

## **Special Feature** Measurement of Management Effectiveness: The Next Major Stage in MPAs?

Over the past two decades, much of the effort among proponents of marine protected areas has focused on securing designation of new sites. Thousands of MPAs now exist worldwide, with more to come as nations work to establish representative MPA networks. While some of these sites are meeting their goals, many are having difficulty, with financial shortfalls, low compliance, and other challenges. Ineffective MPAs may be little better than having no protection at all.

The emergence in recent years of several methods for measuring the effectiveness of MPA management has been a welcome development. By examining how well MPAs are meeting their goals, these methods can be used by managers to clarify critical issues to address in a systematic, adaptive way. They can also help to share lessons learned with practitioners at other MPAs.

The growth in the number of evaluation tools appears to signal a trend. A current review by the IUCN World Commission on Protected Areas (WCPA) has counted dozens of distinct mechanisms for evaluating the effectiveness of protected area management, with several designed specifically for marine areas.

With so many methods available, managers interested in conducting an evaluation may be overwhelmed by the choices. Several analyses are underway to assess these mechanisms, distill what they have in common, and determine the keys to MPA success. Undertaking these analyses — mostly in early stages — are WCPA (*A Global Analysis of Protected Area Management*), Conservation International (*Global Marine Management Area Management Effectiveness Analysis*), WWF US (*MPA Management Effectiveness Meta-Analysis*), and the University of Rhode Island in the US (studying marine ecosystem governance in the context of Caribbean

MPAs). Project leaders are in discussions on how best to harmonize these projects and minimize duplication.

Ultimately, the outputs from management effectiveness evaluations could be incorporated in a global MPA database. (A rating system for Philippine MPAs already enters assessments of individual MPAs in a national database — see “Rating system available for MPA management in Philippines”, *MPA News* 6:3.) The concept would be to display effectiveness data for each site, allow for site comparisons, and enable changes to reflect increases or decreases in effectiveness. Organizers of the World Database on Protected Areas (<http://sea.unep-wcmc.org/wdbpa>) and the MPA Global database (<http://www.mpaglobal.org>) are in discussions with WCPA on how best to collect such information in the future and what indicators would be most appropriate.

Over the next three pages, this *MPA News* special feature on evaluations of management effectiveness includes:

- An essay by Sue Wells and Nancy Dahl-Tacconi on why management effectiveness is important to evaluate;
- A table, compiled by Wells and Dahl-Tacconi, that describes and contrasts six existing mechanisms for evaluating MPAs; and
- An interview with Marc Hockings, vice-chair of WCPA, on what it means for a MPA to be a “success” and how to choose the right evaluation method for your site.

In future issues, *MPA News* will continue to report on management effectiveness as the aforementioned analyses move forward, and as management evaluation becomes an increasingly integral part of MPA management.

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## Editor's note:

Sue Wells, a private consultant to the UNEP World Conservation Monitoring Centre, coordinated the theme on "Ensuring Effective Management" at the First International Marine Protected Areas Congress (IMPAC1) in October 2005 in Geelong, Australia. Nancy Dahl-Taconi is a Ph.D. candidate at the University of Queensland, Australia, studying the roles of scientific methods and participatory processes in evaluating MPA effectiveness.

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# A. Why Should We Evaluate the Management Effectiveness of a MPA?

By Sue Wells and Nancy Dahl-Taconi

There is resistance from some MPA managers to the concept of formal, systemized evaluations of their sites. In October 2005 during a side event on management evaluations at the International Marine Protected Areas Congress (IMPAC1), several attendees voiced skepticism. Evaluations take up too much time and financial resources, they said, and it can be awkward for staff and managers to have to acknowledge problems or weaknesses to their superiors. It would be better, the skeptics said, to trust managers to know what is best for their sites, using whatever informal evaluative methods each manager chooses.

Certainly, carrying out an evaluation is not always easy, for the reasons listed above. But the range of evaluation methods now available offer solutions to most problems: there are methods now, for example, that do not require much time or personnel to operate.

Fundamentally, evaluations should be viewed as a tool *to assist* managers in their work, not distract them from such. Lessons learned from an evaluation, and the recommendations that arise from it, can be used to adapt management strategies in response to changing conditions — a benefit to any manager. Case in point: a formal evaluation of Miramare Natural Marine Reserve in Italy helped identify both that improved patrols were needed in summer months, and that a better control study was needed to compare the reserve's biodiversity results with neighboring areas. As in any business or workplace, evaluation of impact and performance should be seen as a normal and essential component of good management processes. Even for the best managed MPAs, there are opportunities for improvement.

Evaluations should not only identify problems and their causes but also highlight what is working well. This way, a learning environment is created to share knowledge and experience, and to ensure that lessons learned are not lost nor mistakes repeated. Additional benefits from an evaluation include:

- Improving accountability with donors and stakeholders. An evaluation of Lenger Island Marine Protected Area in the Federated States of Micronesia revealed that local communities had a poor understanding of the site and that there was a need for improved public awareness and education programs.
- Assisting with planning and partnerships, including setting of priorities and improving relations. An evaluation of Bunaken National Park in Indonesia revealed that satisfaction levels of residents of the park (a large but relatively silent stakeholder group) were quite high, in contrast to criticism of park programs from a smaller group of vocal, external stakeholders. This finding led management to promote external awareness of what was working well and to withstand calls for program changes from the latter group.
- Highlighting issues for which more support or additional funds are needed. An evaluation of the Galápagos Marine Reserve documented key issues in governance, fisheries, and community perception, and a funding strategy was developed to target each issue.
- Improving the usefulness of monitoring so that adequate mechanisms for tracking progress are in place. Many evaluations have demonstrated that biodiversity monitoring programs are not sufficiently targeted and that socioeconomic monitoring, if in place, is usually inadequate.

The process should be embraced as an accepted component of MPA management. Indeed, the Convention on Biological Diversity, in its Programme of Work for Protected Areas, calls on Parties to develop and adopt appropriate methods, standards, criteria, and indicators for evaluating management effectiveness and governance by 2008, and to assess at least 30% of their protected areas by 2010. Perhaps we need to think of management effectiveness evaluations in the way we think of regular service check-ups of our cars: a periodic check to make sure things are functioning well and to troubleshoot for any problems on the horizon. 🌊

# B. Table: Methodologies for Evaluating MPA Management Effectiveness

By Sue Wells and Nancy Dahl-Taconi

Many methods are being developed and tested for evaluating MPA management effectiveness. This is good: different situations and needs of MPAs require different methods of evaluation. Bear in mind that the various methods are not mutually exclusive. There is potential for combining parts of them, as well as others developed for terrestrial protected areas or more general coastal management initiatives, to create evaluations that cater to specific needs.

The table on page 3 gives examples of three general types of evaluation methods: broad-scale, fine-scale, and

scorecards. Broad-scale methods (1 and 2) include measures and descriptions of a wide range of management elements. They provide a strong basis for understanding and improving management as well as reporting on progress and promoting good practice. Fine-scale methods (3 and 4) provide a more detailed analysis of the conservation and socio-economic impact of a MPA, using more specific indicators. Scorecards (5 and 6) offer shortcuts to evaluation — providing a general picture of how management is progressing, thus helping to identify areas that need immediate attention.

METHODOLOGY	CHARACTERISTICS	STRENGTHS	ISSUES TO CONSIDER
<p><b>1. World Heritage Management Effectiveness Workbook</b>  <a href="http://www.enhancingheritage.net">http://www.enhancingheritage.net</a></p>	<ul style="list-style-type: none"> <li>• Broad-scale</li> <li>• Contains worksheets on context, planning, inputs, processes, and outcomes</li> <li>• Qualitative and semi-quantitative</li> </ul>	<p>Incorporates a wide range of views from internal and external participants on all elements of management</p>	<ul style="list-style-type: none"> <li>• Designed for World Heritage sites, so some adaptation may be needed for other protected areas</li> <li>• Funding is necessary for workshops, and possibly for a consultant if MPA managers are not available</li> <li>• Pilot assessments have taken 6-12 months on average to conduct</li> </ul>
<p><b>2. Workbook for the Western Indian Ocean</b>  <a href="http://www.wiomsa.org/default.asp?groupid=2004121144044139">http://www.wiomsa.org/default.asp?groupid=2004121144044139</a></p>	<ul style="list-style-type: none"> <li>• Based on World Heritage method</li> <li>• Broad-scale, but with simpler worksheets than World Heritage method</li> <li>• Qualitative and semi-quantitative</li> </ul>	<p>Same as above</p>	<ul style="list-style-type: none"> <li>• Funding is necessary for workshops, and possibly for a consultant if MPA managers are not available</li> <li>• Requires 2-3 months to conduct and the capacity to facilitate workshops and surveys</li> </ul>
<p><b>3. How Is Your MPA Doing?</b>  <a href="http://effectiveMPA.noaa.gov">http://effectiveMPA.noaa.gov</a></p>	<ul style="list-style-type: none"> <li>• Fine-scale</li> <li>• Focuses on individual indicators, selectable from a generic list</li> <li>• Offers a variety of methods for data collection and analyses of a wide range of indicators</li> <li>• Qualitative and quantitative</li> </ul>	<ul style="list-style-type: none"> <li>• Provides guidance on linking objectives with indicators</li> <li>• Offers good coverage of biophysical and socioeconomic outcomes</li> <li>• Gives detailed instructions for collecting and processing data</li> </ul>	<ul style="list-style-type: none"> <li>• Most useful for mature management arrangements (manual advises that it be used for MPAs in existence for 2 years, with a management plan in place)</li> <li>• May be time-consuming, and technically and financially demanding</li> <li>• Requires clear management objectives as basis for selecting indicators</li> </ul>
<p><b>4. The Nature Conservancy 5-S framework</b>  <a href="http://nature.org/summit/files/five_s_eng.pdf">http://nature.org/summit/files/five_s_eng.pdf</a></p>	<ul style="list-style-type: none"> <li>• Fine scale</li> <li>• Provides criteria, questions, and scoring systems to assess status and changes in threats and ecological integrity</li> <li>• Qualitative</li> </ul>	<ul style="list-style-type: none"> <li>• Focuses on threat reduction, with direct relevance to immediate management decisions</li> <li>• Supports strategic planning by gauging ecological integrity</li> <li>• Can be used to compare sites and strategies</li> </ul>	<ul style="list-style-type: none"> <li>• Focuses on outcomes only</li> <li>• Provides indications for overall systems, not specifics for each species or threat</li> <li>• Designed for small-scale and short-term conservation initiatives</li> </ul>
<p><b>5. World Bank Scorecard to Assess Progress</b>  <a href="http://www.MPAscorecard.net">http://www.MPAscorecard.net</a></p>	<ul style="list-style-type: none"> <li>• Scorecard initially aimed at MPAs supported by Global Environment Facility projects</li> <li>• Questionnaire addresses context, planning, inputs, processes, outputs, and outcomes</li> <li>• Qualitative and semi-quantitative</li> </ul>	<ul style="list-style-type: none"> <li>• Is quick, simple, and inexpensive</li> <li>• Allows comparisons across sites if used consistently</li> <li>• Incorporates some site-specific objectives and challenges into scoring</li> </ul>	<ul style="list-style-type: none"> <li>• Quality and relevance of results are based entirely on knowledge and perspectives of respondent(s) at one point in time</li> <li>• Method designed primarily for self-assessment by MPA staff (does not involve other stakeholders)</li> </ul>
<p><b>6. MPA Report Guide and Rating System</b>  <a href="http://www.coast.ph/text/MPA%20Report%20Guide%20Local.doc">http://www.coast.ph/text/MPA%20Report%20Guide%20Local.doc</a></p>	<ul style="list-style-type: none"> <li>• Contains a survey developed for use as part of a national rating system for Philippine MPAs</li> <li>• Survey addresses mostly context, processes, and outputs</li> <li>• Qualitative and semi-quantitative</li> </ul>	<ul style="list-style-type: none"> <li>• Is quick and simple</li> <li>• Allows comparisons across sites if used consistently</li> </ul>	<p>May need to be adapted for use by MPAs elsewhere</p>

## C. On Defining MPA “Success” and Choosing an Evaluation Method: Interview with Marc Hockings

Marc Hockings is vice-chair of the IUCN World Commission on Protected Areas (WCPA), responsible for WCPA’s program of Science, Knowledge and Management, which includes work on management effectiveness. He co-authored the IUCN report *Evaluating Effectiveness: A Framework for Assessing the Management of Protected Areas* with Sue Stolton and Nigel Dudley in 2000 (<http://www.iucn.org/themes/wcpa/pubs/guidelines.htm>); a revised version is due for release in mid-2006.

Hockings is directing a WCPA-led project to analyze all studies of management effectiveness at protected areas worldwide, including distilling the most useful indicators. The project, which also involves WWF, The Nature Conservancy, and the World Bank, is scheduled for completion by September 2007. Below, Hockings discusses the project with *MPA News*:

**MPA News:** What is the status of your project, *A Global Analysis of Protected Area Management*?

**Hockings:** The project commenced in July 2005. The current focus of work is on collecting and collating information on management effectiveness evaluation systems and where they have been applied. We currently have information on application of 40 different evaluation systems in over 2600 protected areas around the world.

**MPA News:** For many people, the concept of evaluating management effectiveness means examining how successful a protected area is. What constitutes “success” for management of a protected area?

**Hockings:** It is a complex issue. To some extent, “success” like “beauty” is in the eye of the beholder. In the IUCN World Commission on Protected Areas Guidelines, *management effectiveness evaluation* is defined as the assessment of how well the protected area is being managed — primarily the extent to which it is protecting values and achieving goals and objectives. The term *management effectiveness* reflects three main themes:

- Design issues relating to both individual sites and protected area systems;
- Adequacy and appropriateness of management systems and processes; and
- Delivery of protected area objectives including conservation of values.

Some work undertaken by graduate students working on the issue of “success” in protected area management has revealed that different people and groups involved


in protected areas and their management can have very different views on what constitutes “success” and how it might be assessed.

**MPA News:** Managers worldwide are faced with choosing among several assessment methods to apply to their sites. What factors should they consider when making their decision?

**Hockings:** The first issue that a manager might consider in choosing an evaluation system is the reason why he or she is undertaking the evaluation and the scope of the evaluation. There are many reasons why people want to assess management effectiveness. These different purposes may require different assessment systems and varying degrees of detail. Funding bodies, policy makers and conservation lobbyists may use the results to highlight problems and to set priorities, or to promote better management policies and practices by management agencies. Managers may wish to use evaluation results to improve their performance or to report on achievements to senior managers, the government, or external stakeholders. Local communities and other stakeholders, including civil society, need to establish how well their interests are being taken into account. Increased emphasis on evaluation is in part due to changes in society, especially the increased demand for accountability, transparency, and demonstrated “value for money”.

In terms of scope, the approach taken for a system-wide assessment of all protected areas in a country will be different from an assessment of an individual site. Some systems like the RAPPAM methodology (<http://www.panda.org/parkassessment>) are designed for system-wide application, while others like the *Enhancing our Heritage* approach (<http://www.enhancingheritage.net>) are designed for site-level application.

A second issue to consider is the level of resources that are available to undertake an evaluation and whether it is intended as a one-off assessment or an ongoing process integrated into the management system for the site.

A third issue is the extent and depth of information that is available from monitoring programs, and what will be possible to collect in the time available. As a general rule, more effort should be put into monitoring and evaluation for those protected areas that possess greatest value and significance, or that are subject to the greatest threat. 

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## Notes & News

### Australian government releases final plan for MPA network in SE Australia

The Australian government has released its final plan for a representative MPA network in Southeast Australia, to cover 226,000 km<sup>2</sup> of commonwealth waters in 13 new marine protected areas. The release on 6 May followed months of consultations with stakeholders, conducted in response to the government's proposal last year of a candidate MPA network ("MPA Network Is Proposed for SE Australia", *MPA News* 7:7). The government will now begin a statutory process to have each MPA designated as a Commonwealth protected area, expected to be completed by the end of 2006.

According to Environment Minister Ian Campbell, the final plan achieves a notable combination of feats: it is 24% larger than the 171,000-km<sup>2</sup> network proposed last year, while its impact on the commercial fishing sector is significantly more benign than that of the earlier proposal. "We have been able to deliver these new marine protected areas with minimal impact on industry," said Campbell in an announcement. "Since I released the proposed network last December, we have made more than 20 adjustments to boundaries and zoning that will reduce the impact on commercial fishing by more than 90%."

The network will be integrated with a national program to reduce fishing effort, including a license buyout initiative, described in the February 2006 *MPA News*. Roughly 43% of the network area will allow no fishing or other extractive activity; 36% will be closed to commercial fishing but open to recreational fishing and other activities; and the remainder will allow for multiple uses, including various commercial fishing methods.

The June 2006 issue of *MPA News* will contain more details on the Southeast Region MPA Network as well as lessons learned by stakeholders and planners. For the official announcement of the network plan, as well as maps and other information, visit <http://www.deh.gov.au/coasts/mpa/southeast/index.html>.

#### For more information

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### Fisheries patrol director is murdered in Philippines

The 46-year-old leader of a community-based fisheries patrol in Cebu City, Philippines, was murdered on 12 April in what authorities and colleagues say was likely meant as retribution for his team's enforcement activities. Elpidio (Jojo) dela Victoria was director of

the city's *Bantay Dagat* Commission, a volunteer civilian force deputized to patrol Cebu City waters for illegal activity up to 15 km from shore, particularly blast fishing. Under dela Victoria's direction since 1996, the Cebu City Bantay Dagat has confiscated P16 million (US \$310,000) of dynamited fish and arrested 449 illegal fishers. His crew also raided several local factories of explosives and blasting caps.

A police officer, Marcial Ocampo, from the neighboring municipality of Minglanilla has been arrested and charged with carrying out the murder of dela Victoria. Local authorities have offered a reward of P1 million (US \$19,000) for information leading to the arrest of the planner of the crime.

This is the second murder of a fisheries patrol director in the Philippines in three years. In 2003, Sixto Atienza was killed: he was leader of the Calatagan Bantay Dagat, which patrolled Balayan Bay (in the western Philippines, facing the South China Sea) and had arrested more than 120 illegal fishers (*MPA News* 4:11). No one has been prosecuted for the crime.

The Philippines has Bantay Dagat commissions country-wide, involving more than 100,000 volunteer coast watchers. In the past year the Cebu City Bantay Dagat has been active in forming a larger, joint patrol — the Visayan Sea Squadron — with its peer organizations in nearby municipalities. The goal of the squadron is to eradicate illegal fishing in the Visayan Sea, a 10,000-km<sup>2</sup> area of high biodiversity. (At present, commercial fishing is banned in municipal waters of the Visayan Sea — i.e., within 15 km of the coast — but subsistence fishing is allowed.) The squadron, led by attorney Antonio Oposa, has also called on local governments to designate 15% of their municipal waters as completely no-take areas.

On 2 May, provincial and local officials, NGOs, fishing organizations, the Visayan Sea Squadron, and other stakeholders finalized a memorandum of agreement to establish several provisions on co-management of the Visayan Sea. The provisions include crafting a comprehensive ecoregional management plan and setting maximum sustainable yields for commercial fishing in non-municipal waters. "I hope that concrete actions will result from this, and it will not be mere words on paper," says Liza Eisma-Osorio of the Coastal Conservation and Education Foundation (CCEF), a Philippine NGO that participated in drafting the agreement.

#### For more information

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## Report proposes global network of no-take reserves for high seas

A new report released by Greenpeace International proposes the designation of a representative network of no-take marine reserves on the high seas, protecting a total of 40% of all waters outside of any nation's jurisdiction. Authored by Callum Roberts, Leanne Mason, and Julie Hawkins — all of the University of York (UK) — the report bases its recommended network on analysis of a variety of oceanographic and biological data, including water temperature gradients, upwelling areas, depth zones, sediment types, and fishery and tracking data on oceanic megafauna, among other factors. The authors also consulted with experts in marine science and management, asking them to nominate sites they believed should be protected.

The 58-page report *Roadmap to Recovery: A Global Network of Marine Reserves* is available online in PDF format at <http://oceans.greenpeace.org/en/documents-reports/roadmap-to-recovery>. A separate map of the proposed high-seas reserves is available at <http://oceans.greenpeace.org/en/our-oceans/marine-reserves/roadmap-to-recovery>.

"The design presented in this report includes 29 separate marine reserves that together encompass 40.8% of the area of the world's oceans," states the report. "All the marine reserves identified incorporate places that are biologically important based on available data." The authors used the computer program MARXAN to help develop network designs that would minimize the area and boundary length of recommended reserves — a proxy for minimizing costs related to management and compliance. (Socioeconomic data, such as for high-seas fisheries, were not directly incorporated in this project's modeling.) MARXAN has been used in other high-profile reserve-planning programs in recent years, including for the Great Barrier Reef Marine Park in Australia and the Channel Islands National Marine Sanctuary in the US ("Using Computer Software to Design Marine Reserve Networks", *MPA News* 6:4).

Few MPAs exist on the high seas, due in part to the lack of an international legal framework to allow for implementation of reserves applicable to all nations ("At World Parks Congress, Target Is Set for High-Seas MPAs", *MPA News* 5:4). Greenpeace aims to use the report to push for creation of a new implementing agreement under the UN Convention on the Law of the Sea that would (a) formally recognize the need to protect biodiversity on the high seas, and (b) mandate protection of high-seas areas for conservation purposes. More details on Greenpeace's vision for a new implementing agreement are included in a separate document, *Black Holes in Deep Ocean Space*, released in November 2005. It is online in PDF format at <http://www.greenpeace.org/raw/content/international/press/reports/black-holes.pdf>.

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## Report offers guidance for financing protected areas, recommends hiring of business managers

Many, if not most, protected areas worldwide face a funding crisis, both in terms of the amount of funds available and how those funds are used, according to a new report from the IUCN World Commission on Protected Areas (WCPA). The report, *Sustainable Financing of Protected Areas: A Global Review of Challenges and Options*, details a broad range of financing mechanisms available to protected areas — from charging user fees, to attracting voluntary donations, to establishing enterprise funds, and more — and describes opportunities and pitfalls of each, as well as case studies from marine and terrestrial sites.

"It is clear that achieving PA [protected area] financial sustainability will require major changes in the way that funding is conceptualized, captured, and used," states the report. "There is an urgent need to expand and diversify PA financial portfolios, and to ensure that funding reaches the groups and activities essential for biodiversity conservation."

Beyond describing how levels of funding can be increased, the report emphasizes that such funding is only as sustainable as the management system it supports.

"Generating more funds for PAs is necessary, but not sufficient," write the authors. Financial sustainability, they say, will also require general reinforcement of PA management capacity, in particular to:

- Become more responsive to changing opportunities and external demands;
- Strengthen institutional capacity to use financial and business planning tools;
- Establish more supportive economic policy and market conditions; and
- Involve a wider range of stakeholders in protected area management.

This goes beyond simply training managers to be more financially savvy. "A critical determinant of successful fund raising is the recruitment of successful business managers within PA agencies, who can work effectively with a range of stakeholders," states the report. "Such individuals have an important role in identifying new funding opportunities and securing appropriate external partners to help develop them."

The 97-page report, authored by Lucy Emerton, Joshua Bishop, and Lee Thomas, is an update and expansion of a previous WCPA publication, *Financing Protected Areas: Guidelines for Protected Area Managers* (*MPA News* 2:8), released in 2000. The new 2006 edition is available online in PDF format at <http://app.iucn.org/dbtw-wpd/edocs/PAG-013.pdf>. A version in HTML format is available at <http://www.iucn.org/bookstore/HTML-books/BP13-sustainable-financing/cover.html>.

# MPA Perspective Using Regional Workshops to Understand the Human Dimension of MPAs

By Bryan Oles, Charles M. Wahle, Sarah Fischer, Marc L. Miller, and Patrick Christie

How often have you heard it said that people are the key to the success or failure of marine protected areas? This message is echoed repeatedly in the literature on MPA design and effectiveness. In practical terms, though, what does it mean to understand the human dimension of MPAs, and how do we incorporate social science into effective planning and adaptive management of MPAs?

The (US) National MPA Center is addressing these questions through its social science program, which was launched with the *Social Science Research Strategy for MPAs* (SSRS). Drafted in 2003, this document is based on a workshop that brought together 75 leading social scientists, policy makers, and MPA practitioners to generate key research themes on the human dimensions of MPAs. The SSRS describes priority areas of social science inquiry that are fundamental to MPA planning, management, and evaluation, and recommends steps for building national capacity in MPA social science research ([http://www.mpa.gov/virtual\\_library/Publications/ssr\\_strategy.pdf](http://www.mpa.gov/virtual_library/Publications/ssr_strategy.pdf)).

Each priority area (i.e., governance, institutions, and processes; use patterns; attitudes, perceptions, and beliefs; economics; communities; and cultural heritage and resources) entails the application of concepts and methods from an array of social sciences. These include anthropology, economics, political science, and more. The SSRS lays the foundation for strengthening the use of social science in MPA processes by highlighting the diversity of issues to be addressed and understood by managers, agencies, researchers, and the public.

## Identifying regional needs for MPA social science


The MPA Center is building on the broad and generally applicable themes in the SSRS by identifying specific regional social science research and data needs through a series of focused workshops held in the US and its territories. To date, four workshops have been held: US Caribbean and South Florida (August 2003), South Atlantic (December 2003), US Pacific Islands (March 2004), and Pacific Coast (August 2005). Each workshop brought together researchers and MPA practitioners from state and federal agencies, NGOs, academic institutions, and regional governing bodies. They identified priority research needs and developed specific projects to meet them. The workshop reports are available at [http://www.mpa.gov/information\\_tools/social\\_science.html](http://www.mpa.gov/information_tools/social_science.html).

This participatory process has revealed general research needs that are common to all regions, such as:

1. Studies that yield insights into, and models for, effective stakeholder participation;
2. Research on management structures and processes that determine success;
3. Analyses of public attitudes about MPAs and the environment, which can be used to craft more effective communication strategies;
4. Documentation of past, present, and future trends in use patterns and their impacts for both baseline assessments and monitoring effects of MPAs;
5. Social and economic impact assessments; and
6. Methods of incorporating local knowledge and stakeholder input into site planning and monitoring design.

However, workshop results stress that the approach to understanding these commonly identified needs must be informed by the unique geopolitical, ecological, socioeconomic, and cultural characteristics of each region. These characteristics include, for example, the relative importance of tourism to the Caribbean and South Florida region, or the presence of tribal and indigenous peoples in Alaska and the northwest coast of the US. The regional history and intensity of MPA activity can also affect the prioritization of social science needs. Just as there is no one-size-fits-all approach to MPAs, regional socioeconomic and cultural differences may require the application of equally flexible and adaptable social science methods and approaches.

The MPA Center intends to complete the social science workshops in the remaining regions of the United States. These efforts aim to build on the body of work being generated by scientists, managers, and stakeholders to raise awareness of the human dimensions of MPAs and ecosystem-based management in general. As ecosystem approaches to management gain currency in marine policy, human dimensions research is gathering momentum among state and federal agencies, academic institutions, and NGOs.

The findings of the social science workshops promote the need for greater integration of social and natural science and the recognition that people are instrumental to successful MPA and ecosystem-based management. The research priorities and projects identified through this process, coupled with the MPA Center's and workshop participants' shared commitment to rigorous and ethical social science, will continue to support MPA planning and management efforts and other forms of place-based, ecosystem management throughout the US and abroad. 

## Editor's note:

Bryan Oles, Charlie Wahle, and Sarah Fischer work with the (US) National MPA Center, established in 2000 within the National Oceanic and Atmospheric Administration (NOAA) to provide science, information, and tools for an effective national system of MPAs (<http://www.mpa.gov>). Marc Miller and Patrick Christie are on the faculty at the School of Marine Affairs, University of Washington, USA.

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**Conference Calendar, June-July 2006**

June 3-8 — **ISSRM 2006: 12th International  
Symposium on Society and Resource Manage-  
ment.** Vancouver, British Columbia, Canada.  
<http://www.issrm2006.rem.sfu.ca/>

June 4-9 — **2006 Summer Meeting of the  
American Society of Limnology and Oceanogra-  
phy.** Victoria, British Columbia, Canada.  
<http://aslo.org/meetings/victoria2006/>

June 5-7 — **Coastal Environment 2006: Sixth  
International Conference on Environmental  
Problems in Coastal Regions Including Oil and  
Chemical Spill Studies.** Rhodes, Greece.  
[http://www.wessex.ac.uk/conferences/2006/coast06/  
index.html](http://www.wessex.ac.uk/conferences/2006/coast06/index.html)

June 18-24 — **First Asia Pacific Coral Reef  
Symposium.** Hong Kong, China.  
<http://www.cuhk.edu.hk/bio/APCRS/index.htm>

June 24-26 — **20th Annual Meeting of the Society  
for Conservation Biology.** San Jose, California,  
USA. <http://www.conservationbiology.org/2006/Index.cfm>

June 26-29 — **International Conference on  
Coastal Ecosystems: Towards an Integrated  
Knowledge for an Ecosystem Approach for  
Fisheries (ICCE 2006).** Campeche, Mexico.  
<http://etzna.uacam.mx/epomex/icce/icce.html>

July 9-14 — **11<sup>th</sup> Deep-Sea Biology Symposium.**  
Southampton, UK. [http://www.noc.soton.ac.uk/GDD/  
DEEPSEAS/symp\\_pages/symphome.html](http://www.noc.soton.ac.uk/GDD/DEEPSEAS/symp_pages/symphome.html)

July 9-14 — **Catchments to Coast: The Society of  
Wetland Scientists 27th International Conference  
and the Australian Marine Sciences Association  
Annual Meeting.** Cairns, Queensland, Australia.  
<http://www.catchments.org.au/>

July 11-14 — **Annual Conference of the Interna-  
tional Institute of Fisheries Economics and Trade  
(IIFET 2006).** Portsmouth, UK.  
<http://www.port.ac.uk/special/iifet2006/>

July 12-14 — **30th Virginia Law of the Sea  
Conference: Law, Science, and Ocean Manage-  
ment.** Dublin, Ireland. [http://mri.nuigalway.ie/  
marinelaw/microsite/index.html](http://mri.nuigalway.ie/marinelaw/microsite/index.html)

July 12-16 — **CoastGIS '06: Seventh International  
Symposium on GIS and Computer Cartography  
for Coastal Zone Management.** Wollongong and  
Sydney, New South Wales, Australia.  
[http://www.uow.edu.au/science/eesc/conferences/  
coastgis06.html](http://www.uow.edu.au/science/eesc/conferences/coastgis06.html)

July 18-21 — **Annual Meeting of the Association  
for Tropical Biology and Conservation (ATBC  
2006).** Kunming, China. <http://atbc.xtbg.ac.cn/>

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