

International news and analysis on marine protected areas

MPA News to be monthly again; paper version is ending

Hi everyone,

Welcome to the 150th issue of MPA News! When our team started the newsletter 17 years ago, we never expected it would still be chugging along at this point. We're grateful to continue to serve you.

This milestone brings some changes for the newsletter.

With our next issue (October) MPA News will return to monthly distribution, as opposed to every second month. Long-time subscribers may remember we were a monthly publication for our first ten years (1999-2009) before switching to our current, less-frequent schedule.

With so much happening now in the MPA field, and with the 2020 deadline of Aichi Target 11 looming just four years away, a more frequent publication schedule makes sense.

Another change: Support for MPA News from the David and Lucile Packard Foundation, which has helped fund the newsletter for 15 years, ended last month.

With the end of Packard support, we are reducing our costs by suspending the paper version of MPA News. This current issue is likely to be the final paper one. If any institutions or individuals out there would like to support a resumption of the paper version, please email me. In the meantime, we will switch anyone who currently receives the paper version to receive the email version instead.

Thank you for the work you do for the oceans!



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President Obama expands Papahānaumokuākea, creating largest protected area in world

On 26 August, US President Barack Obama expanded the boundaries of Papahānaumokuākea Marine National Monument in the northwestern Hawaiian Islands from its previous size of 362,000 km² — already one of the largest MPAs in the world — to an enormous 1.5 million km². The expansion creates the largest protected area, marine or terrestrial, on Earth.

Formerly the boundaries of the MPA extended 50 nm from shore. Now they extend to the full 200-nm limit of the EEZ. All commercial extraction activities, including commercial fishing and any future mineral extraction, are prohibited in the expansion area, as they are within the boundaries of the existing monument. Recreational fishing and the removal of fish and other resources for Native Hawaiian cultural practices are allowed in the expansion area by permit, as is scientific research.

Obama designated the expansion via executive powers he wields under the US Antiquities Act.

The move did not require legislative approval from Congress.

Indigenous support

Obama's action was in response to a proposal and campaign — Expand Papahānaumokuākea (www.expandpmnm.com) — put forward by Native Hawaiian leaders earlier this year. Supported in turn by cultural groups, NGOs, and scientists, the proposal and campaign called for expanding the MPA to improve protection of the region's marine ecology and cultural seascape ("MPAs as eco-cultural systems", MPA News 17:5). The northwestern Hawaiian Islands and their surrounding waters are considered a sacred place for the Native Hawaiian community, and play a significant role in creation stories and long-distance voyaging and wayfinding traditions.

In parallel with the expansion, the Obama Administration elevated the Office of Hawaiian Administration
continued on next page



Affairs (OHA) — a semi-autonomous department of the state of Hawai‘i — to the position of co-trustee of the MPA. This move had also been requested in the Native Hawaiian proposal. The position as co-trustee will provide Native Hawaiian interests with greater influence over MPA policy. Previously the monument’s management system had just three co-trustees: the US Secretary of Commerce (through NOAA), US Secretary of the Interior (through US Fish & Wildlife Service), and the State of Hawai‘i (through the Department of Land and Natural Resources).

“OHA applauds President Obama’s decision to elevate the voice of Native Hawaiians in the management of the lands and waters in the northwestern Hawaiian Islands,” said Kamana‘opono Crabbe, CEO of OHA. “Papahānaumokuākea is critical to Native Hawaiian spiritual wellbeing, and this action by the President helps revive our connection to our kūpuna [ancestral] islands and reinforce our understanding of Hawai‘i as a contiguous spiritual and cultural seascape.”

To comment on this article:

<https://openchannels.org/node/14396>

Just how large is Papahānaumokuākea?

The newly expanded Papahānaumokuākea Marine National Monument is now 1.5 million km² in size. To give a sense of proportion, that is:


- More than four times the size of Germany.
- More than 742,000 times the size of Monaco.
- More than 200 million football (soccer) fields placed side to side.
- About 0.4% of the global ocean surface.

Do you have some other size comparisons for Papahānaumokuākea? We would love to hear them! Send to mpanews@u.washington.edu

Opposition faced uphill battle

Prior to Obama’s actions, there was some opposition to the proposed expansion, namely from Hawai‘i’s tuna longline fishery, the largest fishery in the state. The fishery does most of its fishing outside the MPA’s expansion area, but had occasionally worked inside it, too. Backing the longliners were the regional fisheries management council, various restaurants on the main Hawaiian Islands, and some current and past elected officials.

But opponents faced an uphill battle. The expansion proposal was widely supported by Native Hawaiian cultural groups. It was backed by 1500 scientists at the International Coral Reef Symposium (held in Hawai‘i in June), who co-signed a letter in support to the President. Multiple NGOs, including Pew, provided support behind the scenes. And the concept was shepherded politically by US Senator Brian Schatz, who helped convene public meetings for Obama Administration officials with Hawaiian stakeholders earlier this year. Meanwhile President Obama, who is from Hawai‘i originally, is taking actions like this to burnish his environmental legacy in his final year in office and wields the executive power to make such a unilateral designation.

The convergence of these factors made everything seem to come together relatively quickly — even for the designation of the largest protected area in the world. 

For more information:

Presidential proclamation: <https://oct.to/ZZt>

Obama Administration fact sheet: <https://oct.to/ZZv>

Office of Hawaiian Affairs announcement: <https://oct.to/Z4k>

National Geographic article on expansion: <https://oct.to/Z4Z>

Essay on challenges of managing new area: <https://oct.to/Z4T>

MPA events at the World Conservation Congress, 1-5 September

MPA News and its affiliated website OpenChannels.org will be at the IUCN World Conservation Congress in Honolulu, Hawai‘i, live-blogging the event from 1-5 September. You will be able to stay up to date on the conference’s main outcomes, news, photos, and more at www.openchannels.org/chat/wcc-2016

These large IUCN meetings (this one has more than 8000 registrants) always have an energetic MPA-oriented contingent. The Oceans & Islands Pavilion will be the site of multiple MPA sessions, including ones on MPA networks, large-scale MPAs, marine mammal MPAs, locally-managed marine areas, and more. You can follow the Congress’s entire “Marine Journey” — listing 175 marine-themed events at the conference — at <https://www.iucn.org/news/marine-journey-event-guide>

In addition, the Oceans & Islands Pavilion will host the launch of a special issue of *Aquatic Conservation* journal containing some 255 pages of new peer-reviewed material related to MPAs.

Another journey at WCC — the Promise of Sydney Journey — will guide attendees through sessions related to outcomes from the World Parks Congress in 2014. That journey is at <https://oct.to/Z44>

And last, OpenChannels.org and the NOAA National MPA Center will co-host a webinar on 4 October with a wrap-up of the World Conservation Congress. To register: <https://oct.to/Z4o>

Examining the small print of Aichi Target 11: Is it time for a conversation on what the words mean?

At the World Conservation Congress in coming days (1-5 September in Honolulu, Hawai'i), there will be much talk about how the MPA community can best meet Aichi Target 11. That target, established under the UN Convention on Biological Diversity (CBD), calls for at least 10% of coastal and marine areas...

“especially areas of particular importance for biodiversity and ecosystem services, to be conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures”

...by the year 2020.

MPA News has covered Aichi Target 11 several times, including how the phrase “other effective area-based conservation measures” could be interpreted (MPA News 16:5). But as the 2020 deadline grows nearer — and as global MPA coverage still lags well short of the 10% goal — a clear understanding of how to reach the target is becoming increasingly necessary.

A forthcoming article in the journal *Aquatic Conservation: Marine and Freshwater Ecosystems* examines Aichi Target 11 in the broader context of ocean conservation. Mark Spalding of The Nature Conservancy is the lead author and contributed his thoughts below to MPA News.

On the language of Aichi Target 11:

“The language of CBD and particularly Aichi Target 11 is excellent. The challenge is in achieving a more balanced implementation of the target. There seems to be something of a race to protect 10% of the oceans, with perhaps half an eye on biodiversity. Target 11 calls for much more. It calls for protection of ecosystem services as much as biodiversity, but where are our prioritization schemes for incorporating ecosystem services into MPA networks? Target 11 also states that protection must be effective and equitable, and more broadly it demands that areas must be representative, well-connected and placed in a wider setting of managed oceans. We barely have the conversations about what these might mean, let alone the tools to measure them. But we could!”

On “other effective area-based measures”:

“Another challenging piece in Target 11 is the incorporation of ‘other effective area-based measures’, or OEAMs. This was in recognition of the fact that protection is often effectively provided by other means than formally declared MPAs (which in some countries are tightly held in the hands of the conser-

vation ministries). This is a huge opportunity but it runs the risk of opening a Pandora’s box: recognized MPAs already cover a highly variable suite of management approaches — from sites that offer just a few regulations on one or two activities, to places closed even to visitation. OEAMs will just add to this. The objective of Target 11 is to achieve observable conservation benefits. Understanding the degree of protection provided by different sites should help us to track or predict that.”

On the need to start categorizing MPAs as extractive areas or non-extractive areas:

“In this context the IUCN management categories, as applied, are not all that helpful. In a quick assessment of 380 MPAs that we knew to be fully no-take, we found only 30% were listed in the higher IUCN protection categories I-III (in the World Database on Protected Areas). So as a starting point we really need to start using ‘non-extractive’ versus ‘extractive’ as a means to categorize the enormous variety of protection. Further sub-categories could follow, particularly among the extractive sites, but this first subdivision is absolutely critical.

“We are not, however, suggesting that non-extractive is the only real form of protection — far from it. Target 11 and whatever follows [after 2020] should and will be achieved by a balanced suite of protection. In many areas non-extractive protection may not be a sensible or effective option.”

On the “end game” of ocean protection:

“Perhaps we need to develop separate targets for both extractive and non-extractive sites. But those targets must not just be about extent, and will be locally informed. Meanwhile, facing the full text of Target 11, we have to think of the entire oceanscape. Globally our ‘end game’ must be for 100% sustainable management of the oceans with special protection embedded in a wider, fully-managed oceanscape.”


On the small print of the 2020 deadline:

“Remember that the 2020 target will not be met if we reach 10% without reading the small print. The protection has to be connected, representative, equitable, effective, and focused towards key biodiversity and key ecosystem services. The growth in vast and remote MPAs is exciting and countries must be encouraged and congratulated on their efforts to protect the last great tracts of secure ocean wilderness. But we shouldn’t be over-awed by these. It is relatively cheap

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and easy to protect a hectare of remote ocean with few pressures and low fishing levels. The bigger challenge is the cost and complexity of designating even just one hectare close to people and multiple threats.

“The potential payback from the latter is immense. Get it right, as witnessed by many locally managed marine areas (LMMAs) from Chile to the South Pacific, and the system will start to snowball.

Fishers will be demanding more, tour operators will be pushing for protected dive sites, and investors will be funding blue carbon or mangrove restoration reserves to secure carbon stocks or reduce insurance premiums.” 

For more information:

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The paper “Building towards the marine conservation end-game: consolidating the role of MPAs in a future ocean” is in press at *Aquatic Conservation: Marine And Freshwater Ecosystems*.

Spalding also co-authored a chapter (“Marine Protected Areas: Past, present and future – a global perspective”) in the book *Big, Bold and Blue: lessons from Australia's marine protected areas*, available at www.publish.csiro.au/pid/7293.htm

How do you respond when a mysterious mortality event happens in your MPA?

In late July 2016 a group of recreational divers in the Flower Garden Banks National Marine Sanctuary, off the coasts of Texas and Louisiana in the US, noticed something weird. The water was green and hazy instead of the normal clear blue. Large and dense white mats of an unknown substance covered corals and sponges that had previously been healthy. And untold numbers of other reef invertebrates — including brittle stars, sea urchins, crabs, worms, and shrimp — lay dead on the bottom.

It was a bizarre and troubling scene, not least because the reason or reasons for the die-off were unclear — and remain unclear two months afterward. MPA staff are working with partners in government and academia to study the die-off sites for answers (only some areas of the MPA were impacted; other areas remain healthy). The working theory at this point is that a number of stressors likely contributed.

MPA News spoke with the MPA's research coordinator Emma Hickerson about how management has responded to the event. The interview took place on 18 August.

MPA News: This event took everyone by surprise. What is the process by which Flower Garden Banks management responded to such an unexpected event?

Emma Hickerson: Our first main action was to attempt to determine the extent of the event through direct surveys by research divers. We are still working on completing these surveys — weather has hampered our efforts. We work very closely with partners at academic institutions as well as state and federal agencies to collaborate on key activities, like water sampling, biological sampling, identifying funding sources, etc.

MPA News: Have you been able to rule out any potential causes of the event yet?

Hickerson: No, not yet to be honest. We are still looking at all sorts of possibilities — coming from above, below, or a combination of both.


MPA News: The MPA has asked recreational divers not to enter the affected area. This is to guard against spreading any toxins/microbes to non-affected areas. What precautions are the research divers taking?

Hickerson: After each dive in the affected area we have been rinsing all of our gear in a disinfecting solution. However, the event no longer appeared active by the time of our second response cruise, so the recommendation is no longer in place.

MPA News: Can you estimate how much funding will be needed for this response?

Hickerson: Initial estimates are around US \$275,000 for a multi-year response effort. That doesn't include a lot of in-kind support.

MPA News: Last year the federal government proposed expanding the size of Flower Garden Banks National Marine Sanctuary, potentially to several times its current size of 145 km². A process to consider that proposal is ongoing. Does this mortality event impact the proposal?

Hickerson: Indirectly. It highlights the fact that in order to catch something like this event, we need to be in the water to see it taking place. If the MPA is expanded to include more reef sites, those sites will become part of the sanctuary's regular research and monitoring program. We will have more of a chance to catch future events. Additionally if a site is under sanctuary status, it will have more direct access to funds to respond to an unanticipated event like this. 

To comment on this article:

<https://openchannels.org/node/14398>

For more information:

Emma Hickerson, Flower Garden Banks National Marine Sanctuary. Email: emma.hickerson@noaa.gov

For updates on the MPA's response to the mortality event, including photos and video of the impacted reefs, go to <http://flowergarden.noaa.gov>

New MPA classification system proposed: sites get scores based on what uses they allow

A joint team of Portuguese and French researchers has proposed a new system for classifying MPAs based on what activities the sites allow and how those activities could impact biodiversity. The proposed system relies on scoring. An MPA that allows relatively impactful activities like bottom trawling, for example, would receive a different score than one that allows less impactful activities, like spearfishing. And both MPAs would receive a different score from an MPA that allows no fishing at all. The system also scores MPAs according to the presence or absence of aquaculture, oil/mineral extraction, anchoring, and boating.

Under the system, the more activities an MPA allows, the higher its accumulated “MPA index”. Sites with the highest index scores are classified as “unprotected”. Four other possible classifications are fully protected, highly protected, moderately protected, and poorly protected.

The system also accounts for zoned MPAs. It generates a score for each zone, then integrates those scores in the site’s overall index. So a site that has an equal mix of no-take zones and fishing zones would have a different index score than one that is mostly or fully no-take.

In response to IUCN categories

Published in the journal *Marine Policy*, the system is a response to IUCN’s current framework of MPA management categories (<https://oct.to/Z4J>). The IUCN system bases its categories on management objectives rather than a site’s actual regulations. According to the Portuguese/French team, this results in three main inefficiencies:

1. The main objectives of MPAs are often not clearly described in their management plans.
2. MPAs’ actual regulations may be inconsistent with their originally stated objectives.
3. The IUCN system was not designed to account for the fact that many MPAs are multi-purpose and comprise various zones with different rules.

The newly proposed system is designed to address each of those inefficiencies. The research team considers its proposed system to be a robust but simple classification — “providing an alternative to or complementing the current IUCN system of categories for MPAs.”

MPA News spoke with the first author of the paper, Bárbara Horta e Costa, and with Emanuel Gonçalves

and Joachim Claudet, who were co-principal investigators on the project.

MPA News: You wrote that your classification system could potentially be used in conjunction with IUCN’s system. What might that look like?

Bárbara Horta e Costa: Ideally, we hope that the wide use of our classification could lead it to be adopted in the future by IUCN. In the meantime, the use of both systems is not precluded since each MPA could be classified according to both their objectives (IUCN categories) and regulations (our classification system). Ideally a third classification should complement them: the level of enforcement associated to those regulations. Inconsistencies between IUCN’s and our systems will emerge (which is informative as well), but we hope that this could guide the selection and definition of future objectives and regulations of MPAs.

Joachim Claudet: Having a globally applicable, meaningful and unambiguous system to classify and distinguish zones and MPAs is central to assessing conservation achievements. That includes understanding what we are protecting under the Convention on Biological Diversity and Aichi Target 11.

Do you have a website or tool where people can enter the criteria for a particular MPA and its zones and generate a score?

Emanuel Gonçalves: We are developing a website that will allow users to easily classify zones and MPAs. After entering the information online, users will be able to submit it to a global database that we aim to compile on regulations for MPAs. The submitted and validated information will be made freely available to everyone. Users will also be able to simulate hypothetical situations, such as for planning a future MPA.

Claudet: In the meantime, while the website is being developed, it is easy to generate scores for zones or MPAs simply by following the steps in our journal paper, which is freely downloadable.


To test your proposed system, you applied it to a range of 100 MPAs around the world. An appendix to your study shows the index score for each MPA. What did you find in these tests?

Costa: We had MPAs classified as unprotected (worst rank) and fully protected areas (best rank). In both cases we found single-zone *and* multiple-zone MPAs.

What are your next steps for the classification system?

To comment on this article:
<https://openchannels.org/node/14399>

Gonçalves: We plan to continue revising it. We hope the global MPA community starts using this system and sending feedback. Additionally, we will be submitting another paper shortly, assessing the ecological effectiveness of the different classes of partially protected areas through a meta-analysis of available studies.

Claudet: As a final note, we have considered incorporating management effectiveness in our classification system, but such information is not yet available at a global scale. Two MPAs with similar scores may have different ecological (and socio-economic) outcomes depending on, among other factors, how well they are managed. We hope this gap can be addressed in the near future and this information could then be integrated in our classification. We have started pilot studies in the Mediterranean and Portugal looking at management effectiveness, which might bring some interesting developments. Stay tuned and contact us for any questions! 

For more information:

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The paper “A regulation-based classification system for Marine Protected Areas (MPAs)” in *Marine Policy* journal is available for free at <https://doi.org/10.1016/j.marpol.2016.08.043>. Appendices to the paper include infographics on how to calculate MPA index scores, and a table of the several dozen MPAs worldwide that were tested with the system.

Letter to the editor: To consider only one culture’s interaction and influence over a landscape is insufficient

Dear editor,

The article “MPAs as ‘eco-cultural systems’: Indigenous people and the intersection of culture and conservation” in your June-July 2016 issue illuminates an important element of the heritage of these places. Too often the indigenous communities have had to work much harder than they should to have MPA managers understand, recognize and integrate their perspectives into the stewardship of these sites.

Indigenous co-management can be quite successfully accomplished, and one need look no further than Gwaii Haanas National Park Reserve/National Marine Conservation Area Reserve/Haida Heritage Site in British Columbia (Canada). The Council of the Haida Nation and Parks Canada have forged and nurtured an effective partnership. We should all appreciate, acknowledge, and learn from the very long and often challenging process the Haida Nation and Government of Canada have embraced. They have achieved great progress in real, on-the-ground co-management of the significant natural and cultural resources present on Haida Gwaii.

The cultural heritage of places is a fabric woven of the contributions, over the full sweep of history, of many cultures. A deeper understanding of the maritime cultural landscape of a place, which encompasses the human-environment interactions in that place from the first peoples to the present, offers essential context related to interactions of the people with that ecological landscape — how people shaped this place and

how the place shaped the people who lived there. It also offers the often difficult and complex interactions among those who valued that place throughout its history.

To consider only one culture’s interaction and influence over that landscape is insufficient. It fails to provide the context needed to fully understand what we see today, the challenges we face in effectively preserving and protecting the significant natural and cultural resources that landscape has supported and continues to support, and to avoid further polarization of one perspective over another as the “most important”. Each culture’s contribution is important in some way. Each changed the landscape and was changed by it. And the historical conflicts that occurred there, however uncomfortable they are to understand and address, are elements of the story that must be part of the deeper knowledge of place we should seek. It is the rich and complex cultural legacy of all that can help us learn the lessons of the past, and perhaps not repeat those with each passing generation who do not seek this knowledge.


There is increasing interest in the integration of maritime cultural landscapes in the management of MPAs. How we might go about doing this effectively is the subject of a growing body of literature. Managers from a number of countries are participating in conferences and workshops on the subject to raise awareness of this approach and better implement it in MPAs. As an example, a Maritime Cultural Land-

To comment on this letter:
<https://openchannels.org/node/14400>

scape Symposium was held in the US last year, sponsored by the US National Park Service, NOAA Office of National Marine Sanctuaries, Bureau of Ocean Energy Management, and the Wisconsin State Historic Preservation Office, with extensive participation of indigenous communities and their perspectives. The Symposium aimed to better define maritime cultural landscapes and offer some consensus approach for integrating this into MPAs in the US. It is hoped that the results of this meeting will offer opportunities to expand the reach of this idea to others, and to foster further discussion of the value of this approach in place-based preservation of the maritime landscapes we value and protect for future generations.

Clearly, however, any management approach can only be fully successful if we overcome polarization of perspectives, and avoid valuing any culture's influence over the historical landscape of a place over any others' contributions. We must seek a deeper under-

standing of the contributions of all, honoring and respecting what each has brought to that place, and how that place was influenced by those people who were deeply connected to that landscape. All voices should be welcomed, heard, acknowledged and given due consideration in finding a path forward to effective preservation and management of MPA resources. All should have a say in which path is chosen.

Trying to understand something without the larger context is challenging and potentially divisive — and is best avoided if we are truly interested in learning from the past and using that knowledge effectively, together, to better protect and preserve these places we value. 

Brad Barr

Barr is senior policy advisor for NOAA's Office of National Marine Sanctuaries (ONMS). In his comments here, he is not speaking for ONMS, NOAA, or the US Government.

Correction

In the June-July 2016 issue of MPA News, the article on MPAs as eco-cultural systems stated that the Gwaii Haanas Archipelago Management Board in Canada has equal board representation, with two members from Canadian Government and two from the indigenous Haida Nation. Actually the board has three members from each, not two (www.pc.gc.ca/eng/pn-np/bc/gwaiihaanas/plan/Plan1A.aspx).

Notes & news

Russia to expand an Arctic park

In late August, Prime Minister Dmitry Medvedev of the Russian Federation signed a draft resolution to expand the Russian Arctic National Park, increasing its size from 14,000 km² to 88,000 km². The expansion area includes islands of the Franz Josef Land Archipelago and their surrounding territorial waters, and is intended to protect species like narwhals and bowhead whales. With the expansion, the protected area will become the country's largest terrestrial park and largest MPA. A *National Geographic* article on the expansion plan is at <https://oct.to/Z4U>

Poacher in Galápagos Marine Reserve is sentenced to three years in prison

In August, an Ecuador court sentenced a local Galápagos resident to three years in prison for trafficking sea cucumbers that were fished illegally in the marine reserve. The man was caught trying to smuggle more than 3700 dried sea cucumbers out of the archipelago by plane. For more information: <https://oct.to/Z4w>

Report calls for World Heritage sites on high seas

A new report recommends five sites on the high seas that would be suitable as potential World Heritage sites, and calls for changes to the World Heritage Convention to allow such areas outside national jurisdiction to be inscribed. Currently the convention allows countries to propose only sites within their own jurisdictions for inscription. The report's five recommended sites are:

- The Costa Rica Thermal Dome (Pacific Ocean), an oceanic oasis that provides critical habitat for multiple threatened species;
- The White Shark Café (Pacific Ocean), the only known gathering place for white sharks in the north Pacific;
- The Sargasso Sea (Atlantic Ocean), home to a unique ecosystem built around a concentration of floating algae;
- The Lost City Hydrothermal Field (Atlantic Ocean), an 800-meter deep area dominated by tall carbonate monoliths; and

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Note on website links:

MPA News shortens long URLs using our <https://oct.to> shortener. This makes it easier for our paper-version readers to type the URLs, and easier for our PDF readers to click on them.

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Thanks!

- The Atlantis Bank, a sunken fossil island in the subtropical waters of the Indian Ocean.

The report *World Heritage in the High Seas: An Idea Whose Time has Come* was co-produced by the UNESCO World Heritage Centre and IUCN. It is available at <http://whc.unesco.org/en/news/1535>

Report calculates cost of meeting water quality targets for GBR


In 2015, the Australian and Queensland governments — which share management responsibility for the Great Barrier Reef Marine Park — agreed on targets to significantly reduce the sediment and nutrient pollutants flowing into the MPA. A new report commissioned by the Queensland government puts a price tag on what it will cost to reach those targets by 2025: A\$8.2 billion (US\$6.2 billion). The report *Costs of achieving the water quality targets for the Great Barrier Reef* is available at <https://oct.to/Z4i>

Manual available on how to develop climate adaptation measures

A new manual offers an approach for developing climate adaptation measures in coastal and marine protected areas. Produced by WWF, the report combines ecosystem- and community-based approaches to

adaptation, and uses a participatory approach to build consensus among stakeholders on actions to be taken. Case studies describe lessons learned from field-testing at six protected areas. *Changing Tides: Climate Adaptation Methodology for Protected Areas* is available at <https://oct.to/Z45>

Study: Coastal and ocean protected areas are even more valuable than inland ones

A new study of coastal and ocean protected areas in the US finds that they account for a disproportionately large share of total visitation and economic impact among all US federal protected areas. Coastal and ocean protected areas exceed the median figures for recreational visitation, visitor spending, jobs created, and economic output compared to inland park units. “The results indicate that coastal and ocean parks are high-performing economic assets for the surrounding communities and states — assets that serve as infrastructure to sustain high levels of employment and economic output, whether at urban beaches or in remote wilderness,” write the authors. Produced by the Center for American Progress, the report *The Dividends of Coastal Conservation in the United States* is at <https://oct.to/Z4S> 

To comment on these notes & news items: <https://openchannels.org/node/14401>

From the MPA News vault Features and news items from yesteryear

Five years ago: Sept-Oct 2011 (MPA News 13:2)

- The Surge in Very Large MPAs: What Is Driving It and What Does the Future Hold?
- Is Mexico’s Cabo Pulmo National Park the Most Successful No-Take Marine Reserve in the World?

Ten years ago: Sept 2006 (MPA News 8:3)

- Oil Spills in Lebanon and the Philippines Highlight Spill Threat to MPAs
- Results from MPA News Poll: Which MPA is “World’s Largest”?

Fifteen years ago: Sept 2001 (MPA News 3:3)

- Managers of Cultural MPAs Face Unique Challenges
- UNESCO Draft Convention on Protection of Underwater Cultural Heritage: An Introduction

For these and all other issues of MPA News, go to www.mpanews.org/issues.html

This is likely the final paper version of MPA News.

As explained on page 1 of this issue, we are suspending the paper version of MPA News unless we can find a new funder for it.

The email version will continue, however!

If you currently receive the paper version of MPA News, you will be switched to receive the email version instead.

MPA News will also be returning to a monthly distribution schedule, rather than every second month.

As always, we look forward to continuing to serve the global MPA field!