MPA news

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International News and Analysis on Marine Protected Areas

Updates on MPA Networks in Progress: Experiences So Far in Victoria and West Hawai`i

This past May at the Second International Marine Protected Areas Congress (IMPAC2), multiple sessions offered insights on existing MPA networks, and practitioners reflected on their experiences to this point.

One of the most significant messages from the meeting was that some MPA networking initiatives have been in place long enough to begin yielding good practices. This month we examine two such networks: a state-run system of marine national parks in Victoria, Australia, and a network of fish replenishment areas to support the aquarium fishery in West Hawai`i.

Victoria: A representative system of no-take areas

In 2002 when the state government of Victoria designated its system of 13 marine national parks and 11 marine sanctuaries in state waters, it was the first time a government had established an entire, representative MPA system all at once (*MPA News* 4:7). Covering 5.4% of Victoria's waters, the system was not easy to plan. The process lasted ten years, involved six periods of public comment, and was overseen by three successive state governments. The effort encountered delays due to many factors, including evolving views on the merits of multiple-use parks vs. no-take areas. Ultimately the entire system was made no-take. The government developed a program to compensate users displaced by the new MPAs.

With the system in place for seven years now, management is focused on improving its understanding of the protected sites and addressing threats to the system. And the state government has completed its five-year adjustment and compensation program.

• Extensive mapping of habitats: During the planning process for the MPA system and even into 2005, Parks Victoria had only low-resolution habitat maps for most of its waters, including the MPAs. In the past four years, managers have conducted a program to produce high-resolution maps of many of the MPAs, with some maps featuring higher resolutions than 1 km^2. The idea behind these improved maps is to inform better management.

"An important part of the mapping process has been the input of managers into the scope, design, and products to make sure we produce the most useful mapping products possible," says Steffan Howe of Parks Victoria. "Maps can help identify areas vulnerable to

continued on next page

Note from the editor: An anniversary and a new publishing schedule

Dear reader,

In July 1999, the first issue of *MPA News* was published. Its purpose was simple: to help MPA planners and managers learn from each other, no matter where they were in the world. Now 10 years later, *MPA News* has more than 4000 subscribers in 122 countries. Our staff and editorial board are pleased to continue to serve the field of MPA planning and management. With you, we are building a global community of MPA practitioners.

This issue of *MPA News* also marks a new publishing schedule for the newsletter. For at least the next two years, *MPA News* will be published bimonthly (every other month), rather than monthly. The new publication schedule of *MPA News* will alternate with that of its sister newsletter *Marine Ecosystems and Management* (MEAM), which will also be distributed on a bimonthly basis. If you are not already a subscriber of MEAM and wish to sign up or read back issues, please visit its website at www.MEAM.net.

Although this means a less-frequent delivery for *MPA News*, we will supplement it with regular Web-based seminars to provide more in-depth analysis of particular subjects, straight from experts in the field. *MPA News* will co-produce these webinars with the EBM Tools Network. The first webinar will be announced soon at www.mpanews.org.

Thank you for your support of *MPA News*. It is a pleasure to serve you, and our team looks forward to continuing to do so for years to come.

John Davis
Editor

Table of Contents

the key threats identified for each MPA. This includes areas sensitive to physical damage, such as from anchoring, and areas sensitive to catchment-related runoff, such as seagrass beds." Parks Victoria and partners have already produced several habitat maps applied to particular management issues, and plan to produce a full range of applied maps related to the main threats to each of the MPAs.

Habitat mapping also has a range of other uses, says Howe. These include providing a baseline inventory of resources, informing emergency response planning, and simply discovering new aspects of the protected areas, which can be featured in public communications about the sites. Mapping can also track environmental change.

"The first mapping effort involved mapping of areas down to 10 meters depth using high-resolution aerial photographs that were ground-truthed using video," says Howe. "The second project was a deep-water mapping project that involved mapping areas from 10 to 105 meters depth through collection of hydro-acoustic data (using multibeam sonar), again with video ground-truthing. In both cases, ecological modeling was used to process the data collected to produce the final habitat maps."

Parks Victoria has partnered on the mapping with several institutions, including Primary Industries Research Victoria, the Coastal Cooperative Research Centre, the University of Western Australia, and Deakin University. Two other state government agencies, the Department of Sustainability and Environment (DSE) and the Department of Primary Industries (DPI), have also been involved.

• Addressing land-based threats to the system: When Victoria's MPA system was designated, fishing organizations criticized it as doing too little to address what they viewed as the main ecological problems facing Victoria's waters, particularly urban and rural runoff. Around 80% of Victorians live in coastal catchments, and populations are rising. Urban development and industrial and agricultural activity are creating diffuse and point source pollution via stormwater drains, sewage outfalls, and runoff.

Parks Victoria is taking a risk-based approach to management of the MPAs. Between July 2004 and February 2006, the agency held several risk assessment workshops across the state covering all the MPAs. The workshops allowed stakeholders to help identify valued attributes within the parks, as well as assess associated risks. Catchment-based runoff was identified as one of the major risks to the MPAs' natural values.

"For a parks management agency there are clear challenges in dealing with catchment-sourced nutrients or sediment loads, particularly where the park manager is not the land manager," says Howe. "Much of Victoria's urban and rural environments are managed by private landholders, local government, or other agencies. The challenge, as well as the opportunity, is to form partnerships with the various groups directly responsible for land management." He says such partnerships can seek cooperative and integrated approaches to managing whole landscapes with a view to reducing loads on the receiving waters.

Parks Victoria has initiated or partnered with other institutions on several projects to address catchment-based threats to marine values. The agency refers to these as Catchment Connections projects, and Parks Victoria has been integral in developing a "whole-of-landscape" approach to water quality. One example is the Watsons Creek – Yaringa Integrated Catchment Project. It engages local government, agencies, farmers, and urban communities in initiatives to improve water quality in one of the region's most polluted streams, which flows into Yaringa Marine National Park (www.biosphere.org.au/projects/watsoncreek/index.html).

For a full description of Parks Victoria efforts to integrate MPAs into catchment management, as well as lessons learned from these initiatives, go to www.coast2coast.org.au/presentation-files/Rodrigue.html.

• Compensating displaced users: A key part of legislative negotiations on the Victoria MPA system was developing a program to compensate fishing-license holders for losses due to the new no-take areas. "The Victorian government was unable to get parliamentary support for marine national parks until it included a fisheries adjustment package in its legislation to create them," says Chris Smyth of the Australian Conservation Foundation. "Providing compensation to commercial fishing licensees was one of several measures used to enable displaced activities to adjust to the network. Without these measures there would have been further political pressure to move the parks away from fished areas, something that had already occurred during negotiations with the fishing industry. The result would have been a less representative network."

The adjustment and compensation program lasted five years. In all, the Victorian government made 156 payments totaling AU $4.52 million (US $3.55 million), according to Joan Phillips of the Victorian Environmental Assessment Council. Almost 70% of the total amount went to compensate increased operating costs, and approximately 30% for reduced catches.

For more information:

Steffan Howe, Parks Victoria, Melbourne, Victoria, Australia. E-mail: showe@parks.vic.gov.au

Joan Phillips, Victorian Environmental Assessment Council, East Melbourne, Victoria, Australia. E-mail: joan.phillips@dse.vic.gov.au

Chris Smyth, Australian Conservation Foundation, Melbourne, Victoria, Australia. E-mail: C.Smyth@acfonline.org.au

Victorian MPA system is separate from South-east Commonwealth marine reserve system

The state of Victoria as a jurisdiction was not formally involved in the process to designate a representative system of marine reserves in adjacent Commonwealth waters, described in our February 2006 issue (*MPA News* 7:7). The latter system of reserves took effect in September 2007 and covers 226,458 km^2, including examples of the diverse seafloor features and associated habitats found in the South-east marine region of Australia. That region stretches from the far south coast of New South Wales, around Tasmania and Victoria, and west to Kangaroo Island off South Australia. (See www.environment.gov.au/coasts/mpa/southeast/interim.html.)

West Hawai`i: A network of reserves to replenish an aquarium fishery

In 1999 a multi-stakeholder working group on the west coast of the island of Hawai`i approved a proposal to designate a network of fishing closures (*MPA News* 1:1). The nine closures, called fish replenishment areas (FRAs), were intended primarily to address a long-standing user conflict between dive tour operators and aquarium fish collectors. In the FRAs, which covered approximately 35% of the 240-km West Hawai`i coastline, diving would be allowed and aquarium fish collecting would not.

Over the past 10 years, the network has helped reduce the level of conflict between the groups. But it has also had a clear effect on populations of the main target species for aquarium collectors — yellow tang. There is spillover of adult yellow tang occurring across the FRA boundaries, indicating the protected areas may play an important role in sustaining stocks over the long term.

• Evidence of spillover: In a paper published in the May 2009 issue of the journal *Biological Conservation*, a team of researchers showed that prior to designation of the FRA network, yellow tang densities were similar at sites open to fishing and those slated for closure. By 2007, however, the closed areas had five times the density of target-sized fish, and 48% higher density of adults than open areas. The main evidence of spillover was this: densities of adults in so-called "boundary" areas (open areas less than 1 km from nearest MPA boundary) were significantly higher than in open areas far from MPA boundaries.

In light of the fact that the number of active aquarium fishers along the coast doubled from 1999 to 2007, as did the total catch of yellow tang, the authors suggested that the protected areas could be essential for supplying adult fishes to keep the fishery going. "The West Hawai`i protected area network, by sustaining adult stocks over large areas of the coastline, acts as a bulwark against overexploitation," wrote the research team, which included government and academic scientists.

The yellow tang fishery is relatively unique, at least compared to most commercial food fisheries. The prime target size for yellow tangs is 5-10 cm; this is when they are usually less than two years old and still juvenile. Adults on the other hand are not targeted by collectors and can live beyond 40 years, meaning that individuals that reach adulthood could be reproductively active for decades. Hence, for yellow tang, the FRA scenario contrasts with that of many other protected areas, where adult targeted fish are caught upon spilling over the reserve boundary.

Because juveniles are strongly site-attached, their abundance in open areas is dependent on natural levels of settlement and not directly affected by spillover, says Jeremy Claisse of the University of Hawai`i at Manoa, a member of the research team. "A main benefit [of the FRAs] is that more of the coastline will have higher adult densities than would be the case if fishing were unconstrained," says Claisse. "Most of the yellow tang settlement in West Hawai`i will be of fishes/larvae that originated from that immediate area, hence local fishers will benefit if population fecundity is sustained or enhanced by reserves."

With the increasing exploitation of yellow tang, the juvenile population has declined in the open areas by as much as 45% since 1999. Because adults are not fished, the fishery will receive greater reproductive output for every unit area of juvenile habitat that is protected, says Claisse. "These protected areas will provide additional adult spawning stock to the available adult habitat in the surrounding open areas," he says.

• Role of public support: Brian Tissot of Washington State University also co-authored the *Biological Conservation* study and has been active with the FRAs since their planning. He says the successful designation of the network resulted from three factors, all related to public support in some way.

"First, we had strong community support for the FRAs due to long-standing conflicts in the community around aquarium collecting, and MPAs were seen as the best solution to the problem," he says. "Second, we had strong legislative support. A bill was passed that established a flexible management framework. That framework created FRAs along a minimum of 30% of the coastline and also involved the community in co-management with the state. Third, it was critical to create synergy among state managers and biologists, academic scientists, outreach specialists, and students to educate the public and get folks involved in supporting management solutions. In the end we had 93% support at the public hearing that established the FRAs."

Opponents of the FRA plan included the aquarium collectors, though. They said they had been assured that no more than 30% of the coastline would be no-take. Ten years later they remain skeptical. A survey in 2007 of 22 aquarium collectors indicated most are still frustrated with the FRAs: 68% said they were either "dissatisfied" or "strongly dissatisfied" with the protected areas. Asked if they felt the FRAs had helped enhance reef fish populations, 45% called the FRAs ineffective while 23% called them effective. The rest were neutral.

"The overall level of satisfaction that fishers have with the FRAs is poor," says Todd Stevenson of Washington State University, who conducted the survey. "And fisher perceptions of how well the FRAs have performed in enhancing reef fish populations are inadequate."

• The value of "before" data: Critical to research of the network has been the existence of data collected along

the coast prior to designation of the FRAs. Those "before" data allow researchers to differentiate between changes due to designation and changes that may be due to other factors.

"It is obviously very important from an experimental design perspective to have a complete *before-after control-impact* (BACI) design," says Tissot. [Editor's note: BACI design was described in our December 2003/ January 2004 issue (*MPA News* 5:6).] "The BACI design is the best possible approach for analysis of MPAs and is a statistically powerful way to tease out detailed changes over time. We also had two sets of controls to compare to the FRAs: 1) long-term protected areas that had been closed for at least 10 years prior to FRA establishment; and 2) areas still open to aquarium collecting. This allowed us to look both at where we expected the FRAs to go and what happened outside the FRAs once they were closed.

"Not having 'before' data always opens the door to some uncertainty regarding effectiveness," Tissot continues, "although it can be addressed in a variety of ways and is not insurmountable. Now, with 10 years of data, I would say the 'before' data are becoming less important as we focus more on the long-term trends."

For more information:

Jeremy Claisse, Hawaii Cooperative Fishery Research Unit, Department of Zoology, University of Hawai`i at Manoa, Honolulu, Hawai`i, U.S. E-mail: claisse@hawaii.edu

Brian N. Tissot, School of Earth & Environmental Science, Washington State University, Vancouver, Washington, U.S. E-mail: tissot@vancouver.wsu.edu

Todd Stevenson, School of Earth & Environmental Science, Washington State University, Vancouver, Washington, U.S. E-mail: tcstevenson@wsu.edu

Special Section: More News from the Second International Marine Protected Areas Congress (IMPAC2)

The Second International Marine Protected Areas Congress (IMPAC2), held in May in Washington, DC, provided an array of findings and perspectives on the use of MPAs for ecosystem conservation and fisheries management. Some of these lessons were described in our June 2009 issue. Our coverage of the meeting continues below:

Vessel reefs as a useful tool for no-take areas and fisheries management

Sunken vessels in no-take marine reserves could serve a strategic role in attracting marine life to those protected areas and increasing biomass production, according to Paul Arena of Nova Southeastern University in Florida (U.S.). In his research of reefs in Broward County, Florida, Arena discovered that not only do vessel-based reefs attract and concentrate more biomass than natural coral reefs, but they may also foster greater productivity, particularly for certain economically important species like snappers.

So rather than viewing vessel reefs as incompatible with or unrelated to conservation, he says, resource managers should consider them as a way to optimize the effectiveness of no-take areas. Arena points out there are no protected areas around any of the 70 vessel reefs in waters off Broward County. "Without protection, the vessel reefs act more as fishing tools — attracting and concentrating fish to a well-known fishing spot — than fisheries enhancement devices," he says. "This has the opposite effect on fisheries than reserves would, and exploits the resource at an even faster rate than if the vessel reefs weren't there." He recommends designating reserves around some of the existing wrecks, or sinking vessels in existing reserves without wrecks.

Arena notes there are potential downsides to placing sunken vessels in protected areas. Placement too close to natural reefs, for example, could be a problem in the case of storm events, which can move even large vessels across the seafloor. And deploying vessel reefs within existing reserves will likely cause some migration of fishes from natural areas to the vessels during initial colonization of the latter. "This would lead to decreased numbers of fish on natural reefs until all space is utilized," says Arena. "But natural reefs should be repopulated by movement of fishes into the vacant habitat or recruitment of juveniles."

For more information:

Paul Arena, Department of Math, Science and Technology, Nova Southeastern University, Davie, Florida, U.S. E-mail: arenap@nova.edu

Cellphones and anonymous tips as tools for community-based MPA enforcement

In the Philippine province of Bohol, enforcement of the dozens of community-based MPAs there is a challenge. The small MPAs are scattered and distant from enforcement centers, and enforcement manpower is too

limited to have staff on site at all times. With incidents of violence by illegal fishers and even corruption by some enforcement staff, few community members have been willing to participate actively in reporting MPA violations.

To address these challenges, Project Seahorse Foundation for Marine Conservation partnered with KAMADA (an alliance of 18 fishing communities in the region) and PAMANA ka sa Pilipinas (an alliance of Philippine MPA managers) to create a community-based reporting structure. The basis of the structure was an intermediary center to receive cellular phone calls from a network of anonymous tipsters. An observed incident of dynamite fishing, for example, would be phoned to the center, and the center would then communicate that tip to the regional fish market. There, delivery of dynamited fish by the offender could be seized by enforcement officials. One tip received through the system led officials to seize 1000 kilograms of dynamited fish.

Financial constraints and other factors have caused a temporary halt to the intermediary center's operation. However, the concept was proven in practice for Bohol and holds promise for other areas around the world, says Erwin Brunio, a former staffmember of Project Seahorse Foundation who facilitated the formation of the community reporting structure. "If we can engage communities in reporting violations in an anonymous and safe way, we can increase the number of community members participating in enforcement-related activities for MPA management," says Brunio. The more eyes there are watching an MPA, he says, the more effective it can be. "After all, an unenforced MPA is not an MPA."

For more information:

Erwin Brunio, Graduate School of Marine Science and Technology, Fish Population Analysis Laboratory, Tokyo University of Marine Science and Technology, Tokyo, Japan. E-mail: ebrunio@gmail.com

Database on seamounts informs planning of high seas MPAs

Launched in 2001 and continually adding greater and greater detail, the SeamountsOnline website provides data on species that have been observed or collected from seamounts worldwide (http://pacific.sdsc.edu/seamounts). The website is designed to facilitate research on seamount ecology, and to act as a resource for managers. The latest version of SeamountsOnline, released earlier this year, provides the ability to search for seamounts and related data by Exclusive Economic Zone (EEZ), as well as by species or seamount. Users may also search in international waters.

The project, mentioned in multiple presentations at IMPAC2, is led by Karen Stocks of the University of California. "Creating MPAs on seamounts to better manage their resources is occurring within national jurisdictions, and is under consideration on the high seas," says Stocks. "By providing information on the species that have been recorded and the level of biological knowledge about different seamounts, SeamountsOnline can help managers determine which seamounts may have species of special concern (such as deepwater corals), which ones have particularly diverse communities, and, on a more practical level, which ones have been studied well enough to draw conclusions about their ecology. This information is one piece of the puzzle managers need to determine which seamounts should be protected, how many need to be protected, and in what spatial arrangement."

The main challenge in developing the database, she says, has been getting high-quality datasets. The data that are published in journal articles and reports are often summarized and incomplete. When she launched the project, Stocks was concerned that information in SeamountsOnline might help extractive industries "discover" a new seamount. "I developed some protocols to guard sensitive data, such as not posting quantitative information (i.e., biomass per trawl) for commercially targeted species like precious corals. However, my experience is that scientists are one step behind industry, and I have not yet come across any datasets that I thought would change fishing practices. Generally, scientists come by a seamount to do the 'post-mortem' after commercial extraction has already boomed there."

Note that SeamountsOnline is distinct from the Seamount Catalog (http://earthref.org/databases/SC/main.htm), a complementary but separate initiative that provides bathymetric maps on more than 1800 seamounts and data on their geology, rather than ecological data. The two projects are now collaborating to develop a link between their respective data systems.

For more information:

Karen Stocks, University of California, San Diego, California, U.S. E-mail: kstocks@sdsc.edu

Next IMPAC will be in France in 2013

France will host the Third International Marine Protected Areas Congress (IMPAC3) in Marseilles in 2013. An announcement in French is at www.aires-marines.fr. Including its overseas territories, France has the second largest Exclusive Economic Zone of any country in the world, after the U.S. The first IMPAC was held in Australia in 2005.

Notes & News

Enormous no-take areas in Western Pacific set to take effect January 2010

In May, government ministers of Western Pacific island nations agreed to add two more areas to a system of high seas fishing closures already set to take effect in January 2010. The entire system of closures will cover 1.2 million km^2, and will include waters from French Polynesia to Palau. Initiated to protect tuna stocks, the closures will represent collectively the largest no-take area in the world.

Last year the Western and Central Pacific Fisheries Commission, which regulates international fisheries in the region, agreed to close two large areas beyond the EEZs of its member nations. The recent decision by government ministers, which occurred outside the Commission process, adds two smaller pockets that have been fished intensively. The ministers' proposed addition of the smaller pockets will be submitted for approval by the Commission at its next meeting this December.

The government ministers also agreed to apply stricter regulations to tuna fisheries within their EEZs, such as reducing the number of fishing days by the 225-ship international fleet of purse seiners, and requiring the ships to carry independent observers, among other measures. More information on the closures and accompanying regulatory measures is at http://cmsdata.iucn.org/downloads/science_magazine_may2009.pdf.

Indonesia designates MPA to protect whales, provide sustainable fisheries

The Indonesian government in May designated a 35,000-km^2 marine protected area to serve as both a whale sanctuary and a mechanism for sustainable management of fisheries for local populations. The Savu Sea Marine National Park features a combination of strong currents and steep underwater cliffs, with upwelling zones that support large marine life such as sperm whales and blue whales. The productivity of the area also supports pelagic fisheries, including a pole-and-line fishery for tuna and billfish.

A management plan for the MPA is under development by the government. By itself, the new MPA comprises more than one-third of Indonesia's commitment to designate 100,000 km^2 of MPAs by 2010.

"Pelagic fisheries sustain the livelihoods of around 4.5 million people living in the region," says Ben Kahn of APEX Environmental, an NGO. "If properly protected, the Savu Sea could become a refuge for marine life and ensure productive fisheries amid global climate change. To achieve such an outcome, a long-term management plan with a strong emphasis on large marine life and sustainable fisheries is needed." Kahn says that by discouraging damaging fishing gear such as gillnets and long lines and encouraging gear used locally such as poles and lines (which feature minimal bycatch and no net entanglement risks), overfishing and bycatch of marine life would be reduced.

For more information: Benjamin Kahn, APEX Environmental, Bali, Indonesia. E-mail: bkahn@apex-environmental.com

Mexico designates its first deep sea MPA, plus two other MPAs

In June, Mexico designated its first deep sea marine protected area around two hydrothermal vent systems in the Gulf of California and the Eastern Pacific Rise. The newly designated Guaymas Basin and Eastern Pacific Rise Hydrothermal Vents Sanctuary covers 1456 km^2 of benthic habitat, as well as the portion of the water column deeper than 500 meters below the surface. Above that, the waters remain open to fishing.

Letter to the Editor

Be honest with communities about MPAs

Dear MPA News,

I am writing in response to the article on MPA communications in your May 2009 issue. One success factor for MPAs is the management of local community expectations. It is essential that we are honest with communities and local stakeholders about what an MPA can and cannot achieve:

1. Be clear on what benefits the local resource users will get from the MPA. If the MPA will cover only 20 hectares of reef, for example, it may have little effect on fish populations on nearby reefs or on highly mobile fish stocks. If our long-range goal is to manage those populations, then once we have the 20-ha area managed we can begin to scale up management efforts to address issues for the adjacent coral reefs and pelagic fisheries.

2. The MPA probably is not going to bring thousands of tourists, divers, or snorkelers to the village, nor treasure chests of foreign currency.

3. MPA management is still an experiment. Although there are some good rules of thumb, we do not have all the science yet and we cannot predict exactly what is going to happen. We should use each MPA as a community experiment and learn as we go along in partnership with local stakeholders.

The reality, at least in the short term, is that the MPA is going to cost the community money and time, cause some anxiety and problems, and upset the status quo. However, MPAs are probably the best and simplest management tool we have. By ensuring that communities are aware of the realities from the beginning, they may not become disappointed later and MPAs should have a greater chance of success.

Stuart J. Green
Stuart Green is a coastal and marine management consultant based in Bohol, Central Visayas, Philippines. E-mail: stuartjames.green@gmail.com

"This new deep sea MPA model represents a proof of concept to be further expanded to protect other benthic habitats where fisheries interests prevent the protection of the entire water column," says Juan Bezaury Creel of The Nature Conservancy – Mexico Program.

The two vent systems that comprise the MPA present a distinct ecosystem. At least 41 species of invertebrates and 2 species of vertebrates are present at both sites. Of these, at least 8 species are endemic to Mexican hydrothermal vents.

On the same day, the Mexican government designated two more MPAs:

- The 306-km^2 Lobos-Tuxpan Reef System Flora and Fauna Protection Area in the state of Veracruz, containing the country's northernmost Gulf of Mexico coral reefs; and
- The 1460-km^2 Whale Shark Biosphere Reserve, on the Yucatan Shelf, that protects one of the world's largest concentrations of whale sharks.

For more information: Juan E. Bezaury Creel, The Nature Conservancy — Mexico Program, Mexico City. E-mail: jbezaury@tnc.org

Brazil designates two marine "extractive reserves"

The Brazilian government in June designated two marine "extractive reserves", a form of protected area with defined user rights for local communities. Brazil has experimented with such extractive reserves on land and in water since 1989, when rubber-tapper union leaders argued that Brazilian forests were worth more standing up than cut down. The new MPAs are:

- The 1007-km^2 Cassurubá Marine Extractive Reserve, located on Abrolhos Bank, the south Atlantic's largest and richest coral reef system. Home to 95% of the Abrolhos Bank's mangroves, the Cassurubá estuary was threatened by plans for what would have been Brazil's largest shrimp farm.
- The 252-km^2 Prainha do Canto Verde Marine Extractive Reserve. The fishing community (lobster and reef fish) of Prainha do Canto is a center for Brazil's fisher advocacy movement. In 2006, the community won a 17-year legal battle with a real estate company over ownership of a beach where fishers had settled around 1870. The MPA also includes 660 hectares (6.6 km^2) of coastal land where community-based tourism generates complementary income.

The Brazilian government designates extractive reserves in response to demands from traditional and indigenous communities. The objective is to use public land or water to extract natural resources in a sustainable way, thereby preserving both the natural environment and the local culture and traditions. Brazil concedes user rights on the land/water for 30 years with the option of extending the concession permanently after that. The federal government then assists the community in the task of developing a sustainable management plan. Ultimately the community determines how it will use the resources, with financial support and government assistance to enforce the local laws.

For more information:

René Schärer, Instituto Terramar (an NGO), Prainha do Canto Verde, Brazil. E-mail: fishnet@uol.com.br

Guilherme Fraga Dutra, Marine Program, Conservation International-Brasil, Brazil. E-mail: g.dutra@conservation.org.br

Wadden Sea added to World Heritage List; Belize Barrier Reef added to Heritage in Danger list

At its annual meeting in June, the UNESCO World Heritage Committee added the Wadden Sea on the coast of Germany and The Netherlands to the World Heritage List. The largest unbroken system of inter-tidal sand and mud flats in the world, the Wadden Sea provides critical habitat for migratory birds, with 10-12 million birds passing through every year. The committee also extended the boundaries of the Tubbataha Reef World Heritage Site in the Philippines to encompass an area of 970 km^2 (previously 330 km^2).

Meanwhile the committee added the Belize Barrier Reef System, a World Heritage site, to the "World Heritage in Danger" list, due to threats from extensive mangrove cutting and the sale of mangrove islands. The purpose of the danger list is to focus attention on enhancing the conservation and management of endangered sites. Tim Badman, head of the IUCN delegation at the World Heritage Committee meeting, said, "By adding the Belize Barrier Reef to the [danger list], the World Heritage Committee is acting to ensure that one of the world's most outstanding natural places is being protected and that the international community is doing its utmost to support Belize in its conservation efforts." The committee also voted to keep Galápagos National Park and Marine Reserve on the danger list.

For more information: Pedro Rosabal, Senior Programme Officer, Programme on Protected Areas, IUCN, Gland, Switzerland. E-mail: pedro.rosabal@iucn.org

Journal theme issue: tropical marine EBM

The May 2009 issue of the journal *Coastal Management* is a special theme issue devoted to the feasibility of tropical marine ecosystem-based management (EBM), including the use of MPAs and MPA networks in such management. Based on the findings of a working group

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Direct correspondence to: MPA News, School of Marine Affairs, University of Washington, 3707 Brooklyn Ave. NE, Seattle, WA 98105, USA. Tel: +1 425 788 8185; Fax: +1 206 543 1417; E-mail: *mpanews@u.washington.edu*

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at the National Center for Ecological Analysis and Synthesis, the issue draws on hundreds of interviews and a review of field experiences from around the world. The authors describe several design principles for successful EBM programs, including that the programs:

- Be tailored to each location;
- Utilize a wide variety of tools, such as creating MPAs and managing fishing effort;
- Balance ecological concerns with social and governance concerns; and
- Have the sustained commitment of formal institutions, governments, resource users, scientists, and donors.

The case studies present research from the Philippines, the Caribbean, the Benguela Current (Southern Atlantic Ocean), and Hawai`i. Most of the theme issue (Vol. 37, Issue 3&4) is available for purchase only, although an overview article is available for free at www.informaworld.com/smpp/content~content=a910537346~db=all~order=page.

Expanded toolkit available on marine conservation agreements

A revised version of the toolkit on marine conservation agreements (MCAs) is now available at www.mcatoolkit.org. Such agreements were described in our October 2008 issue ("A Role for Marine Conservation Agreements", *MPA News* 10:4). MCAs include any formal or informal understanding between parties in which the parties agree to take certain actions to achieve agreed-upon conservation goals. The parties exchange benefits through formal and informal agreements, such as leases, contracts, or concessions.

The new edition of the toolkit has expanded its substantive and geographic scope to include an overview, which answers basic questions and defines terms; a field guide that walks practitioners through a four-phase process from analyzing MCA feasibility to implementation; new country and U.S. state analyses; in-depth case studies; sample agreements; and more.

For more information: Jay Udelhoven, Senior Policy Advisor, The Nature Conservancy, U.S. E-mail: judelhoven@tnc.org

Scientific guidelines produced for Australian MPA planning

Researchers at the University of Queensland have produced a set of scientific principles to guide the design and implementation of Australia's National Representative System of Marine Protected Areas (NRSMPA). Based on consensus opinion of more than 40 scientists involved in Australian MPAs, the guidance statement describes an array of criteria that should be used to minimize risks involved in planning amid uncertainty.

"While the NRSMPA is underpinned by the principles of *comprehensiveness*, *adequacy* and *representativeness* (CAR), these principles are expressed [in legislation] in a largely aspirational form that is too broad for implementation," says Romola Stewart, who led the development of the guidelines. The statement, she says, seeks to present clear advice on what the NRSMPA system is expected to achieve, and to frame the CAR principles as measurable objectives. "Our view is that a scientifically rigorous application of the CAR principles that is based on scientific evidence and current understanding will promote consistent application of the CAR principles nationally," says Stewart.

Many of the scientists involved in developing the guidance statement are active in the planning and management of MPAs outside of Australia as well. For that and other reasons, Stewart expects that much of the broad consensus of scientific opinion will be applicable to MPAs outside Australia, too. Scientists from inside and outside Australia are invited to endorse the guidance statement, which is available at www.uq.edu.au/spatialecology/mpaguidelines.

For more information: Romola Stewart, The Ecology Centre, University of Queensland, Australia. E-mail: r.stewart@uq.edu.au

Report: Lessons learned from skills-building events at World Conservation Congress

A new IUCN report analyzes the outcomes of nearly 50 workshops and classes on building conservation-oriented skills at last year's World Conservation Congress in Barcelona. The publication *What Can You Learn from 5048 People Hours of Learning in Skills-Building Workshops?* identifies best practices from the sessions and provides tips to inform future professional development efforts. The workshops and classes featured topics ranging from conflict resolution, to innovative financing strategies, to using satellite images, and more. The report, which offers advice for professional development rather than advice on each of the workshop topics, is available at http://cmsdata.iucn.org/downloads/learning_opp_final_report_en.pdf.

www.mpanews.org
searchable back issues,
MPA-related conference calendar,
and more.