MPA news

International news and analysis on marine protected areas

Vol. 13, No. 2
September/ October 2011

The Surge in Very Large MPAs: What Is Driving It and What Does the Future Hold?

On 7 September, Prime Minister Henry Puna of the Cook Islands in the South Pacific made a big announcement. He stated that in 2012 his country will designate a marine protected area across roughly half its exclusive economic zone. That will be a 1 million-km^2 marine protected area. (The announcement is at **www.cook-islands.gov.ck/view_release.php?release_id=1245**.)

To put that in perspective:

- The Cook Islands MPA will be nearly twice the size of the 544,000-km^2 Chagos Marine Protected Area in the Indian Ocean, which was widely considered the world's largest MPA upon its designation just last year (MPA News 11:6).
- It will be almost three times the size of Australia's Great Barrier Reef Marine Park (344,400-km^2), which was considered the world's largest MPA for more than a quarter-century.

It is the latest in a surge of large MPAs designated worldwide over the past few years (see box, page 2). There are more to come: Australia has proposed the 322,000-km^2 South-west Corner Commonwealth Marine Reserve (MPA News 12:6) and Bermuda is pursuing the designation of a vast MPA in international waters of the Sargasso Sea (**www.sargassoalliance.org**).

A trend is clearly occurring in the designation of very large MPAs. The growing number of sites larger than 150,000 km^2 now accounts for more than half of total MPA coverage worldwide, according to UN figures. Why is this spike in large MPAs happening? What is the significance of these sites in a world where the median size of MPAs is just 1.6 km^2? And what does the future hold for big MPAs? MPA News asked four practitioners for their insights:

- **Jon Day**: Director of Ecosystem Conservation and Sustainable Use, Great Barrier Reef Marine Park Authority;
- **Dan Laffoley**: Marine Vice Chair, IUCN World Commission on Protected Areas;
- **`Aulani Wilhelm**: Superintendent of the 360,000-km^2 Papahanāumokuākea Marine National Monument; and
- **Jay Nelson**: Director of the Pew Environment Group's Global Ocean Legacy project, which aims to establish a worldwide system of very large no-take marine reserves.

What factors are driving the designation of so many large MPAs?

Jon Day: There is the increasing recognition that only a very small percentage of the world's oceans is currently protected, and hence there is a need for more MPAs across the globe. There is also a recognition that a broad area, especially if managed as an integrated whole, is preferable to a series of isolated protected areas surrounded by a "sea" of unmanaged activities. Lastly, there is a not-unhealthy desire for "one-upmanship" — i.e., wanting to have the biggest MPA in the world.

Dan Laffoley: One of the main factors has been the need to expand protection into the open ocean, simply because it is the singular place on Planet Earth that has had least conservation action. Moreover, many of the marine animals we have already committed to protect spend a large portion of their lives in the open ocean and rely on large-scale oceanic processes and habitats. Large ocean MPAs — and particularly no-take marine reserves — must be part of these conservation efforts. Efforts to date have largely focused on the unused outer parts of the exclusive economic zones of countries to achieve this.

What are some of the advantages associated with large MPAs?

Laffoley: First, by protecting a very large area, the management cost per unit area actually decreases substantially. So what at first may seem like an incredibly costly idea of protecting a vast area of ocean actually represents some of the best value per unit area on ocean conservation. [Editor's note: for background, see "Comparing the Costs of Large vs. Small MPAs…", MPA News 12:6.]

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A publication of • Marine Affairs Research and Education

Another advantage is that protection of large areas ensures that we protect not only what we know but also all the algae, animals, and ecosystems in a given area that science has yet to reveal much about. Large marine reserves confer protection on things living between the bits we know about, and thus give some insurance that we are protecting the full range of ecosystem services, processes, and structure for the future.

`Aulani Wilhelm: Along that line, when we talk about protecting for "representation" on a global scale, we need to consider protecting larger areas of the ocean to be able to understand what ecosystem-level management really means in these areas. Through connectivity work done by our research partners at the Hawaii Institute for Marine Biology, it is clear that the boundaries of Papahanāumokuākea indeed capture the main connectivity flows relevant to sustaining important ecological processes within the Northwestern Hawaiian Islands. A smaller MPA would not have been able to achieve this.

Relatedly, when you protect large areas, it is likely that some of the area included will also be remote. We specifically need to protect such areas. Remote, largely undisturbed areas can serve as important "natural barometers" for Earth's oceans, and as such are increasingly of scientific and management interest. These remote areas are not only banks of biodiversity and safeguards in the face of global change, but also provide unique research opportunities to better understand the effects of global changes on areas with low to no human presence.

Day: A broad-area multiple-use MPA can be very effective in allowing for all reasonable uses to occur sustainably while minimizing conflicts between uses. And in a very practical sense, large MPAs can enable better integration of management efforts, provide buffering of core areas, and dilute impacts from adjacent areas.

How do you view the relative value of large vs. small MPAs?

Wilhelm: The size of an MPA does matter, for the reasons we've described. However, ultimately the issue of value is really less about size and more about quality and purpose of any site. MPAs serve many purposes today beyond efforts to create spillover effects for local fisheries or to deal with user conflicts. MPAs are now viewed as tools to protect intrinsic ecosystem function; to establish refugia for endemism or biodiversity (or both); to provide local communities

Individual MPAs greater than 150,000 km^2 in area, by year of designation

Any listing of MPAs depends on one's definition of "marine protected area", as discussed previously in MPA News ("*MPA News* Reader Poll: Which MPA Is the 'World's Largest'?", MPA News 8:2). There are many marine areas under management that fit most MPA definitions but are not universally considered to be MPAs, such as fishing gear closures (like the 1.63 million-km^2 Mediterranean/Black Seas bottom trawl closure). MPA News generally considers such closures to be MPAs. However, the list here of large MPAs focuses on sites designated with broad marine conservation as the overarching goal, as indicated to some extent by their names ("…Marine Park", "…Marine Reserve", "…Marine Protected Area", etc.).

In addition, there are obviously functional differences between multiple-use MPAs and no-take marine reserves. The list here includes both, with no-take marine reserves indicated by a checkmark (✓). Some scientists and organizations have advocated specifically for designation of large no-take marine reserves as opposed to large multi-use MPAs. The appropriateness of one type or the other depends on a project's goals and can be complex, balancing a range of issues (conservation, sustainable use, ease of enforcement, and more). Note: In most cases, the multi-use MPAs on this list include substantial no-take zones, whereas the no-take marine reserves typically still allow a low or negligible amount of non-commercial fishing, such as limited subsistence fishing by indigenous populations.

1975:
Great Barrier Reef Marine Park, Australia. 344,400 km^2

1999:
Macquarie Island Commonwealth Marine Reserve, Australia. 162,000 km^2

2006:
Papahanāumokuākea Marine National Monument, US. 360,000 km^2 ✓

2008:
Phoenix Islands Marine Protected Area, Kiribati. 408,250 km^2

2009:
Marianas Trench Marine National Monument, US. 246,608 km^2

Pacific Remote Islands Marine National Monument, US. 210,000 km^2 ✓

Prince Edward Islands Marine Protected Area, South Africa. 180,633 km^2

2010:
Chagos Marine Protected Area, British Indian Ocean Territory. 544,000 km^2 ✓

Motu Motiro Hiva Marine Park (formerly Sala y Gómez), Chile. 150,000 km^2 ✓

2011: *proposed*
South-west Corner Commonwealth Marine Reserve, Australia. 322,000 km^2

2012 or beyond: *in planning*
Cook Islands Marine Protected Area. 1 million km^2

MPA in international waters of Sargasso Sea. 5 million km^2?

with management tools appropriate for place; to increase protection for essential harvest species (e.g., food security); to enhance education and community engagement with coastal areas; to protect culture and heritage including access to areas and species; and the list goes on. To accomplish this variety of community and political aspirations, MPAs of all sizes are likely needed because the size should depend on the purpose for which the site is being designated.

Laffoley: It is not an either-or situation with large vs. small sites. We need them all, we need them now, and we need more. All marine reserves and other types of MPAs matter if effectively established and run. A small no-take marine reserve, for example, can be very important for a local community by maintaining local diversity and sustaining local food supplies. There has been a tendency in the last few years, perhaps, to celebrate large marine reserves more than any other MPA efforts. If we are to succeed as a community, all efforts large and small must be celebrated.

Day: Although the Great Barrier Reef may not be a typical MPA in terms of its size or complexity, the experience gained in the GBR over the past 35 years has been useful for MPAs elsewhere, irrespective of the size of those MPAs. Our ecosystem-based approach to management (i.e., recognizing the entire spectrum from catchment to ocean, and influencing activities outside the jurisdiction of the MPA), along with a complementary approach to management with the adjoining State Government, both provide useful models for others to adapt to their own situation, especially for coastal areas. In fact, in light of its coastal nature, the Great Barrier Reef has some characteristics that are more in common with smaller coral MPAs than with large oceanic sites like Papahanāumokuākea or the Phoenix Islands.

`Aulani Wilhelm, in our January/February 2011 issue you spoke about the challenges involved in managing large MPAs as opposed to small coastal ones, including enforcement of vast, remote areas and the related costs ("Network Launched for Managers of Very Large MPAs", MPA News 12:4). Might these challenges ultimately limit the number of large MPAs?

Wilhelm: Large-scale MPAs have been established so far for several different reasons. "Do-ability" has not always been the leading one, in my opinion. As such, I'm not sure these constraints will necessarily limit the number that are designated, but they will continue to impact the quality and effectiveness of management to achieve the establishing goals. Also, the definition of "do-ability" is changing as this new genre of MPA matures and we understand more how these challenges affect management and what can (or cannot) be done about them. It is precisely the need to exchange management experiences and learn from each other how to address these core challenges that the Big Ocean network was founded for managers of large MPAs (**www.bigoceanmanagers.org**). I believe it is through shared learning experiences that we will forge and co-invest in potential advances to address them, enabling large-scale MPAs to benefit at whatever stage of their lifecycle. [Editor's note: Wilhelm notes that her comments on Big Ocean are hers alone and she is not speaking for the Office of National Marine Sanctuaries, the National Oceanic and Atmospheric Administration, or the US government.]

Jay Nelson, the Global Ocean Legacy project has championed the designation of several large marine reserves in recent years, including the Chagos MPA and the Marianas Trench Marine National Monument. What are some of the lessons learned from that experience?

Jay Nelson: It is common to talk about our living in a "small world" as a way to describe the interconnectedness of our modern society. But the Earth is small in other ways as well. In our Global Ocean Legacy work (**www.pewenvironment.org/campaigns/global-ocean-legacy/id/8589941025**), we have learned that no matter how remote an area of ocean might be, there will be commercial interests, groups, or individuals who will oppose changes in management, sometimes irrespective of whether or not it affects them significantly. On the other hand, we have also identified among the broader public both an enormous reservoir of concern for the health of our oceans and a strong willingness to support protection in the sea, similar to what most nations did on land as long as a century ago.

What large new MPAs is Global Ocean Legacy pursuing now?

Nelson: Global Ocean Legacy is designed to secure the establishment of very large no-take marine reserves within the EEZs of individual nations. We focus on sites with low population where the ecological impact from fishing is limited. We also look for sites identified as having high biological, geological, historic, cultural, or other values, as well as sites that are at least 100,000 km^2 in area or larger. And lastly we look for sites under the jurisdiction of stable governments operating under rule of law, so that once protected they are likely to stay that way. We currently have active initiatives in favor of new reserves in Australia (Coral Sea – 972,000 km^2), New Zealand (Kermadec region – 600,000+ km^2), the United Kingdom (Pitcairn Island – 800,000+ km^2), and Bermuda for its EEZ (300,000+ km^2). We are also in initial conversations about potential sites in French waters, among others.

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Letter to the Editor

Additional comment on Australia's proposed South-west MPAs

Dear MPA News,

In response to the letter from Jeff Moore of the Great Australian Bight Fishing Industry Association ("Well-managed trawl fishery would be disproportionately impacted by SW Australian MPAs", MPA News 13:1):

Mr. Moore argues that the commercial fishing sector will be disproportionately impacted by the Australian Government's proposed network of marine reserves in the 1.4 million-km^2 South-west marine region, while the oil and gas industry is left largely unaffected. We share his concerns about the quarantining of oil and gas. However, we also note with concern that in its recent submission on the Australian Government's proposal for the South-west marine reserve network, the commercial fishing industry agreed the draft plan "endeavors to recognize the needs of other marine resource users such as … oil and gas" and proposed no further restrictions on that sector (**http://tinyurl.com/SW-fishing-industry**).

Mr. Moore also makes the point that much of the South-west region is "largely prospective", untouched by the fishing industry. Frankly, this is because much of it is unable to support economically viable fisheries, not because of the environmental benevolence of the commercial fishing industry. We note that within the large area proposed by the Australian Government for the South-west corner to become a marine sanctuary, the last major economically viable trawl fishery there was for the orange roughy, now listed under Australia's federal environmental laws as "conservation dependent". The Australian Government's marine reserve network proposal does a good job of protecting areas that have had little current or historical interest to the recreational or commercial fishing or mining industries. The commercial fishing sector's campaign to maintain access to areas it has never used, in case it wishes to do so in the future, is concerning. Australia should not follow the world in a fishery resource exploitation model that chases ever-smaller and more vulnerable novel fisheries to the limits of its EEZ in order to prop up catches. Instead, we should focus on rebuilding the fisheries we have already exploited.

While trawling covers relatively little spatial extent of Australian waters, this is due to the relatively low productivity of those waters, and their limited ability to support extensive trawl fisheries. Those areas that are capable of supporting such fisheries are fully exploited. Furthermore, the Australian Government draft plan for the South-west marine region does not significantly reduce access to trawl fisheries in areas that are considered important trawling grounds.

Mr. Moore emphasizes the complex and restrictive fishery management measures in place in the Great Australian Bight trawl fishery. These measures are intended to manage the trawl fishery. The network of marine reserves in the South-west marine region proposed by the Australian Government is intended to manage and conserve biodiversity. Australia and other countries around the world are moving toward a new system of marine resource management that includes spatial management for conservation objectives. In this new era, fishing interests will no longer have unfettered access to areas that are most productive for them, as the same areas often have the highest conservation values. Compensation will be available to the commercial industry.

While conservation of biodiversity is the primary goal of Australia's National Representative Network of Marine Protected Areas (NRSMPA), a network of fully protected marine sanctuaries throughout the South-west marine region will also deliver benefits to fisheries management. Highly protected marine sanctuaries will provide cost-effective reference areas for ecosystem-based fishery management (EBFM) in an environment where fisheries are typically small (and therefore generate relatively little revenue for EBFM research) and data-poor. The Western Rock Lobster fishery, Australia's best understood and most valuable single species fishery, has been proven unable to adequately assess the ecosystem impacts of the fishery without the use of closed areas in this manner.

Dear reader:
MPA News uses URL shorteners such as **bit.ly** and **tinyurl.com** to condense long website addresses. When retyping them, please note that the shortened URLs are case-sensitive.

Australia releases draft bioregional plans and MPA networks for two more regions

The Australian Government has released draft bioregional plans and proposed marine reserve networks for its North and North-west regions. The 10 proposed MPAs in the North-west region cover an area of 377,297 km^2; the eight proposed sites in the North cover 121,723 km^2. The draft plans and proposed networks are open for public comment until 28 November 2011.

Like the proposed MPA network for the South-west region that was released earlier this year ("Australia Announces Plan for Large Network of MPAs Off SW Coast", MPA News 12:6), extractive activity would be allowed in most of the waters included in the MPA networks for the North and North-west. As laid out, the new MPAs comprise three types of zones:

- Marine National Park zones: excluding all commercial activities and extractive recreational activities, except for vessel passage and non-extractive tourism.
- Multiple Use zones: allowing a range of existing activities to continue while excluding activities that carry a high risk to the conservation values of the MPAs.
- Special Purpose zones: allowing a wider range of commercial activities than in the multiple-use zones.

Information on the marine bioregional planning process in general and the proposed marine reserve networks is at **www.environment.gov.au/coasts/mbp/index.html**.

We expect that management of any other fishery in the South-west marine region (all of which are much smaller) would benefit from marine sanctuaries in a similar manner, given that EBFM and/or environmental sustainability is a goal for all Western Australian, South Australian, and Commonwealth managed fisheries.

The commercial fishing industry submission says they will "be working with Government to achieve balanced outcomes for biodiversity conservation." Their proposal calls for there to be no highly protected no-take areas in the shelf waters of the western part of the South-west marine region (a coastline of more than 700 km). This cannot be claimed to represent a balanced outcome.

In August, the Australian Marine Science Association, the Australian Coral Reef Society, and more than 220 leading scientists from around the world released a statement of concern* about the lack of protection and scientific foundation in the Australian Government's reserves proposal. The concerns cited included no high-level protection proposed for three of the seven marine bioregions on the continental shelf, and overall less than 3.5% of the shelf proposed for high-level protection.

The science community is clear on this matter: networks of protected areas, with large fully protected zones, are essential to maintaining healthy ecosystems over the long term, complemented by responsible fisheries management. They are urging the Australian Government to act on their concerns by significantly increasing the level and extent of protection. As is the general community as evidenced by the 42,000 submissions in support of large marine sanctuaries in Australia's South-west marine region, a record-breaking level of support for any Australian government environment process.

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* "Developing Australia's national system of marine reserves: A statement of concern about the proposal for Australia's South West Marine Region". August 2011. **http://bit.ly/SouthWestStatement**

Is Mexico's Cabo Pulmo National Park the Most Successful No-Take Marine Reserve in the World?

Since 1995 when it was designated as an MPA, Cabo Pulmo National Park in Mexico's Gulf of California has experienced a remarkable resurgence in marine life. Total fish biomass within its boundaries has increased by more than five times. The biomass of top predators has increased by more than 11 times. Both of these trends strongly counter those for fish elsewhere in the Gulf in unprotected areas (where biomass has remained level or decreased).

Although it is normal for no-take marine reserves like Cabo Pulmo to exhibit increases in biomass after designation, the increases at Cabo Pulmo are believed to be the largest recorded by science. The 71-km^2 site is featured in an article in the August 12 edition of *PLoS ONE* journal. The lead author, Octavio Aburto-Oropeza of the Scripps Institution of Oceanography, credits the MPA's success to local leadership, effective self-enforcement by local stakeholders, and the general support of the broader community.

MPA News: What is the management like for Cabo Pulmo National Park?

Octavio Aburto-Oropeza: The park is managed by the Mexican government under the Commission of Natural Protected Areas (CONANP). Cabo Pulmo receives its funding from the government, and several NGOs and academic institutions participate in research, education, and social programs.

MPA News: According to the park's official designation, only 35% of its area is supposed to be no-take. But you note that the entire MPA has effectively been treated as a no-take marine reserve for the past 16 years. Why is this the case?

Aburto-Oropeza: It was a decision by the local community — they decided not to fish in the entire park. In the decades preceding the MPA, the local community used to be very fishing-dependent. The founders of the town were pearl oyster divers, and later they exploited sharks and reef fish species such as groupers and snappers. When they overexploited the resources on their reefs, they had to start traveling to other areas in Baja California [Mexico] to fish.

The community still recognized, however, that Cabo Pulmo was an important place due its great coral coverage (7 of the 11 species of hard coral in the Gulf

of California are in Cabo Pulmo). So with the help of the local university — Universidad Autonoma de Baja California Sur — the community requested designation of the park to stop the degradation of coral habitats and help the reef ecosystem recover. Now since designation, several locally owned small-scale tourism operators have grown up around the park, benefiting economically from the recovered ecosystem.

MPA News: Following publication of your paper, many magazines and newspapers referred to Cabo Pulmo as "the world's most robust marine reserve." Do you agree with that description?

Aburto-Oropeza: Behind the theory of marine reserves are several hypotheses that have not been tested adequately, mainly because there are insufficient opportunities to study large areas for several years. If we understand that less than 0.1% of the world ocean consists of no-take areas, that the majority of marine reserves that comprise that percentage are less than 1 km^2 in size, that very few of these areas are older than 10 years, and that even fewer of them have been adopted by the local communities, we see that Cabo Pulmo is an exceptional case. Furthermore, Cabo Pulmo shows that no-take areas may yield results significantly greater than areas previously studied. From this perspective, I think Cabo Pulmo is the world's most robust marine reserve.

For more information:

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The study "Large Recovery of Fish Biomass in a No-Take Marine Reserve" is at **http://bit.ly/CaboPulmo**. Underwater photos of Cabo Pulmo National Park by Octavio Aburto are at **www.octavioaburto.com**.

Notes & News

US seeks nominations for national MPA system

The US National MPA Center has launched its fifth round of nominations for sites to be included in the national MPA system. Eligible federal, state, territorial, and tribal MPA programs are invited to nominate some or all of their sites by 31 October 2011. Currently 297 federal, state, and territorial sites are members of the national system, which provides coordination, technical assistance, training, and grants to existing MPAs to enhance collaborative stewardship of marine resources. For more information or to nominate an MPA, go to **www.mpa.gov**.

Conference on MPA enforcement: February 2012

A conference in February 2012 will examine all aspects of MPA enforcement — from demonstrations of enforcement tools, to strategies for increasing compliance with MPA rules, to self-sustaining financing mechanisms, and more. The four-day Global MPA Enforcement Conference (**www.wildaid.org/index.asp?CID=8&PID=682)** will feature cases of effective enforcement with discussions of best practice. It is hosted by WildAid, an international NGO dedicated to ending the illegal wildlife trade.

Proposals unveiled for regional MPA networks in UK

Four regional, stakeholder-driven initiatives to plan and propose networks of MPAs in UK waters have submitted their recommendations. All told, the proposals comprise 127 sea areas (called Marine Conservation Zones, or MCZs) and encompass more than 37,000 km^2. The plans will now be analyzed by advisory institutions to the UK Government (the Joint Nature Conservation Committee and Natural England) to assess potential environmental and socioeconomic impacts and ensure the proposals abide by official network design guidance. From there, the proposals and advice will go to Ministers, who will consider the supporting evidence and potential impacts before deciding sites to take forward for designation.

Under the recommendations, just under 2% of the total combined area for MCZs would be highly protected (allowing no extraction, deposition, or human-derived disturbance). Information on the four regional plans — including details on individual site boundaries, features proposed for protection, and draft conservation objectives — is at **www.mczmapping.org**. The January-February 2011 edition of MPA News featured an interview with Jen Ashworth of Natural England about the UK planning process ("Comparing Two Methods of Building MPA Networks…", MPA News 12:4).

In other UK news, the Government submitted the country's portion of the Dogger Bank sandbank in the North Sea to the European Commission to be included in a European network of nature protection sites. The 12,000-km^2 area is the largest marine site to be submitted by an EU country. If accepted, the UK section would link up with existing protected areas in German and Dutch waters. A press release is at **www.defra.gov.uk/news/2011/09/01/dogger-bank**.

Pacific island leaders endorse plan to designate regional shark sanctuary

In late July, leaders of several Western Pacific island nations agreed to begin a process of designating a 3 million-km^2 area in which fishing for sharks — as well as possession or sale of shark fins — will be banned. Once the MPA is officially designated, it will be the world's largest shark sanctuary. The area will cover the waters of the Federated States of Micronesia, Guam, the Marshall Islands, the Northern Marianas Islands, and Palau.

The sanctuary will extend existing protection for sharks in the region. Palau's waters are already off-limits to shark fishing, and the Marshall Islands instituted a shark-fishing moratorium in 2010 after reports of unregulated activity in its waters. However, in other parts of the proposed sanctuary there is still a significant longline fishery. Although the fishery is primarily for tuna, sharks are also caught and their fins sold, which will be illegal under the ban.

Philippines town designates 12 more marine sanctuaries, bringing total to 15

In mid-August, the town of San Joaquin in the Philippine province of Iloilo designated 12 no-take marine sanctuaries, bringing the town's total to 15. Each of the marine sanctuaries is 20 km^2 in area, and corresponds to one or more *barangays* (neighborhoods). "Our main purpose here is to protect and preserve the source of livelihood of small fisher folk," said San Joaquin Mayor Ninfa Garin in a statement.

The 12 new no-take areas are in response to the success of an earlier pilot project involving three sanctuaries. Within months of designating the pilot sites, local fishing catches increased, leading to community support for more sanctuaries. The sanctuaries will be maintained and enforced with the help of barangay officials and the community. A news article on the new MPAs is at **http://bit.ly/SanJoaquinMPAs**.

Protest of oil exploration near Brazil MPA

In late August, Greenpeace activists shut down the headquarters of a Brazilian petroleum services company to protest oil exploration near Abrolhos Marine Park, an important breeding ground for humpback whales. The Abrolhos region in northeast Brazil was previously closed to oil exploration, but was reopened to energy producers last December after a federal court struck down the oil exploration ban in the area. Several exploration blocks have now been leased within what was previously a buffer zone around the marine park. The buffer zone has been the focus of political and legal struggles for years among conservationists, municipalities, and government agencies.

The August protest involved two-dozen Greenpeace activists blocking the front entrance of OGX Brasil, one of several firms holding exploration blocks in the Abrolhos region. The activists were dressed as oil-soaked humpback whales. The Greenpeace Brasil website (in Portuguese) is **www.greenpeace.org/brasil/pt**. A letter from OGX to Greenpeace following the protest is at **http://bit.ly/GreenpeaceOGX**.

New Zealand designates five no-take reserves

The New Zealand Government in August designated five new no-take marine reserves along the west coast of its South Island. The new protected areas encompass 175 km^2. An additional 95 km^2 in the area was set aside as off-limits to bottom trawling, dredging, and Danish seining (a type of net fishing). New Zealand Conservation Minister Kate Wilkinson called the reserves a huge achievement and said their establishment was driven by the local community, including fishermen. The opposition Green Party said the reserves were disappointingly small and did too little to increase the country's share of waters in marine reserves (which remains less than 0.5%). The Government press release on the new reserves is at **www.beehive.govt.nz/release/five-marine-reserves-announced-west-coast**.

Studies cite need to protect deep ocean

Two recent studies by large international teams of scientists have concluded that the deep ocean is under significant threat from human activities, and that MPAs on the high seas are a necessary tool for protecting the ecosystem:

- In the journal *Marine Policy*, researchers recommend an end to most commercial fishing in the deep sea. They cite powerful fishing technologies that are overwhelming fish species adapted to life in "deep-sea time" — i.e., species with slow maturation rates. The best policy, according to the authors, would be to redirect subsidies to help displaced fishermen and rebuild fish populations in productive waters closer to ports and markets, places more conducive to sustainable fisheries. The study "Sustainability of Deep-Sea Fisheries" is available at **http://bit.ly/DeepSeaFisheries**.

- In the journal *PLoS ONE*, an analysis of human impacts on the deep ocean suggests the greatest current impacts are from exploitation (including fishing, mining, and petroleum exploration and extraction), but that future impacts will be greatest from increases in dissolved CO_2 and consequences of climate change. The scientists suggest MPAs can help lessen human impacts on the deep sea. The study "Man and the Last Great Wilderness: Human Impact on the Deep Sea" is available at **http://bit.ly/LastGreatWilderness**.

NGO proposes MPA network for Mediterranean

Oceana, an international NGO, has proposed a network of marine protected areas in the Mediterranean that would increase total MPA coverage in the region to 12%. Current MPA coverage in the Mediterranean is 4%. Oceana's network, called

MPA News

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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.

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MedNet, would feature 100 new MPAs encompassing 200,000 km^2, and would include seamounts, banks, canyons, slopes, trenches, ridges, mud volcanoes, gas seeps, carbonate mounts, and more. "We suggest MedNet as a minimum proposal in order to reach the 10% MPA coverage target under the UN Convention on Biological Diversity," says Pilar Marin of Oceana. She says it represents the first time a comprehensive MPA network has been planned for the Mediterranean with connectivity in mind. To access the MedNet website, go to **http://bit.ly/MedNet**. For more information: Pilar Marin, Oceana, Madrid, Spain. E-mail: **pmarin@oceana.org**

Study: Protecting 4% of world ocean could protect most marine mammal species

Enhancing conservation at just nine specific ocean sites worldwide — equal to 4% of the ocean — could protect critical habitat for the vast majority of marine mammal species, according to a new study in the journal *Proceedings of the National Academy of Sciences*. The nine sites are located off the coasts of Baja California (Mexico), eastern Canada, Peru, Argentina, northwestern Africa, South Africa, Japan, Australia, and New Zealand.

To identify areas where conservation could protect the maximum number of species and the ones most vulnerable to extinction, the research team overlaid maps of where each marine mammal species is found. The composite map revealed locations with the highest species richness (i.e., the highest number of different species). The researchers discovered that 84% of all marine mammal species had significant range within the nine aforementioned sites. The paper "Global distribution and conservation of marine mammals" appears in the 16 August 2011 edition of *Proceedings of the National Academy of Sciences*. The abstract is available at **www.pnas.org/content/early/2011/07/26/1101525108**. A press release is at **http://news.stanford.edu/news/2011/august/seals-082911.html**.

MPA Bookshelf: new publications

Navigating the Future of Marine World Heritage

By Bud Ehler and Fanny Douvere
UNESCO, 74 pages. **http://whc.unesco.org/en/series/28**

This report summarizes the conclusions and recommended actions from the first meeting of all World Heritage marine site managers, held in Hawai`i in December 2010. The meeting focused in particular on the exchange of success stories, providing the basis for a stronger community of site managers and the capacity needed to deal with the increasing complexity of conserving World Heritage marine sites. Outcomes from a survey to address threats and management gaps at the sites are also discussed in this publication.

How to Support the Development of Alternative Livelihoods and/or Income-Generating Activities in the Mediterranean Marine Protected Areas?

MedPAN, 60 pages. **www.medpan.org/_upload/1537.pdf**

These are the proceedings of a workshop held in Korba, Tunisia, in December 2010, that gathered MPA managers and others from the Mediterranean region and beyond. Alternative livelihoods and income-generating programs are defined here as professional activities that (a) provide compensation for the possible loss of income by local populations due to MPAs and (b) ensure that any resulting use of natural resources is sustainable. The proceedings present 12 brief case studies of MPA-related alternative livelihood programs or other income-generating initiatives in practice. Conclusions and recommendations from the three-day workshop are also provided.

A Management Capacity Assessment of Selected Coral Reef Marine Protected Areas in the Caribbean

By Meghan Gombos *et al.*
Caribbean MPA Managers Network & Forum, 269 pages.
http://bit.ly/CoralMPACapacityAssessment

This report provides the results of an assessment of management capacity at 27 MPA sites throughout the Caribbean, including in the Bahamas, Belize, the British Virgin Islands, Grenada, Honduras, Mexico, Saba, St. Eustatius, St. Lucia, St. Vincent and the Grenadines, and the Turks and Caicos. It addresses criteria ranging from MPA management planning and governance, to monitoring and education, fisheries management, and resilience to climate change. The report also includes feedback from participating site managers about priority capacity needs (enforcement was the most commonly identified) and their desired approaches to capacity building.

Designing and Planning a Network of Community-Based Marine Protected Areas

By Anna Varney *et al.*
Coastal Conservation Education Foundation, 83 pages.
http://bit.ly/CommunityBasedMPAs

Published in 2010 but only recently available online, this manual is designed to help coastal managers in the Philippines develop effective MPA networks. It walks readers through the guiding principles of MPA network governance (including coordinating multiple management institutions) and the related science — both ecological and social.