

MARINE PROTECTED AREAS (MPAs) AND SANCTUARIES FOR WHALES, DOLPHINS AND PORPOISES: THE STATE OF CETACEAN HABITAT PROTECTION AND MPA MANAGEMENT WORLDWIDE

Erich Hoyt

Senior Research Fellow, WDCS, the Whale and Dolphin Conservation Society, 29A Dirleton Ave., North Berwick, Scotland EH39 4BE UK (erich.hoyt@mac.com; www.cetaceanhabitat.org)

INTRODUCTION

Cetacean habitat protection is an idea coming of age. Still, few of the existing marine protected areas (MPAs) around the world protect cetacean habitat as well as they could. Only a few countries are sponsoring the basic research to identify cetacean habitat, and even fewer have put in place the overall policy, specific framework and management provisions to guarantee effective cetacean habitat protection. In 1997, a long-term project was initiated to assess the worldwide status of cetacean habitat protection in 102 coastal countries and overseas territories.

MATERIALS AND METHODS

Detailed questionnaires were sent out to cetacean researchers and MPA managers in more than 100 countries in 18 marine regions (**Fig. 1**) to obtain information on cetacean habitat protection. Information was solicited on existing MPAs and sanctuaries where cetaceans were regularly found, how well or poorly they protected cetacean habitat, and on the status of management plans. Proposals to expand or upgrade MPAs to include cetacean habitat were also investigated, as were newly proposed MPAs. This work was part of a multi-year research project on marine protected areas and cetaceans conducted for the Whale and Dolphin Conservation Society. The work was recently published as a book by Earthscan (Hoyt 2005).

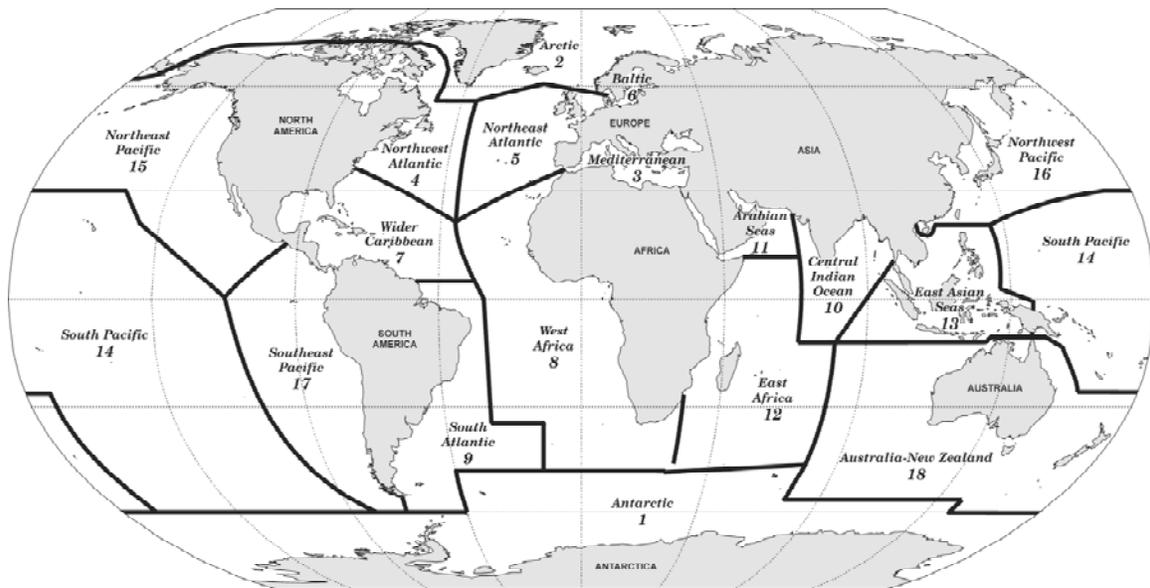


Fig. 1: The 18 marine regions of the world ocean (IUCN World Commission on Protected Areas – WCPA).

RESULTS

Worldwide, some 358 marine protected areas (MPAs) with cetacean habitat have been identified worldwide, 41 of which are proposed for expansion, plus 176 newly proposed MPAs with cetacean habitat (**Fig. 2**). The worldwide total is 534 proposed and existing MPAs with cetaceans. In addition to these

MPAs, the project looked at 19 existing and four proposed national sanctuaries for cetaceans, most covering the entire exclusive economic zone (EEZ). On the high seas, used by 79 percent of cetacean species (37 percent use the high seas exclusively), there are only five existing and nine proposed international sanctuaries. National and international sanctuaries, in general, provide a much lower degree of protection than the smaller MPAs. Yet even among existing MPAs, cetacean habitat protection is sporadic, inconsistent and inadequate.

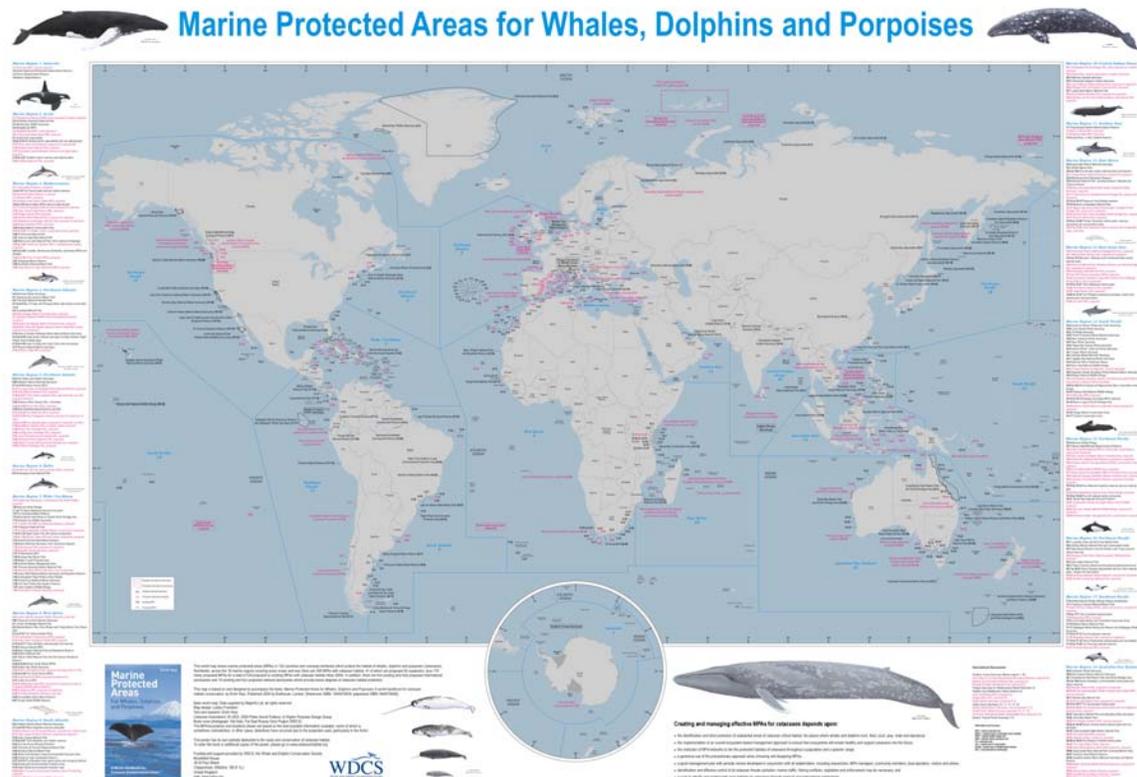


Fig. 2: This large world map poster by Lesley Frampton and Erich Hoyt shows the location of the 534 proposed and existing MPAs for cetaceans, the 23 proposed and existing national sanctuaries, and the 14 proposed and existing international sanctuaries. (For more information, see www.cetaceanhabitat.org.)

Creating and managing effective MPAs for cetaceans depends upon:

- the identification and strict protection of substantial areas of cetacean critical habitat, the places where cetaceans hunt, feed, court, play, and reproduce (**Box 1**);
- the implementation of an overall ecosystem-based management approach to ensure that ecosystems will remain healthy and support cetaceans into the future (**Box 2**);
- the institution of MPA networks to link the protected habitats of cetaceans throughout the range of specific populations or species (**Box 3**);
- a generous use of the precautionary approach when designing and designating MPAs;
- a good management plan with periodic review developed in conjunction with all stakeholders;
- identification and control of all cetacean threats (pollution, marine traffic, fishing conflicts) with appropriate legislation and enforcement as needed; and
- a push to identify and protect high seas habitats for cetaceans under regional and international agreements.

Box 1: Critical habitat

Critical habitat refers to those parts of a cetacean's range, either a whole species or a particular population of that species, that are essential for day-to-day survival, as well as for maintaining a healthy population growth rate. Areas that are regularly used for feeding (including hunting), breeding (all aspects of courtship) and raising calves, as well as, sometimes, migrating, are part of critical habitat. Identifying the critical habitat of cetaceans, the crucial core areas, is the first step toward good marine management of MPAs with cetaceans (Hoyt 2005).

Yet marine critical habitat boundaries may be less fixed, especially in terms of hunting and feeding areas which are dependent on upwelling and other changing oceanographic conditions. The implication for MPA design is that more flexible definitions of marine protected areas for cetaceans are needed in some cases, with zoned protection that can be adjusted as needed from year to year or even within seasons. To achieve such fine-grained critical habitat management, it will be necessary to unravel and understand ecosystem processes and the impacts that humans can have on such processes. An appropriate tool for this is ecosystem-based management.

Box 2: Ecosystem-based management (EBM)

Ecosystem-based management is a regime to manage the uses and values of ecosystems with all stakeholders to maintain ecological integrity in the face of the uncertain and ever changing nature of ecosystems (Hoyt 2005).

To maintain a healthy marine ecosystem, conservation management needs to uncover through research and take into consideration all the key links within the ecosystem, as well as to manage human activities and their impacts. It is necessary to manage fisheries, chemical and noise pollution, vessel traffic, climate change, agriculture and industrial activities that produce runoff, offshore oil, gas and other mineral industries, among other things, to minimize adverse impacts and to maintain a healthy functioning ecosystem.

Ecosystem-based management requires an ongoing research commitment to unravel and model the complex linkages in marine ecosystems which nourish all life and life processes in the sea. And, where knowledge is lacking, the creation of MPAs can be used as a precautionary approach to protect ecosystems while research is carried out.

Box 3: Networks of MPAs

In recent years, increasing attention has been paid to the idea of developing networks of MPAs, rather than focusing simply on individual areas (Commission on Geosciences, Environment and Resources 2000). Both the World Summit on Sustainable Development (Johannesburg – 2002) and the World Parks Congress (2003) have called for the development of a global system of MPA networks by 2012. This is partly in response to the postage-stamp nature of many MPAs. Especially if MPAs are small, but even if they are fairly large, there will need to be a number of them to forge an effective conservation plan for populations, species and ecosystems. Networks accommodate the needs of many ocean species that travel during their life histories, such as cetaceans which migrate or, in some cases, travel in search of food or mates. In addition, cetaceans depend on food webs whose critical habitats may be widely separated. MPA networks help deliver the mandate of ecosystem-based management as they allow essential ecosystem processes and the important features of complex marine ecosystems to be protected (Hoyt 2005).

DISCUSSION

In addition to numerous national MPA programmes, coastal countries have signed conventions such as CMS (Conservation of Migratory Species of Wild Animals), CBD (Convention on Biological Diversity) and UNCLOS (United Nations Convention on the Law of the Sea) which commit them to participating in MPA conservation in national waters as well as on the high seas. Regional programmes based on WCPA marine regions (**Fig. 1**) – such as ACCOBAMS (Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area) in the Mediterranean – have started taking a leading role, for example, with the recently created Pelagos Sanctuary for Mediterranean Marine Mammals (**Fig. 3**) and the Regno di Nettuno MPA (**Fig. 4**). All the newly established MPAs and MPA programmes represent the good intentions and hopes of many people. Still, few MPAs protect cetacean habitat as well as they could, or even adequately. Few have been set up around core critical habitat protection in zoned IUCN Category I areas, and ecosystem-based management remains an elusive goal. **Fig. 5** shows an example of a workable structure to integrate critical habitat protection, zoned areas and ecosystem-based management in a biosphere reserve.

The target set by the V World Parks Congress (2003) is for a global system of MPA networks by 2012 including fully protected (IUCN Category I) areas that amount to 20 to 30 per cent of each marine habitat. At present, according to Roberts and Hawkins (2000), an estimated half a per cent, or one two-hundredth, of the world ocean has been designated as MPAs, yet only roughly 0.0001 (one ten-thousandth) of the world ocean exists in fully protected (IUCN Category I) marine reserves. Although cetacean habitat protection has made great strides in the past decade, we remain at the earliest stage in our protection of cetacean habitat.

ACKNOWLEDGEMENTS

The research for this work was sponsored by WDSC, the Whale and Dolphin Conservation Society, with grants from the Ellerman Foundation, the Kleinwort Charitable Trust, the Fishmongers' Company and others. The overall concepts and extensive data for the book were reviewed by more than 80 reviewers. Thanks are also due to Mark Simmonds, Margi Prideaux, Vanessa Williams and Alison Wood, along with Lesley Frampton for the maps.

REFERENCES

- Commission on Geosciences, Environment and Resources. 2000. *Marine Protected Areas: Tools for Sustaining Ocean Ecosystems*, Report of the National Research Council, National Academy Press, Washington, DC, 181pp + appendices
- Hoyt, E. 2005. *Marine Protected Areas for Whales, Dolphins and Porpoises: A world handbook for cetacean habitat conservation*, Earthscan, London, 516pp.
- Roberts, C.M. and Hawkins, J.P. 2000. *Fully Protected Marine Reserves: A guide*. Worldwide Fund for Nature endangered Seas Campaign. WWF-USA, Washington, DC and Environment Dept., University of York, York, UK, 108pp.

Fig. 3 (below): MPAs such as the Pelagos Sanctuary for Mediterranean Marine Mammals, are best seen as ‘works in progress.’ Even the long-established Great Barrier Reef Marine Park has only in the last few years taken the lead with a cetacean management plan and by setting aside a third of the park in critical habitat (IUCN Category I) areas. Most of the world’s MPAs still have a long way to go: the Pelagos Sanctuary is a recent landmark MPA which includes the national waters of three countries (Italy, France and Monaco) and the high seas, but it needs to draw on cetacean research to devise a zoning plan for critical habitat protection as part of an overall management plan.

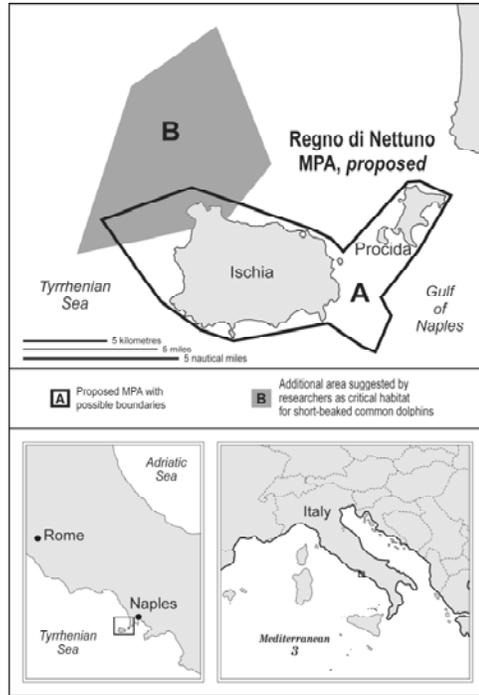
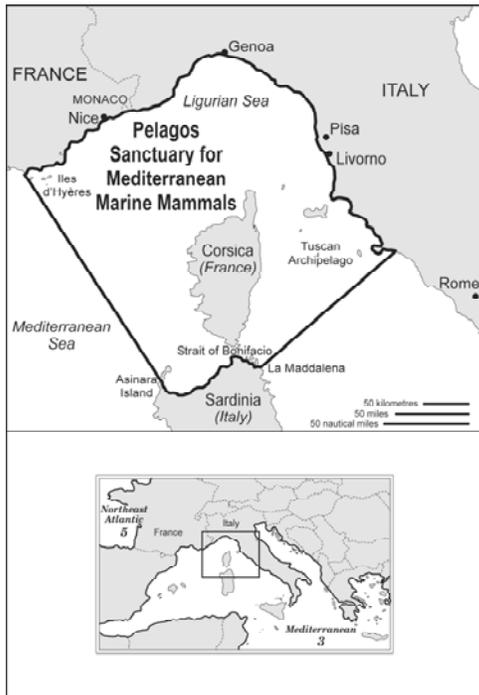


Fig. 4 (above): Also located in the Mediterranean, the proposed Regno di Nettuno MPA needs some re-thinking and adjustment of boundaries to protect cetacean critical habitat, in this case, for short-beaked common dolphins.

Fig. 5 (right) shows an example of a workable structure to integrate critical habitat protection, zoned areas and ecosystem-based management in a biosphere reserve. With their large habitats, position atop the food pyramid and broad appeal, cetaceans have the potential to help improve conservation prospects for marine ecosystems.

