

Book Review

MARINE PROTECTED AREAS FOR WHALES, DOLPHINS AND PORPOISES: A WORLD HANDBOOK FOR CETACEAN HABITAT CONSERVATION AND PLANNING, SECOND EDITION. Erich Hoyt. Earthscan, London, UK, and Washington, DC, USA, 2011. ISBN 978-1-84407-762-5 and 978-1-84407-763-2, 448 pp.

Erich Hoyt, a renowned conservationist, exhibits a strong passion for research and writing which is evident in his publication of 18 books and over 500 articles, reports, and book chapters. From the North American Midwest to a Victorian seaside town in Scotland, Hoyt has led a full suite of conservation projects and has established himself as a lead proponent of sustainable ecotourism, habitat protection, and ecosystem-based management for marine mammals. His plethora of writing samples has been used as reference guides for marine mammal researchers, conservationists, and enthusiasts throughout the world. Time and again, he has succeeded in conducting comprehensive reviews and summarizing a wealth of information in a user-friendly and engaging format. His latest book, an update to the first edition about marine protected areas for whales, dolphins, and porpoises (Hoyt, 2005), is no exception.

As Hoyt notes in his Epilogue, the worldwide total number of marine protected areas (MPAs) and protected areas (PAs) with cetacean habitat has increased dramatically since his last edition was published; the number of proposed or existing MPAs rose from 542 in 2004 to 740 in 2011. Thank goodness Hoyt has successfully taken on the daunting task of researching and condensing the details of these areas into less than 500 pages of well-written text. As a fan of the first edition, I was pleased to see that Hoyt stuck to his original outline in the newest edition. This book appears to be a true update of the original. However, Hoyt takes this edition to a higher level by adding some new steps for creating MPAs for cetaceans and new sections on designing MPAs that address current and predicted changes caused by climate change and underwater noise. Hoyt also adds to the large success of the first edition by expanding the subject matter to include new developments in the Mediterranean, Caribbean, and Pacific. Hoyt revises and updates the same nine case studies from the first edition and adds a new case study of the Costa Rica Dome, an important habitat for blue whales.

In the first four chapters of the book, Hoyt outlines the purpose and principles behind habitat conservation for cetaceans. In the first chapter, he describes MPAs in a cetacean context: sanctuaries, reserves, parks, naturreservats, zapovedniks . . . oh my! The choices and terms for MPAs boggle the mind. Luckily for us, Hoyt lists and describes these terms and several others along with some techniques for defining critical habitat and informing the design of MPAs. One of the most popular techniques in use today is habitat spatial modeling (e.g., Cañadas et al., 2005; Bailey & Thompson, 2009; Embling et al., 2010). Hoyt includes a nice summary of this method, which uses density surface models to describe animal density/abundance as a function of habitat features. He is also careful to acknowledge that these models are only as good as the available data and that data from a “multi-year research period, with dedicated surveys and quantified effort” are best.

In Chapter 2, Hoyt describes his top reasons to spotlight cetaceans as assets for place-based conservation. Cetaceans are top predators and often utilize large areas as habitat so when we protect them, we are also protecting numerous other species and ecosystems. Cetaceans also serve as ecological monitors of the health of the environment. As charismatic megafauna, cetaceans tug at the public’s heartstrings, fostering positive community involvement in conservation and increased funding for MPAs. Hoyt summarizes the International Union for Conservation of Nature’s (IUCN) Red List status and distribution of each cetacean species in the 18 marine regions defined by the IUCN World Commission on Protected Areas (WCPA). Over 50% of cetacean species are designated as data deficient and may fall under the “precautionary approach” to management.

After describing why we should be concerned with protecting cetacean habitat, Hoyt moves straight into his explanation of how to do so in Chapter 3. In this chapter, Hoyt describes his 20 key steps to designing, establishing, and managing MPAs for cetaceans. These steps are meant to be a checklist for scientists, planners, and managers. Although they all offer critical information for effective MPA development, the most important of these steps is probably the last one: “Don’t give up and don’t stop working for the best MPA or PA possible.” In a nutshell, a mediocre MPA is better than no MPA at all. If the MPA is already justified,

then do not hesitate to establish the MPA before it is deemed "perfect." We can further refine the MPA and management plans later as more information and data become available.

Chapter 4 focuses on applying ecosystem-based management to cetacean conservation. This tactic may involve classifying the oceans as large marine ecosystems or marine ecoregions to help focus on the larger ecosystem or networked MPAs instead of just a single MPA, which is limited in its level of protection. Hoyt also touches on the impacts of climate change and underwater noise on cetacean habitat; these are additional factors to consider when developing MPAs. Hoyt describes the need for and challenges of establishing networks of MPAs and high seas MPAs which require considerable coordination and cooperation, particularly across international borders.

The last chapter is the "meat" of the book and defines it as a quick reference guide for worldwide information on the proposed and existing protected areas that include cetacean habitat. Hoyt does an excellent job in condensing large amounts of information and data into fairly succinct tables that outline the existing and proposed MPAs in the 18 marine regions. Although I would like to see the sources included in each table, I understand that these have been left out to conserve space and simplify the tables, and I am thankful that Hoyt provides this more detailed information in the online MPA directory (www.cetaceanhabitat.org).

The overall content of these five chapters is solid and sets this book aside as one of the "go-to" reference guides on MPAs along with others such as Kelleher (1999), Baker (2000), Roberts & Hawkins (2000), Ehler et al. (2004), and Salm & Clark's (2000) "bible" of MPA planning and management. My criticism lies with some of the layout and visual features of the book. For instance, the placement of the section on the 12 key protected areas and networks proposed for cetaceans (plates 1-20) is a bit odd. While this is definitely the most eye-catching section, containing the only color map and photos in the entire book, it seems to have been arbitrarily placed between Chapters 4 and 5 without any introduction or much discussion to its purpose. It is not even listed under the contents list for Chapter 4 or 5. I would have liked to see more of an explanation from Hoyt on why he considers these proposed areas and networks particularly important for cetaceans. According to the notes and rationale columns of the MPA tables in Chapter 5, these 12 sites are key areas proposed by the Whale and Dolphin Conservation Society (WDCS) as model cetacean habitat protection areas. It would have been beneficial to the reader if this information and more were stated in the

12 key areas section. In addition, some of these areas are included in Chapter 5 as their own case study, but I think that the importance of them as key areas warrants each as a case study.

Although the use of plates is often beneficial for printing and publishing purposes, I think the brief descriptions and associated photos of the 12 key areas would be better placed within the marine region sections in Chapter 5. Peter Folkens' accurate and attractive illustrations of the whale, dolphin, and porpoise species (plates 19 and 20) would be better placed in Chapter 2 where these species are first introduced along with their IUCN Red List status and distribution information. Since readers are more likely to refer frequently to the marine regions and MPA tables, this chapter could use the addition of labels at the edges of the pages of each marine region to allow for easy, quick access to the regions when flipping through the book. I also would have liked to see more color used to visually enhance the information displayed in the figures, particularly the more complex figures like Figure 4.6 (MPA networks and ocean zoning). At least Hoyt does offer free access to a comprehensive color poster map of all the cetacean-protected areas via the Cetacean Habitat website (www.cetaceanhabitat.org).

These minor criticisms aside, I strongly support this book as an invaluable addition to the library of any marine mammal manager and conservationist as well as regulators, industry leaders, and decisionmakers. This book was clearly written for a scientific/technical audience and not necessarily for the layperson due to the technical nature of the content and the lack of personal stories, anecdotes, and more photos and attractive illustrations. Hoyt writes with an underlying sense of urgency but also with hope and a plan that can be put into action. Fortunately, the reader is not left with an overwhelming feeling of despair over the long road ahead for cetacean MPAs and the immense amount of work left for researchers, managers, and stakeholders to effectively protect cetacean habitat. Instead, we are left with a better understanding of where we currently stand, where we need to go, and how to go about it. Hoyt has given us an MPA roadmap complete with specific tools and checklists to help us along the way.

The success or failure of cetacean MPAs is largely up in the air in most areas. As Hoyt points out, all protected areas start out on paper, and their success or failure will be determined based on how we (the people, managers, stakeholders, researchers, etc.) adapt these areas and reinvent them based on the ever-changing marine environment; new research findings; and changes in the way humans use the habitats and homes of the whales, dolphins, and porpoises. If we are to effectively

conserve these species, we must not only strive to save them from harpoons and nets but also start saving their homes.

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Literature Cited

- Bailey, H., & Thompson, P. M. (2009). Using marine mammal habitat modeling to identify priority conservation zones within a marine protected area. *Marine Ecology Progress Series*, 378, 279-287. <http://dx.doi.org/10.3354/meps07887>
- Baker, J. L. (2000). *Guide to marine protected areas*. Adelaide, South Australia: Department for Environment and Heritage.
- Cañadas, A., Sagarminaga, R., de Stephanis, R., Urquiola, E., & Hammond, P. S. (2005). Habitat preference modelling as a conservation tool: Proposals for marine protected areas for cetaceans in southern Spanish waters. *Aquatic Conservation: Marine and Freshwater Ecosystems*, 15, 495-521. <http://dx.doi.org/10.1002/aqc.689>
- Ehler, C., Cicin-Sain, B., & Belfiore, S. (Eds.). (2004). *Incorporating marine protected areas into integrated coastal and ocean management: Principles and guidelines*. Gland, Switzerland, and Cambridge, UK: World Commission on Protected Areas (WCPA), International Union for Conservation of Nature (IUCN).
- Embling, C. B., Gillibrand, P. A., Gordon, J., Shrimpton, J., Stevick, P. T., & Hammond, P. S. (2010). Using habitat models to identify suitable sites for marine protected areas for harbour porpoises (*Phocoena phocoena*). *Biological Conservation*, 143, 267-279. <http://dx.doi.org/10.1016/j.biocon.2009.09.005>
- Hoyt, E. (2005). *Marine protected areas for whales, dolphins, and porpoises: A world handbook for cetacean habitat conservation*. London: Earthscan.
- Kelleher, G. (Ed.). (1999). *Guidelines for marine protected areas*. Gland, Switzerland, and Cambridge, UK: WCPA, IUCN.
- Roberts, C. M., & Hawkins, J. P. (2000). *Fully-protected marine reserves: A guide*. York, UK: University of York.
- Salm, R. V., & Clark, J. R. (2000). *Marine and coastal protected areas: A guide for planners and managers* (3rd ed.). Gland, Switzerland: IUCN. 370 pp. <http://dx.doi.org/10.2305/IUCN.CH.2000.13.en>