

See you at the World Parks Congress in Sydney!

Dear reader,

A few quick notes as we go to press:

- **World Parks Congress**

I will be in Sydney in November 2014 attending the World Parks Congress. If you see me, feel free to say hello! I will have a few OpenChannels tote bags with me to give away to people who ask for them.

- **OpenChannels coverage of August's IMCC**

OpenChannels hosted a live blog throughout the International Marine Conservation Congress (held in Glasgow in August) as a way to help non-attendees worldwide stay informed on the meeting. It is available at <http://openchannels.org/chat/imcc-2014>. This was our first live blog of a conference and we are open to feedback on what worked and what didn't, format-wise. We foresee a future where conferences in our field are at least as well-attended online as in person. Also from IMCC: coming issues of MPA News will be reporting on research presented at the meeting.

- **Spanish version of MPA News is ending**

Dating back to the January 2008 issue of MPA News, a Spanish-language version of the newsletter has been available at <http://mpanews.org/issues.html>. Funding for the translations ended earlier this year, however, so we are drawing our Spanish version to a close. If you would like to translate future issues of MPA News into Spanish (or just about any language), we recommend Google Translate at <https://translate.google.com>. The translations are not as high-quality as our Spanish ones of the past six years, but they are not bad. And I would like to express my sincere appreciation to Ricardo González, Ph.D., Instructor in the Department of Global and Socio-cultural Studies at Florida International University, who provided the excellent Spanish translations of MPA News these past several years. Thank you.



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OpenChannels is funded by the Gordon and Betty Moore Foundation.

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US designates 1.2-million-km² MPA in which all commercial extraction is banned

With a stroke of his pen in September, US President Barack Obama expanded the size of the existing Pacific Remote Islands Marine National Monument (PRIMNM) to 1.269 million km², creating the world's largest MPA in which all commercial resource extraction is banned. Commercial fishing, petroleum exploration, and deep sea mining are off-limits in the expanded MPA.

To put the MPA's expanded size in perspective: it is more than five times as large as the United Kingdom.

Before the expansion, the site had covered a total area of 225,000 km² around multiple US-governed islands and atolls in the south-central Pacific. The newly expanded boundaries bring an additional 130 seamounts inside PRIMNM, as well as deep water corals. The expanded MPA also provides protection for the habitats of wide-ranging animals including

sea turtles, cetaceans, sharks, tunas, and at least 19 species of seabirds.

Technically PRIMNM is not a no-take area. Limited recreational fishing is still allowed, although it is rare in the monument. Its remote waters can take several days to reach by boat from the nearest ports.

Background

PRIMNM is a composite MPA — a group of five distinct protected sites, each separated from the others by hundreds of kilometers of ocean. Most of the space between the sites is high seas, beyond any nation's jurisdiction. The five protected sites are (1) Wake Island; (2) Jarvis Island; (3) Johnston Atoll; (4) Kingman Reef & Palmyra Atoll; and (5) Howland & Baker Islands.

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MPA News is published bimonthly by Marine Affairs Research and Education (MARE), a 501(c)(3) not-for-profit corporation, in association with the School of Marine & Environmental Affairs, University of Washington. Financial support is provided in part by a grant from the David and Lucile Packard Foundation.

All content has been written by the MPA News editorial staff unless otherwise attributed. The views expressed herein are those of the author(s) and should not be interpreted as representing the opinions or policies of the Packard Foundation or other funders of MPA News.

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President Obama expanded the monument using his executive powers under the (US) Antiquities Act, which does not require Congressional approval for designation of national monuments. Former President George W. Bush used the same authority in 2009 to designate the original, smaller version of PRIMNM (MPA News 10:7), whose boundaries extended 50 nm from each of the atolls and islands.

In June 2014, when President Obama first announced his intent to expand PRIMNM, he proposed expanding the MPA's boundaries to 200 nm from each atoll and island (MPA News 15:6). This would have created an MPA of 2 million km². Following a public consultation process in which the government received more than 170,000 comments on that proposal, President Obama implemented a smaller expansion: extending the protection around Wake, Jarvis, and Johnston to 200 nm, but leaving the remaining sites' boundaries at 50 nm.

The larger June proposal was opposed by some commercial fishing organizations, including the American Tunaboat Association, the Hawai'i Longline Association, and the Western Pacific Regional Fishery Management Council (WPRFMC), which oversees fisheries in Western Pacific waters of the US. Anti-expansion arguments included that the move would displace some fishing activity and that such a large and remote protected area would be difficult to enforce. When President Obama proclaimed the smaller-than-proposed expansion in September, the

WPRFMC expressed appreciation for the compromise (<http://bit.ly/WPRFMCrelease>).

US Secretary of State John Kerry said the Obama Administration recognizes the enforcement challenge. "MPAs are not going to be effective if no one's monitoring them," he said. "And the kind of enforcement that we're going to need [for PRIMNM] is going to take training; it's going to take resources."

Report on scientific basis for expansion

The scientific basis for the MPA's expansion, as well as potential economic impacts from it, were laid out in a May 2014 report produced by Marine Conservation Institute and National Geographic, available at www.marine-conservation.org/media/filer_public/filer_public/2014/06/17/primnm_expansion_report.pdf. Marine Conservation Institute was also instrumental in lobbying for the original 2009 designation of PRIMNM by former President Bush.

"When the story of marine conservation is written, President Obama's efforts to expand Pacific Remote Islands Marine Monument and create the largest strongly-protected area on the planet will surely be one of the greatest achievements," said President Lance Morgan of Marine Conservation Institute.

The presidential proclamation is at <http://bit.ly/PRIMNMexpansion> 

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Notes & News

Barbuda designates five MPAs as part of new ocean plan


In August the Barbuda Council — which governs half of the twin-island Caribbean nation of Antigua and Barbuda — instituted a sweeping set of regulations to transform its ocean management and conservation. The measures include a zoning plan for its coastal waters, a network of five new no-take MPAs covering 33% (139 km²) of inshore habitats, and island-wide bans on the catching of parrotfish and sea urchins. The latter organisms are herbivores necessary for controlling algal growth on coral reefs.

The new regulations also feature a prohibition on the use of fishing nets in 16% of coastal waters, including anywhere within 20 meters of a coral reef. And anchoring by visiting boats is now restricted to four anchoring zones, to protect seabed habitats.

The regulations are the outcome of a community-driven process that occurred over the past year and a half. The process was under the umbrella of the Bar-

buda Blue Halo Initiative, a collaboration among the Barbuda Council, Government of Antigua & Barbuda, Barbuda Fisheries Division, Codrington Lagoon Park, and the Waitt Institute. The Waitt Institute provided the science, mapping, and communications for the initiative, and offered policy recommendations.

The initiative aimed to balance current and future needs to use ocean resources. "No part of this is meant to hurt fishers," said Arthur Nibbs, chairman of the Barbuda Council and Antigua and Barbuda Minister of Fisheries. "It's the reverse — ensuring that they have a livelihood that will last in perpetuity."

"The state of Caribbean reefs and fisheries is dire, but the policy solutions are simple," said Ayana Elizabeth Johnson, executive director of the Waitt Institute and coordinator of the Barbuda Blue Halo Initiative. An essay by Johnson on the new regulations, including a map of the zones, is at <http://openchannels.org/node/7375>. 

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Upheaval at Great Barrier Reef Marine Park Authority: Era of global leadership may be over

For nearly 30 years, dating back to its establishment under Australian law in 1975, the Great Barrier Reef Marine Park Authority (GBRMPA) has served as a leader for the global community of MPA planners and managers. With experience gained from managing one of the largest and oldest MPAs in the world, GBRMPA staff have advised multiple peer agencies worldwide and been a regular presence at international meetings. GBRMPA programs to link land and sea conservation, particularly on water quality, and to study climate change as a threat to MPAs were among the highest-profile programs of their kind. The rezoning of the marine park in 2004 remains one of the most rigorous MPA-planning efforts achieved to date, anywhere. GBRMPA programs have earned their reputation for representing the best practices — the gold standard — in the field.

This era of global leadership may be drawing to a close.

Over the past six months, 17 GBRMPA officers have agreed to take voluntary redundancies* and are stepping down as part of a downsizing and restructuring of the agency. These include five members of GBRMPA's Senior Management Team at the director level, some of whom may be familiar to readers of MPA News: Jon Day (Director of Heritage Conservation), Paul Marshall (Director of Climate Change), and Adam Smith (Director of Environmental Impact Assessment). Also departing are Directors Hugh Yorkston (Water Quality and Coastal Development) and Chris Briggs (Tourism and Recreation).

The exodus of senior staff represents a sudden and dramatic change for the agency. Collectively, the 17 departing officers have over 250 years of experience and institutional knowledge relating to the Great Barrier Reef. Much of that knowledge is walking out the door with them.

The timing of the departures is noteworthy given the Australian Government's recent 2014 Outlook Report for the Great Barrier Reef. The report concludes that even with recent management initiatives to reduce threats from climate change, land-based runoff, coastal development, and fisheries:

[T]he overall outlook for the Great Barrier Reef is poor, has worsened since 2009, and is expected to further deteriorate in the future. Greater reductions of threats

* For readers unfamiliar with the term *voluntary redundancy*, it is a financial incentive offered by an organization to encourage employees to resign voluntarily.

at all levels...are required to prevent the projected declines in the Great Barrier Reef and to improve its capacity to recover. (www.gbrmpa.gov.au/managing-the-reef/great-barrier-reef-outlook-report)

The loss of expertise has happened during the lead-up to an important meeting next year when UNESCO's World Heritage Committee will consider whether the Great Barrier Reef should be added to the "World Heritage in Danger" list given the range and severity of threats it faces.

The redundancies have also occurred around the same time as a controversial decision by GBRMPA to approve an application to dump three million cubic meters of dredge spoil inside the marine park (MPA News 15:6 and 15:4). Although that approval is being reconsidered following opposition from the Australian public, the scientific community, the UNESCO World Heritage Programme and other institutions, the decision was a blow to staff morale at the conservation agency, according to insiders. At least some staff, and many outside the agency, perceived the decision as GBRMPA's crumbling to political pressure from the Federal Government.

MPA News speaks with some of the departing directors about what has driven the current changes at GBRMPA and what it means for the agency's leadership role going forward.

How voluntary were these redundancies?

Early in 2014, GBRMPA personnel were advised that the agency would need to reduce staffing. Like all Australian government agencies, GBRMPA's budget was undergoing cuts as part of an across-the-board reduction in public service costs. For GBRMPA, this meant a cut of AUD 2.8 million (USD 2.47 million) in Federal Government funding.

continued on next page

Australian and Queensland Governments release 35-year plan for Great Barrier Reef

While GBRMPA is experiencing the strains of budget cuts and restructuring, the Australian and Queensland Governments released for comment their 35-year sustainability plan for the Great Barrier Reef. The draft *Reef 2050 Long-Term Sustainability Plan*, released for public comment on 15 September, aims to satisfy a requirement of the UNESCO World Heritage Programme. The Great Barrier Reef is a World Heritage site.

Federal Environment Minister Greg Hunt said the plan is an overarching framework for managing the Reef from 2015 to 2050. "This Reef Plan is the Queensland and Australian Governments' commitment to working with industry and the community to improve the health and resilience of the Great Barrier Reef for future generations," said Hunt. The draft plan is available for comment at www.environment.gov.au/marine/gbr/reef2050.

Government agencies including GBRMPA offered their staff voluntary redundancy packages to assist in meeting the downsizing needs. At GBRMPA, 17 officers applied for and were provided redundancy packages.

For at least some of the GBRMPA senior directors, structural changes within the agency meant little prospect of continuing in leadership roles on critical issues like heritage and climate change. In effect, the restructure heavily influenced the decision by some to take a redundancy package. However, as noted by outgoing director Jon Day, “It would seem odd that leaders in such important issues like climate change and heritage could be considered ‘redundant’ at this juncture in the management of the Great Barrier Reef.”

The factors in accepting the redundancy package varied by person. Reg Parsons, GBRMPA compliance manager and one of the 17 departing staff, was already contemplating leaving the agency to establish a new International Centre for Compliance Management in MPAs (described in MPA News 15:6 and 14:5). Others were already nearing the end of their careers.

“Each person who took the voluntary redundancy had their own reasons,” says Adam Smith. “Several had been at GBRMPA for a long time and were close to retirement. A deciding factor for others was that they were frustrated with the leadership and culture at GBRMPA, and the redundancies provided a financial

opportunity to try something new that fitted with their values.”

“The decision to approve sea dumping in the Marine Park was a factor for several people to move on,” says Smith. “I joined GBRMPA in 1999 because of the privilege of working to protect the reef and GBRMPA’s great reputation, leadership, passionate staff, and values. I left in 2014 because some of these attractions had been diluted by politics and bureaucracy, and I felt I could make a bigger difference for the Reef if I worked in the private sector.” Smith is now a director at Reef Ecologic, an NGO that provides conservation-oriented research and innovation services to coastal communities and marine enterprises.

Paul Marshall, who ran GBRMPA’s climate change program, has joined Smith at Reef Ecologic, where he will be focusing on developing tools and approaches for climate-resilient MPA management, application of ecosystem services concepts and making biodiversity offsetting applicable to coral reef settings. He notes GBRMPA’s changes this year are just the latest (and largest) in a series of changes in recent years.

“GBRMPA has been going through some difficult times in the last few years as shrinking budgets necessitated efficiency measures,” says Marshall. “For at least some of the senior officers who accepted redundancies, the decrease in institutional capacity made it difficult to feel effective in areas that are important for the future of the Great Barrier Reef. In my situation, the voluntary redundancy program provided an opportunity to pursue options to work on Great Barrier Reef issues from a non-government platform.”

Australian Government appoints review panels for marine reserves

Australia’s ruling Coalition Government has announced the personnel and terms of reference for several panels to review the country’s Commonwealth marine reserves and their zoning plans. The review will pertain to 33 sites, covering a total of 2.3 million km², that were designated in 2012 by the previous Labor Government in Australia.

The panels include an Expert Scientific Panel and five Bioregional Advisory Panels. Lists of the panels’ chairs and members are available at www.environment.gov.au/marinereservesreview/home.

When the Coalition Government came to power in September 2013, it said the new reserves had been imposed without adequate consultation of industry, and would unfairly “lock out” recreational fishermen from large areas of the ocean (MPA News 15:3 and 15:2). The new Government scrapped the zoning plans for the reserves (which had been set to take effect July 2014) and announced it would appoint review panels to recommend new zoning based on the best available science and consultation with stakeholders.

Among the 33 sites under review is the 1-million-km² Coral Sea Marine Reserve, of which roughly half would have been no-take under its original management plan. The review panels will report to the Government in mid-2015.

What impacts will the departures have on GBR management?

It is unusual for any institution to lose a significant number of its senior officers in as short a span of time as GBRMPA has. The departures are likely to have an impact on the agency’s day-to-day and long-term efforts.

“It is disappointing that such redundancies were even contemplated for GBRMPA at this time, given that the number of pressures on the Great Barrier Reef is increasing,” says Jon Day. “More disturbing is the fact that much of the expertise that has been, or is being, lost is in the areas of the main threats facing the Reef.”

Climate change, for example, no longer features as a distinct programmatic area in GBRMPA’s organizational structure. The staff dedicated to implementing the GBR Climate Change Adaptation Strategy and Action Plan 2012-2017 has shrunk from eight full-time positions to less than one full-time staffer.

Marshall led the GBRMPA’s climate change work for over 10 years. “There are staff remaining in

GBRMPA who are very dedicated to helping the agency address the challenges associated with climate change,” he says. “But the reality is that they are over-worked and under-resourced to provide the level of programmatic support on this issue that characterized GBRMPA’s work in the previous (2007-2012) period.”

“It is extraordinary for so many experienced, long-term directors and managers who have made a great contribution to the Reef, industry, and stakeholders to leave at the same time,” says Smith. “The knowledge, networks, and skills of the directors will be missed by remaining staff and stakeholders.”


Can GBRMPA remain a best-practice leader for the global MPA community?

At the Third International Marine Conservation Congress, held in August 2014 in Glasgow, there were no GBRMPA personnel in attendance. In past years, a GBRMPA presence at such an international meeting would have been a certainty.

“The key to leadership is great people who set a vision, inspire others, take action, and make a positive difference,” says Smith. “GBRMPA has had and continues to have some great leaders at all levels. In the past two or three years, however, there has been a perceived change in culture from passionate protection of the Reef in partnership with stakeholders to a

risk-averse culture focusing on processes such as the strategic assessment. It has been increasingly difficult for GBRMPA to progress best practice on challenging issues such as dredging, spoil disposal, climate change mitigation or unsustainable fishing.”

Marshall says there is hope for the future. “GBRMPA still has an enviable pool of expertise and experience to draw on, and the exodus of senior officers creates opportunities for other staff to develop and take on leadership roles,” he says. “This can bring new ideas and energy to the organization, and help GBRMPA make up ground on tackling the big challenges common to MPA management everywhere — including developing new approaches and contributing at the frontiers of best practice. The unfortunate, and hopefully temporary, reality, however, is that remaining staff have huge workloads and will be operating with a strong focus on the most immediate issues.”

Increasingly, says Marshall, the effectiveness of GBRMPA and its reputation as a leading MPA management organization will depend on partnerships with researchers, industry bodies, private enterprise, and the NGO community. “Like elsewhere around the world, the Great Barrier Reef needs all the help it can get if it is to continue to deliver valuable ecosystem services and associated community benefits into the future.” 

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Building successful endowments to support MPAs: Malpelo and the Mesoamerican Reef

In the May-June 2014 issue of MPA News, we examined cases in which MPAs have worked to make their financing more sustainable (MPA News 15:5). The article focused in particular on the value of diversifying funding streams. By generating revenue from multiple sources rather than just one or two, MPAs can reduce the risk should one of the streams dry up, such as during periods of government budget cuts.

Another way of making financing more sustainable is through endowments. The funds in an endowment are invested and the earnings on those invested funds can be spent on an MPA’s program activities. Meanwhile the capital in the investment remains there, serving to generate additional income each year. While no investment tool is risk-free, endowments can provide a level of financial sustainability for MPAs that is hard for other revenue sources to match. (MPA News covered endowments in our 9:10, 9:11, and 13:6 issues.)

Here we profile the creation and management of two endowments that are supporting MPAs: Fondo

Acción’s Malpelo endowment and the Mesoamerican Reef Fund (MAR Fund).

A. The Malpelo endowment: Funding 36% of its MPA’s annual budget

In the eastern tropical Pacific, the no-take Malpelo Fauna and Flora Sanctuary is home to nearly 400 species of fish as well as great numbers of marine mammals and sea turtles. Encompassing the small Colombian archipelago of Malpelo and its surrounding waters, the MPA covers 8575 km² and is a World Heritage site.

José Luis Gómez is executive director of Fondo Acción, a Colombian nonprofit entity that administers environmental funds (www.fondoaccion.org). As part of its work, Fondo Acción developed an endowment fund for Malpelo. That fund now holds US \$5 million.

MPA News: How did the Malpelo endowment fund get started?

Editor’s note:

This article on endowments is an abridged version of one that is available on **OpenChannels.org**. The longer version includes insights on how Fondo Acción is collaborating with other environmental funds in the Latin American and Caribbean region. It also features advice from the Mesoamerican Reef Fund on how to set up an endowment. For the full article, go to <http://openchannels.org/node/7298>.

José Luis Gómez: In 2006, Fondo Acción decided to create an endowment with net revenues that had accumulated in the Americas Account. This account had been created by the US government in agreement with the Colombian government using funds from a debt-for-nature swap. This financial mechanism was established between the US and several Latin American and Caribbean governments after the 1992 Rio Earth Summit.

In 2008, thanks to our collaboration with Conservation International Colombia, we identified an interesting opportunity to use our endowment in a strategic way. The Global Conservation Fund (GCF), a financial mechanism made possible by a grant from the Gordon and Betty Moore Foundation, had been established to support the creation, expansion and long-term management of protected areas. GCF would provide strategic and financial assistance, including the capitalization of endowments, to enable local communities, NGOs, and governments to protect their biological wealth.

Our Board decided to provide a US \$2.5-million match from the endowment of the Americas Account and to leverage the same amount from the GCF to constitute the Malpelo endowment subaccount. We then prepared a technical proposal and secured the institutional agreements that made this possible. The Malpelo endowment was created in 2008, precisely when the global financial crisis rocked the markets and produced severe losses in many endowments. However our Board and the Malpelo Steering Committee decided to begin grant making in 2009.

Since 2008, the annual management of Malpelo has been funded by at least three sources: revenue from the endowment fund, public funding (from the National Parks Service), and foundations and similar sources (namely project-based funding). On an annual basis, revenue from the endowment has represented at least 30% (in 2011) and up to 48% (in 2013) of the MPA's budget, with an average of 36% over the five-year period. The endowment has provided a total of US \$977,000 over these five years. That is more than twice as much as the funding provided by the public sector.

What advice would you give on setting up and managing successful endowments?

Gómez: Endowments are attractive financial mechanisms in the field of conservation finance. However their effectiveness depends on several institutional factors. The Malpelo endowment, for example, is embedded in a particular institutional arrangement. The main components of this arrangement include:

(1) A special agreement between the Colombian National Parks Service, a public entity, and Malpelo

Foundation, a Colombian conservation NGO. This agreement enables Malpelo Foundation to act as an operator and thereby implement the protected area's Annual Management Plan. The Plan has been previously approved by the Parks Service. The Parks Service is also key in maintaining strategic partnerships with other public agencies — particularly the Colombian Navy, which is in charge of patrolling the protected area.

(2) A simple governance structure with a Technical Committee and a Steering Committee. The Technical Committee (Parks Service, Conservation International Colombia, and Fondo Acción) provides advice to Malpelo Foundation, monitors progress periodically and reviews the annual request of funds from the Malpelo endowment. The Steering Committee approves the annual grant to Malpelo Foundation and decides on changes or updates to the investment policy for the Malpelo endowment.

(3) An endowment administrator. This role is played by Fondo Acción. Fondo Acción also monitors performance of the endowment's financial manager.

(4) A financial manager. Custody and investment decisions are in the hands of UBS–The Arbor Group, a private firm. The financial managers are required to follow the investment policy adopted for the Malpelo endowment.

Having clearly defined roles and responsibilities for the different public and private agencies that take part in the arrangement is a key lesson from the Malpelo model.

Success also depends on financial aspects. The Malpelo endowment, currently US \$5.2 million, is in fact a subaccount within a larger endowment operated by Fondo Acción and managed by UBS–The Arbor Group. The larger endowment is US \$38.2 million in size. Sheltering the Malpelo endowment subaccount in the larger endowment is very positive as it provides the financial managers with sufficient breathing space to balance the portfolio and obtain better conditions for investments. (The net annual return on the Malpelo subaccount from 2008-2014 has been 5.39% each year on average.)

Finally it is important to note that while the revenues from the Malpelo endowment cover core management plan costs (such as technical and scientific staff from Malpelo Foundation and scientific expeditions), these funds are also used by Malpelo Foundation to leverage additional resources from other donors for different activities of the management plan.

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B. Supporting multiple MPAs: The Mesoamerican Reef Fund

The Mesoamerican Barrier Reef System extends more than 1000 km along the Caribbean coast of Central America, from Mexico's Yucatán Peninsula through Belize and Guatemala to Honduras. In 2004, in-country conservation funds from these four nations worked together to create the Mesoamerican Reef Fund. Called the MAR Fund (www.marfund.org), it is designed to provide financial sustainability for conservation in the region, including for multiple MPAs (the Belize Barrier Reef System, a World Heritage site, is among these). The MAR Fund also encourages more effective coordination — on fundraising, grant-making, and reef management in general — among the four participating funds.

María José González is executive director of the MAR Fund.

MPA News: How much money does the MAR Fund give out to projects?

María José González: That varies each year. We disburse to projects mainly through two windows:

- The Small Grants Program, which currently has seven grants underway for a total of US \$242,770; and
- The “Conservation of Marine Resources in Central America” Project, which is financed with €10 million (US \$13.4 million) in endowment funds contributed by the Government of Germany through the KfW [Germany's development bank]. In this project, the main focus is on strengthening the management, conservation, and sustainable use of resources of priority coastal and marine protected areas in the Mesoamerican Reef. The project has two five-year phases, each supported by €5 million of the endowment. In Phase I, which initiated in 2012 and is ongoing, we have funded four priority areas, with a total of \$1,000,335 approved for 2014. In Phase II, which will begin field implementation this year, five additional areas will be supported. These areas are now developing their work plans and we don't know yet how much funding they will require for the remainder of 2014.

What are the main challenges the MAR Fund has experienced over the years?

González: The two main challenges have been:

- 1) Raising funds. The MAR Fund was established as an alliance to raise and distribute funding for strategic conservation initiatives in the MAR, in addition to existing funds. When the mechanism was established, it had no funding — it started from scratch. It began by defining its working priorities, both thematically and geographically, and then by

Book review

Economic Incentives for Marine and Coastal Conservation: Prospects, Challenges, and Policy Implications

Edited by Essam Yassin Mohammed, 2014, Routledge, London. The book is available at amazon.com for US \$37.57.

Review by Tundi Agardy, MPA News contributing editor. tundiagardy@earthlink.net

These chapters on economic incentives, compiled by Essam Mohammed of the International Institute for Environment and Development, are an important contribution to marine conservation. As we have seen time and again at international marine meetings, the most sought-after information for planners and managers is guidance on how to make effective management financially sustainable. This is key to the viability of MPAs.

Readers who assume the book is a set of guidelines on how to create incentives for conservation may be disappointed. More a collection of essays on the potential for sustainable financing and the theory behind it, the book does not prescribe a path to economic sustainability. A key point of the book is that reward systems for good behavior — a necessary element in any management plan — must be suited to the particular socio-ecological context of the protected area. Thus generic guidance on how to establish economic incentives is difficult if not impossible to present.

Nonetheless, readers will find good material on how to assess both social and ecological conditions, and use this information to develop tailored payment schemes to complement traditional institutional (and publicly financed) management. Of particular relevance to the MPA community is Lucy Emerton's chapter on using valuation to make the case for economic incentives (i.e., private financing). Hebin Lin and Jeffrey Thornton's chapter on integrated approaches in China, along with Tek Maraseni and Munir Hanjra's chapter on agricultural catchment payment schemes in the Great Barrier Reef region, both emphasize that sustainable financing for effective management should extend to watersheds adjacent to MPAs. And lest the reader be left with the impression that harnessing markets for marine conservation is easy, the chapter by Marisol Rivera-Planter and colleagues on the challenge of creating economic instruments in Mexico's MPAs in the face of perverse subsidies reminds us that no MPA is an island, and no incentive structures are established in a vacuum.

MPAs have been with us for decades, long enough for us to take stock of what works and what does not. MPAs where little attention has been given to the economics of management eventually fail. The consideration of ecosystem services, their value, and how these values can incentivize good behavior and support broader co-management may be the most important area on which to focus, now and into the future.

To comment on this review: <http://openchannels.org/node/7858>

initiating fundraising for them. In addition to the fact that the fundraising strategy started in 2008 (probably the worst year, financially speaking), it was important to begin working regionally to generate trust in the mechanism. After all, MAR Fund was the first regional fund in the Americas and it was viewed a bit as an experiment.

Thanks to the support of the Summit Foundation, which was our angel donor, and other wonderful foundations that believed in us and the MAR Fund concept, we were able to begin operations in the region. We started very small, and have grown slowly. We have been able to demonstrate that

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the mechanism is effective, and that through our particular structure we can support regional initiatives. We are still learning, of course, but I believe we have been able to adapt to the required changes in order to respond to the operation needs. The four national member funds are the foundation upon which the mechanism relies for its regional reach.

2) Changes and evolution in governance. When the fund was designed by the founding members, with support from WWF and The Nature Conservancy, all was new. There were no other multinational examples that could be applied adequately to the Me-

soamerican Reef region. The mechanism was then designed very much centered around the four founding members. As the MAR Fund has grown, we are seeing that some of the structures that were initially put in place now need to be reconsidered for adequate growth to respond to the region's needs. The Board is currently having these discussions with the intent of being more effective in leading the MAR Fund to successful growth and expanded operation. It is part of the normal evolutionary process of organizations. 

Film festival on MPAs

The second edition of the INMARE Film Festival — the festival dedicated to videos and documentaries filmed in MPAs — will be held 5-8 December 2014 in Camogli, Italy. It is co-hosted by the Camogli City Council and the nearby Portofino Marine Reserve. "INMARE's mission is to show viewers the aquatic realm's beauty and versatility, make them aware of its fragility, and remind them of the obligation to protect this wonderful world for future generations," says festival director Angelo Mojetta. For more information or to submit a film for consideration, go to www.inmarefestival.eu.

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Notes & News

Spain protects Mediterranean seabed habitats

In August 2014, Spain designated three new Fisheries Restricted Areas in waters near the Balearic Islands in the western Mediterranean. The new MPAs protect vulnerable marine ecosystems through a bottom trawling and dredging ban around Emile Baudot seamount (a 300 km² protected area), Ausias March seamount (65 km²), and Fort d'en Moreay Reef (30 km²). Other gears, including longline, will still be permitted.

The seabed ecosystems feature coralligenous communities and maerl beds, which provide important habitat for a variety of commercial and protected species in the Mediterranean. The designations follow several years of advocacy by Oceana, and bring Spain into compliance with 2006 European legislation obligating EU Member States to protect the coralligenous and rhodolith areas of the Mediterranean. The Spanish Government's announcement, in Spanish, is at www.boe.es/diario_boe/txt.php?id=BOE-A-2014-8645.

Scottish Government closes MPA when fisherman violates voluntary agreement

The Scottish Government has instituted an urgent Marine Conservation Order (MCO) to protect a fragile marine ecosystem in the South Arran MPA, off the Scottish island of Arran. The MCO immediately prohibits fishing in the 250-km² site until more permanent protective measures are put in place in 2015. The order comes in response to a scallop dredger's breach of a less formal, "voluntary" agreement between Scotland's marine authorities and fishermen to avoid fishing in the MPA. The voluntary agreement had been intended as a stop gap until more formal protective measures could be implemented.

The MCO is the first to be put in place under the Marine (Scotland) Act 2010. The South Arran MPA is home to maerl beds. Maerl is a coralline red algae that serves as nursery habitat for scallops and other species. For more information, go to <http://bit.ly/ArranMCO>.

MPAs should be planned to protect vulnerable ecosystem functions, not just biodiversity

A global study published in the journal *Ecology Letters* concludes that tropical MPAs have generally been sited to protect species richness (i.e., large numbers of species) but not the species that provide key and difficult-to-replace functions in their ecosystems. The study examined 169 tropical sites worldwide and found that many areas with threatened but functionally important fish were outside of existing MPAs.

The concept of functional redundancy is key to the study. If only one species of fish provides a certain function in an ecosystem — say, eating a particular type of algae on a coral reef — that ecosystem is more vulnerable than if multiple species were performing that same function. The study's authors suggest these vulnerable ecosystems should be protected, not just the species-rich ones. "The recognition that all species are not the same and that some play more important and different roles in ocean ecology prompted this new investigation," says Tim McClanahan, Senior Conservationist with the Wildlife Conservation Society and a co-author of the study.

McClanahan says that if MPAs continue to focus on species rather than function and mismanage those species with low species-redundancy functions, this will eventually reduce fisheries production and ecosystem services. "Protecting function with low redundancy needs to be an important part of management," he says. "The assumption that diversity may be a proxy for vulnerable functions on the larger biogeographic scale was shown to be incorrect in this paper. This finding undermines many of the current key assumptions of global-level planning and policy for protected area investments."

The paper "Global mismatch between species richness and vulnerability of reef fish assemblages" is available at <http://bit.ly/redundancystudy>.