

Developing a National System of MPAs: US Working To Promote Coordination of Existing and Future Sites

Several nations worldwide are wrestling with the challenge of building cohesive and effective systems of MPAs in their waters. In the US, when former President Bill Clinton declared by executive order in 2000 that his nation develop a comprehensive national system of MPAs (*MPA News* 1:9), few details were available on how that mandate should be accomplished. Fleshing out the details — including what exactly a “national system” of MPAs is — has largely been the responsibility of a federal interagency program, the National Marine Protected Areas Center, established by the same executive order.

The MPA Center, as it is known, is in the process of developing a framework for what the US national system should be: its purpose, goals, and processes for implementation. In doing so, it is soliciting input from management authorities and stakeholders nationwide, and receiving expert opinion from a federal advisory committee (see box at right, “US advisory committee on MPAs offers recommendations”). To examine the MPA Center’s progress so far and what it hopes the US system will ultimately achieve, *MPA News* discusses development of the system with Jonathan Kelsey, national system coordinator, and Dana Topousis, communications director, of the MPA Center.

MPA News: The US has hundreds of MPAs already designated at various governmental levels. When you say you want to develop a “national system” of these, what do you mean?

Jonathan Kelsey: With some exceptions — like in the Florida Keys — this existing set of individual MPAs and programs at the state and federal levels is not coordinated in a way that maximizes effectiveness, such as by developing and working toward common management goals. The national system we are developing is intended to do just that. It will build partnerships at the regional and national levels with existing sites and programs to promote coordination of effort, like for planning and management. The national system will also look for efficiencies in addressing common needs and integrating the main conservation purposes for which MPAs are most often designated — natural

heritage, cultural heritage, and sustainable production. [Editor’s note: Italy is another country that is working to coordinate its MPAs: a national project, *Sistema Afrodite*, is coordinating research and monitoring at sites throughout the nation’s waters (*MPA News* 5:3).]

MPA News: Will the US national system be different from a “network” of MPAs?

Kelsey: A national system of MPAs is a set of sites that collectively meets common national, regional, and ecosystem-based goals, and supports coordination across those sites and their programs. Within that system, an ecologically connected network of MPAs would be a tool used at the regional or ecosystem level to protect related areas associated with key life-history stages of marine resources, such as spawning or nursery habitats. So networks of sites would be subsets of the US national system. Incidentally, networks could also be used to connect series of related cultural marine resources, such as shipwrecks.

MPA News: What are some of the challenges the MPA Center has faced so far in building the national system?

Dana Topousis: One challenge is ensuring that government agencies and other stakeholders understand how essential their feedback is to developing an effective MPA system. To ensure transparency for our process, we have held public and agency workshops in several regions around the country, and have made sure the US website on MPAs (<http://www.mpa.gov>) has the latest information about the process.

Another challenge has been the complexity of MPA terminology. In many peoples’ minds, the term “MPA”

US advisory committee on MPAs offers recommendations

In June 2005, a federally appointed committee of experts on MPAs delivered its first set of recommendations on establishing and managing a national system of MPAs in the US. The report of the Marine Protected Areas Federal Advisory Committee (MPA-FAC) sets guiding principles, establishes goals and objectives, and articulates processes for assessing existing MPAs and proposing new sites for inclusion in the national system.

The MPA-FAC recommendations will be considered by the Departments of Commerce and the Interior. The departments will then work with the National Marine Protected Areas Center — the federal program responsible for overseeing development of the national system — to determine how to implement the recommendations. The committee report, *Protecting America’s Marine Environment*, is available online in PDF format at http://www.mpa.gov/fac/pdf/mpafac_report_06_05.pdf.

Table of Contents

| | |
|---|---|
| Developing a National System of MPAs: US Working To Promote Coordination of Existing and Future Sites | 1 |
| Feedback on the Roles of Science and Stakeholders in MPA Decision-making | 3 |
| Letter to the Editor | 4 |
| Notes & News | 5 |
| Note from the Editor | 6 |

continued on next page

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means no-take reserve — a misconception since MPAs normally include a range of sites from multiple-use, to no-take, to no-access. At the same time, we have found that the definition of MPA found in the executive order is too vague: it contains key terms that can be interpreted in many ways [see box below, “Tightening the definition of ‘MPA’”]. A more refined definition of MPA, specifically for the purpose of establishing criteria for the national system, is something on which we are seeking input.

MPA News: When do you anticipate the system of MPAs will be completed?

Kelsey: Once the framework document for the national system is finalized, hopefully by early 2007, we will use it to identify existing sites that meet the system’s criteria. We will then consult with the management agencies and authorities for those sites to determine if they are interested in participating. We hope to complete this initial national system of existing MPAs and begin working with those participating sites and programs on priority needs by the end of 2007. In the meantime, the MPA Center will begin work with pilot regions to identify regional MPA priorities. This will take several

years and involve our working collaboratively with managing agencies [at federal and state levels] and interested stakeholders, region by region. A complete set of regional priorities could be completed by 2011.

MPA News: Australia has adopted a similar regional approach in developing its own national system of MPAs (*MPA News* 5:3 and 5:11). One part of its process has involved engaging regional stakeholders to help plan new MPAs. Will the planning of new MPAs play a role in developing the US MPA system?

Topousis: The initial focus of the US national system is to develop common criteria for MPAs, identify existing sites, and enable coordination at the regional level, not to plan new MPAs. However, the ensuing collaborative process to identify regional MPA priorities could result in identification of areas to be considered for MPA designation by existing programs and authorities. In facilitating this regional planning process, the role of the MPA Center will be to ensure that all interested agencies and stakeholders have appropriate opportunities for participation, and provide them with sound science to analyze priority natural and cultural resource areas and gaps in management and protection. 

Tightening the definition of “MPA”

Deciding what is, or is not, an MPA is not always easy. When the US federal government defined “marine protected area” in 2000 as part of an executive order to establish a national MPA system, the definition featured several words whose meanings in this context were unclear. The lack of clarity has challenged efforts to determine whether existing candidate sites for the national system qualify, in fact, as MPAs — a challenge similarly faced by MPA inventory projects worldwide (*MPA News* 6:8).

A federal advisory committee responsible for providing recommendations on development of the US national MPA system has offered its interpretation of the definition. For the purpose of demonstrating the difficulty in defining MPAs and how one expert body has addressed it, *MPA News* provides the committee’s interpretation of three key terms here:

US Executive Order 13158: A marine protected area is “...any *area*¹ of the *marine environment*² that has been reserved by federal, state, territorial, tribal, or local laws or regulations to provide *lasting*³ protection for part or all of the natural and cultural resources therein.”

1. *Area:* A marine site or region that has legally defined geographic boundaries. The site or region shall not include the entire US Exclusive Economic Zone or an entire state’s waters.

2. *Marine environment:* Coastal and ocean waters and seafloors, including intertidal areas (to mean high tide level), estuaries (extending upstream to 0.5 ppt salinity), and the Great Lakes (to ordinary high water).

3. *Lasting:* Enduring long enough to enhance the conservation, protection, or sustainability of natural or cultural marine resources. The minimum duration of “lasting” protection ranges from 10 years to indefinite, depending on the type and purpose of MPA. An “indefinite” duration of protection means that the intent at the time of designation is permanent protection. The distinction between “indefinite” and “permanent” acknowledges that MPA designation and level of protection may change for various reasons, including natural disasters that may destroy or alter resources, or changes in societal values.

Adapted by *MPA News* from *Protecting America’s Marine Environment: A Report of the Marine Protected Areas Federal Advisory Committee on Establishing and Managing a National System of Marine Protected Areas* (http://www.mpa.gov/fac/pdf/mpafac_report_06_05.pdf).

Feedback on the Roles of Science and Stakeholders in MPA Decision-making

In an essay in the June 2005 issue of *MPA News*, Nancy Dahl-Tacconi of the University of Queensland called on MPA managers to balance the roles of science and stakeholder participation in decision-making (“Science, Participation, and Politics in MPA Management”, *MPA News* 6:11). At the end of the essay, *MPA News* asked readers: What role should negotiation with stakeholders play, and are there times when decisions should be based primarily on natural science with less consideration of stakeholders’ concerns?

Feedback, consisting of two letters and an interview, is presented below:

Letter: Decision-making is always a negotiation

Dear *MPA News*:

Natural scientists, as professionals, may know far more than other stakeholders about natural science. However, decision-making is always a negotiation among a variety of agents involving societal choices, trade-offs, and value judgments. After all, we do not “manage” natural systems; we manage the human activities that influence those systems, and it is these human/ecosystem interactions on which we need to focus management strategy. In this context, the views and values of natural scientists are no more valid than those of other stakeholders. So when it comes to making management decisions, all stakeholders are, or should be, equal participants. The management plan that reflects the values and desires of as many stakeholders as possible is also the one most likely to work.

I am not rejecting scientific input — far from it. Rather, *all* factors should be recognized and included. (Basing decisions on purely economic concerns can be fairly disastrous, too.)

Granted, this represents an optimistic view of community decision-making. I have been involved in such decision-making where the option put forward by “educated and informed management” (me!) was rejected out of hand to my astonishment, and I had to accept that. Thankfully, no urgent natural science questions were at stake. But there may be other cases where communities select short-term, self-interested options with potentially harmful consequences, from a natural scientist’s viewpoint. Should these scientists have some sort of right of veto? I am not sure, and I am even less sure how it would be implemented.

It should be noted that the statement “Management should be based on sound science” is interpreted differently by different disciplinary perspectives. The natural scientist places the emphasis on “sound science” (as opposed to unsound science). The social scientist places the emphasis on “based on”, recognizing that

there are many other factors that contribute to management.

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Editor’s note: Karen Bowler is a Ph.D. candidate studying the Irish Sea as a socio-ecological system.

Letter: Socio-economic factors determine MPA fate

Dear *MPA News*:

The issue of what role stakeholders should play in MPA decision-making is a critical question. Please forgive me if I quote from *Guidelines for Marine Protected Areas* (IUCN 1999), with which, I suppose predictably, I strongly agree:

“5.2 — In selecting sites, the conservation needs should be balanced with the needs of local people, who may depend on the sea for their livelihoods.

“In most countries, there is a long history of using marine areas close to the coast, often for subsistence. Attempts to exclude these uses from traditional areas may jeopardize the well-being or even survival of the human communities involved. In such cases, opposition will be strong and undermine successful management of these areas if they are ever established.

“It is better to create and manage successfully an MPA that may not be ideal in ecological terms, but which achieves the purposes for which it is established, than to labor vainly to create the theoretically ideal MPA. Where there is a choice of ecologically suitable areas, as there often is in the sea, the dominant criteria for selection of MPA locations, boundaries, and management systems should be socio-economic. Where there is no choice, ecological criteria should come first.

“In general, not enough weight has been given to socio-economic criteria in the selection of MPAs, yet these factors will probably determine whether the MPA flourishes or fails. Because community support is absolutely vital to the success of any MPA, MPAs that contribute to economic activity will be far easier to create and manage than those that do not.”

Graeme Kelleher

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Editor’s note: Graeme Kelleher, a senior advisor to the IUCN World Commission on Protected Areas, edited Guidelines for Marine Protected Areas. The full publication is available in PDF format at <http://www.iucn.org/themes/marine/pdf/mpaguid.pdf>.

Interview: Policy decisions should be based on ecology

M. Nils Peterson, a biologist at Michigan State University (US), writes in the June 2005 issue of *Conservation Biology* that the overuse of consensus-based processes by resource managers can have dangerous implications for the resources being managed (“Conservation and the Myth of Consensus”, Volume 19, No. 3, pp. 762-767.) He recommends the use of an “argumentative model” in decision-making, rooted in ecology and allowing for dissent among stakeholders. For a copy of his paper, e-mail Peterson at peter529@msu.edu.

MPA News: Should environmental policy decisions be based more on ecology than on socioeconomic considerations?


Nils Peterson: Absolutely. If we do not base policy decisions on ecology, the socioeconomic impact is disastrous. But, as you know, it is not simple. Context should inform environmental decision-making in every case, and the context is a milieu resulting from past interactions between societies and their environments. Ecological historians have demonstrated how culture (including economy, religion, education, etc.) interacted with nature (e.g., climate, availability of fossil fuels, adjacency of water bodies, species compositions) to create decision-making contexts. Arbitrarily dividing ecological and socioeconomic considerations is analogous to dividing the brain from the rest of your body when making health decisions.

MPA News: One of the main arguments made in favor of consensus-based processes for MPAs is that they foster compliance with regulations: if everyone agrees

on what the regulations should be, then everyone will obey them. The argumentative model that you propose would result in some people not agreeing with regulations of a site. Do you believe your model still works best for MPAs?

Peterson: If a policy does not protect the natural resources it is intended to protect, it does not help to have 100% compliance. Bad policy remains bad policy, even if everyone follows it. One of the biggest weaknesses of consensus-based processes is their focus on ensuring that everyone “feels good” about the outcome. That can lead to sloppy decision-making.

Consensus, it should be said, is not an inappropriate goal, because it does foster compliance, thus lowering the cost of implementation and monitoring. We are not suggesting abandoning consensus, merely de-centering it. Instead, our argumentative model facilitates creative use of dissent when it exists. An argumentative approach makes dissenters responsible for explaining the rationale behind their dissent in an attempt to influence policy. It offers a realistic means of negotiating the politics of opposing identities and interests that confront one another in environmental policy deliberations.

Our model relies on evidence that citizens of democratic states often obey laws because they believe widespread obedience to law protects the community’s interests, not because the law meets their individual short-term interests. They will not do this if the legal system loses its legitimacy. Thus, we are not advocating doing away with public participation; instead we suggest legitimizing dissent within public participation. Dissent is essential for any sustainable society because dissent leads to change, and society must change to survive in a dynamic environment. 

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Letter to the Editor

No-take areas are not one-size-fits-all solution

Dear MPA News:

The Pew Fellows report discussed in the June issue (*MPA News* 6:11) is troubling. To say that 10-50% of all marine ecosystems should become no-take zones ignores reality. In each part of the sea where protection is necessary, there are areas where no-take is justified within MPA boundaries, and areas where other types of management are more appropriate.

In a scientific manner, certain key areas of MPAs should be identified and given full protection because of their vital functions, while the remaining portions should be managed in other ways for particular purposes. Most MPAs will include a variety of ecosystems, each needing to be managed optimally depending upon specific conditions. This requires

knowledge of each of the underwater habitats and their optimal functioning, as well as the particular threats facing them. A multi-objective management scheme should be established within each MPA to properly manage its various parts.

To close up to 50% of all marine ecosystems because one does not know how else to manage them says that research, knowledge of the system, and commitment to appropriate, scientifically based, multi-objective management is to be scrapped in favor of an easy-fix, one-size-fits-all, draconian approach.

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Editor's note: Clark is co-author, with Rodney Salm and Erkki Siirila, of Marine and Coastal Protected Areas: A Guide for Planners and Managers, now in its third edition (IUCN 2000).

Notes & News

Study: Total fish biomass could take 20+ years to recover inside reserves

A new study in the journal *Marine Ecology Progress Series* finds that total fish biomass inside no-take marine reserves could take more than 20 years to recover to its maximum level following closure of the area. The study, by Tim McClanahan of the Wildlife Conservation Society (an international NGO) and Nicholas Graham of the University of Newcastle (UK), examines the size structure and biomass of total fish populations in four coral MPAs in Kenya, repeatedly sampled from the 1980s onward. Analyzed across the four sites, biomass of the fish assemblages reached a peak between 21 and 22 years after closure.

“The study suggests that the time to recovery can be slow, more than two decades, which makes it important to have permanent and full closures so that countries have areas that represent relatively undisturbed ecosystems,” says McClanahan. “Given that this study was in the tropics and near the equator, it would suggest that this might actually be one of the faster recovery times expected. As one moves farther from the tropics, colder water and greater seasonality should produce a shorter growing season and therefore slower inter-annual growth rates.”

McClanahan says spillover of adults or larvae from reserves to fished areas would be expected to be proportional to the recovery of biomass inside the reserves. Therefore, spillover could take a similar amount of time — 20 years or more — to reach its full effect. “Reserve planners must, therefore, convince stakeholders to have a long view of the expected reserve effects on fisheries,” he says. For a copy of the paper, “Recovery trajectories of coral fish assemblages within Kenyan marine protected areas” (*Marine Ecology Progress Series*, Vol. 294:241-248, 2005), e-mail McClanahan at tmccclanahan@wcs.org.

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Managers recommend trawl ban for US Pacific coast waters, reserves for Channel Islands

In a move intended to prohibit expansion of bottom trawl fishing and protect deep-sea habitats and ground-fish species, federal fisheries managers for the US Pacific coast recommended in June that all regional waters beyond the 700-fathom depth contour be closed permanently to such gear. (That depth contour is

equivalent to 1280 meters.) The recommendation, if approved by the federal fisheries agency (NOAA Fisheries), would ban bottom trawling in an area of 845,000 km², amounting to roughly 75% of US waters between the Canadian and Mexican borders.

The recommendation by the Pacific Fishery Management Council was developed through a collaborative process involving trawl fishermen, other fisheries representatives, conservationists, and Pacific coast states (California, Oregon, and Washington). The ban on bottom trawling is not expected to affect the trawl industry in the near term, as most current trawling activity occurs in areas slated to remain open.

The collaborative process also resulted in recommendations to close several ecologically important sites in nearer-shore waters to various fishing gear types. Among these recommended closures were several areas within existing national marine sanctuaries, including the multiple-use Channel Islands National Marine Sanctuary (CINMS). The proposed closures for CINMS, intended to apply to all gear types, are consistent with those recommended by stakeholders and experts in 2002 as part of a process to plan a network of marine reserves within the sanctuary (*MPA News* 4:6). If approved by NOAA Fisheries, the closures would largely represent the culmination of that earlier planning process, and would raise the percentage of the sanctuary that is no-take to approximately 20%. (A complementary set of reserves in state waters of the sanctuary already took effect in 2003.)

A summary of the council recommendations, with a map of all affected areas, is available at http://www.pcouncil.org/groundfish/gfefeis/pfmc_efeis_pa.pdf.

The trawl ban recommendation reflects similar management moves elsewhere this year. In February 2005, managers of US North Pacific fisheries voted to prohibit bottom trawling in 950,000 km² of waters around the Aleutian Islands in an effort to minimize impacts on sensitive coral and sponge habitat (*MPA News* 6:8). Also that month, the main intergovernmental fishery management body for the Mediterranean voted to prohibit bottom trawling in all areas of the Mediterranean and Black Sea deeper than 1000 m — a closure estimated to be 1.63 million km² in size (*MPA News* 6:9).

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Journal publishes issue on acoustic tracking of fish in MPAs

The Spring 2005 issue of the *Marine Technology Society Journal* is devoted to the subject of acoustic tracking of fish and its implications for the design of MPAs, with 11 articles on the topic. Access to the journal is free to members of the Marine Technology Society; non-members may order a copy of the Spring 2005 issue for US \$20. Information on the journal and how to order the issue is available at <http://www.mtsociety.org/publications/journal.cfm>. For background on the subject of acoustic tracking and marine protected areas, *MPA News* reported on the subject in April 2004 (*MPA News* 5:9).

Report identifies priority conservation areas for Pacific waters of North America

A new report identifies 28 priority conservation areas that experts consider essential to protecting the marine biological diversity of much of the Pacific coast of North America — from Baja California in Mexico to the Bering Sea. Part of an ongoing project to develop a network of MPAs spanning the jurisdictions of Canada, Mexico, and the US (*MPA News* 1:4), the report recommends that these priority conservation areas serve as nodes around which such an MPA network could be built. The sites, representing roughly 8% of the three nations' exclusive economic zones within the Baja California to Bering Sea (B2B) region, are not necessarily intended to serve as a prescriptive MPA network design.

The report was published by the Marine Conservation Biology Institute (a US-based NGO) and the Commission for Environmental Cooperation, an organization established by Canada, Mexico, and the US to address transboundary environmental concerns. The publication represents the data and opinions of hundreds of scientists, managers, and resource users from throughout the three countries, gathered during a five-year process. The ecology and human-use patterns of each priority conservation area are described, including notes on existing MPAs in each.

Report co-author Lance Morgan of the Marine Conservation Biology Institute says the next step is to match the report with community-based conservation planning involving stakeholders within the priority areas. "The report targets two groups," he says. "One is the public, to give it a sense of the connectedness of the North American seascape and the ecological jewels in this region. Two are the managers of MPAs and

Note from the Editor

Dear reader,

This issue of *MPA News* marks the beginning of our seventh year of publication. We have come a long way. When *MPA News* was launched in July 1999, the project goal was simply to help MPA practitioners worldwide learn from each other's experience. The project team never imagined that *MPA News* would eventually have subscribers in more than 100 countries — a mark we hit this past year.

It is gratifying that the project has proven to be useful enough to warrant that readership. More importantly, we are grateful for the assistance of the hundreds of experts worldwide who have shared their knowledge with their peers through *MPA News*. Without the abundant expertise they have volunteered, *MPA News* would not exist. Thank you.

We are part of a growing, global learning network of MPA practitioners — and you, the reader, are part of it, too. We count on your experience and insights to help your fellow planners and managers. Are you working on a project of potential interest to *MPA News's* readers? Do you have a tip on planning — or management, or monitoring — that could help your peers? Please let us know. We need to hear from you.



John B. Davis
Editor-in-Chief, *MPA News*

individuals working on MPA issues at the local and regional scales to provide a larger framework to assist their efforts." The report is available in PDF format (14 MB in size) at http://mcbi.org/marineprotected/B2B_Master.pdf.

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