

Stretching Your MPA Budget: How To Do More with Less Funding

When MPA practitioners face the challenge of meeting their conservation goals with a budget that is less than optimal, there are two options available to them: seek more funding from other sources, and find ways to minimize costs. Because the “seek more funding” option can entail significant work without guaranteed returns, many practitioners have become adept at finding ways to stretch the limited funding they have. In the tightly budgeted world of MPA planning and management, frugality is a necessary virtue.

This month, MPA News interviewed two managers – one from the US, one from Zanzibar – about the challenge of doing more with less, and how to leverage available resources to manage an MPA effectively.

A diversity of partnerships

Susan White is the national coordinator of marine programs for the US National Wildlife Refuge System, a century-old program overseeing hundreds of sites across the US and its territories. Despite the program’s longevity and its formative role in national development of marine resource management, its financial history has been one of relatively minimal budgets.

“To deal with this, the program has developed a diversity of partnerships with other entities to leverage the refuge system’s resources,” said White. “Although the idea of partnering is the idea *du jour* in protected area management, the refuge system has been doing it for 100 years.” Managers of many refuges have teamed up with state-level agencies for wildlife management and law enforcement. At other refuges, NGOs help with management and conduct research. Other federal agencies, such as the US Department of Defense, US Coast Guard, and the National Aeronautics and Space Administration (NASA) also provide key assistance at refuges that share property or operations.

“When you don’t have a lot of funding, you need to be innovative in capitalizing on what you have,” said White. In several cases, she said, the refuge system has acquired coastlines that are degraded, then identified these areas to regulators as being in need of restoration. This allows private land developers – faced with legally mandated mitigation of coastal impacts they have generated elsewhere – to fund restoration of the refuge’s land at minimal cost to the refuge system. Managers have also

worked with adjacent landowners, such as by obtaining grant funding to help fence out livestock on private land from a waterway that flows downstream to a refuge, thereby improving water quality.

In a prior job from 1989-1994, White was manager of the Saba Marine Park in the Netherlands Antilles, where partnerships and networking played just as important a role. While the park initially benefited from Dutch government funding, it became self-financing early on (through visitor fees, souvenir sales, and donations) and also took advantage of regional coordination opportunities in the Caribbean, such as those offered by the UNEP Regional Seas Programme and the IUCN. In her work on Saba, White helped convene the first meetings of marine park managers in the Netherlands Antilles – an opportunity to share resources and reduce duplication. That networking continued well beyond her departure and has borne fruit in recent years, such as through the sharing of mooring-buoy installation equipment among parks in the archipelago.

Volunteers are a critical component to getting things done on a tight budget, said White. “For every aspect of what an MPA is about – physical labor, education, administration – there is a volunteer who can help with it,” she said. The refuge system is striving to get more volunteer coordinators in order to train and nurture volunteers, and ensure that the latter know their efforts are appreciated. Although such training and attention involves an investment on the part of the refuge, that investment is critical and pays dividends, said White. Not only can volunteers perform duties on the MPA site, but they also become ambassadors for the MPA in the community, all while fulfilling their own interests.

Those volunteers with connections to funding organizations can even help to seek financial assistance for the protected area. “You rely on friends to help you seek additional funds,” said White. In her days as manager of the Saba Marine Park, she took advantage of every such opportunity. Describing how she went about patching budgetary holes for equipment, research, and other needs, she said, “Almost everyone I talked to, I would tell them of our needs, ask for donations, time, or even supplies. Everyone can be a source of assistance. When someone shows a bit of interest, find out what they like to do and capitalize upon it.”

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White spoke at Sustaining Seascapes symposium

Susan White, who spoke with MPA News for the adjoining article, gave a presentation on some of the same subject matter at the *Sustaining Seascapes: The Science and Policy of Marine Resource Management* symposium, hosted in March by the American Museum of Natural History in New York City. More information on the symposium is available online at <http://research.amnh.org/biodiversity/symposia/seascapes/>.

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MPA News

Editor-in-Chief

John B. Davis

Editorial Board Chair

David Fluharty, Ph.D.
School of Marine Affairs
Univ. of Washington

Patrick Christie, Ph.D.
School of Marine Affairs
Univ. of Washington

Michael Murray
Channel Islands National
Marine Sanctuary

Direct correspondence
to: MPA News, School
of Marine Affairs, Univ.
of Washington, 3707
Brooklyn Ave. NE,
Seattle, WA 98105, USA.
Tel: +1 206 685 1582;
Fax: +1 206 543 1417;
E-mail: mpanews@u.washington.edu.

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Staying afloat with frugal management

Out of necessity, finding ways to keep overhead costs down has become an art form for Sibylle Riedmiller, project director for Chumbe Island Coral Park Ltd. (CHICOP). CHICOP, a small, not-for-profit company, manages the Chumbe Reef Sanctuary, located 13 km southwest of Zanzibar, Tanzania. The operation aims to create a model of sustainable conservation area management where ecotourism supports conservation and education.

In early 2001, Riedmiller and CHICOP faced a serious financial challenge. Political violence was flaring up in Zanzibar, and foreign officials and media were warning tourists against travel to the area. Tourism – and the revenue it brought to the sanctuary – dropped off immediately. In an interview at the time with MPA News (MPA News 2:8), Riedmiller said the best way to prepare financially for such events was to keep operating expenses to a precautionary minimum: encourage help from volunteers, keep some staff on seasonal schedules, outsource some monitoring to university students, and conduct marketing for the MPA primarily via the Web.

A year later, CHICOP is still going, although the occupancy rate in its lodgings remains relatively low. (Riedmiller attributes this partly to reduced global tourism in general due to worldwide events of the past few months.) "Luckily we are able to stay afloat with very frugal management of the park," she said.

The internet has been very helpful, said Riedmiller. "Once an MPA has a good presence, profile, and ranking on the Web, you will get offers for volunteer work from all around the world – more than you can accommodate," she said. "Plus, information on donors, NGOs, zoos, conservation organizations, etc. is on the internet." She said that relevant newsletters and networks – also on the Web – are effective in finding out about potential funding sources, funding criteria, and application forms. As a case in point, she found out about a funding program for coral reef conservation activities run by the US-based National Fish and Wildlife Foundation (<http://www.nfwf.org>); CHICOP applied, and was approved, for a US \$10,000 grant to support an environmental education program for the sanctuary.

"Another source of very welcome support is our visitors, who are enthusiastic about what they see happening, and who sometimes offer help spontaneously," said Riedmiller. Examples of such assistance include free use of high-quality photos; purchasing and forwarding spare parts from overseas; free, professional-quality advice; and word-of-mouth recommendations of the project to friends.

"In the early years when the internet wasn't yet accessible here – and we weren't very visible there! – friends, or friends of friends, offered volunteer work," said Riedmiller. "Some tourists decided they loved the place and wanted to spend some time here [to help out]. At

one point in 1999, when we had an urgent need for temporary island managers, our project manager even searched for suitable candidates among tourists dining and drinking in Zanzibarian restaurants and bars. She found an enthusiastic Canadian couple who were flexible enough to jump on the opportunity and move to Chumbe the next day or so. They ended up spending half a year with us."

Riedmiller said that it is important for practitioners in developing nations to choose technologies and technical equipment that are simple, appropriate, and low-cost to maintain under developing world conditions. "In most cases this means 'outdated' equipment by Western standards, often secondhand, but which is still fully operational and has a lifespan that can be extended by local technicians," she said. Old computers and reconditioned cars can be fixed locally. "In most third World countries, one can find low-cost alternatives to virtually everything in local, informal markets, as well as roadside fitters and 'technicians' who are creative in fixing things that are considered scrap elsewhere."

In contrast, said Riedmiller, the expensive, state-of-the-art equipment too-often favored by donor-supported projects often breaks down quickly in an environment characterized by tropical climates, power fluctuations, unskilled users and lack of specialized spare parts. She cites, as one example, a set of expensive solar batteries her project imported from Europe. The batteries broke down, and now CHICOP buys normal car batteries, obtained locally.

"Very fortunately, as a conservation area, Chumbe is in excellent shape," said Riedmiller. The reef is healthy, and a recent survey of local fishermen indicated strong support for the MPA, despite its no-take restrictions. "The results were even better than we expected," she said. 

Next month: Advice on seeking more funds

In the May 2002 issue, MPA News will examine where MPA practitioners can go to seek additional funding, with contact information for aid organizations and tips on how to approach them.

For more information

Susan White, National Wildlife Refuge System, 4401 N. Fairfax Drive, Room 670, Arlington, VA 22203, USA.
Tel: +1 703 358 2415; E-mail: susan_white@fws.gov; Web: www.refuges.fws.gov.

Sibylle Riedmiller, CHICOP, P.O. Box 3203, Zanzibar, Tanzania. Tel: +255 24 2231040; E-mail: chumbe.island@raha.com; Web: www.chumbeisland.com.

Improving Applications of Science in MPA Design and Management

Last month, MPA News presented findings from a November 2001 workshop to discuss the role of socioeconomic concerns in successful MPAs, convened at the 54th annual meeting of the Gulf and Caribbean Fisheries Institute (MPA News 3:8). This month, we present findings from a parallel workshop that discussed how to improve the application of science in MPA design and management. This latter workshop – involving more than 30 individuals from 10 countries – identified several priority areas for filling gaps in the use of MPA science.

The science workshop *Improving Applications of Science in MPA Design and Management* identified the absence of clear goal-setting and subsequent hypothesis-testing as obstacles to determining long-term MPA effectiveness. The report, available online at the website of the Gulf and Caribbean Fisheries Institute (<http://www.gcfi.org>), suggests tips for better integrating science in MPA practice. In light of the report's usefulness to practitioners both inside and outside the Caribbean region, MPA News has summarized its highlights below.

I. Establish explicit and realistic protocols for measuring effectiveness

- Managers: Provide explicit goals for measuring effectiveness. Scientists: Work with managers to develop measurable attributes of the key goals.
- Consider a broad array of metrics, familiar to both scientists and managers. Identify the ones that are critical, and monitor these over appropriate time scales.
- Recognize the confounding effects of both natural and anthropogenic variables. This task is complicated as political timelines (e.g., election cycles, sunset clauses) are commonly incompatible with biological response timelines needed to identify management results in the presence of many confounding variables.
- Recognize that management effectiveness may not always be best measured at typical confidence levels, particularly in the face of 1) 500 years of prior marine anthropogenic impacts in the Caribbean and the many generations of shifting — i.e., lowered — management baselines, and 2) extremely disconnected cause-and-effect responses from management actions over short time scales.

II. Identify key population linkages

- Conduct long-term research on populations and habitats, including the collection of basic biological information, much of which is often limited (e.g., home ranges of adults and younger life stages; habitat dependency, opportunism, and shift timing with maturation across the shelf; growth variation correlated with fecundity; details of trophic patterns; and geographic variations within all of these attributes).

- Find the resources (financial and otherwise) to conduct and process vertically stratified plankton surveys. Direct empirical information on larval behavior is almost non-existent.

- Standardize commercial fisheries data at the species level.

- Evaluate impacts of commercial fishing gear, recreational fishing gear, and recreational diving on habitats.

III. Build political insight to accommodate scientific time and spatial scales

- Better educate managers and fishermen on cascade effects over multiple time and spatial scales, and the difficulties and delays in predicting outcomes.
- Provide adaptive management alternatives upfront and educate managers that it is not a failure to modify the alternatives as new information becomes available.
- Bring commercial and recreational fishermen more directly into the information-gathering process.
- Develop ways to standardize monitoring and enforcement within and among MPAs, allowing for easier determination of effectiveness. 

For more information

Ken Lindeman, Environmental Defense, 14630 SW 144 Terrace, Miami, FL 33186, USA. Tel: +1 305 256 9508; E-mail: klindeman@environmentaldefense.org

Rich Appeldoorn, Department of Marine Sciences, University of Puerto Rico, PO Box 5000, Mayaguez, PR 00680, USA. E-mail: R_Appeldoorn@rumac.uprm.edu

Make science more applicable: Bonaire perspective

Of the myriad research projects conducted in MPAs around the world, relatively few may be of direct value to the management of those sites. Kalli De Meyer, former manager of the Bonaire Marine Park (BMP), would like to see science made more applicable to MPA management. "Science is most useful when it is providing support for resource management and addressing management issues," she told the *Sustaining Seascapes* symposium in New York City in March (<http://research.amnh.org/biodiversity/symposia/seascapes/>).

De Meyer cited three studies that had proven to be very useful to BMP, in terms of both aiding management and steering local governmental response to threats. These studies, she said, had the following qualities:

- Management-related conclusions were clear;
- Results were delivered to the park in a timely fashion;
- The science did not necessarily have to be rigorous to be valuable; and
- The park was involved throughout, so that the resulting discussion and presentation had the maximum impact on policy.

There is plenty of room for improved collaboration between managers and scientists, said De Meyer, including in the choice of subject matter and experimental design. She estimates that in her nine years at BMP, less than 5% of the research conducted there by external scientists was of value to the MPA.

For more information: Kalli De Meyer, Director of the Coral Parks Programme, Coral Reef Alliance (CORAL), Kaya Madrid 3a, Sabana, Bonaire, Dutch Caribbean. Tel: 599 7173465; E-mail: kdm@bonairerlive.com

New England (US) Groundfishery Could Face Additional Closures

The New England groundfishery, off the northeastern coast of the US, faces the specter of increased closures by management as a result of a lawsuit brought by conservation groups to limit bycatch and prevent overfishing.

In papers filed in March with the presiding federal court, the National Marine Fisheries Service (NMFS) proposed a remedy of extending one major closure and creating a new one to decrease fishing mortality. It is up to the court to accept the NMFS proposal or draft another solution, which could include removal of the groundfishery from NMFS jurisdiction, as requested by the conservation groups that brought the suit.

The Conservation Law Foundation and four other NGOs filed the lawsuit last year. They charged that the New England Fishery Management Council – which has direct regional oversight of groundfish management, and submits management plans to NMFS for approval – had violated federal law by failing to adopt a framework for minimizing bycatch and preventing overfishing in a timely manner. Of the 19 groundfish stocks under council management, 15 are considered to be overfished. The court ruled last December that the council had indeed violated the law, and called on NMFS and the NGOs to propose remedies.

The remedy proposed by NMFS would extend indefinitely the life of an 880-nm² (3020-km²) inshore closure to protect juvenile cod that was scheduled to expire this year. That closure, restricted to commercial groundfishing for four years, would now also be closed to recreational groundfishing. In addition, NMFS has proposed banning groundfishing in a 200-nm² (700-km²) area offshore, also to protect cod. Further proposed measures from NMFS include limits on days-at-sea and an increase in mesh size.

John Nelson, chair of the council's committee on marine protected areas, said NMFS's proposed measures could seriously hurt fishing communities. "The way [NMFS] has been forced to act, it may save the fish but not the fishermen," he said. He would prefer that the council have more time to develop gear-based technologies to limit bycatch.

Anthony Chatwin, staff scientist for the Conservation Law Foundation, said it is difficult to determine whether the closures will help to achieve the fishing mortality objectives they were designed to address. "Not all types of fishing would be excluded from the offshore closure," he said, noting that the ongoing herring fishery there would continue to harvest the main prey species of groundfish. 

Groundfish science report aims to address "sliding baselines"

The Northeast Fisheries Science Center, a US federal fisheries laboratory, has released a report that re-evaluates biological reference points — such as the biomass necessary to produce maximum sustainable yield — for groundfish stocks off the northeast coast of the nation. Despite its low-key title, the *Final Report of the Working Group on Re-Evaluation of Biological Reference Points for New England Groundfish* could prove to be a revolutionary document in the management of fisheries in the US.

In short, it states that chronic overfishing for the past 70 years has led management to vastly underestimate potential biomass targets for many of the stocks, and calls on managers to allow stocks to rebuild to significantly higher targets than previously set. If abided by management, the report could lead to more closures and other restrictions on fishing, at least until the higher targets are achieved.

The problem the report addresses is one of "sliding baselines" in fisheries management. That is, each generation of fisheries managers is familiar only with what it has seen in its own experience; as chronic overfishing reduces biomass over the long term, baseline estimates of potential biomass — often set within the range of observed biomasses — decline as well.

"Given the lack of experience in observing these populations at high biomass, we can only model the expected behavior of the system under varying assumptions," states the report. It advises the New England Fishery Management Council (NEFMC) to adopt an adaptive management approach to find the point where each stock's biomass exhibits diminishing returns to yield as a function of increased stock density.

"This report is probably going to set the pace" for other similar biomass re-assessments around the US, said Steve Murawski, chair of the working group that authored the report. The working group consisted of 20 scientists, including six from outside the New England region.

To view the report online in PDF format, go to <http://www.nefsc.nmfs.gov/nefsc/publications/crd/crd0204/>. 

For more information

John Nelson, Marine Division, New Hampshire Fish and Game Department, 225 Main St., Durham, NH 03824, USA. Tel: +1 603 868 1096; E-mail: jjnelson@starband.net

Anthony Chatwin, Conservation Law Foundation, 62 Summer St., Boston, MA 02110-1016, USA. Tel: +1 617 350 0990; E-mail: achatwin@clf.org

Teri Frady, Chief, Research Communications for NMFS Northeast Region, c/o Northeast Fisheries Science Center, 166 Water Street, Woods Hole, MA 02543-1026, USA. Tel: +1 508 495 2239; E-mail: tfrady@whsun1.wh.whoi.edu

California MPA Process Ordered to Start Over: Too Little Input from Fishermen

Public protests about potential fishery closures off the coast of the state of California (US) have led state officials to scrap a two-year process to plan a network of marine reserves, and start over. State officials agreed with recreational fishermen, commercial fishermen, and other groups that stakeholders had not had enough input in the planning process. A new process, expected to begin this month, will involve representatives from an array of stakeholder groups in the study of potential closures.

The effort to plan a series of closures stems from the Marine Life Protection Act (MLPA), a state law passed in October 1999 (MPA News 1:3). The MLPA requires the California Department of Fish and Game (DFG) to draft a master plan for a network of MPAs in state waters; the plan must meet resource protection goals while considering the needs of interested parties. Responding to the law, DFG convened a team of scientists – referred to as the master plan team – to draw up concept maps of potential new closures. It was these maps that drew stakeholder criticism. In announcing the new inclusive process this past January, DFG Director Robert Hight said he was “wiping the slate clean.”

The MLPA calls for the master plan to be “prepared with the advice, assistance and involvement of participants in the various fisheries and their representatives,” along with conservationists, scientists, and other stakeholders. Although the master plan team in charge of drawing concept maps had sought public input through letters and public meetings, the letters were sent out too late for feedback to be incorporated in the draft maps. The public meetings often grew hostile, with fishermen asserting their interests were being ignored.

The new process will set up seven regional workgroups to develop options for the MPA network. The groups will include representatives of a variety of interests – recreational and commercial fishing, conservation, tourism, science, and harbor districts. DFG has already sought recommendations on the membership of these workgroups, and officials anticipate the groups will be set by the middle of this month.

“They put us in a defensive position”

“The law says that everyone is going to do this planning together,” said Bob Fletcher, president of the Sportfishing Association of California (SAC). “But the

[master plan] team drew up a draft set of proposed closures without consulting the fishing industry, and that put us in a defensive position.”

Karen Garrison of the Natural Resources Defense Council – an NGO that was instrumental in passage of the MLPA – agrees that there was too little public participation. “There were several unintentional problems with DFG’s course of action,” she said. With little staff support, the master plan team was able to prepare only a single set of maps, not alternative choices, “which led to widespread fear that the single option was already a done deal,” said Garrison. It didn’t help, she said, that DFG was hampered by a tight deadline – January 2002 – to draft the plan. Although the state has since extended the deadline to January 2003, this extension came late last year.

DFG Senior Biologist John Ugoretz, in charge of overseeing the new inclusive process, agrees that the master plan team did not have enough time to involve the public sufficiently. He adds, however, that the public only really became interested when the master plan team drew up maps, which came later in its work. “This is a problem with any process to create closed areas,” said Ugoretz. “It’s very difficult to get people interested until you show them a map with possible closures. And yet they usually get upset with the lines on the map when they see it.” He said delaying the drawing of lines allows participants to talk through issues thoroughly beforehand, and arrive at common goals. “But it also delays the airing of some conflicts that really become apparent when the map’s lines are drawn,” he said.

The new process will not aim for consensus in the workgroups, said Ugoretz. “Consensus, while an honorable goal, is not necessarily realistic,” he said. “We will try to narrow down the range of options. It will be critical for DFG to lay out what is required and expected of the groups. People need to know the ground rules and boundaries of the process before they come to the table with suggestions.”

SAC’s Fletcher said the recreational fishing community is ready to work with other groups to find a solution. “Recreational anglers are finally coming to grips with the fact that we have a tool – marine reserves – that needs to be in place,” he said. “But we don’t want it to be forced down our throats. The economic impact of reserves needs to be considered in this process.”

For more information

Bob Fletcher, Sportfishing Association of California, 1084 Bangor St., San Diego, CA 92106, USA. Tel: +1 619 226 6455; E-mail: dart@sacemup.org

Karen Garrison, Natural Resources Defense Council, 71 Stevenson, Suite 1825, San Francisco, CA 94105, USA. Tel: +1 415 777 0220; E-mail: kgarrison@nrdc.org

John Ugoretz, California Department of Fish and Game, 1933 Cliff Drive, Suite 9, Santa Barbara, CA 93109, USA. Tel: +1 805 560 6758; E-mail: jugoretz@dfg2.ca.gov

www.mpanews.org: searchable back issues, updated conference calendar, and more.

Dear MPA News:

As former manager of three US National Marine Sanctuaries (Key Largo, USS *Monitor* and Channel Islands), I would like to offer the following perspective to the MPA definition discussion that has been proceeding in the "Letters from Readers" (MPA News 3:7, 3:8).

Briefly, unless we have control over pollutants coming in from the land, air and external currents, we are trying to manage the proverbial "submarine with three screen doors". We might have success on the land side, but the air and current sides are often international (as well as large-scale national) problems, and not easily mitigated.

If MPAs aren't really protected from the three screen doors, then we shouldn't be calling them "marine protected areas" or "fully-protected areas" or any other form of "protected" area.

In this day and age with all the built-in stresses imposed on our sacred marine areas, an area is not magically or instantaneously protected via an MPA designation. Protection must be continually fought for — and it may never be attained.

Stephen C. Jameson

President, Coral Seas Inc. -
Integrated Coastal Zone
Management, 4254 Hungry
Run Road, The Plains, VA
20198-1715, USA. Tel: +1
703 754 8690; E-mail:
sameson@coralseas.com, Web:
www.coralseas.com.

Notes and News

Only 14% of coral-reef MPAs in Southeast Asia effectively managed A new report published by a team of international organizations states that only a small percentage — 14% — of coral-reef MPAs in Southeast Asia are managed effectively. The report *Reefs at Risk in Southeast Asia* provides a country-by-country analysis of the human pressures to coral reefs in the region, and integrates available information on reef status, protection, and management. The report is published by the World Resources Institute in collaboration with the United Nations Environment Programme-World Conservation and Monitoring Centre (UNEP-WCMC), the International Coral Reef Action Network, and the World Fish Center.

The report states that some 646 MPAs cover an estimated 8% of coral reefs in the region. Of the 332 MPAs whose management effectiveness could be determined by local experts (based on such criteria as staff size and existence of a management plan), 14% were rated as effectively managed, 48% had "partial effective management", and 38% had inadequate management. The report is intended to be the first in a series of regional analyses; the next will focus on the Caribbean. **For more information** and to view the report online, go to <http://www.wri.org/reefsatrisk/>. To go directly to the chapter on MPAs, go to http://www.wri.org/reefsatrisk/rsea_management.html.

Russia designates protected area off Kamchatka

Russia has set aside a 123-km² area off Kamchatka as a no-take zone to protect marine mammal rookeries and seabird colonies. Designated officially as the "area of special protection adjacent to Nalychevo nature park", the site will be administered by the regional fishing authority, with assistance from the Kamchatka directorate of nature parks and WWF (an international NGO). It stretches 20 km along the coast, from the mouth of the Nalycheva River to that of the Vakhil River. **For more information:** Vassily Spiridonov, Marine Program Coordinator, WWF Russia, Tel: +7 095 727 09 39; E-mail: vsiridonov@wwf.ru.

Proceedings available from conference on MPA economics

Proceedings from the *Economics of Marine Protected Areas* conference, held in July 2000 at the University of British Columbia Fisheries Centre, are now available for purchase (CDN \$40). To order the 255-page report, contact Events Officer, Fisheries Centre, University of British Columbia, 2204 Main Mall, Vancouver, BC V6T 1Z4 Canada. Tel: +1 604 822 0618; E-mail: events@fisheries.ubc.ca. A selection of these papers appears in the current issue (Vol. 30, No. 2) of the peer-reviewed journal *Coastal Management*, published by Taylor & Francis Ltd (www.taylorandfrancis.com).

New MPA plan for Victoria enshrines compensation of fishermen In a revision of its plan for a series of marine national parks in state waters, the Australian state government of Victoria has developed a compensation scheme for fishermen affected by the new parks. Under the revised plan, financial assistance would be available to eligible fishery license holders to cover increased fishing operating costs and reduced catches directly related to the MPAs. The plan also calls for creation of an assessment panel to determine compensation amounts and an appeals tribunal.

Last year, the ruling Labor government introduced a version of the plan to the state Parliament, only to reach an impasse with the opposition Liberal party on the issue of compensation (MPA News 3:1). Although that plan offered AU \$1.2 million (US \$636,000) in "transitional assistance" to affected fishermen for reduced catches, it did not address increased operating costs. It also prevented fishermen from seeking further compensation, such as through the Supreme Court.

The revised plan adds an additional marine national park and a marine sanctuary to last year's proposal. If approved by Parliament (which would require the support of the opposition party), the plan would set aside 5.5% of Victorian waters as no-take areas, compared to 0.05% currently. The government expects to introduce the revised plan to Parliament later this year. To read a government overview of the revised plan, go to <http://www.nre.vic.gov.au>.

Fines levied for violations of Tortugas reserve

US federal prosecutors have charged eight fishing vessels with poaching in the Tortugas Ecological Reserve, a no-take zone designated last year within the Florida Keys National Marine Sanctuary (FKNMS). These are the first citations for violations of the reserve; the fines range from US \$12,000-\$20,000, in addition to seizure of the catches. The accused vessels have the option of paying the fine or contesting the charges in court.

The reserve, located at the western end of the Florida Keys archipelago, is relatively isolated, posing an enforcement challenge for managers. "Fully enforcing the reserve is a top priority for the sanctuary, and a commitment we made to everyone who supported the reserve," said Cheva Heck, public affairs officer for FKNMS. The US Coast Guard, which caught three of the cited vessels in a one-day patrol of the reserve in January, has provided the sanctuary with two 82-foot (25-meter) cutters, free of charge, for use in regular enforcement of the reserve. The cutters are now undergoing a refitting in preparation for their new assignment. Designation of the reserve was the end result of an intensive, multistakeholder process (MPA News 1:1). **For more information:** Cheva Heck, FKNMS, 216 Ann Street, Key West, FL 33040, USA. Tel: +1 305 292 0311; E-mail: cheva.heck@noaa.gov.