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De Facto MPAs: How They Can Assist Conservation and Resource Management

Many areas of the ocean are off-limits to human activity for reasons other than conservation. Zones around coastal military bases may be completely closed for security purposes. Waters around oil platforms often restrict fishing or access in general. Anchoring is forbidden around undersea cables. These restrictions, by the fact that they limit some human impacts on these ocean sites, provide a degree of protection for the ecosystems there. For this reason, they are sometimes referred to as "*de facto* marine protected areas" — meaning MPAs in practice but not in law.

This month, the US National Marine Protected Areas Center released what may be the world's first national-scale assessment of de facto MPAs (see box in margin). In recognition, *MPA News* examines how de facto MPAs could be integrated into national MPA systems, and describes a case where one such site has been converted to conservation-minded management.

What is a de facto MPA?

On land, there are many examples where non-conservation areas play important roles in resource management. Some military cases are particularly remarkable. On the Korean peninsula, for example, the 4-km-wide demilitarized zone (DMZ) — a heavily landmined no-man's land for over 50 years — provides an unlikely wildlife sanctuary to Asiatic black bears, crane species, and perhaps even leopards and tigers, according to scientists. In the US, several endangered species have their most significant populations on military bases, which in some cases are the largest undeveloped spaces remaining in the species' habitats.

In the marine realm, examples of de facto MPAs are readily found. The report from the US National MPA Center, *State of the Nation's De Facto Marine Protected Areas*, lists a wide array including:

- Anchorage grounds — To protect government vessels or vessels carrying explosives from injury or sabotage;
- Danger zones — To protect the public from target practice, bombing, rocket firing, or other especially hazardous operations;
- Lightering zones — To confine and control the transfer of oil and hazardous materials (i.e., lightering);
- Prohibited areas — To prevent transfer of oil and hazardous materials at sea;
- Regulated navigation areas and traffic separation schemes — To control vessel traffic around ports and harbors;
- Restricted areas — To provide security for government operations (and protection of the public from the risks of damage or injury arising from government activity) by prohibiting or limiting public access;
- Safety zones — To limit access for safety or environmental reasons;
- Security zones — To safeguard public or private infrastructure from destruction, loss, or injury from sabotage; and
- Shipping safety fairways — To control the erection of structures in highly trafficked areas.

While the purpose of these areas is not conservation, the areas are, in fact, *protective*: they protect the public from various military and government activities…they protect military, government, and private facilities from the public…and they protect the public from environmental hazards, such as oil spills and ship collisions.

"Although de facto MPAs are not established or managed for conservation objectives, some may be located in ecologically significant ocean areas," says Charlie Wahle, a co-author of the report and senior scientist at the National MPA Center. He says that if these sites are to be integrated in conservation efforts in a meaningful manner, steps must be taken.

"The conservation impact of these sites could be augmented in two ways," says Wahle. "First, through collaborative planning and co-management between operational and conservation agencies, areas currently protected by de facto MPAs could be incorporated into growing networks of conservation MPAs. A new conservation MPA could be overlaid on the same

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Report on de facto MPAs

The report *State of the Nation's De Facto Marine Protected Areas*, published by the US National Marine Protected Areas Center, is available at www.mpa.gov. It was co-authored by Rikki Grober-Dunsmore, Charles Wahle, Lisa Wooninck, and Lauren Wenzel.

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footprint as the existing de facto MPA, but with place-based management measures targeting conservation outcomes." As an example, Wahle cites Vandenberg State Marine Reserve off the coast of the US state of California. The marine reserve was designated in 2007 over an existing marine security zone for the coastal Vandenberg Air Force Base. Another example is Merritt Island National Wildlife Refuge in the state of Florida, part of which overlaps with the marine security zone for the Kennedy Space Center, where the space shuttle is launched. The overlapping portion of the wildlife refuge is closed to public access due to security concerns of the space center. The remainder of the refuge is open to various recreational activities, including fishing.

"Alternatively," continues Wahle, "the management agency of a de facto MPA could independently modify its restrictions on access and use to achieve complementary conservation objectives." Such modifications would use appropriate authorities and guidance from conservation entities, he says. "In both scenarios, existing de facto MPAs could continue to serve their original operational purposes, such as safety zones, while also contributing significantly to environmental security goals."

Conversion of a de facto MPA: Kaho`olawe Island, Hawai`i

Kaho`olawe Island, 115 km$^2$ in size, is the smallest of the eight main volcanic islands in the Hawaiian archipelago. First settled by people as early as 400 A.D., Kaho`olawe served several uses for Native Hawaiians over the ensuing centuries — as a home to farmers and fishers, a site for religious and cultural ceremonies, and even a navigation training center for trans-Pacific voyaging. In the early 1800s, it was converted to a prison colony, then to ranch land. In the mid-20th century, following the attack on the Pearl Harbor Naval Station, the US military declared martial law over Hawai`i and began using Kaho`olawe as a bombing range. Title to the island was later transferred to the US Navy to continue this use, under the condition that Kaho`olawe be returned in habitable condition when no longer needed by the military.

Native Hawaiian groups filed suit in the 1970s to have the land returned and, after bombing was stopped in 1990, Kaho`olawe was officially transferred back to the state of Hawai`i in 1994. The US government approved a US $400 million cleanup fund. The island and its surrounding waters, which include an extensive and relatively intact reef system, are now the Kaho`olawe Island Reserve. Except for limited trolling (to which the reserve is open two weekends of each month) and subsistence fishing for consumption while on the island (allowed once a month), the marine portion of the reserve is no-take.

Emmett Aluli, who helped lead the legal effort to transfer Kaho`olawe back to Hawai`i, is chair of the Kaho`olawe Island Reserve Commission (KIRC), which manages the reserve (http://kahoolawe.hawaii.gov). Some of the main challenges faced by KIRC, says Aluli, are common to ones encountered by many protected areas — like reducing surface soil erosion and associated runoff to the reef, and controlling alien species. But

The case of Vieques, Puerto Rico

Isla Vieques is 13 km to the east of Puerto Rico, a US island commonwealth in the northeastern Caribbean. Vieques is a municipality of the larger island. Similar to Kaho`olawe Island in Hawai`i, Vieques was used for decades as a US Navy bombing range. A series of protests by Puerto Rican citizens led to the Navy's departure from the island in 2003, and the military transferred terrestrial portions of the Vieques naval base to the US Fish and Wildlife Service. But the island's marine area — formerly a danger zone but containing some of the healthiest coral reef habitat in the US territories — remains in limbo. After half a century of strict military protection, Vieques waters have been opened to fishing by Puerto Rico's Department of Natural Resources while the government decides the area's future.

Eugenio Piñeiro, a member of the US Caribbean Fishery Management Council and the federal MPA Advisory Committee, says Puerto Rican officials seek to establish an MPA on the site but lack the funds to do it. (At the federal level a bill, HR 5864, has been introduced to the US Congress that would designate one bay on Vieques as a national marine sanctuary.) Piñeiro says commonwealth-level planning efforts have been delayed by conflicting views among various stakeholder groups and scientists on how such an MPA would best be managed.

"The information I get from personal interviews with charter-boat operators and commercial fishermen is that the fishing in Vieques is very good," says Piñeiro. "Commercial fishing on Vieques takes place in nearshore waters, mostly for reef fish. An increasing amount of recreational fishing activity, coming from the 'Big Island' [Puerto Rico], has been observed since the Navy's departure. The primary target of these fishers is coastal pelagics and also billfish." He notes there are more than 60,000 registered recreational vessels in Puerto Rico.

Piñeiro, a commercial fishermen himself, says he would like to see the MPA planning proceed. "Once funds are allocated, the creation of an MPA network around Vieques should begin as soon as possible to preserve the natural wonders of this island paradise," he says. "Vieques may have been used as a Navy range for six decades, but it is still majestic."

For more information

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other challenges are more unique to the reserve, and relate to the island's modern history.

"Remnant unexploded ordnance (UXO) in the reserve waters is one of our main challenges," he says. These unexploded bombs, left over from the island's military days, lie on the seafloor and present a severe hazard. This is one reason why most fishing is banned in the reserve. "The cleanup of Kaho`olawe by the federal government was limited to land-based UXO clearance work with no ocean cleanup," says Aluli. "This requires our ocean operations always to consider the UXO risk when establishing moorings, anchorages, and other underwater works."

Illegal fishing activity is another challenge, he says. "Our ocean resources were previously protected within a federal restricted area patrolled by the Navy," says Aluli. "Upon turnover to the state of Hawai`i, the marine reserve was established to extend two nautical miles offshore, approximately the same distance as the federal restricted area. Our main challenge has been patrolling and enforcing the reserve waters. Poaching increased with the transfer from the Navy: fishermen no longer worried about the bombing or the risk of vessel seizure by the federal government. Under state jurisdiction, our penalties for illegal fishing are mostly low fines."

Aluli defines the reserve as being more of a marine *managed* area than a marine *protected* area, despite the fact that Kaho`olawe is now overseen with the health of its resources in mind. "Our primary purpose for the reserve is the perpetuation of traditional Native Hawaiian practices, which include subsistence fishing and gathering," he says. "As such, a sustainable ecosystem that is consistent with pre-contact Native Hawaiian conservation restrictions is a necessary component to implement traditional Native Hawaiian practices."

Aluli says the intention of KIRC was always to allow for subsistence while on the island. "Our establishing legislation included provisions to develop rules to permit fishing consistent with the purpose of the reserve," he says. "In addition there was pressure from the powerful Maui fishing lobby. The pelagic species that are the primary target species for trolling are not habitat-based, but transient through the reserve. Therefore we felt that allowing limited and controlled trolling, in which vessels must register with the KIRC and submit catch reports, would be a minor compromise to protect the overall health of the intact marine ecosystem."

For more information

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MPA Tip: How to approach donors to establish an endowment

Last month's *MPA News* described how endowments can help provide sustainable financing for MPAs. To establish such endowments requires money. The Nature Conservancy and other international NGOs and institutions have helped finance several MPA-related endowments in recent years. Below, Bill Raynor and Trina Leberer of The Nature Conservancy's Micronesia Program offer advice for MPA practitioners on how to approach potential donors for endowments:

1. Most importantly, there must be a strong conservation commitment from the local community, region, or nation before pursuing commitments on financing. Donor organizations are more likely to support people or their governments that are pursuing conservation for reasons with long-term meaning — such as protecting resources for future generations, maintaining cultures in a changing world, etc. — instead of simply for financial benefits.

2. In terms of being ready to receive funds, it helps if you already have a mechanism established that meets international standards of financial accountability, and which is capable of managing an endowment. An example of this is the Micronesia Conservation Trust, which is now receiving funds for an endowment to support the Micronesia Challenge (www.mctconservation.org). With such a mechanism, you demonstrate to donors that systems are in place to ensure the endowment will:

- Be well-managed
- Yield an acceptable level of interest, and
- Be managed specifically for the purposes for which it is being funded.

3. Donors that fund endowments almost always want to see some local financial commitments to ongoing activities, and sometimes require local matching funds for the endowment. In the context of the Micronesia Challenge, The Nature Conservancy is urging local jurisdictions to raise 50% of their projected funding needs from local funding mechanisms and sources. The sustainable finance plan for Palau, for example, calls for the nation to raise nearly US $1.9 million annually toward the cost of managing its national protected area network. As a result, Palau is asking the international community to help fund an endowment large enough to generate the remaining $600,000/year necessary to meet its budget needs.

4. Donors want details, so it is a good idea for practitioners to develop a long-range business plan detailing implementation benchmarks and financial needs. This way, donors can see how critical the endowment is to the success of an individual MPA or overall network.

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Editor's note

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MPA Perspective Monitoring for Resilience to Climate Change in Coral MPAs

By David Obura, Gabriel Grimsditch, and Ameer Abdulla

With the world's attention now squarely on climate change as a global threat, many MPA managers are correctly asking, "What can we do about such a large-scale issue?" At the MPA scale, the primary approach to limiting climate impacts is to reduce other stressors. By minimizing the work an ecosystem must do to resist one threat, the ecosystem is better able to deal with other threats.

Resilience is the ability of a system to absorb or recover from disturbance while maintaining its functions and services. The key for MPA practitioners is to manage for this. It becomes critical then for scientists and managers to determine the range of threats affecting a given ecosystem, and thereby understand and manage its ability to cope with climate change. This is monitoring for resilience.

Such monitoring provides a comprehensive overview of threats, as well as the state of the system. With this information in hand, a manager can make sound decisions. For example, fishing may be closed for different herbivorous fish groups during or after a bleaching event to minimize algal competition with recovering corals. Or, during bleaching events, the manager may press for more stringent control of pollution or runoff to minimize stress to corals.

With support from the MacArthur Foundation, the IUCN Climate Change and Coral Reefs (CCCR) working group is developing a resilience assessment protocol to address this management need. The project is focusing on the major threat of high sea-surface temperatures, which cause thermal stress to corals. The resilience-monitoring protocol involves the following themes:

1. Benthic cover – Obtainable from ongoing monitoring programs. This provides a standard status assessment that is common to coral reef studies.

2. Coral genera – Relative abundance on a 5-point scale. This provides a picture of the coral community, its susceptibility to threats, and impacts of past threats.

3. Coral size class distributions – From smallest to largest, with sampling stratified for different sizes. The most time-consuming section, this gives a picture of population dynamics within the coral community, which is evidence of past conditions and regeneration.

4. Coral condition – Including bleaching, disease, other conditions and mortality. This gives an indication of current stress in the coral community, and of recent mortality.

5. Fish community structure – Emphasizing a) abundance of herbivore functional groups (large and small excavators, scrapers, grazers, browsers and grazers/detritivores) as these affect recovery via coral-algal competition, and b) top predators as their removal is a primary indication of fishing pressure.

6. Resilience indicators – Factors affecting protection of a site from thermal stress, such as temperature, visibility, depth, topographic complexity, sediment impact, and anthropogenic influence on water quality.

The full protocol can be obtained from the CCCR website (see box in margin), along with information on current sites and partners. Future improvements to the protocol will allow for customization to various local needs, including the capacity of monitoring teams, and incorporate new modules for additional components of resilience. It is worth noting that the principles applied here for coral reefs and climate change should be transferable to other ecosystems and threats.

Some tips on resilience monitoring are below:

- The survey area should ideally be an integral reef system, up to about 100 km in length.
- Good knowledge of the survey area and its representativeness in the greater region is required; this enables scaling and customization of semi-quantitative indicators.
- A large number of sites within the survey area should be included, covering different levels of reef health, threats, and protection categories. Because of the large number of variables, 20 or more sites should be included. The protocol can be completed in one dive per site.
- Background information improves the interpretation of resilience indicators, so past or ongoing monitoring and research greatly improve the utility of the resilience assessment. Other information – such as maps, charts, fish catch levels, and demographic information – are also useful.
- Prior to surveys, a clear examination of MPA objectives and key threats will help guide site-selection, application of the method, and feasible management responses that could be prioritized based on data analysis.
- Conducting resilience surveys *before* a marine protected area is zoned can help identify critical sites and refugia from different threats.

Additional resources on resilience

IUCN Climate Change and Coral Reefs Working Group
www.iucn.org/themes/marine/coral_reefs/cccr/cccr_home.html

Resilience Practitioners Network
www.reefresilience.org

Reef Manager's Guide to Coral Bleaching
www.iucn.org/dbtw-wpd/edocs/2006-043.pdf

For more information
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Implementing France's MPA Law: Interview with Olivier Laroussinie, Director of the French MPA Agency

After the US, which nation has the second-largest total marine area? France. With island territories worldwide, France's combined Exclusive Economic Zone and territorial sea total more than 11 million km^2.

France aims to establish a coherent network of MPAs throughout that marine area. To help do this, the nation passed a law on MPAs in 2006. Among other actions, the law created an Agency for Marine Protected Areas to lead the national network-building effort. Olivier Laroussinie is director of the agency. *MPA News* spoke with him about reaching his country's MPA goals.

MPA News: What challenges does France face in meeting its national and international obligations on MPAs?

Olivier Laroussinie: The main challenges are the timeframe and the huge marine area under France's jurisdiction. Like other countries around the world, we aim to have a complete system of MPAs by 2012, as agreed at the World Summit on Sustainable Development (*MPA News* 4:3). We are also required, along with other European countries, to complete the Natura 2000 network at sea by the end of this year (www.natura.org). Yet our starting point is a network of MPAs covering a very low proportion of French waters, mostly in coastal areas. And the marine area of France is enormous, with a large proportion consisting of offshore areas.

MPA News: What role does your Agency for Marine Protected Areas play in pursuing those goals?

Laroussinie: The Agency does not have the authority to designate MPAs. Instead, it assists the public bodies that do have that authority — mainly the State, which is the principal authority at sea with the exception of local governments in the French Pacific territories. In addition to coordinating the national effort to build a cohesive system of MPAs, the Agency collects information, organizes it, and distributes it to stakeholders. The administrative council of the Agency consists of resource users, NGOs, local authorities, and State administrators. This small "parliament of the sea" is helpful in building political will to establish the national MPA system.

MPA News: France's MPA law created a new type of MPA called a marine nature park, which your agency is in charge of managing. Since passage of the law, one marine nature park has been designated and three more are under study. What is the distinction between marine nature parks and other types of MPAs?

Laroussinie: Marine nature parks feature an integrated approach. They are designated for nature protection as well as social and economic objectives. Marine nature parks are mainly designated in large areas where there are ecosystems, habitats, and species of special interest, as well as significant human activities that may conflict with each other and with protection objectives.

MPA News: Would you say that France's approach to MPAs is different from the approaches of other countries?

Laroussinie: I don't think there is a specific approach to MPAs in France. We have a range of MPA types from small, highly regulated sites to integrated management areas with little or no regulatory framework. In establishing a strategy for creating MPAs throughout the French marine domain, our first aim is to cover a representative set of ecosystems, natural heritage, and human uses. At the same time, we are also developing a monitoring system of French waters — evaluating the role of MPAs in management of the country's marine resources, and using the MPAs as observatories on the global marine situation.

For more information
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Notes & News

Convention on Biological Diversity adopts criteria, guidance for high seas MPAs

In May in Bonn, Germany, the Ninth Conference of the Parties (COP9) to the Convention on Biological Diversity (CBD) took steps to advance the protection of marine areas beyond national jurisdiction. Among its actions, COP9 adopted criteria for identifying ecologically significant areas in need of protection in the open ocean and deep sea. The conference urged Parties and invited other governments and relevant organizations to submit their views on these criteria, as well as sites that they think meet the criteria. COP9 also adopted guidance for designing representative networks of MPAs in open-ocean and deep-sea ecosystems. This information will feed into an expert workshop that COP9 agreed to convene to provide scientific guidance for identifying important areas beyond national jurisdiction. This workshop will be hosted by the government of Canada with financial assistance from Germany. **For more information: Kristina Gjerde**, Chair, High Seas MPA Task Force, World Commission on Protected Areas; E-mail: kristina.gjerde@eip.com.pl

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Report available from seminar on managing high seas biodiversity

The report of a March 2008 seminar in Monaco on the management of marine biodiversity in areas beyond national jurisdiction is available at www.iddri.org/Publications/Collections/Idees-pour-le-debat/Id_0808_Report-Monaco-Seminar_EN.pdf. Organized by the Institute for Sustainable Development and International Relations (IDDRI), the seminar *Towards a New Governance of High Seas Biodiversity* convened experts from international organizations, national governments, NGOs and research centers. Nearly 70% of the world's marine area is on the high seas.

Feedback invited on proposal for MPA governance manual

The IUCN World Commission on Protected Areas – Marine has begun work to produce a manual on MPA governance, and is inviting feedback on the project outline. The proposed guide is premised on the view that successful MPA governance involves addressing basic conflicts between conserving biodiversity and exploiting marine resources. Namely, the manual *Governing MPAs: a guide to getting the balance right* will use case studies to examine how to provide for meaningful stakeholder participation in MPA decision-making while also fulfilling conservation objectives. Full details of the consultation can be found at http://groups.google.com/group/wcpamarine-summit/web/a-consultation-on-the-proposed-new-publication-governing-mpas-a-guide-to-getting-the-balance-right?hl=en&hl=en

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Detailed case studies available on social dimensions of MPAs

The International Collective in Support of Fishworkers (ICSF) has added full case studies to its website on social dimensions of MPAs — http://mpa.icsf.net. The case studies offer detailed perspectives on MPAs from local and traditional fishing communities in Brazil, India, Mexico, South Africa, and Thailand. The website was first mentioned in the March 2008 edition of *MPA News*.

US advisory committee delivers guidance on MPA compliance, enforcement

The US Marine Protected Areas Federal Advisory Committee (MPA FAC) has released a set of management principles for enhancing compliance and enforcement in MPAs. The document, *Committee Recommendations on MPA Compliance and Enforcement*, is available at http://mpa.gov/mpafac/fac.html. The committee's other products, including a recent compilation of its recommendations from 2006-2007, are available on the same website.

Toolkit: how to lease or own coastal and ocean resources for conservation

A new online toolkit describes how land and resources in ocean and coastal waters can be leased or bought for conservation purposes. Produced by The Nature Conservancy and partners, the toolkit describes the policy bases and rationale for such conservation efforts. It walks practitioners through the processes of acquiring marine-related resources and implementing private management. The toolkit provides 24 case studies, 8 country assessments, and 24 US state assessments, as well as other resources. "Many of these leased and owned areas are functionally private MPAs, like Chumbe Island Coral Park in Tanzania," says Jay Udelhoven of The Nature Conservancy. *Leasing and Ownership within Ocean and Coastal Waters — A Conservation Practitioner's Toolkit* is available at www.leaseown.org.

More versions available of *Science of Marine Reserves* booklet

The 2007 edition of the booklet *Science of Marine Reserves*, described in the December 2007/January 2008 edition of *MPA News*, is now available in several versions: a US version, an international version, and a version that targets a Latin American and Caribbean audience. All versions of the booklet can be accessed at www.piscoweb.org/outreach/pubs/reserves.

www.mpanews.org
searchable back issues, MPA-related conference calendar, and more