

Building the future of MPA enforcement: Project Eyes on the Seas and other high-tech surveillance programs

If you were to build a system to combat illegal fishing, including within remote MPAs, it would most likely feature a way to track two things: where fishing vessels are in relation to the area of interest, and whether those vessels are fishing. Thanks to advancements in technology over the past decade, such systems have become available. Using a combination of satellites and on-board transponders, the systems are empowering a potential revolution in how governments can enforce their rules within MPAs, particularly remote ones.

MPA News has reported on some of these systems over the past couple of years when they were just being launched. A webinar in May provided more details on one system in particular — Project Eyes on the Seas — that has now been in operation since January 2015. The webinar offered insights on the capability of the system, how it may be of use to site managers, and how it can be coupled with additional policy measures to combat illegal fishing in general. (A recording of the webinar — which was co-hosted by MPA News, the US National MPA Center, OpenChannels.org, and the EBM Tools Network — is available at <https://oct.octo.zzf>.)

A brave new tech-based world is emerging for fisheries and MPA enforcement. Here we briefly examine how Eyes on the Seas is addressing the challenge, then describe other systems that are also available.

A system to serve even resource-poor enforcement agencies

Eyes on the Seas is a partnership between The Pew Charitable Trusts (an NGO) and Satellite Applications Catapult, a UK government initiative developed to foster economic growth through the application of space technology. The purpose of the partnership is to build an information platform to allow a true, near-real time picture of industrial fishing activity around the world. Ultimately the vision is to provide a cost-effective global fisheries monitoring system that can be used by governments and their respective enforcement authorities, including resource-poor agencies that may not otherwise have the financial ability to commercially access and use such technology.

The system is also designed to allow retailers and the vast majority of commercial fishers who operate within the law to show buyers where, when, and how their fish were caught. The purpose of this is to provide consumers greater market assurance that illegally caught fish are not intentionally or haphazardly being introduced into the market.

“The system is designed to provide credible, actionable insights into what’s happening on the water,” says Mark Young, senior officer in conservation enforcement for The Pew Charitable Trusts. “Project Eyes on the Seas is a system that facilitates a network of information and analysis.”

Merging four sources of data

How does it work? The technology behind the Eyes on the Seas system merges four main sources of information:

- Data from on-board Automatic Identification Systems (AIS) and Vessel Monitoring Systems (VMS), which broadcast a variety of information on vessel identity, position, speed, and other characteristics;
- Satellite imagery, including Synthetic Aperture Radar, optical imaging, and thermal imaging;
- Data from regional fisheries management organizations on vessel histories, as well as fishing boundaries, marine reserve boundaries, and other information; and
- Automation, including alerts to users when anomalies are detected, such as when an AIS is suddenly turned off when a vessel is about to enter a no-take reserve or EEZ. Such alerts are then investigated by trained, expert analysts.

In the webinar, Young displayed a snapshot of the system at work. Eyes on the Seas technology breaks down each vessel on screen by cross-referencing its identity, risk profile (if it has offended before), and operating licenses. It also identifies, based on various clues and algorithms, what the vessel is likely doing at any point in time: deploying its gear, actively fishing, retrieving its gear, or simply transiting an area, among other behaviors.

continued on next page

Table of Contents

Building the future of MPA enforcement: Project Eyes on the Seas and other high-tech surveillance programs . 1

Notes & news 2

Perspective Planning MPAs and creating stable agreements: Lessons learned from California’s Marine Life Protection Act process. 3

New techniques for responding to coral bleaching in MPAs 5

The *other* roles of MPAs, part 3: How MPAs can help address land-based runoff and water quality 6

Notes & news 7

MPA Science Corner ... 8

From the MPA News vault..... 8



To comment on this article:

<http://openchannels.org/node/13787>

All together, says Young, this technology provides the power to transform the current “needle in a haystack” approach to finding offending vessels inside marine reserves and other areas. Still, it is not enough by itself. “There is no single silver bullet to ending illegal fishing,” says Young. “You need a multifaceted approach to allow authorities to stay one step ahead of illegal fishers.” The technology must be combined, for example, with critical policy frameworks such as the Port State Measures Agreement, which came into force on 5 June 2016 with an initial 30 governments ratifying it (<https://oct.to/ZZY>). This international treaty empowers inspectors to board and investigate offending vessels when they eventually come to port. It also provides mechanisms to increase information sharing among parties to the agreement to allow for

more effective and streamlined actions to detect, deter, and eliminate illegal fishing.

Eyes on the Seas has been trialed so far in Polynesia in cooperation with existing national and regional monitoring, control, and surveillance frameworks as supported by the Pacific Islands Forum Fisheries Agency. Eyes on the Seas has also monitored the waters of the UK’s proposed Pitcairn Islands Marine Reserve in the south Pacific. Findings from the first 12 months’ implementation in Pitcairn demonstrate the technology provides a cost-effective, accurate means of surveillance for a large and isolated area.

Multiple large-scale retailers have reportedly begun discussions with Eyes on the Seas on how to apply its information to the market side. According to Young, Eyes on the Seas is envisioned eventually to become a self-sustaining independent entity, charging for services (to governments and retailers) to recoup only its costs of operating — not as a commercial enterprise, but as a non-profit for public good.

Governments and retailers interested in learning more or getting involved can contact Mark Young directly via email: msyoung@pewtrusts.org 

For more information:

Project Eyes on the Seas: <https://oct.to/ZZN>

Pew’s Ending Illegal Fishing Project: <https://oct.to/ZZx>

Satellite Applications Catapult: <https://sa.catapult.org.uk>

Video recording of webinar on Project Eyes on the Seas: <https://oct.to/ZZf>

The webinar also addressed whether Eyes on the Seas can be applied to small boat artisanal fisheries, how it is examining high seas fisheries, and whether it could be coupled with fisheries certification programs.

Other high-tech MPA surveillance programs


In addition to Project Eyes on the Seas, there are two other global fisheries surveillance systems that may be of value to MPA agencies: Global Fishing Watch and DigitalGlobe. MPA News is not advocating for one system over the others, and encourages readers to examine the relative merits of each:

- **Global Fishing Watch** — Developed by Oceana, SkyTruth, and Google, Global Fishing Watch provides a global view of commercial fishing activity based on data from vessels’ Automatic Identification Systems (AIS). It has been piloted to monitor fishing vessel activity inside the Phoenix Islands Protected Area in Kiribati, where it documented the apparent success of the MPA’s no-take regulations. The website is www.globalfishingwatch.org
- **DigitalGlobe** — Still under development, DigitalGlobe’s platform for observing illegal fishing will use the company’s own satellites to provide visual evidence to aid prosecution efforts in remote waters. Users are also expected to benefit from DigitalGlobe’s predictions of fishing activity and vessel behavior based on multiple factors, and can access Vessel Monitoring System information as well. For more information, email Alyson Kauffman, DigitalGlobe oceanographer, at alyson.kauffman@digitalglobe.com

Notes & news

US President Obama considering expansion of Papahānaumokuākea to 1.6 million km²

A proposal initiated by a Native Hawaiian-led group to expand the boundary of Papahānaumokuākea Marine National Monument in the Northwestern Hawaiian Islands is being considered by US President Barack Obama. The proposed expansion would move the seaward boundary of the MPA from its current 50 nm from shore to the full 200-nm limit of the EEZ. As a result, the 362,000-km² site would grow to a giant 1.6 million km² in area — making it arguably the largest MPA in the world.

Obama Administration officials reportedly held a recent listening session in Hawai`i with stakeholders to discuss the expansion idea. The expansion is supported by US Senator Brian Schatz of Hawai`i, who sent a formal proposal developed with stakeholder feedback to President Obama on 16 June (<https://oct.to/ZZW>). In the proposal, Schatz recommends that sections of the expanded park remain open to recreational and subsistence fishing. Commercial fishing and other extractive activities would be banned in the expanded area, as they are in the current MPA. 

For news coverage of the proposed expansion:

The Washington Post: <https://oct.to/ZZm>

Hawai`i Magazine: <https://oct.to/ZZs>

Perspective Planning MPAs and creating stable agreements: Lessons learned from California's Marine Life Protection Act process

By Scott McCreary

MPA planning takes many forms. Some are highly technocratic and depend on command-and-control regulation to be implemented. Others are more "stakeholder driven" but depend on an ultimate decision-making authority. Still others could be fully consensus-seeking.

Emerging practice suggests that MPAs should be planned in consultation with the full range of affected stakeholders in a region. But exactly how should that consultative planning process be structured and how can it be most successful? This article argues that without proper process design, the outcomes that result from such planning are not always stable.

What does it mean for an agreement to be "stable"? Based on accepted and well-documented best practices in negotiation process design, a stable agreement is one in which (1) significant cross-interest agreements are made, (2) consensus or near-consensus is reached, (3) objective scientific criteria are met, (4) the process is widely viewed as fair, and (5) the agreement is widely supported.

California's Marine Life Protection Act (MLPA) Initiative was established to address declining fish stocks and habitat loss off the California coast. Involving a region-by-region planning process that was implemented over several years last decade, the initiative resulted in a new network of more than 100 MPAs throughout the state's waters (<https://oct.to/ZZg>).

We at CONCUR have just published an article that details the challenges encountered in the stakeholder process to design MPAs in one region of the MLPA Initiative, the South Coast. Our article, "Creating Stable Agreements in Marine Policy: Learning from the California South Coast MLPA Initiative" (in *Negotiation Journal*, published by the Program on Negotiation at Harvard Law School) is available at <https://oct.to/ZZM>.

The article draws insights from the conflict resolution field on how to improve the design and management of these multi-stakeholder processes to ensure a stable outcome. It also draws on the first-hand experience that members of the authorship team had with the South Coast process, including as lead facilitator, stakeholder negotiator, and survey analyst, respectively.

Good process with good outcome, but not a great process with great outcome

Dozens of articles have been published on the California Marine Life Protection Act Initiative and,

overwhelmingly, authors herald its successes. (Indeed, I co-authored one such article after the largely successful North Central Coast regional process — <https://oct.to/ZZQ>.) In contrast, our article on the South Coast MLPA regional process examines it from the field of conflict resolution, and finds that the process was good — but not great.

In our view, while the South Coast stakeholder process had many positive outcomes, it failed to achieve a stable agreement. For example, near-consensus was not reached, and our survey afterward demonstrated that stakeholders do not now view the process as fair. We assert that the pitfalls of the South Coast stakeholder process could have been avoided had the management and facilitation team consistently considered and applied best practices in dispute resolution.

In our article, we highlight four major problematic process design choices that encouraged stakeholders to engage in positional bargaining (i.e., holding to a fixed idea), discouraged them from developing cross-interest agreements, and ultimately led to a distrust of process legitimacy. We then offer recommendations for future stakeholder-driven marine planning efforts:

- Ensure equal representation on the stakeholder group.
- Provide up-front training in principled negotiation for stakeholder representatives.
- Create stronger incentives for negotiation toward consensus.
- Consistently articulate and enforce strong decision rules.
- Integrate the facilitation team in all policy panel process design choices.

We hope that this deeper dive into the California Marine Life Protection Act process design will be used to improve future marine planning processes around the globe.

Creating a stable agreement

Is there such a thing as a perfectly stable agreement from a stakeholder process? Or will there always be some degree of divergence and imperfection — particularly in complex, urban environments like the South Coast process with high stakes and many competing stakeholders?

In CONCUR's professional practice over the past two decades, we have facilitated several dozen projects that reached unanimous consensus among all stakeholding parties. And on the question of stability, the

Editor's note:

Scott McCreary served as lead facilitator for three of the four main regional planning processes implemented under California's Marine Life Protection Act (MLPA). McCreary is managing principal at CONCUR, Inc., a firm providing expertise and coaching to clients in strategic planning, joint fact finding, and facilitation of agreements on complex environmental and natural resources issues (www.concurinc.com).

To comment on this article:

<http://openchannels.org/node/13789>

most pressing consideration is, “What is the mechanism for translating informally negotiated agreements into binding agreements?”

In the case of the MLPA Initiative, that mechanism was regulations adopted by the California Fish and Game Commission, but with an intermediate and formative stop at the Blue Ribbon Task Force (BRTF) — a policy panel that held power to “hybridize” and revise proposals forwarded by stakeholders. The BRTF certainly played a vital policy integration role, serving as a political buffer and doing a great deal of heavy lifting for the Fish and Game Commission. But it also distanced the stakeholders from the ultimate implementing mechanism.

Granted, some thoughtful observers have suggested that without the BRTF, the MLPA process may not have delivered final regulations, as the stakeholder processes did not always yield consensus or near-consensus. But in the MLPA Initiative, we actually never tested a process model where a stakeholder body was fully incentivized to negotiate to a single broad-based consensus. Such an incentive would likely have hinged a strong commitment that if the stakeholders reached consensus, their recommended plan would move directly to rulemaking. (This is precisely the model used by the US National Marine Fisheries Service with its Take Reduction Team process, which works with fisheries to reduce bycatch of marine mammals — <https://oct.to/ZZd>.)


For more information:

Scott McCreary, CONCUR, Inc., Berkeley, California, US. Email: scott@concurinc.net

command-and-control based models of top-down regulation to much more participatory models. Beyond participation, there are increasing examples of the use of collaborative planning models that convey at least some stakeholder ownership to co-develop MPA proposals.

Designers of future MPA planning efforts would be wise to invest in an up-front component of strategic planning that would, among other topics, investigate:

- Cultural norms around expectations for the extent of consensus in decision-making;
- Opportunities and strategies for incentivizing negotiation of consensus agreements;
- Prevailing models of collaborative planning;
- Potential compensatory mechanisms to offset financial losses; and
- Clarity of decision rules for drafting, finalizing, and adopting MPA proposals.

Finally I would recommend that conveners of MPA planning arrange to teach principles in mutual gains bargaining — the art and science of reaching mutual gains — along with standard planning skills and technical skills such as GIS analysis. The upside potential is considerable, and could set a good precedent to leverage progress on natural resource and planning issues beyond marine spatial planning. 

Evolution in MPA planning over the years

Without question, the field of integrated coastal zone management has moved a long way from early

New tool uses video from real MPA-planning meetings to show how to facilitate public decisions

Using video clips from actual public meetings that were part of implementing California’s Marine Life Protection Act (MLPA) Initiative, a unique new tool lets users explore strategies for facilitating the steps of collaborative decision-making.

Developed by Steven Yaffee and Julia Wondolleck of the University of Michigan, the tool demonstrates how professional facilitators organize a process and navigate difficult situations. Users can navigate by stages, topics, and subtopics. For example, users can explore in detail how to start a public process, or maintain control of it, or reach agreements, as well as multiple other aspects.

Due to California’s open-meeting laws and the state’s desire to ensure transparency of the process, most MLPA meetings were video-recorded and archived. As a result, the recordings provide an unparalleled record of a complex, science-based, and conflict-laden process — one of the most intensive MPA-planning processes in the world. To MPA News’ knowledge, this is the only video-based tool of its kind in the MPA field.

The tool Facilitating Collaborative Public Decisions is available at <https://oct.to/ZZP>

New techniques for responding to coral bleaching in MPAs

In May 2016, the MPA News staff had an opportunity to snorkel the 306-km² Bar Reef Marine Sanctuary in northwest Sri Lanka. Located in a sparsely populated area of Sri Lanka and billed as having the most pristine coral reef in the country, the MPA has 156 species of coral. When we got there, it was all completely bleached.

The third global coral bleaching event, ringing the world from 2014-2016, has wreaked havoc for many coral reef MPAs (<http://coralreefwatch.noaa.gov>). With climate change, this is likely the new normal. Coral reef MPAs — from small sites like Sri Lanka's Bar Reef to large ones like the Great Barrier Reef in Australia — will experience bleaching more and more frequently in coming years. Some corals will recover from the bleaching events. An increasing number will not, and will die. It is a grim forecast. (For a quick primer on the distinctions between bleached and dead corals, see the box on this page.)

What if anything can coral reef MPAs do about this?

Managing for bleaching

In 2006 the Great Barrier Reef Marine Park Authority published a report, *Reef Manager's Guide to Coral Bleaching* (<https://oact.to/ZZe>). The report walks readers through four steps of managing for bleaching: (1) protecting resistance to bleaching, (2) building tolerance to bleaching, (3) promoting recovery from a bleaching event, and (4) supporting human adaptive capacity.

Much of the report addresses the need to reduce stressors on reefs, such as overfishing and pollution — undoubtedly an important strategy. But with the third global bleaching event coming so close on the heels of the second global event in 2010, coral MPAs may be facing a larger, more severe, and more immediate threat than was envisioned when the report was written. It may not be enough simply to reduce stressors on coral reefs. Even relatively pristine reefs like the Bar Reef in Sri Lanka are being hit hard.

Active, creative management of reefs will probably be necessary. In coming issues of MPA News, we will examine ways that coral reef MPAs can face the threat of bleaching.

"In a decade or less, the water will warm again"

Here we present ideas from Austin Bowden-Kerby of Corals for Conservation, based in Fiji. His comments are adapted from suggestions he has made this year to the Coral-List listserv, drawing from his work:

"In Fiji we experienced our first recorded mass bleaching in 2000, with >90% mortality on

Southern reefs. It was indeed tragic, but at the time I felt a bit encouraged by the few unbleached, resistant corals. However, that initial hope was quickly dashed to bits when crown-of-thorns starfish (COTS) ate virtually all of the surviving corals, quickly consuming their preferred species (*Acropora*, *Pocillopora*) before moving on to some of the less palatable ones. This happened even at sites with low COTS abundance prior to the bleaching, as the relative abundance went through the roof when most of the corals died.

"We are once again experiencing a mass bleaching event at some of our Fiji sites, but this time we are doing something about it:

1. Predator removal (and weeding of seaweeds if needed) to save the corals that didn't bleach; and
2. Collecting fragments of the unbleached branching corals to ensure they don't succumb to external factors post-bleaching. We are growing these resistant corals in field nurseries to form a gene bank of the various species. The corals will be trimmed each year to prevent senescence and to create large numbers of second-generation fragments for out-planting back to the reef, within no-take MPAs where possible. The goal is to create sizable patches of bleaching-resistant corals that spawn, recombine, and spread their genetics and symbionts and thus offer some hope against future mass bleaching events.

"This proactive strategy to give the reef a helping hand in this time of crisis can be applied widely to help the reef adapt. If any are interested, I can send

A primer on bleached vs. dead corals

For readers not experienced with corals, Austin Bowden-Kerby of Corals for Conservation provides this primer on the distinctions between bleached and dead corals:

"When corals bleach, it means they have lost most or all of their symbiotic algae. As a result of this loss, they either become bright white or, if they have an underlying tissue color, they reveal that color, which is normally masked by their golden brown symbiotic algae.

"The role of the symbiotic algae is to provide food to the corals via photosynthesis. Severely bleached corals — deprived of that food for a prolonged period of time — most often end up starving to death. This death is readily recognizable: dead corals quickly get covered with dark microbes and mats of green filamentous algae (non-symbiotic) — or, where there are lots of grazing fish, pink coralline algae (also non-symbiotic).

"Partially bleached corals that have lost some but not all of their symbiotic algae often recover, with recolonization by those symbiotic algae."

the manual of the various nursery and out-planting methods.

“An idea discussed on Coral-List recently by several list members was that of shading coral nurseries to prevent bleaching. My advice to that idea was: Bleaching will be back. So unless you plan to plant your nursery-reared corals to sites where the water stays cooler during future bleaching events, you may be fooling yourself that you are restoring the reef. In a decade or less the water will warm again and these corals will only bleach and die. What makes a lot more sense would be to allow nature to take its course in your nursery, and to use this mass bleaching event as an opportunity to identify corals that are bleaching-resistant. You can then re-do your nursery using these resistant corals.

“Whatever restoration you do with those corals will be more permanent and will help build resistance to climate change. Pockets of healthy, bleaching-resistant corals, which have enough genetic diversity within each species to ensure successful spawning,

would generate coral larvae that would then spread resilience throughout the wider reef system. Isolated corals would on the other hand be unlikely to spawn successfully.

“A second strategy to protect the few corals that don’t bleach — from predators and from algal overgrowth — could make a big difference to post-bleaching coral survival and ultimately to reef recovery, while helping build resilience in the system. What a shame if the resistant corals that are so vital to the future of reefs end up as COTS food! A COTS removal program might be in order on many reefs right now.”

For more information:

Austin Bowden-Kerby, Corals for Conservation, Fiji.
Email: abowdenkerby@gmail.com

NOTE: For more thoughts from Austin on managing and responding to mass bleaching, including his current study of bleached reefs in Kiribati, go to www.mpanews.org/Bowden-Kerby.htm

To comment on this article:
<https://openchannels.org/node/13790>

To comment on this article:
<https://openchannels.org/node/13788>

The *other* roles of MPAs, part 3: How MPAs can help address land-based runoff and water quality

The political spotlight that often shines on MPAs has fostered a view among some that MPAs pertain only to addressing the effects of fishing, as that is the role that attracts the most media attention. But that view sells MPAs short. In truth, MPAs can play valuable roles in addressing a variety of non-fishing-related threats facing the oceans.


This year MPA News is helping to shed more light on these roles. So far we’ve shown how MPAs can help address climate change (MPA News 17:2) and marine litter (MPA News 17:3). In this issue, we spotlight past coverage — in MPA News and our affiliated publication MEAM (Marine Ecosystems and Management) — of how MPA practitioners have worked to address land-based runoff of sediments and related water quality issues:

“Integrated land-and-sea management: Examining three cases where marine practitioners are looking upstream”, MEAM 6:6
<http://meam.net/MEAM31.html#upstream>

“Case: Management of Monterey Bay affected by changes in agriculture upstream”, MEAM 3:1

<http://meam.net/MEAM8.html#Monterey>

“Managing Water Quality in MPAs: How Practitioners Are Handling the Challenges”, MPA News 3:7

<http://mpanews.org/MPA27.htm#water quality> 

OpenChannels.org

- More than 50,000 users in the past two years
- Live interactive chats and trainings with experts
- Job, grant, and conference listings
- Comment-capable news and blogs
- Back issues of MPA News and MEAM
- Curated literature library of more than 5000 items
- Weekly updates on the latest literature in the field

OpenChannels is your resource for information on ocean planning and management.

Notes & news

Malaysia designates 10,000-km² MPA

In May, Malaysia designated the 10,000-km² Tun Mustapha Park off the northern end of Sabah province in Borneo. It is the country's largest MPA. The site includes coral reefs, mangroves, seagrass beds, more than 50 islands, and productive fishing grounds, as well as tens of thousands of Malaysian residents. Sustainable fishing will be allowed in designated zones of the park. The MPA designation comes after 13 years of work led by Malaysia's Sabah Parks, local communities, and international NGOs, including WWF-Malaysia. A press release by WWF-Malaysia is at <https://oct.to/ZZn>

Preliminary findings on bleaching-related coral die-off on Great Barrier Reef

Amidst the major bleaching event affecting so many coral reefs around the world, the Great Barrier Reef Marine Park has released preliminary findings on the extent of coral die-off in its waters. Produced by the Great Barrier Reef Marine Park Authority (GBRMPA) and the Australian Institute of Marine Science (AIMS), the findings indicate that 22% of the park's corals have died so far as a result of the bleaching event.

Most of the mortality has occurred in the northernmost section of the park, where heat stress has been greatest: in that area alone, 50% of the corals have died. The southernmost section of the park has experienced no recorded coral mortality from the bleaching event so far. A GBRMPA press release with the findings, released on 3 June, is available at <https://oct.to/ZZh>

AIMS Chief Executive John Gunn said, "While we know many corals in the northern sector will die, others will recover from bleaching over the coming months and we're hopeful that in areas where bleaching has been minor the Reef will bounce back well."

The Ocean Elders, an independent group of global leaders on ocean conservation issues (www.oceanelders.org) has called on Australia's government to combat coral bleaching and climate change, including in the name of protecting the Great Barrier Reef. The group's open letter to Australian Prime Minister Malcolm Turnbull is available at www.mpanews.org/ocean-elders-letter.pdf

MPA coverage in North American waters is lagging

An assessment of MPA progress across the continent of North America has found that MPAs cover just

1% of the continent's total ocean area, and only 0.04% of the ocean area is in fully protected areas. Co-produced by the Canadian Parks and Wilderness Society (CPAWS) and the Marine Conservation Institute (MCI), the report concludes the countries of Canada, the US, and Mexico have a long way to go to reach the goal of 10% marine protection by the year 2020, as established under the UN Convention on Biological Diversity. (The report included only continental waters, so excluded Hawai'i and the US's Pacific Island territories from its calculations.)

The report describes the need for urgent action, including recommendations to designate all currently proposed sites and partially implemented MPAs, implement strict interim protection measures, establish strategic MPA network planning, and secure full and permanent protection for at least 30% of each ecoregion. The report *Dare to Be Deep* is available at <https://oct.to/ZZ7>

Report: European MPAs provide an array of benefits

European MPAs are providing a range of real benefits beyond just biodiversity conservation, according to a new report from the Institute for European Environmental Policy. These benefits include the provision of food, climate change mitigation, nature-based tourism, coastal security, and opportunities for bio-prospecting and research.

"The existing evidence, while incomplete, clearly indicates that MPAs can contribute to the development of a sustainable blue-green economy in Europe, where the long-term sustainability of marine ecosystems, as well as the associated livelihood opportunities and wellbeing of different stakeholders, are ensured," states the report. European MPAs as of 2012, including the EU marine Natura 2000 network and areas protected under other regional or national legislation, covered 7725 sites and an area of 338,623 km², or 5.9% of EU waters.

The report *Socio-Economic Benefits of the EU Marine Protected Areas* is available at <https://oct.to/ZZ8>

New book on management of transboundary MPAs

The establishment and management of transboundary MPAs present significant governance challenges. A new book, *Marine Transboundary Conservation and Protected Areas*, analyzes a series of initiatives — from the Red Sea, Adriatic Sea, Wadden Sea, West Africa, Coral Triangle, Central America, the Korean Peninsula, and elsewhere — to examine the underlying reasons for their success or failure.

MPA News

EDITOR-IN-CHIEF:

John B. Davis

OPENCHANNELS

MANAGER:

Nick Wehner

EDITORIAL BOARD:

Chair - David Fuharty
University of Washington

Patrick Christie
University of Washington

Michael Murray
Channel Islands National
Marine Sanctuary

CORRESPONDENCE:

MPA News
School of Marine &
Environmental Affairs
University of Washington
3707 Brooklyn Ave. NE
Seattle, WA 98105, USA.
mpanews@u.washington.edu
Tel: +1 425 788 8185

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 for MPA News comes from the David and Lucile Packard Foundation and the Gordon and Betty Moore 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, Moore Foundation, or other funders of MPA News.

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.

Subscriptions to MPA News are free.

To subscribe, go to <https://www.openchannels.org/subscribe-mpanews>

You can choose email or paper delivery. Thanks!

Edited by Peter Mackelworth, conservation director of the Blue World Institute of Marine Research and Conservation, the book offers insights into the development of such initiatives, including the effectiveness of international rules, international norms, and discourse; market forces; and direct access to policy making. The authors also assess the potential for developing wider international cooperation based on relationships forged through marine transboundary conservation.

The 314-page book is available at <https://oct.to/ZXZ>. For a 20% discount off the normal price, enter the code FLR40 at checkout.

Caribbean MPAs invited to participate in regional marine litter program

The Gulf and Caribbean Fisheries Institute (GCFI) and the UN Environment Programme's Regional Coordinating Unit for the Caribbean (CAR/RCU) are co-hosting a Regional Node for the Global Partnership on Marine Litter (GPML) in the Wider Caribbean Region. The GPML node is bringing together public and private sector actors, community-based groups, and local and regional institutions — including MPAs and MPA networks — to help reduce waste that might otherwise end up as marine litter.

So far, two planning workshops have been held to guide the establishment and management of the Caribbean GPML node, one in Panama in late 2015 and one in Jamaica in early 2016, both with the participation of MPA managers and professionals among other government, NGO, and academic representatives.

The GPML node will help support implementation of the Caribbean Regional Action Plan on Marine Litter Management (2014) by maintaining communication

To comment on these notes & news items: <https://openchannels.org/node/13791>

From the MPA News vault Features and news items from yesteryear

Five years ago: May-June 2011 (MPA News 12:6)

- What Are the Main Challenges Facing the MPA World?
- Impacts of the March 2011 Earthquake and Tsunami on Japanese MPAs

Ten years ago: May 2006 (MPA News 7:10)

- Measurement of Management Effectiveness: The Next Major Stage in MPAs?
- Using Regional Workshops to Understand the Human Dimension of MPAs

Fifteen years ago: May 2001 (MPA News 2:10)

- The State of MPA Science: What Have We Learned Lately?
- Science as a Central Tool in Planning Marine Reserves: Case Study of the Channel Islands

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

MPA Science Corner

- **Article:** "Lack of recognition of genetic biodiversity: International policy and its implementation in Baltic Sea marine protected areas", *Ambio* (2016). <https://oct.to/ZZc>

Finding: Management plans across Baltic Sea MPAs are largely void of goals and strategies for maintaining genetic biodiversity, despite the importance of such diversity for enabling species' adaptation to changing selective pressures and rapid environmental change.

- **Article:** "Description of the vessel traffic within the north Pelagos Sanctuary: Inputs for Marine Spatial Planning and management implications within an existing international Marine Protected Area", *Marine Policy* 69, 102 - 113 (2016). <https://oct.to/ZZp>

Finding: An AIS receiver in the Pelagos Sanctuary in the northern Mediterranean tracked maritime activity in the MPA's busy waters over 18 months — a total of 3.75-million km of vessel traffic from 82,000 transits by more than 4000 distinct vessels.

- **Article:** "Effectiveness of a deep-sea cold-water coral Marine Protected Area, following eight years of fisheries closure", *Biological Conservation* 200, 60 - 69 (2016). <https://oct.to/ZZG>

Finding: Demonstrates the effectiveness of a deep-sea MPA at preventing further damage to fragile cold-water coral ecosystems, but also highlights the low resilience and slow recovery potential of deep-sea ecosystems.

and coordination across the Wider Caribbean Region on marine litter; by identifying ways to increase capacity and leverage support to address gaps in marine litter management in the region; and by providing information to the GPML Secretariat on Caribbean regional priorities, interests, and needs.

The work of the node will also assist countries in the Wider Caribbean Region to implement the Global Programme of Action for the Control of Marine Pollution from Land-Based Activities, administered by UNEP, and the Protocol Concerning Pollution from Land-Based Sources and Activities, for which UNEP CAR/RCU is the Secretariat.

Interested MPA managers, staff, and stakeholders are invited to join the new GPML-Carib List LISTSERV list that is dedicated to providing a forum for real-time exchange of information on marine litter issues in the Wider Caribbean Region. To subscribe, go to <https://oct.to/ZZB> 