

Monthly news, analysis, and guidance on marine protected areas worldwide

Happy 2019!

Hi everybody,

A happy New Year to all of you! This issue of MPA News covers December 2018 and January 2019. We'll return to our regular monthly publication schedule in February.

Thank you to all of you who have voted in our logo contest. (Yes, after 20 years MPA News is getting a new logo!) If you haven't voted yet, you can [check out the two finalists and vote for your favorite here](#). With over 390 votes tallied so far, it is nearly a tie! Your vote could be the difference.

Best wishes for your work in 2019!



John B. Davis
Editor, MPA News

Sharpening our focus on MPAs for 2020 and beyond: Emerging consensus on what is and is not an MPA, and key types of MPAs

Nearly 500 MPA practitioners worldwide tuned in to a pair of webinars in early December 2018. The online events examined the standards all MPAs should meet, and defined what is and is not an MPA. They also presented the emerging consensus around types of MPAs according to their stage of establishment and level of protection. These clarifications may well play a fundamental role in determining whether the world meets international targets to protect 10% of the ocean by 2020. They may also influence the MPA field's post-2020 agenda.

Co-hosted by MPA News and the (US) National Marine Protected Areas Center, the webinars are now available to view as recordings:

- The 4 December event, which described the conservation standards for MPAs and details of a global initiative to develop clear language to define MPA status and protection level, [is here](#).
- The 10 December event, which functioned as an extended question-and-answer period for the first webinar, [is here](#).

Both events featured Naomi Kingston of UN Environment World Conservation Monitoring Centre (UNEP-WCMC); Dan Laffoley of IUCN World Commission on Protected Areas-Marine; and Jane Lubchenco and Kirsten Grorud-Colvert of Oregon State University.

An MPA's primary objective must be nature conservation

As addressed in the webinars, IUCN recently clarified its [Protected Area Standards](#), drawing all of IUCN's previously scattered guidance and policies into a single place. These standards reiterate the point that an MPA is an area whose primary objective is the conservation of nature. Areas with different primary objectives, such as fishery management or military functions, are not MPAs even though they may provide some conservation benefit.

A parallel category called 'Other Effective Conservation Measures', also discussed in the December webinars, was recently [defined by](#) the Convention on Biological Diversity's Conference of the Parties, held in Egypt, and may be relevant to non-MPA areas.

The MPA Guide: Formal guidance to address confusion on how much protection actually exists and the likely outcomes from different types of MPAs

The webinars offered a preview of The MPA Guide, a system that works directly with the IUCN protected area categories to add a framework for classifying MPAs according to (1) the MPA's stage of establishment and (2) its level of protection. The MPA Guide recognizes that there are four general steps in the establishment of an MPA: announced,

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legally designated, implemented on the water, and actively managed (i.e., with monitoring and adaptive management in place). The Guide also provides clarity around four categories of biodiversity protection in MPAs (fully protected, highly protected, lightly protected, and minimally protected) and the conservation outcomes that can be expected from each level of protection. (The 4 December webinar in particular provided detail on each of these terms.) The target release for The MPA Guide and associated products and peer-reviewed articles is this coming year, 2019.

The effort to develop The MPA Guide, led by the webinar presenters and financed by [Oceans 5](#), was driven largely by arguments and confusion around how much protection currently exists and what reasonable outcomes can be expected from any particular MPA. The [World Database on Protected Areas](#) (WDPA), which presents the official global data on protected coverage, calculates that [over 7%](#) of the world ocean is protected. But Marine Conservation Institute's [Atlas of Marine Protection](#) (MPAtlas), which provides independent validation of MPA parameters, including whether a site has been implemented, calculates the figure to be less than 4%. Some of the disparity may be due to different definitions of MPAs, and some to different decisions about when along the continuum of establishment an MPA should be counted.


Convergence of coverage calculations?

Because the project has aimed to reduce confusion between the two main calculations of MPA coverage, there is hope that the consensus will result in convergence. For example, the WDPA and MPAtlas will now both follow the IUCN definition of an MPA and they will use the same terms (e.g., "implemented") in the same way. Naomi Kingston of UNEP-WCMC said that The MPA Guide provides the opportunity to assess which of the protected areas reported to the WDPA are designated, implemented, *and* actively managed, as well as the level of protection each site has. This will move the field from the challenge of having a single number for describing global MPA coverage to a transparent dissection of that number.

Whether this means the WDPA calculation will go down or the MPAtlas calculation will go up, or both, remains to be seen. Kingston said there would likely be some shifts in which sites would be included as data providers take on board the simplified MPA Standards from IUCN and new MPA Guide categories. She added, though, that the shifts would be difficult to predict, as sites are continually entering and exiting the WDPA depending on governmental decisions. Laffoley of WCPA-Marine said that what this new clarity means in practice is that it is no longer good enough

for governments to just report an MPA; the new consensus should drive countries to report transparently what is happening on the water and to aim for the final stage of adaptive management — thus ensuring that an MPA is both effective and responsive to the latest challenges.

Grorud-Colvert noted the value of many different types of MPAs and the clarity The MPA Guide will bring to assessing the outcomes of MPAs with different goals and protection levels. Lubchenco seconded that. "The whole reason this effort came about was as a result of the confusion," she said. "Having clarity will help everyone."

MPA News will continue to report on The MPA Guide work in 2019. 

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New online system is available to collect MPA user fees safely and easily; developed by former Bonaire National Marine Park manager

A new online collection system for MPA user fees – gathering entrance charges, annual passes, day passes, dive tags, and other payments – is available to help managers collect the fees safely and easily. It also collects demographic and contact information on MPA users in an easy-to-access database. This latter feature allows managers to understand their user base and, if desired, engage again with previous visitors.

The system is called [Reef Support](#). It was created by Ramón de León, who served for 11 years as manager of the Bonaire National Marine Park, off the Caribbean island of Bonaire. Although the system was designed originally for MPAs like Bonaire, where user fees are mandatory, Reef Support can also be used to collect voluntary donations. This serves MPAs that lack the enabling legislation to support mandatory user fees.

De León developed Reef Support after performing a feasibility study financed by Bloomberg Philanthropies. The system has been tested at several MPAs in the Caribbean and is in use by St. Maarten Nature Foundation and the Man of War Shoal Marine Park – you can [see it in action here](#). It is also in use by the [White River Fish Sanctuary](#) in Ocho Rios, Jamaica; [Parque Nacional Submarino La Caleta](#) in the Dominican Republic; and [Sosua Bay Reserve and Preservation Zone](#), also in the Dominican Republic.

MPA News spoke with de León about the development of Reef Support, what it offers to MPA managers, and why the alternative of just having a PayPal link on your MPA's webpage may not be particularly useful.

MPA News: Ramón, you were the manager of Bonaire National Marine Park from 2004 to 2015. How did that experience lead to your developing Reef Support?

Ramón de León: Bonaire National Marine Park has been financially self-sustaining since 1992, almost entirely from collecting user fees. The MPA has a set of customers who are hardcore divers: 50% of the divers who come to Bonaire make around 20 dives a week. So it is easy to connect with them through the dive operators on the island, where the marine park sells its dive tags ([US\\$45 per calendar year](#)).

The reality, though, is that the over-the-counter dive tag system is very expensive to operate. It consumes more than 7% of the MPA's total income. When I was the park manager, we used to spend almost \$50,000 per year just to make the dive tags.

And there are other problems. The dive operators who are in charge of selling the tags for the marine park authority,

although very supportive of the work of the MPA, are tired of having to sell these tags over the counter, which requires time and administration. The other issue is safety. The mechanism here is that most of the transactions are on a cash basis, which puts operators and rangers in the position of having to handle large amounts of cash. There was no other option in 1992 when the system started. Incidentally, back then there were just eight dive operators; now there are more than 20.

Also, when I joined Bonaire Marine Park in 2004, only divers were required to pay user fees. Now everyone who uses the park pays. So the rangers don't only have to go to dive operators now – they also have to visit kayaking, windsurfing, kitesurfing, and snorkeling operators. It is a heavy day when the ranger has to visit more than 50 operators to deliver tags.

So your online system is designed to make user fee collection simpler and safer. What does it look like for users, and how do they apply the products they pay for?

The payment page is customized to each MPA. You have the logo of the park, a banner where you can put a picture, and information about the MPA. And you have a choice of the products available, like single-day passes, weekly passes, and so forth. When users click to pay for these products, they receive a unique numbered ticket with a code that allows park rangers and tourism operators to verify ticket validity, so it's easy to enforce. The same verification can be done by entering a visitor's name in the system database.

How much does this system cost MPAs to use?

I'm not intending to make money here. I tried to build a system that was as inexpensive to use as possible, so that almost all of the money coming in would reach MPA people in the field. Reef Support is basically just a webpage with an exclusive ticketing system, a credit card processor, and a database that collects user information.

For MPAs that use the system, their percentage of the revenue will range from 85% to 90%, depending on a range of factors. The remaining percentage will cover the costs of the website hosting, banking costs (from credit card processing), and database management. There is no upfront implementation cost for MPAs.

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Many MPAs are not supported by legislation that enables them to collect user fees. How can Reef Support help them?


The reason that most MPAs do not have a user fee system in place is because they do not have the lobbying power to pass enabling legislation to collect such user fees. The Reef Support system does not require enabling legislation. It can be used to collect donations instead. These donations will not be mandatory and are not enforceable, but MPAs can still potentially raise a significant amount of money this way.

So if you are a manager of an MPA and have a lot of visitors, but you don't have any enabling legislation to charge a mandatory user fee, you can still use this tool. In this case, your work as an MPA manager will be to go to your local hotels and tourism operators and convince them to help spread the link for donations to your MPA. We're doing that in Jamaica now, starting with the White River Fish Sanctuary in Ocho Rios, which has thousands of visitors a year but no user fee legislation. The manager there is now convincing hotels, marine recreation providers, and rental car operators to put the donation link on their webpages. So when users are sitting at home planning their next trip to Jamaica, they'll see on every webpage they visit that they can support the local MPA in Ocho Rios.

For MPAs that do use Reef Support for donations, potentially they could incentivize such donations by offering a bonus to donors. It could be a discount for entering a park visitor center, or for visiting another park, or something else.

A number of MPA websites already have links to allow visitors to donate to them, often using PayPal. How is Reef Support different from that?

Webpages for MPAs are not very well visited. Most tourists when they are planning a destination holiday go to a hotel page, dive operator, or rental car page – not an MPA page. So a PayPal link on an MPA page will not accomplish much.

The idea behind Reef Support is to direct users to MPAs from *where they are* – the pages for hotels, rental cars, and other tourism businesses. In addition, Reef Support generates a unique ticket that is enforceable, and collects users' demographic data. In contrast, with PayPal you only get the money. 

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- Building credible, effective MPA enforcement in the Caribbean: An interview with Jayson Horadam

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- Ocean Acidification: What It Could Mean for MPAs
- Applying Conservation and Management Lessons from the Great Barrier Reef to the Baltic Sea Region: Interview with Åsa Andersson

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- Seeking the Win-Win Situation: A Brief Guide to Balancing Conservation and Fisheries Yields in Reserve Design
- MPA Perspective: The Science of Marine Reserves: How Much of It Is Science?

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Perspective:

Local communities and tourism operators partner to establish Fiji's largest Marine Conservation Park

By Sangeeta Mangubhai

The Vatu-i-Ra seascape in Fiji, including and surrounding Vatu-i-Ra Island, lies between Fiji's two main islands of Viti Levu and Vanua Levu. It includes an extraordinary 27,000 km² of forests, mangroves, seagrass meadows, reefs, deep channels, and seamounts.

The Vatu-i-Ra seascape is home to the largest population of nesting hawksbill turtles in Fiji as well as green and loggerhead turtles. It is one of the few remaining locations for the highly prized but globally endangered humphead wrasse (*varivoce* in Fijian) and bumphead parrotfish (*kalia*). Local people thrill to frequent sightings of resident pilot whales and dolphins as well as humpback whales passing through on their annual migrations. Strong currents run through the deep Vatu-i-Ra channel, nourishing a magnificent diversity of more than 300 coral and 1000 fish species. These in turn sustain breeding colonies of seabirds, including a population of more than 20,000 pairs of black noddies.

The traditional owners of Vatu-i-Ra Island are the Navuani social unit (or *mataqali*) of the Nagilogilo clan (*yavusa*), who reside in the villages of Nasau and Navuniivi within the larger Nakorotubu District in Ra Province. The Nagilogilo clan has strong cultural and historical ties to the island, as it was believed to be an old village site.

The traditional fishing ground (*qoliqoli*) surrounding Vatu-i-Ra Island is shared by all 28 villages in the Nakorotubu District, and supports a rich diversity of marine life. The waters are popular with a range of recreational uses including game fishing, snorkeling, and diving. The area is a world-class diving destination and attracts approximately 36,000 tourists per year. An [economic valuation in 2014](#) estimated the annual value of tourism and fisheries in the seascape at FJ\$72 million (US\$34 million).

Vatu-i-Ra Conservation Park

In 2012 the waters immediately surrounding Vatu-i-Ra Island – about 110 km² in area – were designated a traditional *tabu* area (or periodically harvested closure) by the 28 villages of Nakorotubu District in Ra Province. However, because poaching by outside fishers remains a threat, WCS-Fiji and the Ra Provincial Office have worked since 2015 with communities from the district to create a formal protected area for these waters – providing additional protection for both the unique natural heritage and the associated local culture and way of life.

The Vatu-i-Ra Conservation Park was formally designated by the villages in 2018. Its boundaries encompass Vatu-i-Ra Island and the surrounding fringing coral reefs, lagoons,

Editor's note:

Sangeeta Mangubhai is director of the Fiji office of the Wildlife Conservation Society (WCS-Fiji). WCS-Fiji has supported local communities and the Fijian Government in better managing the Vatu-i-Ra Seascape since WCS opened an office in Fiji in 2001.

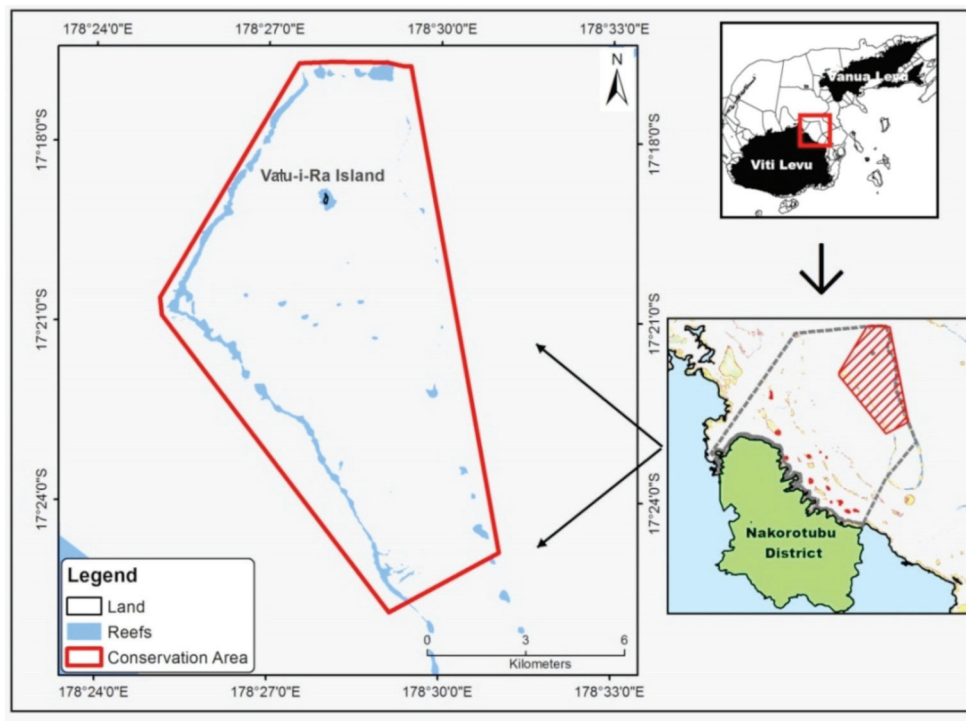


Figure. Boundaries of Vatu-i-Ra Conservation Park, Fiji.

pinnacles, and shallow and deepwater habitat. The MPA is Fiji's largest fully protected Marine Conservation Park.

In May 2018, a management plan was established for Vatu-i-Ra Conservation Park at a formal ceremony at the Ra Provincial Office, officiated by the Permanent Secretary for Fiji's Ministry of iTaukei (indigenous Fijian) Affairs, Mr. Naipote Katonitabua. The management plan was signed and endorsed by:

- Traditional leaders and representatives from the community;
- The national ministries of iTaukei Affairs, Fisheries, and Environment;
- Suncoast Tourism, a consortium representing tourism operators Volivoli Beach Resort, Wananavu Beach Resort, and NAI'A Cruises Fiji;
- The Ra Provincial Office; and
- WCS.

Any forms of destructive or extractive activities are strictly prohibited in the Park. In addition, the Fijian Ministry of Fisheries ensures that fishing licenses given out for Ra Province exclude the Vatu-i-Ra Conservation Park. The MPA has five main objectives:

- Protect the unique biodiversity of the island and the surrounding reefs;
- Protect the unique cultural history of the area;
- Protect critical breeding grounds for fish so that the spillover from this Conservation Park supports community fisheries in the adjacent *qoliqoli*;
- Establish a voluntary mechanism through sustainable tourism that will ensure the sustainable financing of the Conservation Park while supporting sustainable development of resource owners; and
- Establish Vatu-i-Ra as the leading Conservation Park for Fiji and the wider South Pacific.

Sustainable financing to support the Conservation Park and community development


To support implementation of the Vatu-i-Ra Conservation Park management plan, the three members of Suncoast Tourism have established a "voluntary contribution to conservation" scheme. Divers and other visitors to the Park can pay a voluntary contribution of FJ\$15 (US\$7) that is valid for a year. The revenue will be placed into a Trust Fund, with 30% of the fund allocated to support day-to-day management of the Conservation Park. The remainder will support education for tertiary students from Nakorotubu District.

The park contribution is voluntary rather than mandatory because, under Fiji's Surfing Areas Decree of 2010, communities cannot charge fees for watersports within customary fishing grounds. The FJ\$15 amount was based on similar tourism-related charges in other parts of Fiji, and was what the tourism sector felt initially they could sell to their clients (tourists visiting the Park). Similar to other parts of Fiji, the

park's management may eventually look at increasing the contribution amount.

The Conservation Park has a seven-member Management Committee that oversees the park's management (with five representatives from the community, one from tourism, and one from NGOs; the Ra Provincial Office provides secretarial support). A three-member Board of Trustees – individuals who have agreed to serve on the board in their individual capacity – oversees the Trust Fund to ensure it complies with the terms of the Trust Deed developed by the Fiji Environmental Law Association.

In early 2018, the Board of Trustees endorsed its first education grants to 18 students from the Nakorotubu District studying medicine, law, human resource management, business, language, engineering, and environmental management. It is hoped that the fund, if managed in an open and transparent way, will contribute to the conservation of this highly diverse area, protect the cultural and historical values that are important to local communities, and support education and community development that improve the quality of life and living standards of resource owners and communities in the Nakorotubu District.

Given the level of engagement with communities around the use of this kind of mechanism, it is one of the most promising options for protecting marine areas while also providing a revenue stream for communities. 

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Note: The Vatu-i-Ra Conservation Park is supported by the Pacific Community's [RESCCUE](#) (Restoration of ecosystem services and adaptation to climate change) project to promote marine conservation and sustainable coastal fisheries management in one of the Pacific's great wild places, the Vatu-i-Ra Seascape. The RESCCUE project is implemented by the Pacific Community and funded by the French Development Agency and the French Global Environment Facility over a five-year period (2014-2018). The goal of RESCCUE is to contribute to increasing the resilience of Pacific Island Countries and Territories in the context of global changes, resorting especially to economic analysis and innovative funding mechanisms. RESCCUE operates on seven pilot sites in Fiji, French Polynesia, New Caledonia and Vanuatu.

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Perspective:

California's new law cracks down on commercial-scale poaching in MPAs

By Zachary Plopper

On 1 January 2019 a new law takes effect in California (US) to address commercial-scale poaching in the state's marine protected areas. Assembly Bill 2369, authored by Assemblywoman Lorena Gonzalez Fletcher, substantially increases fines and penalties for commercial poaching in the state's MPAs. The bill, signed into law by Governor Jerry Brown on 25 August 2018, was supported by diverse coastal stakeholders in California including conservation organizations, businesses, angler clubs, and tribes.

While California Department of Fish and Wildlife officers are in the field citing MPA violators and City and District Attorneys are successfully prosecuting MPA poaching cases, there is a small percentage of licensed commercial fishing operations and Commercial Passenger Fishing Vessels (CPFVs, or so-called "party boats") operating in violation of California's MPA regulations. Commercial poaching in California MPAs can have a detrimental impact across the entire state MPA network and foster even more poaching behavior.

Previously, fines for commercial-scale take within MPAs could be less than the cost of doing business for many operators, sending the wrong message to businesses thinking about illegal take in the MPAs. Penalties for commercial-scale poaching had not been sufficient to deter commercial-scale poaching in California. Organizations such as WILD COAST, anglers' clubs, tribes, and other stakeholders recognized that an intervention was needed so commercial poachers were faced with fines appropriate for their crimes.

Prior to the new law, fines imposed by the courts on commercial violations were in the US\$200-\$4000 range, with \$1000 a typical fine. Commercial fishing, depending on the type, can gross anywhere from \$5000 to \$20,000 for a single trip. A \$1000 fine could be considered by poachers to be worth the risk. The new law will help ensure that appropriate fines are issued by the courts for commercial-scale MPA poaching and do not involve a lengthy administrative process.

Significant penalties

Starting 1 January 2019, a business or captain in violation may be fined \$5000 to \$40,000 per crime and face up to a year in jail on a misdemeanor conviction. Penalties for a repeat offense will be \$10,000 to \$50,000 and up to a year in jail on a misdemeanor conviction. Repeat offenders will also face the potential revocation of fishing privileges by the California Department of Fish and Wildlife.

Also included in the new legislation, businesses will not be able to transfer a permit if they are awaiting final resolution


of any pending criminal, civil, or administrative action that could affect the status of their permit. In the past, some fishermen under investigation for unlawful fishing would sell valuable fishing permits, sometimes for several hundred thousand dollars, rather than face the consequences of their actions, which could include potential permit revocation.

The new law appropriately stiffens penalties for commercial-scale MPA crimes in California, which supporters hope will serve as a strong deterrent to would-be poachers. According to Assemblywoman Gonzalez Fletcher, the author of the bill, "This law is an important step in preserving the very delicate coastal ecosystems in California's protected marine areas. These greedy poachers have done an enormous amount of damage, showing that the current penalties are nominal to their bottom line and they don't seem to work. I'm pretty sure this new law's threat of a hefty fine will get their attention."

Commercial poaching impacting MPAs

In California, commercial-scale poaching in MPAs was not recognized as a major problem until several cases emerged in 2018 before the Fish and Game Commission and City and District Attorney offices. In perhaps the highest-profile case, the *Pacific Star* (a CPFV) was issued a five-year suspension after a 2013 sting operation by California Department of Fish and Wildlife that documented multiple Fish and Game Code violations including fishing within a State Marine Reserve (a no-take MPA). This penalty marked the first time since completion of the statewide MPA network that the Fish and Game Commission had suspended a license for poaching in an MPA.

Other CPFVs and commercial operators have been cited in recent years in California for MPA violations.

With the new law taking effect in January, MPA supporters are hopeful that it will deter poaching and result in significant penalties for those who do poach at a commercial scale in the state's MPAs. The law also complements a [previously enacted law from 2015](#) that authorizes wildlife officers to cite a recreational-level poaching offense in an MPA as either a misdemeanor or a lower-level infraction that can be processed in traffic court. With the passage of the new legislation, California now has laws on the books appropriate to address the varying types of poaching that happen in MPAs located off its populated coastline. 

To comment on this article:

<https://mpanews.openchannels.org/node/23882>

Editor's note:

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Perspective:

Building environmental change into spatial closures to reduce sea turtle bycatch

By Heather Welch, Elliott Hazen, and Dana Briscoe

Editor's Note:

Heather Welch is a research associate at the University of California, Santa Cruz, and at the (US) National Oceanic and Atmospheric Administration (NOAA). Elliott Hazen is a spatial ecologist with NOAA. Dana Briscoe is a research scientist at Stanford University.

In the early 2000s, the dataset from (US) federal fisheries observers for California's drift gillnet fishery was examined and a concerning pattern emerged. During warm-water years, endangered juvenile loggerhead turtles were coming closer to shore in southern California, which occasionally resulted in bycatch in drift gillnets. These were relatively rare events, which meant there was not enough distribution data to understand the underlying mechanisms, but the relationship between turtles and temperature was strong enough to warrant action. In 2003, NOAA Fisheries (the US federal fisheries agency) established the Loggerhead Conservation Area – a seasonal fisheries closure off southern California that is enacted for months between June and August when El Niño conditions are declared or forecasted to occur, or simply when sea surface temperatures are warmer than normal.

Since its establishment, the closure has been enacted during three periods: August 2014, June-August 2015, and June-August 2016. And it has been largely effective: only one loggerhead turtle has been caught (and released alive) by the drift gillnet fishery since it was established.

However, the productivity of the drift gillnet fishery has been steadily decreasing. Our team was interested in using additional loggerhead distribution data collected since 2003 to re-examine the relationship between turtles and temperature to consider refining the closure rule to reduce bycatch likelihood while also reducing fishery opportunity costs. In a [newly published paper in Ecological Indicators](#), we present our findings, excerpted below.

Understanding the relationship between turtles and temperature

Relationships between species and environmental conditions can operate across many different spatial and temporal scales. For example, species may respond to broad-scale climate forcing, such as El Niño, or local mechanisms such as increased nearshore temperatures. Species may react to these environmental changes immediately, or there may be delays in response, caused for example by the transiting time it takes for highly migratory species to move between areas, or the time it takes for prey to aggregate.

Because we were unsure of the underlying temperature-based mechanisms that cause loggerheads to enter nearshore waters and interact with the fishery, we explored multiple spatial and temporal scales. Spatially,

we tested broad-scale climate forcing from El Niño, intermediate mechanisms that operate over hundreds of kilometers, and local mechanisms (tens of kilometers). Temporally, we accounted for immediate (one month), intermediate (two-three months), and long-period (six months) response lags.

We found that a local temperature mechanism with a long-period response lag was best able to explain turtle presence in nearshore waters off southern California. This translated into a rule to implement the closure when local temperature anomalies averaged over the preceding six months (the long-period response lag) exceeded a threshold of 0.77 °C. Importantly, when we examined how this rule would have performed if it had been implemented in the past, a closure rule based on this mechanism had low opportunity costs to the fishing fleet, and a high ability to avoid historical bycatch events.

Based on this result, we postulate that turtles are responding to local temperature events that are not necessarily caused by broad-scale climate forcing. For example, turtle presence in nearshore waters coincided with a warm-water anomaly event commonly known as “[The Blob](#)”, which was unrelated to El Niño. Additionally, the long-period response lag likely accounts for the transiting time it takes turtles to reach nearshore waters, or the time it takes turtles to aggregate in high-enough densities to be detected in the distribution datasets.

Looking forward

Under conditions of increasing extreme climatic events, we can expect to see more cases of species shifting beyond their normal distribution patterns. This presents an interesting challenge for marine spatial management: how can we accommodate these atypical biological states without incurring undue opportunity costs to resource users?

The field of dynamic management is one possible solution. Dynamic management strategies are flexible in space and/or time, allowing them to track the variability of the features they are designed to protect. These strategies can be regulated similarly to static marine protected areas, with strict boundaries delineating when and where activities can occur. For example, [Hobday and Hartmann \(2006\)](#) developed a dynamic management strategy to avoid bycatch of southern bluefin tuna using core, buffer, and open zones.

Alternatively, dynamic management strategies may inform activities using risk surfaces that show the relative suitability of activities between areas. Examples of dynamic risk sur-


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face include [TurtleWatch](#) and [EcoCast](#), both of which help fishers avoid the bycatch of protected species. Incorporating environmental dynamism into management plans can help ensure spatial management strategies don't lose ecological relevance – for example, when a species shifts outside of the managed area designed to offer it protection. In a time

of increasing climate variability and change, it is important that our approach to management can change, too. 

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MPA Science Corner

Knowledge transfer among managers – Spatial management of seabirds – Partially protected areas – Mesophotic coral reefs

These recent articles or preprints on MPA-related science and policy are all free to access.

• **Article:** Lundmark, C., Sandström, A., Andersson, K., Laike, L. [Monitoring the effects of knowledge communication on conservation managers' perception of genetic biodiversity – A case study from the Baltic Sea](#). *Marine Policy* 99, 223-229 (2019).

Finding: Knowledge transfer among peers can be an effective means to change marine managers' understanding and beliefs. This is demonstrated through surveys of Baltic Sea marine managers taken both immediately after and 3-4 months after they participated in educational sessions on genetic biodiversity conservation. However, changes in their policy beliefs appeared to dissipate over time. The authors conclude that knowledge-communication efforts may need to continue over longer periods in order to facilitate efficient translation of new evidence into practice.

• **Preprint:** Oppel, S., et al. [Spatial scales of marine conservation management for breeding seabirds](#). *Marine Policy* 98, 37-46 (2018).

Finding: Tracking data from more than 5400 adult breeding seabirds of 52 species in 10 families showed that there are substantial differences in how far-ranging and dispersed different families are. Area-based management approaches may be less effective for birds that forage over large ranges in isolation, such as albatrosses, petrels, storm petrels and frigate birds. Improving fisheries management and reducing pollution over large areas may be a better bet for these birds. In contrast, short-ranging and aggregating species – including cormorants, auks, gulls, and some penguins – do likely benefit from smaller-scale protected areas during breeding season.

• **Preprint:** Zupan, M., Fragkopoulou, E., Claudet, J., Erzini, K., Costa, B., Gonçalves, E. [Drivers of ecological effective-](#)


[ness in marine partially protected areas](#). *Frontiers in Ecology and the Environment* (2018). doi:10.1002/fee.1934.

Finding: The ecological effectiveness of partially protected areas (PPAs) – MPAs that allow for varied uses – depends on whether management is effective and on the nature of the allowed uses. Weakly regulated PPAs are not, in the end, different than unprotected areas, whereas highly and moderately regulated PPAs do confer ecological benefits, such as higher levels of biomass. The ecological effectiveness of PPAs is boosted when they are adjacent to a no-take MPA.

• **Article:** Gress, E., Arroyo-Gerez, M., Wright, G., Andradi-Brown, D. [Assessing mesophotic coral ecosystems inside and outside a Caribbean marine protected area](#). *Royal Society Open Science* 5, 180835 (2018).

Finding: Mesophotic coral reefs are not often incorporated in shallow coral reef conservation plans. But a study of the Mesoamerican reef off the coast of Cozumel, Mexico, shows there would be benefits to doing so. Forty-two percent of fish species are present in both the shallow and deeper reefs of the area, suggesting mesophotic zones may play a role in supporting fish populations. These reefs also contain diverse benthic assemblages. The study recommends incorporating mesophotic reefs into the Cozumel National Park management plan, which currently focuses only on shallow zones.

For a free, weekly list of the latest publications on ocean planning and management, including MPAs, [subscribe to the OpenChannels Literature Update here](#).

In addition, [OCTO](#) – the organization that produces MPA News and OpenChannels – also runs [MarXiv](#), the free research archive for marine conservation science and marine climate science. Each week the MarXiv team produces [brief summaries of selected papers](#) for an audience of managers and policymakers. Share your research in MarXiv now and we may summarize your paper, too. 

To comment on MPA Science Corner: <https://mpanews.openchannels.org/node/23884>

MPA Training in a Nutshell: On the importance of reflecting on achievements great and small

By Anne Nelson, Lauren Wenzel, Gabrielle Johnson, and Gonzalo Cid (IMPACT Team)

Editor's note:

This recurring column, MPA Training in a Nutshell, distills insights and lessons learned from what is likely the largest and longest-running MPA management capacity training program in the world – the [International MPA Capacity Building Team](#) (IMPACT). Run by the US National MPA Center (within NOAA's Office of National Marine Sanctuaries), the program has trained thousands of MPA managers in more than 40 countries.

The end of a year is a great time for reflection. Often there is a slower pace and some time away from work that allows a few moments to pause and plan.

You have achievements every day in your MPAs. Yet often the challenges, threats, and constraints make us focus on what is not working instead of what is.


Take a few minutes and reflect on your achievements, no matter how small they may seem. They add up. Focus on what worked and what helped you. It refines your planning for the coming year to see how much you accomplished in the current one, and how those achievements can be built upon. For example:

- Did you make a new connection with a stakeholder, regional partner, or another MPA?
- Did one of your projects reach a milestone?
- Did a group visit your site and gain an understanding of their connection to your MPA?
- Did you contact another agency or NGO to start a conversation that you have wanted to start for awhile?
- Did you learn something new?
- Did you create a plan for the coming year?

We encourage you to share these or other achievements with your colleagues. You can use a newsletter, or awards,

a staff retreat, or simply an email to your team. We also encourage you to share your positive perspective by thanking team members or partners for their part in your MPA's success.

In our MPA management training workshops, we have seen firsthand the benefits of managers' sharing their accomplishments and appreciation. What may seem the smallest of successes can, when shared, be just the spark a colleague needs to keep moving forward despite the challenges faced.

Sending thanks to all of you for all you do to protect special places. May the new year bring stronger connections, many achievements, and ample moments to be outside and enjoying our special places! 

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To comment on this article:

<https://mpanews.openchannels.org/node/23885>

Notes & News

Seychelles to lead new Commonwealth Blue Charter action group on MPAs

Seychelles [has announced](#) it will lead a new intergovernmental action group on marine protected areas. The action group is under the aegis of the [Commonwealth Blue Charter](#) – a coordinated push by the Commonwealth countries to protect the ocean from an array of threats, including climate change, pollution, and overfishing.

The Commonwealth (formerly the Commonwealth of Nations) comprises 53 countries, 46 of which have a marine coastline. Altogether, Commonwealth countries contain about one-third of all marine waters in national jurisdiction. As a result, coordination on sustainable management holds the potential to effect significant change for the world ocean.

Upon launch of the Blue Charter in April 2018, there were eight action groups announced – aquaculture, Blue Economy, coral reef restoration, mangrove restoration, marine plastics, ocean acidification, ocean observations, and ocean and climate change – each led by one or more Commonwealth nations. Although these groups all hold relevance to MPAs, the new Seychelles-led group is the first to focus on protected areas specifically.

The nation's Minister for Agriculture and Fisheries, Charles Bastienne, said, "The government of Seychelles believes that in order to complement the adoption of the Blue Charter and also to achieve sustainable development, Seychelles – being a small island developing state – must play a pivotal role in preserving and protecting our seas and oceans at all costs."

A week earlier, Seychelles cabinet ministers [endorsed a plan](#) to expand the boundaries of two MPAs: Aldabra Atoll (a UNESCO World Heritage site) and an area called Amirantes to Fortune Bank. Together, the expanded MPAs will account for 26% of Seychelles' EEZ.

Argentina designates two MPAs totaling 98,000 km²

In December 2018, Argentina designated two new MPAs in its southernmost waters, protecting habitat critical to marine mammal species, penguins, and more. Together the Yaganes Marine National Park and the Namuncurá-Burdwood Bank II Marine National Park total 98,000 km² in area. Roughly 8% of Argentina's national waters is now in MPAs. Maps and other information on the new MPAs, including background on recent expeditions to survey the sites' biodiversity, are [here](#) and [here](#).

In related news, the government of the nearby British overseas territory of the Falkland Islands (islands that are also claimed by Argentina) [has reportedly expressed](#) that it believes the new Argentine MPAs encroach on the Falklands' fisheries area.

IUCN adds new MPAs to Green List

IUCN's [Green List](#) was launched in 2014 to recognize effective protected area management. With [the addition](#) to the list of 15 sites (terrestrial and marine) in 2018, the list now has 40 sites from 14 countries. New marine additions include Egypt's Ras Mohammed National Park; France's Réserve naturelle nationale des Terres australes françaises; France's Parc marin de la Côte bleue; and Mexico's Parque Nacional Zona Marina del Archipiélago de Espíritu Santo.

Links to all 40 Green List sites [are here](#). The sites are certified by IUCN as being effectively managed and fairly governed, with a positive impact on people and nature.

Agreement reached in principle on elements of federal/indigenous co-management of Canadian MPA

In October 2018, the Government of Canada and the Qikiqtani Inuit Association (an organization that represents 14,000 Inuit people in northern Canada) reached agreement in principle on elements of a collaborative management model for the forthcoming Tallurutiup Imanga National Marine Conservation Area, which will cover 109,000-km² of Canadian Arctic waters. The negotiations seek to help preserve the region's nature and wildlife while ensuring that Inuit rights are respected and traditional activities may continue.

Once a final Inuit Impact and Benefit Agreement for the MPA is agreed upon and an interim management plan is

completed, the MPA will take effect. A press release on the agreement in principle [is here](#). A backgrounder with highlights from the agreement [is here](#), and more information [is here](#).

Latest workshops on Important Marine Mammal Areas identify candidate sites in Southern Ocean and Andaman Islands

In October and November 2018, the IUCN [Marine Mammal Protected Areas Task Force](#) held its fourth and fifth regional workshops to identify [Important Marine Mammal Areas](#) (IMMAs) around the world. These latest workshops focused respectively on the Southern Ocean and the Andaman Islands (India).

IMMAs are discrete areas of habitat, important to marine mammal species, that have the potential to be delineated and managed for conservation. They are intended to spotlight areas that may lead to MPAs or other conservation outcomes, like ship or noise directives or marine spatial planning.

The October workshop, co-hosted by the French Biodiversity Agency and IUCN, [identified 15 candidate sites](#) for IMMA status in the Southern Ocean and Subantarctic islands. The November workshop, held with a team of Indian scientists and conservationists, [focused on the southern Andaman Islands](#) as a candidate IMMA.

The Task Force is holding a series of regional workshops over the course of five years (2016-2021). Previous workshops identified candidate IMMAs in the Mediterranean Sea, Pacific Islands, and the Northeast Indian Ocean / Southeast Asian Seas region.

Apply for MPA grants in Southeast Asia

The [Blue Action Fund](#) – supported by the German, French, and Swedish governments – has issued [an open call for grant proposals](#) for MPA-related projects in Southeast Asia. The fund expects to award four to six grants from this call with a total volume of up to EUR 12 million (US\$13.7 million).

Proposed projects should focus on:

- Supporting ecologically representative and well-connected systems of MPAs through enhancing management, enlarging existing sites, or establishing new ones; and/or
- Supporting sustainable livelihoods in coastal communities dependent on MPAs and their buffer zones.

The call for proposals is open until 14 February 2019. Proposed projects should be situated in Cambodia, Indonesia, Myanmar, Philippines, or Vietnam, although transboundary projects involving Malaysia or Thailand are allowed. More details are [in the call](#).

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Study: Trawling activity is higher inside European MPAs than outside of them

A study that used satellite data to track industrial fishing in EU waters has found that trawling activity is actually 38% higher *inside* MPAs than in unprotected areas. The study examined 727 European MPAs – 59% of which were found to be commercially trawled. In the EU, many MPAs do not address commercial fisheries despite biodiversity protection being an objective of the sites.

The study recommends developing and enforcing minimum standards for MPA designation and classification, along with stronger and more transparent regulations and management. The study "[Elevated trawling inside protected areas undermines conservation outcomes in a global fishing hot spot](#)" is unfortunately hidden behind a journal paywall, but a press release [is here](#) and media coverage [is here](#).

US MPA Federal Advisory Committee issues publications on sustaining MPA benefits in a changing ocean

In November 2018, the US Marine Protected Area Federal Advisory Committee [issued a series](#) of publications on the services that MPAs provide the nation, and how these services can be sustained amid multiple threats, including climate change. The publications were prepared for the US Departments of Commerce and Interior.

Noting "significant and far-reaching benefits from US MPAs," the committee identified five priority action areas to meet the challenges MPAs face. [These priorities include:](#)

- Fully supporting the nation's MPAs in funding and effective management;
- Evaluating emerging ocean uses within MPAs to ensure compatibility with sites' long-term goals;
- Supporting innovative approaches to outreach, monitoring, and enforcement;
- Supporting and funding local community engagement; and
- Addressing the effects of climate change.

The committee also provided an update to its online [Cultural Resources Toolkit](#).

New IUCN report on tourism and protected areas

IUCN has released new guidelines on sustainable management of tourism and visitors in protected areas. The report walks readers through the potential impacts of protected area tourism, how to design management with such impacts in mind, and how to manage tourism revenues and costs, among related subjects. Best practices are featured throughout the publication.

"Protected area managers are under growing pressure to provide meaningful and educational visitor experiences and

revenue for conservation management, while not allowing tourism to compromise the ecological integrity and associated conservation values of protected areas," write the authors. "This document advocates only sustainable tourism that contributes to the conservation of nature over the long term, with the goal of making protected area tourism a strong positive force for conservation at both global and local scales." The report *Tourism and visitor management in protected areas* [is available here](#).

Coral reef restoration toolkit provides guidance on 'coral gardening' strategy

A new toolkit on coral reef restoration has been released by Nature Seychelles, an NGO. The guidance is based on a large-scale coral reef restoration project – called Reef Rescuers – carried out by Nature Seychelles over the past eight years.

The toolkit describes how to complete a coral reef restoration project using '[coral gardening](#)'. This technique takes fragments of corals that have withstood bleaching events and cultivates them for several months before transplanting them to restoration sites. The toolkit describes the protocol for this, and offers guidance on appropriate design, logistics, and execution, based on experience and field-tested methods.

The Reef Rescuers project has raised over 40,000 coral fragments in underwater nurseries and transplanted over 24,000 of them onto a 5225-m² area of degraded reef in Cousin Island Special Reserve, an MPA managed by Nature Seychelles.

The Coral Reef Restoration Toolkit [is available here](#). A press release [is here](#).

New tool for gaining access to paywalled journal papers

Is there a journal paper you would like to access but it is hidden behind a paywall? One solution is to use the new [bookmarklet](#) from MarXiv. (MarXiv is the free research archive for marine conservation science and marine climate science. It is a service of OCTO, which also publishes MPA News.) The bookmarklet is a tiny bookmark that you can add to your browser. When you are on a journal website and encounter a paywalled paper, just click the bookmark and MarXiv will be alerted. MarXiv will then reach out to the author and ask that they share their paper.

For more information, including directions on installing the bookmarklet and which journal publishers are compatible (most of the large ones), [click here](#).

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