

# MMPA NEWS



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## Marine Mammal Protected Areas: What Makes Them Special, and How Their Management Can Be Advanced

It is not uncommon for marine protected areas to be designated with the protection of a particular species or group of species in mind. There are MPAs for many commercially valuable fish species, for example, as well as MPAs for sharks or sea birds or corals. There are also protected areas for marine mammals. This last group of MPAs in particular has experienced a boom in numbers in recent years. In 2004 according to the Whale and Dolphin Conservation Society, there were 358 marine mammal protected areas worldwide. As of June 2011, there are 570 such sites - a 58% increase in just seven years. (Marine mammals include cetaceans [whales, dolphins, porpoises], pinnipeds [seals, sea lions, walrus], sirenians [dugongs, manatees], otters, and polar bears.)

What defines a site as being a marine mammal protected area (MMPA): is it simply an MPA where marine mammals happen to live, or is it more than that? And what challenges do MMPAs and their managers face? For this issue, *MMPA News* interviewed three members of the International Committee on Marine Mammal Protected Areas (ICMMPA), an independent group of scientists, resource managers, and NGOs dedicated to the conservation of marine mammals and their habitats. The committee is actively planning the Second ICMMPA Conference, to be held 7-11 November 2011 in Fort-de-France, Martinique, in the Caribbean (<http://icmmpa.org>).

### A. MMPA managers need to "think big", beyond their site boundaries

By Brad Barr

Editor's note: Barr is a senior policy advisor in the Office of National Marine Sanctuaries (ONMS) within the US National Oceanic and Atmospheric Administration (NOAA). Previously he was manager for six years of the Stellwagen Bank National Marine Sanctuary, which provides a critical feeding ground for several endangered cetacean species, including humpback whales, fin whales, minke whales, and North Atlantic right whales. Regarding his comments below, Barr clarifies that he is not speaking for ONMS, NOAA, or the US Government.

#### On defining a "marine mammal protected area":

Identifying an MMPA is fairly straightforward. If the marine protected area was designated specifically to address (a) the preservation and recovery of marine mammal populations and (b) management of human activities that can affect marine mammals that use the area for some critical life history function (feeding, breeding, calving, etc.), it is an MMPA. The concentration on marine mammals may not be exclusive, necessarily, but can be for some sites. The Hawaiian Islands Humpback Whale National Marine Sanctuary (<http://hawaiihumpbackwhale.noaa.gov>) is a good example of a protected area that is exclusively focused on marine mammals. On the other hand, Stellwagen Bank National Marine Sanctuary (<http://stellwagen.noaa.gov>) is an example of a "non-exclusive" MMPA, where marine mammals are a major management focus but certainly not the only one for which management is responsible. The Stellwagen site also provides habitat for several commercially valuable fish species and is an important cultural heritage site with multiple historic shipwrecks.

Focusing on charismatic megafauna like whales, dolphins, and other marine mammals can be a "tide that lifts all boats" for marine conservation. MMPAs help to make ocean conservation relevant, interesting, and even exciting to the public. At the same time they can foster creative solutions to broader management issues that face ocean conservation.

#### On the ecosystem context of MMPAs:

The geographic scope of management of an MPA should not be constrained by "the box" - i.e., the designated boundary of the MPA. To be effective, we need to work on multiple scales that are largely dependent on the geographic scope of the management targets and the human activities that can affect these resources. Some of the species, groups of species, populations, communities and the like can have high site-fidelity, and the geographic scale of management actions will necessarily be very site-specific. In contrast, for marine mammals the geography involved can be vast, potentially on a continental or ocean basin scale.

Excellent projects like YoNAH (Years of the North Atlantic Humpback [www.coa.edu/yonah.htm](http://www.coa.edu/yonah.htm)) and SPLASH (Structure of Populations, Levels of Abundance, and Status of Humpbacks - [hawaiihumpbackwhale.noaa.gov/science/splashinfo.html](http://hawaiihumpbackwhale.noaa.gov/science/splashinfo.html)) in the North Pacific have helped to limit some of this geographic scope by better defining sub-populations and their critical habitats. But in most cases, our information about ranges, migration, and critical habitats of marine mammals is limited. In these cases, an MMPA manager has to "think big", be inclusive of all the places that population might be using, and coordinate with other managers appropriately. These big geographies - involving sites half a world away in some cases - will define the ecosystem context within which an MMPA manager must plan and act. This may not be the traditional perspective on EBM, which is often significantly more limited in scope. But from a practitioner's point of view, it may be the only way to effectively implement an ecosystem approach to management for MPAs - particularly MMPAs.

#### On the need to communicate with other MMPA managers:

It is these big geographies that represent the greatest challenges and opportunities. MPA managers in general are constrained by limited resources, and there is great emphasis on effectively managing "the box". However, most of the time, marine mammals are not in "the box". As a result, greater attention needs to be paid to communicating with other managers who share stewardship responsibilities for these species, whether in their own agency or across an ocean basin. There is currently little support for allocating the time it takes to do this sort of external coordination effectively, and woefully inadequate funding to support the added costs, which can be considerable.

The good news is that there are some highly creative MMPA managers out there who are doing great things, and we can learn much by simply talking to one another (see box "Examples of creative MMPA management" at the end of this article). With a bit of innovation and strategic thinking, an MMPA manager can accomplish a lot. This is one of the reasons the International Conferences on Marine Mammal Protected Areas were established, the first of which was in 2009 in Hawaii. These conferences are an important mechanism to foster capacity-building and the sharing of creative solutions to common management challenges. With some persistence, the ICMMPA conferences will help to educate and inform the larger marine protected area community - particularly those who oversee national systems of MPAs - why it is essential for MMPA managers to "think (and act) outside the box."

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### B. Building a global network of MMPA practitioners and improving habitat data

By Erich Hoyt

Editor's note: Hoyt is a senior research fellow at the Whale and Dolphin Conservation Society (WDCS) in the UK, where he leads the Global Critical Habitat/Marine Protected Area Programme. He is author of *Marine Protected Areas for Whales, Dolphins and Porpoises: A World Handbook for Cetacean Habitat Conservation and Planning* A completely revised and expanded second edition of the book will be published in July 2011 ([www.cetaceanhabitat.org/cetacean\\_protected\\_areas.php](http://www.cetaceanhabitat.org/cetacean_protected_areas.php)). The second edition describes trends in MMPA practice since 2005, when the first edition was published.

#### On trends in MMPAs:

Although most marine mammal protected areas remain small - too small in fact to offer sufficient habitat protection for sometimes highly mobile marine mammals - the average size of MMPAs is increasing.

This is due in part to the designation in recent years of some very large sites that protect marine mammal habitat, such as Papahānaumokuākea Marine National Monument and other large new Pacific MPAs. Comparing the 15 largest MMPAs in 2005 to 2011, for example, the average size of these has gone from just over 100,000 km<sup>2</sup> to 220,591 km<sup>2</sup>.

Another trend is that the marine mammal community is now talking to each other much more, and on a more global scale. The first ICMMPA conference in Hawaii brought together 200 researchers and managers from 40 countries. The networking that grew out of that has been substantial, including the building of sister sanctuary relationships and exchanges between managers of MMPAs.

### On threats facing marine mammals:

The biggest threat to marine mammals is entanglement in fishing gear: an estimated minimum of 300,000 cetaceans (mainly dolphins) die per year due to entanglement. However, most of these deaths are offshore and outside of existing MMPAs. When we talk about existing MMPAs and threats that they address, we are generally talking about inshore and nearshore areas, and the threats there are more directly related to vessel traffic (including ship strikes and noise); pollution from agricultural runoff; overfishing; and habitat degradation. These are the things that MMPAs tend to see as their mission, based on the human uses of these areas. (For the new, larger, offshore sites like Papahānaumokuākea, the threat analysis will differ.)

### On the need to improve data to support MMPAs:

There is a huge problem with lack of good data on cetacean abundance and distribution, particularly in offshore habitats. Such data are necessary to provide the fine-scale information on distribution that allows for delineating and protecting critical habitat areas. Most of the 87 species of whales and dolphins are found in the open sea; however, many of these may be studied only in a few coastal or nearshore waters, and only seasonally at that. There are serious logistical and cost implications involved in doing transect studies across the great expanse of the open ocean.

Protection (the creation of MPAs) tends to happen where we have data. So the vast majority of data-poor areas receive no protection, even though they may be just as important or more important in terms of species richness, presence of rare or endangered species, etc. Therefore we face a challenge to evaluate these vast expanses and (perhaps through new techniques of spatial modeling and ground truthing) come up with approaches that enable a sensible degree of protection.

### On identifying sites for MMPAs:

The Whale and Dolphin Conservation Society has identified 12 sites around the world as key representative habitat areas for different whale, dolphin, and porpoise species. Because cetaceans live in rivers, lakes, and estuaries as well as nearshore and offshore waters, we chose a wide variety of species living in the widest variety of habitats. We have two proposed river-based networks in northern South America and in South Asia, for example, as well as four high seas areas - including some very large sites covering hundreds of thousands of square kilometers. Such large sites would be appealing for protecting not only marine mammals but everything else in those ecosystems. We view marine mammals, with their popularity and the knowledge we have of their breeding and feeding grounds and their migrations, as a vehicle for attaining large, networked areas that can benefit ocean conservation in general.

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## C. MMPAs in the Mediterranean, and lessons from the Pelagos Sanctuary

By **Giuseppe Notarbartolo di Sciara**

Editor's note: Giuseppe Notarbartolo di Sciara is founder and president of the Tethys Research Institute, an Italian NGO for marine research and conservation. He was active in proposing the creation of the Pelagos Sanctuary for Mediterranean Marine Mammals, a 90,000-km<sup>2</sup> MPA co-designated by France, Italy, and Monaco ([MPA News 5:3](#)), and he is now pushing for improvement of its management. Pelagos provides breeding and feeding habitat for all cetacean species that are regularly in the Mediterranean Sea.

### On the value of protected area networks for marine mammals:

It could be argued that people like me who support protected area networks specifically for marine mammals are simply being marine mammal chauvinists, trying to preserve the seas for our favorite pet taxon. Ocean management, which is moving in general toward a more integrated, holistic approach, doesn't need a craze of single-taxon networks (whale MPA networks, sea bird MPA networks, shark MPA networks, ..., copepod MPA networks?), each focused on a sliver of the marine ecosystem.

Nonetheless, marine mammals are special in that they can serve simultaneously as charismatic flagship species (chosen to represent an environmental cause), umbrella species (whose conservation can confer protection to many co-occurring species), and indicator species (signaling the condition of an ecosystem). As such, marine mammals can be quite valuable as the focus of a protected area or network of protected areas.

I do see a strong need to integrate place-based protection for marine mammals with similar protection for a variety of other taxa that share the same ecosystem. This way the justification for MPA designation becomes more compelling. Threats that marine mammals share with other species (such as bycatch) can be addressed by the same management measures. Importantly, care should be taken to ensure that mitigating a threat to marine mammals - such as by inducing shifts in gear use (e.g., reducing bycatch by shifting from driftnets to longlines) - does not end up increasing a threat to other species, such as sea turtles. I would like to see an initiative to explore practical ways for a more universal approach, integrating other significant taxa with marine mammal place-based protection.

### On which Mediterranean MPAs qualify as MMPAs:

Although many MPAs in the Mediterranean contain suitable habitat for marine mammals, only a handful of these were established with the declared intent of protecting one or more marine mammal populations. Only these, in my view, qualify as "marine mammal protected areas". These include:

- Three MPAs in Turkey (Foça, Yalıkavak and Mersin) and two in Greece (National Marine Park of Alonissos - Northern Sporades and Karpathos) to protect Mediterranean monk seals;
- The MPA of "Ischia - Regno di Nettuno" in the southern Tyrrhenian Sea (Italy), mainly to protect short-beaked common dolphins; and
- The Pelagos Sanctuary in the northwestern Mediterranean, most of which lies on the high seas, established by a treaty among France, Italy, and Monaco.

Unfortunately an MPA dedicated to the protection of common bottlenose dolphins in Croatia - the Losinj Dolphin Reserve ([MPA News 8:3](#)) - was never formally established after a three-year provisional protection expired in 2009.

### On challenges faced by the Pelagos Sanctuary:

In the 12 years since its creation, Pelagos has failed to fulfill the goal of significantly improving the conservation status of the area's cetacean populations, which are threatened by intense human pressures (e.g., fisheries, maritime traffic, military exercises, coastal construction, downstream effects of land use, whale watching, climate change). Effectively mitigating those threats would require ecosystem-based management, or EBM. EBM takes into account the regulation of marine resource use and other human activities, control of land-based and maritime sources of pollution, integrated coastal zone/ocean management, and an adaptive management approach that would deal with rapidly changing patterns of use as well as with technological, socio-economic, political, and natural change.

Management actions - including zoning; channeling the area's intense maritime traffic along established corridors; systematically addressing fishery impacts on cetaceans; ensuring that no high-intensity noise is produced; ensuring the orderly and respectful development of the whale watching industry; and establishing precise regulations to address and mitigate impacts exerted on the local cetacean populations by pressures deriving from human activities - require an adequately empowered management body. Unfortunately, actual management and conservation actions within Pelagos' waters are very limited by the fact that there is no proper management body of the Sanctuary.

### On lessons from the Pelagos experience so far:

The continuing existence of management shortcomings concerning the Pelagos Sanctuary is difficult to understand when considering the effort currently undertaken by UNEP's Mediterranean Action Plan, under mandate from the parties to the Barcelona Convention and with funding from the European Commission, which includes the creation of a network of SPAMIs (Specially Protected Areas of Mediterranean Importance) in Mediterranean areas beyond national jurisdiction. Such effort, which will hopefully result in the establishment of several SPAMIs on the Mediterranean high seas within the next decade (thus creating the core for a future pan-Mediterranean MPA network), begs the question of how the parties to the Barcelona Convention envisage managing such high seas protected areas, or whether it is conceivable to establish MPAs without providing for a solid and effective management mechanism.

This, in turn, raises the question of whether a management mechanism appropriate for MPAs on the Mediterranean high seas can be envisaged within the existing legislative framework, or whether there is a need for more advanced juridical creativity to account for the likely multinational nature of such protected areas. Considering the scenario described above, the lack of interest by Mediterranean countries in the opportunities for management experimentation and development, presented by the only SPAMI on the Mediterranean high seas currently existing (the Pelagos Sanctuary), is baffling. I think that we are facing an example of lack of political leadership in the region. The take-home lesson is that there is no point in mustering the best scientific, advocacy, and managerial expertise to come up with sensible plans to protect the sea if there is no political will to transform such effort in tangible results in the real world.

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## BOX: Donate to MPA News and receive MMPA book & poster

For a limited time, if you donate \$100 in support of MPA News, you will receive the newly revised second edition of the book *Marine Protected Areas for Whales, Dolphins and Porpoises: A World*

## BOX: Examples of creative MMPA management

Brad Barr, a senior policy advisor in the US Office of National Marine Sanctuaries, says managers need to get creative to address the challenges of marine mammal protected areas, including the vast geographic range of many marine mammal species and the shortage of data on their populations. Here he describes two examples of such creative management, both of which were initiated by the Hawaiian Islands Humpback Whale National Marine Sanctuary (US):

"The first example is SPLASH (<http://hawaiihumpbackwhale.noaa.gov/science/splashinfo.html>), a program that brought together 400 researchers from 50 organizations in 10 countries to provide extraordinary information for guiding management of humpback whales in the North Pacific, including on the range, critical areas, and migratory pathways of sub-populations. One networking outcome has been the genesis of an idea, announced at the first International Conference on Marine Mammal Protected Areas and currently in development, to network MMPAs for one sub-population that could ultimately include MMPAs in three nations: Hawaiian Islands Humpback Whale National Marine Sanctuary and Glacier Bay National Park & Preserve (US); Gwaii Haanas National Marine Conservation Area (Canada); and the Commander Islands State Biosphere Reserve (Russia) - all critical areas for this sub-population of Humpback whales. The information provided by SPLASH could not have been assembled by any single country or research organization. It is a great example of how the community can come together to address the essential research and management at an appropriate ecosystem scale.

"The second example is the work on cetacean disentanglement from fishing gear at Hawaiian Islands Humpback Whale National Marine Sanctuary. At that MPA, David Mattila and Ed Lyman have not only further developed safe and effective techniques for addressing this issue on site; they have also shared their expertise with the global MMPA community (including training sessions in Australia, Canada, Korea, Mexico, New Zealand and Samoa), teaching others to effectively implement disentanglement efforts and conducting and participating in critical research to better understand and address the issue. We have come to understand from this work that it is a worldwide problem, and likely a very pervasive and problematic one given the troubling estimates of much larger numbers of humpbacks being killed or seriously injured by entanglement (or bycatch) than previously thought. Many in the community need help to address this challenging problem effectively. The outreach and training that experts like David and Ed provide is critically important, and shows the commitment of such folks in the community to not only address management issues creatively, but offer these solutions to the broader MMPA community."

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General information on the large whale disentanglement work is at:

- <http://hawaiihumpbackwhale.noaa.gov/res/entanglement.html>
- [www.nero.noaa.gov/prot\\_res/stranding/lwd.html](http://www.nero.noaa.gov/prot_res/stranding/lwd.html)
- [www.coastalstudies.org/what-we-do/whale-rescue/introduction.htm](http://www.coastalstudies.org/what-we-do/whale-rescue/introduction.htm)

Editor's note: The above websites do not provide "how to" information or training on disentanglement of large whales as the activity can be very dangerous if undertaken without extensive initial hands-on training and supervision. For information on training opportunities, e-mail David Mattila of the Hawaiian Islands Humpback Whale National Marine Sanctuary at [david.mattila@noaa.gov](mailto:david.mattila@noaa.gov).

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