

# MPA News

International News and Analysis on Marine Protected Areas

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## International MPA Plans Are Emerging Slowly, Amid Obstacles

Despite the international distribution of many marine ecosystems, efforts to provide international management plans for them have been slow in coming. Transboundary ecosystems have generally received piecemeal protection at most, with only rare efforts by planners to coordinate conservation efforts across political lines. Ecosystems on the high seas have received virtually no protection, save for the UN-sponsored multilateral agreement to protect Antarctic waters.

The challenges involved in international environmental protection are numerous, with political, legal, and social obstacles. Nonetheless, several recent efforts have emerged with regard to establishing international MPAs. Such efforts indicate what the future might hold for the protection of marine ecosystems.

### Challenges to international MPAs

For years, biologists have suggested that in order to maintain and restore biodiversity, coherent systems of protected areas must exist. In the young field of MPA science and management, the creation of a single nation's MPA network is often difficult enough, as countries struggling to network their marine protected areas can attest. To coordinate the science and management of protected marine habitats between two, four, ten or more nations can be exponentially more difficult.

Many of the same challenges that face the creation of national MPAs also face the creation of international ones — namely, how to site, monitor, enforce, and otherwise manage the areas. But international negotiations can also encounter language barriers and other communications difficulties, higher costs for meetings and scheduling, and concerns over national security, both economic and military. Any plans for high-seas MPAs must address the issue of the UN Convention on the Law of the Sea (UNCLOS), which holds the open ocean as a global commons. The high seas are therefore open to all nations, and subject to freedoms of navigation, fly-over, and fishing. These freedoms, unless amended through bilateral or multilateral agreements, would make enforcement of any high-seas MPA difficult.

Management of international MPAs provides its own set of issues. Take Antarctica, whose waters provide perhaps the foremost example of the possibility of international marine protection, as well as the challenges inherent in maintaining that protection. Under the Madrid Protocol, all land and waters southward of 60 degrees south latitude are protected to preserve the region's wilderness and scientific value. But confusion over seemingly contradictory protection regimes, and questions over jurisdiction by the Antarctic treaty parties, have allowed the continuation of some potentially hazardous actions, according to Kevin Wood, former marine projects coordinator for the US Antarctic Program. These actions include the incineration of plastics and other materials by research ships in the treaty area.

Differences among nations in treaty interpretation can limit the success of international environmental agreements, said Wood, now a masters candidate at the University of Washington School of Marine Affairs. He blames this in part on "vertical disintegration of policy" — the process of

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policy reinterpretation and fragmentation as it travels from international fora through various departments of domestic administration and finally to the field. "Often the result at the end of this chain has little in common with the policy objective as originally laid out," said Wood.

### **Calls for open-ocean MPAs**

Despite the challenges, proponents of international MPAs have continued to push for them. In 1998, biologists Jim Carlton (Williams College, US) and Claudia Mills (Friday Harbor Laboratories, US) wrote that, given the rising pressures on oceans from resource extraction, ocean conservation should include an international system of marine reserves for the open ocean (*Conservation Biology* Vol. 12, No. 1, pp. 244-7). These reserves would allow no fishing, shipping, or dumping.

Citing an opportunity to be proactive, Carlton and Mills wrote, "Establishing marine reserves on the high seas — regions not yet as direly affected as those coastal or terrestrial reserves adjacent to the major centers of human population — may provide the last opportunity to reach ahead of the destructive waves that accompany human behavior."

A project to encourage the protection of open-ocean ecosystems has been underway at the IUCN (World Conservation Union) since 1994. The IUCN High Seas Project, led by Maxine McCloskey, has largely consisted of enlisting the support of scientists at international conferences. The project has been hamstrung somewhat by a lack of a funding, said McCloskey, as well as by public impressions that international MPAs can't be achieved, aren't necessary, or distract from the protection of coastal ecosystems. She continues to spread the word. "An enormous percentage of the surface of the earth is high seas," said McCloskey. "Why is nobody looking at them?"

In Germany, an ad hoc group of experts on marine law and seabed science is about to take such a look. Led by Renate Platzöder, a law professor at the University of Munich Institute for International Affairs, the group is organizing an international workshop on high-seas MPAs for next year. Platzöder said the workshop will bring together legal experts to discuss possibilities for protecting the open ocean; such possibilities could include amendments to UNCLOS. The German group is noteworthy for its members' expertise on international ocean issues. Platzöder has represented Germany in UNCLOS negotiations for several years and published widely on Law of the Sea topics, while other members include the current president of the UN Seabed Council and a top deep-sea oceanographer.

Australia is already moving to secure protection for some seamounts in international waters. At a consultative process in June held to precede the next round of

UNCLOS negotiations, the commonwealth's delegation proposed the protection of seamounts in the Western Indian Ocean in response to the fishing industry's recent discovery of major orange roughy stocks on seamounts there. Tony Koslow of Australia's Commonwealth Scientific and Industrial Research Organization (CSIRO) hopes some protection can be put in place soon to ensure fishery sustainability and protection for seamount fauna.

With no controls in place on fishing these seamounts, said Koslow, "Virtually the only impediment to the rapid destruction of the [orange roughy] resource and the environment is the present poor state of knowledge of the Indian Ocean. It will take some time to adequately map the bottom and find the seamounts. But this is poor protection, indeed, given the current technologies available to carry out seafloor mapping." In a letter published last month in the journal *Nature* (Vol. 405, 22 June 2000, pp. 944-7), Koslow warned of the vulnerability of seamount habitats to trawling, due to the highly localized distribution of many seamount species.

### **Creation of transboundary MPAs**

Where there has arguably been the most progress on international MPAs has been in two- or three-nation projects. Last November, the governments of France, Italy, and Monaco jointly declared the creation of a 100,000 km<sup>2</sup> whale sanctuary in the Ligurian Sea, in the northwestern Mediterranean. The sanctuary protects an important summer feeding ground for about 2000 whales and thousands of other cetaceans. Broached in a 1993 letter of intent, the treaty commits the three signatory governments to coordinating monitoring activities, cracking down on pollution, and raising public awareness about the marine mammals and their habitat. According to one NGO, the Worldwide Fund for Nature, the sanctuary represents the first time in the northern hemisphere that several countries have established a transboundary marine protected area.

A team of NGOs from three Central American nations is pushing for the creation of a tri-national coastal management program and MPA network in shared waters. The Tri-National Alliance of NGOs for the Conservation of the Gulf of Honduras — formed of nine groups from Honduras, Belize, and Guatemala — has succeeded in getting their governments to talk about fisheries harmonization, according to Will Heyman, marine projects coordinator for the Belize Marine Program of The Nature Conservancy, an Alliance funder. "The Alliance was created after general recognition that the impacts to the basin were received from three countries," said Heyman, "so the conservation strategies must be viewed at the same scale."

The three governments are already collaborating on protection of the manatee, a shared endangered species, and Heyman feels this provides a useful entry to other

conservation topics. "It's less important than some of the larger issues, perhaps, but a good starting point for collaboration," he said. "This [has been] a strategy of the Alliance: start small, get compliance, move larger." There is no transboundary MPA in place yet in the Gulf, he said. "We've learned that this is a slow, laborious, and expensive process, requiring the commitment of many, but all members seem to feel at least satisfied with the growth in understanding — and attention and funding — coming to the area," he said.

Similar discussions of a multinational MPA network have taken place among the eight Arctic nations. At the Circumpolar Marine Workshop in November 1999, representatives of the Arctic rim countries, indigenous peoples, and NGOs approved a resolution to provide more and better protection of the marine environment, such as through a network of MPAs. The Arctic Council, a multinational organization consisting of ministers from each of the Arctic rim countries, will likely provide the framework for any such circumpolar cooperation on MPAs.

Separate negotiations are ongoing on the creation of two transboundary MPAs between Canada and the US. One

proposed MPA — the Gulf of Maine International Ocean Wilderness — would protect a suite of habitats representative of the Gulf of Maine along the eastern marine boundary of the two nations. Formerly referred to as the "Hague Line International Peace Park" (MPA News 1:3), the proposal is supported by several NGOs on both sides of the border. On the nations' western marine boundary, between British Columbia (Canada) and Washington State (US), a multistakeholder group led by NGOs is pushing for a locally governed, integrated network of MPAs, and has proposed creation of an Orca Pass International Stewardship Area.

### Cooperation among governments

For an international MPA to be effective, there must be international agreement on the area's planning and management. Such agreement is often the most difficult aspect of achieving international environmental protection. For open-ocean MPAs in particular, said McCloskey of the IUCN High Seas Project, the central legal question remains, Which body has the authority to establish, monitor, and enforce such MPAs?

International MPA agreements require cooperation — and sometimes the relinquishment of certain freedoms — among governments. When governments are ready to accept this, opportunities for marine resource protection on the ecosystem scale will follow.

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Details on the Gulf of Maine International Ocean Wilderness proposal are available online at [www.atlantisforce.org](http://www.atlantisforce.org). The website contains descriptions of habitats, maps, background science, fact sheets, and other information.

#### Contact:

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Details on the proposed Orca Pass International Stewardship Area are available online at [www.pugetsound.org/mpa](http://www.pugetsound.org/mpa).

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## New Feature

We've created a new feature to provide updated information on previous articles. Below is an update of the lead story from our first issue (July 1999).

### News Update: Tortugas Planning Process to Wrap Up Public Comments

The period for public comment will end July 31 on a proposal to create a no-take "ecological reserve" in the Tortugas area of the US Florida Keys National Marine Sanctuary (FKNMS). That date will mark a milestone in the long process to create a system of no-take areas in FKNMS, an MPA notable for its active commercial and recreational fishing industries. The final plan, incorporating public comments, will be produced later this year.

In a 1995 draft management plan for the sanctuary, FKNMS officials proposed the creation of a 110 sq. nautical mile (346 km<sup>2</sup>) no-take zone for the Tortugas area, to be part of a network of no-take zones in the sanctuary. However, the proposed Tortugas reserve drew criticism that it would cause serious economic harm to fishermen, and FKNMS officials removed it from the final management plan in 1996. Consequently, the sanctuary launched a collaborative initiative with an array of stakeholders to recommend a more acceptable boundary for a Tortugas reserve.

One year ago, the working group responsible for recommending the boundary reached consensus on an ecosystem-based plan for a 635 km<sup>2</sup> reserve, a significant portion of which would be outside of the FKNMS boundary. The working group waited to see how well the consensus would hold as the proposal made its way through the federal designation process. Although a representative of the sportfishing industry had been involved in the working group, another sportsmen's organization that was uninvolved in the planning — the Wildlife Legislative Fund of America, with reportedly 1.5 million members — threatened a lawsuit to block any such ban on recreational fishing.

Any lawsuit to block the ban would likely be lodged after action to designate the reserve is taken by the US Department of Commerce, which oversees the National Marine

Sanctuary Program. Designation of the reserve is likely to occur in 2001.

The working group's proposal included protection of spawning habitat for snapper and grouper, as well as deepwater habitat for other commercial species. The Tortugas region has the best water quality and healthiest coral in FKNMS.

#### Multiple jurisdictions

The working group was responsible for recommending a reserve boundary based on ecosystem considerations, not jurisdictions. As a result, the group recommended protection for an area of reef that fell within the jurisdictions of multiple federal or state agencies, including FKNMS, the Dry Tortugas National Park, the Gulf of Mexico Fisheries Management Council (US), and the state of Florida. The multi-jurisdictional recommendation has had somewhat of a fragmentary effect on agency efforts to adopt the working group's proposal: each agency has been responsible for addressing its portion of the proposed reserve.

The proposal document that is now open for public comment describes FKNMS' recommended alternatives for the boundary and management of its portion of the reserve. The other agencies are adapting the working group proposal to their own jurisdictions.

As described in the proposal document, FKNMS' preferred management alternative for the proposed ecological reserve would include making it a no-take area for all fishing, with no anchoring allowed. Mooring buoys would be available for boats 100 feet (30.5 meters) or shorter. Permission to enter — such as for diving — would be required.

Joanne Delaney, research interpreter at FKNMS and the sanctuary's contact person on the Tortugas process, said that support for the process from outside of the Keys has been helpful in moving it along. "It's garnered national and international attention," she said. "There's been support for the collaborative process that we're trying to achieve, as well as support from scientists." Scientists from as far away as the UK addressed the working group.

#### For more information:

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#### Tortugas proposal on the web

The document that includes FKNMS' proposed boundary and management plan for the Tortugas ecological reserve is available on the web, at [www.fknms.nos.noaa.gov](http://www.fknms.nos.noaa.gov). Directions on how to submit public comments are also available at the site.

## MPA Perspective: Are Traditional Models Adequate for Evaluating Prospective MPAs?

By Dan Holland, Alaska Fisheries Science Center, (US) National Marine Fisheries Service

[Editor's note: This article has been adapted by MPA News from a presentation given by Dan Holland on 7 July 2000 at the "Economics of MPAs" conference in Vancouver, BC, Canada. Holland is an economist.]

Whatever its objectives, the function of an MPA is to change (or preempt) the distribution of fishing effort in space, time, and possibly across species. The relevant question is whether the new distribution of effort will be superior to the current one and why.

To evaluate a specific prospective MPA, we need to determine:

- How the level, distribution, and effectiveness of fishing effort will change as a result of the MPA.
- How that will affect the productivity, variability, and value of all impacted fisheries through time.
- Whether it will be useful or necessary to constrain displacement of effort, and whether doing so would be possible or practical.
- How the impacts of the MPA will be distributed across user groups.

Are traditional models adequate? MPAs are likely to have impacts that extend well beyond the fish stocks they are targeted at protecting, as a result of displaced effort. Even when the impacts of an MPA are net positive for fishermen directly impacted by an MPA, incomes of fishermen in other, biologically separate fisheries may fall as a result of the effort they absorb. The flow of effort between areas will continue to change over time in response to changes in relative conditions. MPA models should consider impacts on directly and indirectly connected fisheries as an interactive system and provide information on distributional impacts.

An MPA will induce changes at a variety of time scales. Subannual, annual, and long-term processes may all be of considerable importance in determining overall results. The results of an MPA are likely to take many years, perhaps decades, to be fully realized. It is important to evaluate short-term losses against long-term gains. Models that utilize only annual-level information and provide only short-term or equilibrium predictions are likely to be inadequate.

Some of the basic components of fishery models may change after an MPA is implemented. We should be cautious about incorporating previously estimated parameters into models. For example, technical interactions and availability to fishing gear by age may change as spatial distributions of species and cohorts change. Natural mortality and growth may be altered by changes in habitat and the distribution of fish. Stock-recruitment relationships may change due to aggregation of the spawning stock, which may affect behavior and interaction with the environment.

There are several challenges that modelers face:

- Matching the temporal and spatial scale of physical, biological, and human processes requires altering standard biological and economic models and data collection systems.
- Many key parameters are uncertain and data to determine them is inadequate (e.g., spatial patterns of fish movement and recruitment and multi-species interactions both biological and technical).
- Even basic life history parameters from old models may be suspect.

Models used to provide management advice are rarely suited to evaluate MPAs. Dynamic spatial models of fisheries are needed to evaluate MPAs and other spatial management strategies, but this presents difficult challenges. Developing and perfecting these models will require continuing research on the interaction of underlying spatial processes — physical, biological and human. Improving models must be viewed as a long-term and iterative process.

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### In our next issue....

Measuring the economic value of a proposed marine protected area can be a critical issue in siting an MPA and gaining community support. We'll take a look at how some leading economists and biologists are calculating the market and non-market values of MPAs.

Dear Reader,

This issue marks the first anniversary of MPA News. Launched last July at the Coastal Zone '99 conference in San Diego, California, USA, the newsletter now has subscribers on six continents, in 54 countries. Your fellow readers include the leaders of national MPA programs, international NGOs, and major fishing organizations, as well as news media, academics, and other interested individuals.

On behalf of the staff and editorial board of MPA News, I want to thank you for the positive support that has allowed the newsletter to grow as it has, with little advertising on our part.

We will continue to improve our product. While our quality of news and analysis will remain constant, we will feature more perspective pieces written by experts in the field. We'll also provide updates on stories we've covered in past issues. In addition, we'll soon launch our new design of the paper version, making it more visually appealing and easier to use.

One year ago, I wrote, "MPA News is here to serve the MPA community, informing people and bringing them together." That remains our purpose. Let us know how we're doing. I look forward to hearing from you.

Sincerely,



John B. Davis  
Editor-in-Chief

## MPA News

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