

## 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<sup>2</sup> marine protected area. (The announcement is at [www.cook-islands.gov.ck/view\\_release.php?release\\_id=1245](http://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<sup>2</sup> 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<sup>2</sup>), 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<sup>2</sup> 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](http://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<sup>2</sup> 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<sup>2</sup>? 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<sup>2</sup> Papahānaumokuākea 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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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 Papahānaumokuākea 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<sup>2</sup> 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<sup>2</sup> 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<sup>2</sup>
- 1999:**  
Macquarie Island Commonwealth Marine Reserve, Australia. 162,000 km<sup>2</sup>
- 2006:**  
Papahānaumokuākea Marine National Monument, US. 360,000 km<sup>2</sup> ✓
- 2008:**  
Phoenix Islands Marine Protected Area, Kiribati. 408,250 km<sup>2</sup>
- 2009:**  
Marianas Trench Marine National Monument, US. 246,608 km<sup>2</sup>  
Pacific Remote Islands Marine National Monument, US. 210,000 km<sup>2</sup> ✓  
Prince Edward Islands Marine Protected Area, South Africa. 180,633 km<sup>2</sup>
- 2010:**  
Chagos Marine Protected Area, British Indian Ocean Territory. 544,000 km<sup>2</sup> ✓  
Motu Motiro Hiva Marine Park (formerly Sala y Gómez), Chile. 150,000 km<sup>2</sup> ✓
- 2011: proposed**  
South-west Corner Commonwealth Marine Reserve, Australia. 322,000 km<sup>2</sup>
- 2012 or beyond: in planning**  
Cook Islands Marine Protected Area. 1 million km<sup>2</sup>  
MPA in international waters of Sargasso Sea. 5 million km<sup>2</sup>?

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 Papahānaumokuākea or the Phoenix Islands.

**ʻAulani 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](http://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](http://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<sup>2</sup> 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<sup>2</sup>), New Zealand (Kermadec region – 600,000+ km<sup>2</sup>), the United Kingdom (Pitcairn Island – 800,000+ km<sup>2</sup>), and Bermuda for its EEZ (300,000+ km<sup>2</sup>). We are also in initial conversations about potential sites in French waters, among others. 

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