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Capacity-Building in MPAs: Practitioners Face Challenges, View Opportunities

Amid the growing recognition of marine protected areas as a useful resource management tool, two things stand out to enable MPAs to achieve their resource management goals. Effective institutions and processes must exist to plan and support the MPAs, and qualified managers and other personnel must be available to oversee them. Without these ingredients, an MPA may well “protect” in name only.

Building the capacity of institutional and human resources that support MPAs improves the management of MPAs’ natural resources. But this capacity-building is not easy. The still-new field of MPAs is in the midst of a rapid learning curve on issues of planning, management, and science, forcing institutions and managers to learn as they go. To make matters worse, budgetary realities handicap all aspects of MPA management, including the hiring and training of personnel.

This month, MPA News asked managers and capacity “trainers” for their views on capacity-building, the challenges they’ve faced with regard to capacity, and opportunities for improving resource protection.

Starting with the basics

Capacity-building on the individual level can be as basic as helping to develop a general environmental awareness among a coastal community’s residents. Ilse Kiessling, a natural resource policy manager with WWF Australia’s Tropical Wetlands of Oceania Program, said her work in the Arafura Sea/Gulf of Carpentaria region (on Australia’s north coast) has involved introducing a conservation mindset to residents more concerned with economic development than environmental protection.

“Australia’s Gulf of Carpentaria region is very remote, very development-oriented, and very dynamic in terms of indigenous issues, economic stability, and a lack of regulation, among other things,” said Kiessling. “Concepts of conservation and environmental management are only just starting to be discussed, and there is a great deal to be done in building relationships, fostering communication, and gathering information on just what is out there in need of protection.”

Kiessling said that the designation of an MPA in the region would not likely occur in the near future. Consequently, capacity-building in terms of training, education, and skill-sharing for the practical management of any future protected area is not a large part of her work. “Nevertheless,” she said, “capacity-building from the point of view of awareness raising, generating discussions and ideas, supporting indigenous aspirations for (and title to) their country, and empowering local communities to the development of management planning and environmental policy is definitely part of what we’re doing.”

In the Indonesian province of North Sulawesi, capacity trainers on coastal management are dealing with some of the same issues as Kiessling. They’ve used innovative exchanges of personnel with established MPAs outside of Indonesia to further their work. Brian Crawford of the University of Rhode Island (US) Coastal Resources Center helps oversee Proyek Pesisir, an Indonesian coastal resource management project that has taken Indonesians to the Philippines to study the Apo Island Marine Sanctuary, noted for its success in rebuilding local fish stocks (MPA News 1:3).

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— Crawford said that by introducing the Indonesian group — consisting of representatives from three coastal villages, national and provincial government, and national and local universities — to a successful MPA, “It gave everyone a common view of what a marine sanctuary could be.” The visit played a part in establishing the Blongko Marine Sanctuary in North Sulawesi, which Crawford said was the first community-based marine sanctuary in Indonesia to receive government endorsement at the village, provincial, and national levels.

Distributing lessons

In turn, the project has brought representatives of Apo Island to the Indonesian villages. Although Crawford said the Indonesians had more to learn from Apo’s experience than vice versa, he noted that the speed with which the Indonesian villages had accepted the sanctuary idea compared favorably with the Philippines, owing perhaps to the benefit of having the latter’s model to follow.

“The coastal communities in our project are rural, quiet fishing villages, which is typical in Indonesia,” said Crawford. “For a lot of the people, ‘biodiversity’ and ‘environmental conservation’ don’t really ring with them. Making a living from day to day does. If they see a benefit accruing from these small MPAs — such as from improved fishing or tourism — that can be the hook that gets communities involved. It’s not so much the number of hectares saved that’s important; we’re establishing examples of how improvements can be made.”

Now, Proyek Pesisir is working to apply the community-based model to other Indonesian provinces by distributing lessons from the three-village pilot program. In addition, the project will hold a workshop this September with Filipinos and Indonesians to discuss lessons learned from their sanctuary management.

On the subject of what advice he would give to other capacity trainers, Crawford said that several capacity-building techniques applied over the long term were the best method. “One technique alone won’t do it,” he said. “You need multiple strategies: short-term skills training (such as mapping), mentoring with more experienced professionals, and learning by doing. You should also take an incremental approach. Provide some basic concepts on integrated coastal management and community-based sanctuaries, then meet back in six months and take it a bit further.”

US is training, learning

The US National Oceanic and Atmospheric Administration (NOAA) has engaged in both sides of the capacity-building process, according to Bud Ehler, director of NOAA’s International Programs Office. On the training side, his office is partnering with the IUCN (World Conservation Union) World Commission on Protected Areas to

offer technical support to workgroups from the Caribbean and the Northwest Pacific.

“With the IUCN workgroups, we’re working with countries to develop regional action plans with regard to sustainable fisheries, integrated coastal management, and strengthening the global representative system of MPAs,” said Ehler. “The message for us has been that we can work with other countries whose real need is not necessarily financial support from us, but technical and planning support.

“One of the benefits of working internationally is that there’s a lot to be learned from the experience of other countries,” he continued. “In particular we’re looking at the application of no-take reserves by other nations, like the Philippines and South Africa.” Ehler pointed to the establishment of a no-take “ecological reserve” in the Florida Keys National Marine Sanctuary (MPA News 1:1) as an example of the US incorporating a lesson learned from other countries.

Similar to the North Sulawesi project, NOAA has encouraged the development of partnering programs between MPA personnel inside and outside the US. Various partnerships with managers in China, South Africa, Mexico, and Canada have led to staff exchanges with US federal MPAs and training workshops in which personnel of both countries share their experiences and knowledge. The US and China, for example, have established three sets of “sister sanctuaries” which exhibit similar physical properties and environmental challenges. (The partnering projects are described in more detail at <http://www.nos.noaa.gov/ipo/projects/us-china/>.)

Challenges in the Caribbean

Although some areas of the world have benefited from capacity-building efforts initiated by externally funded programs and governments, other areas remain challenged by needs for funds, information, skilled personnel, and appropriate institutional structure. Tom van’t Hof, who has established three MPAs in the Netherlands Antilles and consulted on MPA projects around the world, said that although capacity-building was identified 10 years ago as an area of concern for Caribbean MPAs, it remains a problem. “Many Caribbean MPAs are still struggling with the fact that they exist on paper but do not have the capacity to manage effectively,” van’t Hof said.

The main reason for the lack of progress, he said, was the lack of institutional structure. “With one or two exceptions, there are no Caribbean nations that have — or can afford — specialized park management agencies,” he said. “Park management is therefore often delegated to a fisheries or forestry department whose primary mandates are not conservation-oriented. In some cases, management is put in the hands of statutory bodies that operate semi-independently from government, or is contracted out to NGOs.”

To counter this, said van't Hof, MPAs need to start building a network of relationships involving government, NGOs, and the private sector. "My advice is to use all available opportunities for training personnel, and for funding MPA management, outside of traditional government subventions," he said. "The private sector, for example, can contribute in many ways. Financially, they can contribute through license fees, sponsorships, and fees for use of the park name in advertising. Dive tour operators can assist with maintenance, surveillance, law enforcement, and resource monitoring."

He is optimistic about the new "Training of Trainers" course offered to Caribbean MPA managers by the United Nations Environment Programme (UNEP) and The Nature Conservancy (TNC). A 10-day course covering everything from marine ecology to planning, management, monitoring, and communication, "Training of Trainers" is designed to offer comprehensive instruction that managers may then use to train other managers in their countries. UNEP and TNC offered the first course last November in English, and will offer a Spanish-language version in April of this year. Eventually, the course's modules will be used to offer custom-made seminars, like a two-day course on management planning or a one-day workshop on participatory approaches. (For more information on the course, contact Alessandra Vanzella-Khoury, whose contact information is provided at the end of this article.)

Capacity Challenges for Caribbean MPA Managers

Georgina Bustamante, The Nature Conservancy's marine conservation coordinator for the Caribbean, said that Caribbean MPA managers face several capacity-related challenges, including:

- * Shortages of management plans and of research data needed to support such plans in negotiations with other stakeholders.
- * A lack of sustainable funding for implementing regulatory measures, such as mooring buoy placement and maintenance, ecotourism projects, patrolling, and outreach programs.
- * Pressure from the fishing community, tourism developers, and government agencies to manage their MPAs in ways favorable to the fishing and tourism sectors.

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Science of capacity building

There are ongoing efforts by intergovernmental institutions to apply a scientific look at capacity-building. In the interest of becoming more efficient in its assistance to developing nations, for example, the Global Environment Facility (GEF) of the United Nations Development Programme has initiated a project to measure the success of its various capacity-building efforts. Through its Capacity Development Initiative, the GEF will develop a strategic approach to assisting developing nations. Only a minority of the projects under analysis involve marine resource management, although some of the lessons should be transferable. (More information is available at http://www.undp.org/gef/web_files/index.html.)

In terms of building human capacity for MPA management, the science may involve a retreat to past mores, in at least one area of the world. Austin Bowden-Kerby, project scientist for the Coral Reef Restoration and Development Project in Fiji, pointed out that the idea of no-take MPAs is a Pacific Island concept that has existed for thousands of years before being discovered recently by scientists. Traditionally called "tabu" or "tapu" areas (or "kapu" in Hawaii, as noted by Jim Bohnsack, [MPA News 1:5]), these zones gave honor to the ancestors and to the gods, ensuring continued benevolence, health, and the continued harvest of fish and crops.

"Unfortunately, the coming of the missionaries caused the opening of most of the tabu areas," said Bowden-Kerby, noting that the zones were based more on belief in the old religion than on a conscious understanding of resource management. "Now the islanders are beginning to realize that that was a mistake, and are beginning to re-establish tabu areas on their coral reefs and lands." In the case of these islanders, capacity-building has involved their return to the practices, if not the reasons, of their ancestors.

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Clinton Administration Seeks No-Take Status for 20% of US Coral Reefs

The Clinton administration has proposed that the US provide “no-take” status to at least 20% of its coral reefs by 2010 in the interest of protecting the reefs from over-fishing. Describing the nation’s coral reef system as being “in peril,” administration officials voiced their intent to ban fishing on at least one-fifth of US coral reefs and establish sustainable management systems for the remainder.

The US Coral Reef Task Force, created by President Clinton in 1998, delivered the recommendations earlier this month (March) in a National Action Plan. The task force includes officials from 11 federal agencies as well as several state and territorial governments.

Scientists, NGOs Call for Creation of National MPA Council in US

The US federal government should create a permanent, interagency council to set standards, and seek opportunities, for the establishment of marine protected areas in the country, according to a group of scientists and non-governmental organizations (NGOs) who made their recommendation to the Clinton Administration in February.

The group also called on the US to establish regional MPA councils to begin the process of building MPA networks, and for the nation eventually to set aside at least 20% of each marine ecotype as no-take reserves. Two NGOs — the Marine Conservation Biology Institute and The Cousteau Society — convened the work group, which included a dozen natural and social scientists from inside and outside the US.

The group noted existing federal and state initiatives to create effective systems of MPAs, but urged the federal government to integrate the various efforts to protect the nation’s waters as a whole. Unlike Australia’s cooperative effort (including commonwealth, state and territory agencies) to create a national representative system of MPAs, the US has not attempted to coordinate the myriad MPA-related initiatives of its federal, state, and local governments.

To download a copy of the work group’s Call for Presidential Action, go to <http://www.mcbi.org/>.

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Less than 3% of the US’ 17,000 km² of coral reefs are presently designated as no-take reserves. The task force estimated that 10% of the nation’s coral reefs are already degraded beyond recovery, while another two-thirds are under severe environmental stress, with the two main stressors being overfishing and pollution.

MPAs, said the action plan, “may represent the nation’s best — and perhaps last — hope to save these invaluable [coral reef] ecosystems from further decline.”

Mapping of reefs

The action plan calls for the production of comprehensive digital maps of all US coral reefs for use in characterizing habitats, designing monitoring programs, and planning regional conservation measures such as MPAs. According to the task force, the eventual network of coral reef MPAs should include a full representation of all coral reefs and associated habitats in US waters.

More than 90% of US coral reef habitats are in the Western Pacific (Hawaii, Guam, American Samoa, and the Northern Mariana Islands), with the remainder located in the Caribbean. The proposed establishment of no-take reserves would likely show a similar distribution, according to task force participants, with the large majority of no-take sites being located in the Western Pacific.

The task force intends for the no-take reserves to be created through multi-stakeholder processes involving consensus decision making, similar to the Tortugas 2000 process that yielded an “ecological reserve” in the Florida Keys National Marine Sanctuary last year (MPA News 1:1).

“In general, Tortugas 2000 is a great example of how this could be done,” said Roger Griffis, an environmental policy advisor for the US National Oceanic and Atmospheric Administration (NOAA). Noting that such consensus processes can be lengthy, Griffis said, “They do take time, but that’s not necessarily a bad thing. There are limits to how much you can streamline them, because you want the input of the community.”

The 20% trend

The task force’s 20% target for no-take reserves reflects a growing political trend — advocated by several fisheries scientists, particularly in the US — for adopting that figure as a precaution, pending further research on fishing’s impacts. The Bahamas adopted it in its proposal in January to set aside 20%, or one-fifth, of its waters as no-take reserves (MPA News 1:5).

One-fifth of the US’ total coral reef habitat would be 3,400 km², divided among multiple no-take reserves. For reference, the Monterey Bay National Marine Sanctuary in

the US is 12,400 km²; Australia's Great Barrier Reef Marine Park is 350,000 km².

Although coral reef habitats represent just a small fraction of all US marine waters, the task force's plan is one of the first coordinated, inter-agency efforts in the US to set up a networked system of MPAs. Scientists and environmental groups have called for a similar coordinated system to oversee the creation of MPAs in all US marine habitats, not just coral reefs (see box on preceding page).

Administration officials are looking to share lessons learned from coral reef MPA-related efforts in US waters with other MPA programs, inside and outside of US borders. The action plan calls for an evaluation of traditional and community-based coral reef conservation

efforts, particularly in the US islands, and to support sustainable practices. It also calls for strengthening international cooperation among countries with coral reef habitats to conserve global biodiversity and enhance the viability of reef systems worldwide.

The Coral Reef Task Force's National Action Plan and supporting documents are available for downloading, at <http://coralreef.gov/WG-reports.html>.

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MPA Perspective

Indo-Pacific Should Protect More Reef Fish Spawning Aggregation Sites

By R.E. Johannes

[Editor's note: This article has been excerpted by MPA News from a contribution by R.E. Johannes, full text forthcoming in Marine and Coastal Protected Areas: A Guide for Planners and Managers [3rd edition], by Rod Salm and John Clark, to be available later this year. MPA News recognizes and appreciates the diversity of perspectives held by MPA experts around the world, and welcomes the use of MPA News for the sharing of these viewpoints. For guidelines, visit our website, at <http://www.mpanews.org/>.]

Many different species of coral reef food fish aggregate at the same locations each year in order to spawn. Groupers are best known for this habit because they tend to stay at such sites for 1-2 weeks per lunar month during the spawning season. Snappers, jacks, emperors, and surgeonfish are among the food fishes that also use such sites.

In the case of groupers, spawning aggregations have been completely obliterated by overfishing at a number of locations in both the Atlantic and the Pacific (reviewed by Johannes et al. 1999). In recent years, moreover, fishers in the billion dollar live reef food fish industry — centered in Southeast Asia and spreading into the Pacific and Indian Ocean islands — have started to target spawning aggregations.

Proponents of marine protected areas routinely assert that their most important function is to protect spawning stock biomass and improve recruitment to fished areas by means of larval dispersal. Yet, with rare exceptions, the locations of important spawning aggregation sites seem almost never to have been

taken into account by MPA planners in the tropical Indo-Pacific. Even Australia, with the biggest coral reef in the world, is only now beginning to consider the need for protecting spawning aggregations. In contrast, most Caribbean countries, which do not have the problem of the live reef food fish trade to contend with, nevertheless employ a host of measures to protect their reef fish spawning aggregations (reviewed by Johannes et al. 1999).

The tiny Pacific island country of Palau is 20 years ahead of the rest of the tropical Indo-Pacific in giving legal protection to a spawning aggregation site. Palauans, like many other Pacific islanders, had a variety of traditional marine resource management practices — including the protection of spawning aggregations — through placing taboos on them. But traditional authority has weakened in the past half-century and government regulation was sought by Palauan fishermen to help fill the vacuum.

Accordingly, in 1976, Palau passed a law to prohibit fishing from April through July in Ngerumekaol Channel, Palau's best known spawning aggregation site. Fishermen volunteered that this was the peak season for spawning aggregations of three species of groupers; for about ten days prior to the new moon they aggregate there by the thousands in order to spawn. Recent research has shown, moreover, that more than 50 other species of reef fish spawn there, including snappers and unicorn fish. The last of these is the single most important fish in the commercial reef catch (Johannes et al. 1999).

While Palau is still feeling its way towards optimum protection for this important reef fish spawning

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aggregation site, it is nevertheless well ahead of the rest of the tropical Indo-Pacific in this regard and provides an example from which other countries can learn. The small Micronesian state of Pohnpei has recently moved to protect its grouper spawning aggregations — apparently the only other state in the tropical Indo-Pacific to protect important reef fish spawning aggregation.

Why have the locations of important spawning aggregation sites almost never been taken into consideration when delineating marine protected areas in the Indo-Pacific, nor have other measures, such as closed seasons, been taken to protect them? Some fisheries managers say that they do not have adequate data to prove that they are threatened.

There are two responses to this:

1. Waiting for adequate data will, in many cases, mean waiting forever; there are vast areas of tropical nearshore waters where obtaining such data is impractical or too expensive, and will remain so indefinitely (Johannes 1998).

2. Where data have been collected, the track record of grouper (and snapper) fisheries is poor; typically they are the first reef fish stocks to collapse in response to increasing fishing pressure.

Under the circumstances, precautionary protection of reef fish spawning aggregations is not merely appropriate; in many areas of the tropical Indo-Pacific, it is vital.

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