such, important management-related areas, such as quantitatively describing the natural environment, developing an understanding of important ecological processes, the extent and cause of natural variability and the value-threat pathways of key threatening processes, are rarely addressed in a systematic and prioritised way.

At present, assessment of applications for World Heritage funding is carried out, at a state level, by an assessment panel comprised of members of the Shark Bay World Heritage Property Scientific Advisory and Community Consultative Committees, and of officers from CALM Midwest Region. The assessment panel reviews each proposal and assesses it against the generic management objective of ensuring ecologically sustainable development in the Property, and also against the list of management strategies (ongoing, short term and medium term) set out in the CALM Shark Bay Marine Reserves Management Plan (CALM, 1996). The panel then forwards the proposals, with comments and an indication of category of support (*Strongly Supported, Support, Support in Principle/Defer, Not Supported*), to the Ministerial Council with a recommendation that those proposals receiving 'strong support' and 'support' are funded. The Ministerial Council endorses these recommendations and forwards the proposals to the World Heritage Unit of Environment Australia, who then select successful proposals and award World Heritage funds. Statutory, planning and administrative frameworks for the Property are summarised in a number of flow charts included as Appendix I.

The management strategies listed in the CALM Shark Bay Marine Reserves Management Plan were assigned a label of 'ongoing' for strategies which are conducted in the day-to-day operations of the Reserves. Other strategies were given a priority of high, medium or low by the Planning Team based on their perceived importance for management of the values of the Reserves. The CALM Management Plan strategy for improving knowledge of the marine environment of Shark Bay - "*Encourage and support management-orientated research and monitoring projects within the marine reserves*" – is defined as 'ongoing'. Within the short and medium term priorities there is no ranking of the strategies. Similarly, there is no prioritization of marine research and monitoring in the Fisheries WA Management Paper. Hence, in the absence of specific criteria and a pre-determined set of priorities evaluation and subsequent ranking of project proposals for World Heritage funding is left largely to the discretion of the State and Commonwealth government assessment panels.

Criteria to rank the Property's values and a risk assessment approach to value-threat casual relationships are required to provide a more rigorous and technically defensible framework for prioritising marine research and monitoring. This framework will provide a more rational and visible process for determining future research and monitoring funding priorities, as well as addressing, systematically, the strategic and tactical institutional concerns and requirements of the management agencies. Significant aspects of this framework are derived from the draft CALM Marine Conservation Branch paper *Generic Information Requirements for the Management of Marine Reserves in Western Australia*. Nationally, a number of state and federal organisations and academic institutions have developed models for research and

monitoring priority setting. However, despite several different approaches there is a lack of clearly defined frameworks that explicitly identify the linkages between management needs and priorities for research and monitoring.

OBJECTIVES

The objective of this project was to provide CALM, via the Shark Bay World Heritage Property Scientific Advisory and Community Consultative committees, with a strategic framework for prioritising future marine research and monitoring of the Property and for evaluating and ranking project proposals seeking Commonwealth World Heritage funding.

This report describes the actions taken to achieve this objective and summarises the main outcomes of the project.

ACTIONS

Funds to develop a strategic framework for marine research and monitoring in the Property were awarded to CALM's Marine Conservation Branch from the 1996/97 World Heritage funding round. A workshop was organised to bring together CALM and Fisheries WA managers and scientists with members of the Property Scientific Advisory and Community Consultative committees and marine scientists from Western Australia and interstate with interests and previous research experience in the Shark Bay area. The workshop was structured as follows:

- a review session summarising the World Heritage values of Shark Bay, past and current research and monitoring programs, and the management objectives of the marine reserves; and
- a number of workshop sessions to develop an understanding of existing and future threats to the Shark Bay World Heritage values, to develop criteria against which research and monitoring proposals can be assessed, and to identify priority areas for future work.

During the workshop sessions participants were assigned to small multi-disciplinary working groups, each with a rapporteur responsible for reporting back on progress made on key issues.

WORKSHOP PROGRAM

DAY ONE - THURSDAY 12 FEBRUARY

SESSION 1

0830 - 0845	<i>Welcome and opening address</i>	Jeremy Colman
0845 - 0900	<i>World Heritage values of Shark Bay</i>	Ron Shepherd
0900 - 0915	<i>A review of marine research</i>	Di Walker
0915 - 0930	<i>A review of marine monitoring</i>	Jennie Cary
0930 - 0945	<i>A review of fisheries research and monitoring</i>	Jim Penn
0945 - 1000	<i>A review of the oceanography of Shark Bay</i>	Nick D'Adamo

1000 - 1030	Morning tea	
1030 - 1045	<i>Management objectives of the Shark Bay Marine Reserves</i>	Paul Brown
1045 - 1100	<i>Statutory, planning and administrative frameworks for the Shark Bay World Heritage Property</i>	Nigel Sercombe
1100 - 1130	Workshop Briefing Session: <i>A framework for developing research and monitoring priorities</i>	Nick D'Adamo
1130 - 1200	Discussion	
1200 - 1300	Lunch	
 SESSION 2		
1300 - 1500	Workshop Session 1: <i>Identification of values and threats</i>	
1500 - 1530	Afternoon tea	
1530 - 1630	Workshop Session 2: <i>Criteria for ranking values</i>	
1630 - 1700	Discussion - Report back on workshop sessions 1 & 2	
1700	Close of Day 1	

DAY TWO - FRIDAY 13 FEBRUARY

SESSION 3

0830 - 0900	Discussion: <i>Criteria for assessing threats</i>
0900 - 1000	Workshop Session 3: <i>Criteria scoring matrix and ranking of criteria scores</i>
1000 - 1030	Morning tea
1030 - 1130	Workshop Session 4: <i>Development of a prioritising framework</i>
1130 - 1200	Discussion - Report back on workshop sessions 3 & 4
1200 - 1300	Lunch

SESSION 4

1300 - 1500	Resolutions and Recommendations: <i>Research and monitoring priorities for the Shark Bay</i>
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World Heritage Property

1500 - 1530	Afternoon tea	
1530 - 1545	Overview of workshop outcomes	Nigel Sercombe
1545 - 1600	Closing address	Jeremy Colman

RESULTS

The workshop participants are listed in Appendix I of this report. Overheads presented by each of the speakers during the first session of the workshop are included as Appendix II of this report.

There was general agreement from participants that marine research and monitoring priorities for the Shark Bay World Heritage Property should be based on an evaluation of the relative importance of the marine values of the Property, which involves an evaluation of the ecological and cultural significance of these values, their vulnerability to existing and future threats and their recovery potential. The major result from this project is the formulation of a framework which identifies the conceptual links between the values of the Property, threats to those values and management goals, objectives and strategies. It also identifies the function of fundamental research, applied research and monitoring in providing the information required for managing the marine environment of the Property. Prioritization of marine research and monitoring has to be preceded by a risk assessment process that ranks values and value-threat pathways.

Significant components of the framework are:

- Ecological and cultural criteria for ranking values;
- Criteria for ranking value-threat pathways;
- Identification of fundamental research, applied research and monitoring priorities; and
- Pragmatic criteria for ranking research and monitoring proposals, based on project merit, ethics and feasibility.

The framework is designed to be generic, such that it will provide a model for the development of strategic frameworks for research and monitoring in all existing and future CALM Act marine conservation reserves in Western Australia. The framework also provides a mechanism for CALM to integrate other existing and proposed research work in the Property as well as providing the basis for servicing requests for CALM support for largely externally-funded research projects. It is hoped that an additional benefit will be through the generation of increased research interest/effort in the Shark Bay area by scientists involved in the formulation of the framework. It will also enable research groups in agencies and tertiary institutions to focus project proposals on high priority research and monitoring areas.

OUTCOMES

The strategic framework for marine research and monitoring of the Shark Bay World Heritage Property will be described in a CALM Marine Conservation Branch report. A draft of this report will be circulated to the workshop participants for comment. Once comments have been received the report will be completed, printed and distributed.

REFERENCES

CALM (1996). Shark Bay Marine Reserves Management Plan 1996-2006. Management Plan No. 34, Department of Conservation and Land Management, Perth, Western Australia, 100 pp.

Fisheries WA (1996). Shark Bay World Heritage Property Management Paper for Fish Resources. Fisheries Management Paper No. 91. Fisheries WA, Perth, Western Australia, 118 pp.

APPENDICES

APPENDIX I

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APPENDIX II

OVERHEADS FROM SESSION 1 PRESENTATIONS

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|--|-----------------------|
| 1. <i>Welcome and opening address</i> | Jeremy Colman |
| 2. <i>World Heritage values of Shark Bay</i> | Ron Shepherd |
| 3. <i>A review of marine research</i> | Di Walker |
| 4. <i>A review of marine monitoring</i> | Jennie Cary |
| 5. <i>A review of fisheries research and monitoring</i> | Jim Penn |
| 6. <i>A review of the oceanography of Shark Bay</i> | Nick D'Adamo |
| 7. <i>Management objectives of the Shark Bay Marine Reserves</i> | Paul Brown |
| 8. <i>Statutory, planning and administrative frameworks for the Shark Bay World Heritage Property</i> | Nigel Sercombe |
| 9. <i>A framework for developing research and monitoring priorities</i> | Nick D'Adamo |

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1. *Welcome and opening address*

Jeremy Colman

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2. *World Heritage values of Shark Bay*

Ron Shepherd

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3. *A review of marine research*

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5. *A review of fisheries research and monitoring*

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6. *A review of the oceanography of Shark Bay*

Nick D'Adamo

OVERHEADS FROM SESSION 1 PRESENTATIONS

7. Management objectives of the Shark Bay Marine Reserves

Paul Brown

OVERHEADS FROM SESSION 1 PRESENTATIONS

- 8.** *Statutory, planning and administrative frameworks
for the Shark Bay World Heritage Property*

Nigel Sercombe

OVERHEADS FROM SESSION 1 PRESENTATIONS

9. *A framework for developing research and monitoring priorities*

Nick D'Adamo

