Forging the Links

Invitation to participate, partner and collaborate

Monitoring and research requirements for the Marine Parks Monitoring, Evaluation and Reporting Program
A Bridge to Science

The *Forging the Links* document aims to encourage collaborations between ecologists, social scientists, economists and marine park management about projects that address the priorities and challenges of the marine parks, and is directly connected to the DEWNR Marine Parks Monitoring, Evaluation and Reporting (MER) Program. It will also guide investment and research and monitoring requirements for each park.

Science Directions 2010-15 sets the broad direction for science in DEWNR. Marine Parks are included in this strategy: ‘a rigorous monitoring and evaluation framework is required to understand the effectiveness of the marine park network. In particular we need to better understand the patterns in marine biodiversity within state waters, and the ecological and geophysical responses to the network and to different park zones in a variety of locations (Science Directions 2010-15).’

In addition, the state recognises the importance of understanding the long-term social, cultural and economic effects of the marine parks on the urban communities living around the parks and linking these factors to the ecological outcomes of the marine parks. In doing so, a bridge to science between the ecological, social, cultural and economic drivers within and outside of the marine park network is created.

Key themes

The research and monitoring requirements are presented under three themes, Communities: social, cultural and economic, Ecological systems: status and pressures and Management effectiveness. These three themes have been developed from the main elements of the DEWNR Marine Parks MER Program.

Predominant in this document is the notion of creating strong inter-disciplinary links between themes, particularly the Communities and Ecological systems: status and pressures themes. Scientists world-wide are seeking to understand the interdependencies between people and the natural world which are often defined as social-ecological systems. This is a key element in delivering direction for long-term resilience and sustainability in both ecological and social systems.

Invitation to participate, partner and collaborate

Monitoring and research requirements for the Marine Parks Monitoring, Evaluation and Reporting Program
How do we use the scientific information?

The marine park management plans provide strategies to manage the parks under the Marine Parks Act 2007. The Act provides for a 10-year review of the plans from the day they become operational. The plans also outline the main challenges in managing the parks. These challenges provide the basis for research and monitoring.

Rigorous and generally long-term ecological, social, cultural and economic scientific research and monitoring will thus form the foundation for the delivery of the 10-year review. The gathering of this data needs to begin now so that information is ready before and, at the latest, when the management plans are operational.

Cultural knowledge is important for building knowledge to better understand the natural history of each marine park. This will include cultural knowledge that accumulates from Aboriginal interaction with the seascape over millennia or the local experience of particular places. It is our intention to encourage Aboriginal involvement in research and monitoring aspects of MER by collaboratively building a framework for engagement with Aboriginal people.

In addition, the most significant outcomes of marine park research and monitoring will be to inform and adjust policy directions and management activities within the parks, and underpin fundamental knowledge requirements for meeting our obligations under the Marine Parks Act.

Citizen Science

Communities, which include organisations or individuals with an interest in marine parks or the marine environment, may also become directly involved in supporting their marine park through ongoing research and monitoring, by becoming involved in the Marine Parks Citizen Science Program. The Citizen Science Program will allow groups and individuals to monitor particular assets or aspects of the marine park where they live in association with highly experienced technical staff. The information provided by these projects will contribute to the knowledge bank of the core science program. Please contact DEWNR for more information on how to become involved in this program.

Benefits of science to marine parks

- Regular assessment of environmental, social, cultural and economic data relating to the marine parks program.
- Provide understanding of the links between environmental, and social, cultural and economic values.
- Increase our understanding of marine systems.
- Provide high quality information into policy decisions to enable adaptive management of the marine parks program.
- Provide data which will illustrate to communities the importance of the marine park program.
- Support the 10-yearly review of the marine park management plans with high quality monitoring and research.

Objectives

Forging the Links main purpose is to:

- Encourage partnerships and collaboration with a variety of research institutions, communities, individuals and organisations to provide for specific research and monitoring projects for the marine parks.
- Link research and monitoring of ecosystems, habitats and species in marine parks to the social, cultural and economic context of the communities that surround and use them.
- Outline key knowledge gaps and questions in relation to the effects and effectiveness of spatial zoning as a management tool.
- Involve communities and Aboriginal people with the science of marine parks in a way that respects and values their particular local knowledge in adding value to the MER Program.
- Promote research in South Australia’s marine parks.
Forging links

Three themes establish the additional research and monitoring requirements for the first two years of the MER Program. Guidance to requirements is provided in the theme objectives and questions (see Table 1 for questions). These objectives and questions bring together the Forging the Links document to accommodate an integrated approach to future research and monitoring of the marine parks. Foremost in this approach is the seascape and the communities of people that surround and live within the marine park system. These include iconic communities such as Kangaroo Island and the West Coast.

**Theme 1**
Ecological systems: status and pressures

South Australia’s marine environments are unique and contain some of the most biologically diverse waters in the world. The marine parks protect many of these unique assets which include an array of ecosystems and organisms such as salt marshes, mangrove forests, seagrass meadows, reefs, sandy soft bottom sediments, Australian sea lions, dolphins, invertebrates such as sponges and crustaceans, and a diversity of fish. Their ongoing protection requires that we monitor their progress particularly the ongoing condition of those assets that occur in sanctuary and habitat protection zones. The research component will bring fresh knowledge and a deeper understanding of the functioning of our most significant assets. This knowledge allows the marine parks to be managed in the most effective way by targeting areas that remain vulnerable to pressures on the system or are open to ongoing degradation.

South Australia needs to build on its understanding of its varied marine ecosystems, their associated biodiversity, processes and functions. The Monitoring, Evaluation and Reporting Program will determine a ‘baseline’ for significant assets that will be monitored into the future. In association with the ‘baseline’, an in-depth understanding of the biodiversity, ecological processes and functions and how various threats impact on these processes and functions will be required over time.

**Objectives**

- Improve knowledge of the key processes driving the ecological systems protected by the marine parks such as larval recruitment of particular species within sanctuary zones.
- Determine the extent of ecological responses to the establishment of the marine park zones.
- Assess the effectiveness of the network of marine parks at bioregional, community, population, species and genetic levels and size of sanctuary zones.
- Investigate the effects of MPA/protection zones on temperate ecosystems.
- Investigate key ecological relationships and the functioning of processes within South Australian state waters including connectivity, trophic food webs, seasonal and temporal variation and responses to natural phenomena.

**Benefits**

- Increase the specific understanding of what different levels of protection bring over time to marine biodiversity in South Australia.
- Provide key information for the future successful adaptive management of the marine parks.
**Theme 2**
Communities: social, cultural and economic values and assets

Communities are highly valued, socially, culturally and economically, within the marine park system and it is to these that the *Forging the Links* document will be most informative. Communities’ lives and livelihoods are often deeply linked to the environments they live in, so engaging and monitoring the communities and regional economies that surround and use the marine parks is essential to the ongoing effective management of the marine parks. The challenge for management is to understand the perceptions and viewpoints of these communities.

**Objectives**
- Investigate and understand Aboriginal knowledge and values of the region, and marine park use.
- Assess and map human activities in the marine parks to identify patterns of use.
- Determine the ability of communities surrounding marine parks to adapt to the establishment of the marine parks within their region.
- Assess the social and economic impacts of the establishment and ongoing management of the parks.

**Benefits**
- Provide for a better understanding of communities ability to adapt to change.
- More effective involvement of communities in marine park management.
- Will provide for greater certainty in management of marine-based human uses and activities.
- Encourage joint management and initiative projects.
- Provide for more effective park management decision making through active involvement of communities both Aboriginal and local.

**Theme 3**
Management effectiveness

How well marine parks perform is predominantly a product of how people react to zoning and how well they are managed. Strategies outlined in the individual management plans provide the direction for management. It is in monitoring the performance of the management plans that management effectiveness for each marine park will be determined. Each marine park will have its own monitoring program aligned with key performance indicators which will ideally demonstrate how effective the marine parks have been.

Management effectiveness is the degree to which management actions are achieving the goals and objectives agreed for a marine park. The evaluation of management effectiveness provides a formal way to learn from successes and failures and help people understand how and why management practices are being adapted. It provides a way to show accountability for the management of a marine park.

**Objectives**
- Assess specific costs of programs such as compliance and education to meet specific management objectives.
- Evaluate the effectiveness of education programs in raising community awareness of the park, changing attitudes, increasing support for management and participation in management awareness, attitudes, behaviour, support for management, and participation in planning.
- Investigate the interaction of education and enforcement on influencing behaviour changes relating to compliance with park regulations.

**Benefits**
- Provide communities with knowledge and understanding of the marine environment and the management of the marine parks.
- Understand the ongoing requirements of park management.
Key requirements for 2013-15

Table 1: Key requirements for research and monitoring of the marine parks for the years 2013-15

<table>
<thead>
<tr>
<th>Theme 1 – Ecological systems: status and pressures</th>
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</thead>
<tbody>
<tr>
<td>• How is the coast and marine environment doing inside the marine parks versus outside?</td>
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<tr>
<td>• What are the key ecological responses for particular assets to altering activities within sanctuary zones compared to outside sanctuary zones?</td>
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<tr>
<td>• How do other zones within marine parks compare with each other and outside of the park?</td>
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<td>• How do sanctuary zones of different sizes and configurations (shape, buffering, distance apart) perform?</td>
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<tr>
<td>• Identify potential spill over effects of sanctuary zones.</td>
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<th>Theme 2 – Communities</th>
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<tbody>
<tr>
<td>Social</td>
</tr>
<tr>
<td>• How have our communities fared?</td>
</tr>
<tr>
<td>• What are the key benefits and impacts to communities of the marine parks?</td>
</tr>
<tr>
<td>Cultural</td>
</tr>
<tr>
<td>• What are the key cultural responses to the establishment of the marine parks?</td>
</tr>
<tr>
<td>• How are we sharing the resources and values of our state waters?</td>
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<tr>
<td>Economic</td>
</tr>
<tr>
<td>• How is business doing?</td>
</tr>
<tr>
<td>• What are the key economic responses to the declaration of the parks?</td>
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<th>Theme 3 – Management effectiveness</th>
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<tr>
<td>• How is management doing?</td>
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<tr>
<td>• How effective is the management of South Australia’s marine parks?</td>
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<tr>
<td>• To what extent does compliance, education and monitoring activity influence the effectiveness of marine park management?</td>
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<th>Linking the themes</th>
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<tr>
<td>• How does what happens in the sea link to the socio-economic position of the community living around marine parks?</td>
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</table>
Did it work?

The outcomes of the prospectus will be reviewed every 2 years in line with Science Directions 2010-15. An overview of the current knowledge gained, and partnerships and collaborations established from projects conducted as a product of the prospectus will be outlined in a brief report. Essential to this review will be the application and transition of the knowledge gained to the management and activities of the marine parks.

Discovering new people, capabilities and partners

DEWNR invites local communities, individuals, Universities and other organisations to become involved with the research and monitoring of South Australia's marine parks through contacting the DEWNR office.

A list of specific projects that encourage long-term research and monitoring in the marine parks is available from DEWNR. These projects support creativity, innovation and the fundamental desire to be in it for the long haul. Reports from the MER Program will be available on the marine parks website.

Research within marine parks may require a permit particularly in sanctuary zones. Information about permit requirements and how to apply can be found on the marine parks website.

Requirements for third-party funding sources

This statement of need and intent toward partners can be used by researchers to inform their applications for research funding (e.g. Australian Research Council Linkage Projects) that require clear evidence of partner involvement. DEWNR will provide Letters of Support to individuals or organisations that have shown that the outcomes of their project particularly relates to the objectives and key requirements of this prospectus. Assistance may also be available for Ph.D. student projects that are specific to marine park requirements. DEWNR may also provide in-kind support to projects such as operational resources and assistance. Contact DEWNR for more information.

Contact

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