



Ecology and Conservation of the Sirenia: Dugongs and Manatees by Helene Marsh, Thomas J. O'Shea, and John E. Reynolds
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ing population—9.2 billion projected by 2050—will rely ever more on so-called ecosystem services, human interactions with other biological entities will have more and more impact. This volume takes an original and endlessly fascinating approach, offering up life histories of a variety of organisms, manifestly taking into account how humans have shaped the populations of our fellow species from squids to sugar cane to salmon. A representative chapter considers the oak tree, taking as its touchstone an episode with “haycorns” from *Winnie the Pooh*. Deftly weaving the central historic role of the oak in the rise of the British Navy, the taxonomic mystery of its latitudinal preference (flourishing in a distinctly middle belt around the globe), and the impacts of its reproductive patterns on rodents, ungulates, insects, and birds, the book provides a minibiography of this iconic species. Other subjects include honey bees, bracken, barnacles, and legumes. The concluding chapter on the wolf provides a definitive coda on the book’s central thesis, which is that human perception and manipulation of species have impacted their welfare in a profound way.

If we are to help biodiversity stay vibrant, it is incumbent upon us to understand not just the nuts and bolts of traditional species interactions, but our own historic and present involvement in their fates. This volume is a cross-disciplinary dream come true and effortlessly invokes the long time frame of evolution.

MARY ELLEN HANNIBAL, *San Francisco, California*

SUSTAINABLE FISHERIES: MULTI-LEVEL APPROACHES TO A GLOBAL PROBLEM.

Edited by William W. Taylor, Abigail J. Lynch, and Michael G. Schechter. Bethesda (Maryland): American Fisheries Society. \$79.00 (paper). xxvi + 399 p.; ill.; index. ISBN: 978-1-934874-21-9. 2011.

This volume is the product of a symposium held in 2009 at the annual meeting of the American Fisheries Society. It consists of 14 contributions organized into two major sections: Biological Cases of Fisheries Sustainability and Institutional Approaches to Sustainable Global Fisheries. There is a nice balance between chapters defining the problems and solutions, and a balance between capture fisheries and aquaculture, as well as the various disciplines involved in fisheries. The scale ranges from a chapter on small scale freshwater fisheries in Cambodia to the large industrial tuna fisheries of the Eastern Pacific.

An introductory chapter, Sustainable Fisheries: The Importance of the Bigger Picture, does an excellent job of both defining the problem and

realistically addressing solutions. An overriding theme of the chapters is that fisheries can be sustainably managed and we do have the tools to do so, but that the appropriate tools differ from fishery to fishery and country to country. There are no silver bullets.

There is a well-justified repeated emphasis on the importance of institutional arrangements and governance as indicated by the structure and the second section. The intimate connection between communities, management systems, and natural ecological systems also runs through most of the chapters. This is not really a book to be read from cover to cover, but more a resource in which chapters would be chosen selectively. Many chapters would serve as excellent case studies for advanced undergraduate or graduate courses. Overall, this is a collection of papers that are realistic yet optimistic about the future and proposes positive solutions to the many problems of current fisheries.

RAY HILBORN, *School of Aquatic & Fishery Sciences, University of Washington, Seattle, Washington*

ECOLOGY AND CONSERVATION OF THE SIRENIA: DUGONGS AND MANATEES. *Conservation Biology, Volume 18.*

By Helene Marsh, Thomas J. O’Shea, and John E. Reynolds III. Cambridge and New York: Cambridge University Press. \$135.00 (hardcover); \$65.00 (paper). xvi + 521 p. + 4 pl.; ill.; index. ISBN: 978-0-521-88828-8 (hc); 978-0-521-71643-7 (pb). 2012.

In the bestiary of charismatic megafauna, dugongs and manatees (sirenians) are the ugly cousins of whales. Both groups share equally long geologic histories, but whereas whales are acrobatic, engaging, and trophic gourmands, sirenians are docile, slow, and obligate herbivores. The oceans and rivers are littered with species of whales, while sirenians comprise only four extant species, most of which are highly threatened by human activities. Given these traits, do sirenians offer important questions for cutting-edge integrative biology? Is there anything still to be learned about their ecology and conservation? The authors of this thorough, well-rounded, and excellent volume offer resounding affirmatives to both questions. Their writing is crisp and fluid, with a structured narrative within each chapter that moves in a logical way across topics that historically would have been discussed more rigidly and less synthetically. Almost every chapter opens with a comparative frame (oftentimes using the closest terrestrial relatives of sirenians), an approach that offers even specialist readers with an important context for understanding sirenian feeding, life history, and habitat use. The text offers a pleasant mix of foundational and

recent references. The prose is also braided with occasional personal and relayed anecdotes, which serve to emphasize just how little we know about the natural history of any marine mammal. The authors make it a point to highlight directions for future research in every chapter, although unanswered questions in sirenian biology and ecology are richly dispersed throughout the text, making it necessary reading for any student of marine mammalogy, and a valuable go-to source for early career scientists. One qualm: the figures are inconsistent in formatting and graphic details but, overall, they are sufficient to convey the important facts. Chapter 2, about the ecology of the now-extinct Steller's sea cow (*Hydrodamalis gigas*), is a superlative and highly creative contribution that reads like a detective novel, unfolding what we know about this unique cold-water dugongid using Georg Wilhelm Steller's own words. Conservationists will read this chapter as a sober lesson to belie any complacency about the status of living sirenians.

It is clear that this volume was a labor of love, and the result of substantial feedback from colleagues across many disciplines, over many years. The result is an accessible and rich summary that is worthwhile for anyone interested in the ecological history and fate of marine mammals.

NICHOLAS D. PYENSON, *Paleobiology, National Museum of Natural History, Smithsonian Institution, Washington, DC*

BIRD WATCH: A SURVEY OF PLANET EARTH'S CHANGING ECOSYSTEMS.

By Martin Walters; Consultants: Birdlife International and Jonathan Elphick. Chicago (Illinois): University of Chicago Press. \$45.00. 256 p.; ill.; index. ISBN: 978-0-226-87226-1. 2011.

This volume begins with a bold claim, "A healthy population of birds, and a high diversity of different bird species, is a sure sign that conditions are good and that a habitat is in a stable and balanced state" (p. 9). It then goes on to review the threats to birds, presents the major habitats of the world, and finally catalogs the world's threatened birds.

This is a great coffee-table book. It is easy to read and is illustrated with beautiful, poignant, and sometimes depressing photographs. It draws on Birdlife's extensive database and does its best to highlight conservation successes as well as conservation problems. If you are interested in natural history, you will enjoy this volume and probably be quite concerned by it, too.

My problem with the book is the bold claim at the beginning and the complete lack of justification for it. This is a claim often made by bird conservationists, but it simply is not evidence

based. In what sense are wild bird populations valuable surrogate indicators of the state of ecosystems? There is good reason to be skeptical about this claim. Few studies have rigorously tested such claims (see D. B. Lindenmayer and G. E. Likens. 2011. *Ecosystems* 14:47-59). The extent to which wild birds provide insights into ecosystem function and services remains an open question. What do conservation priorities defined on the basis of population status and trends tell us about the functional role of birds or any other taxa? Diversity often peaks at intermediate levels of disturbance, but ecosystem functions are often degraded under such conditions. There is not a simple relationship between diversity and ecosystem function.

Wild birds provide inspiration and enjoyment for millions of people, me included. This is a good reason to conserve them. Before we make broader claims about the value of bird conservation, let us make sure we have the evidence.

KEN NORRIS, *Centre for Agri-Environmental Research, University of Reading, Reading, United Kingdom*

CONSERVATION OF TROPICAL BIRDS.

By Navjot S. Sodhi, Çağan H. Şekercioglu, Jos Barlow, and Scott K. Robinson. Hoboken (New Jersey): Wiley-Blackwell. \$129.95. ix + 300 p. + 12 pl.; ill.; index. ISBN: 978-1-4443-3482-1. 2011.

This book, collating the knowledge of four ornithologists with considerable expertise across the world, should be welcomed by the many people engaged in conservation of tropical birds. The avian extinction crisis is focused in the tropics, but research and conservation efforts remain heavily biased toward richer, higher-latitude countries. The authors state the purpose of this book as advancing the field of conservation ornithology, particularly facilitating more research on tropical birds. It certainly achieves this purpose in principle, by collating in a single volume an overview of conservation issues facing tropical birds. However, at just 226 pages excluding references, I am concerned that in practice many researchers—particularly those in the tropics—may not be able to justify the high purchase price.

The focus, organization and style of chapters are somewhat idiosyncratic, reflecting the somewhat deficient editorial hand evident throughout. Despite its undoubted importance, a chapter on habitat fragmentation sits oddly separated from other threat-focused chapters (on fire, biotic invasions, harvesting, and climate change) by chapters on extinctions and ecological functions of birds. Sections on ecological function (developed from a chapter in another book) and fire reflect particular author interests, but consume pages out of

Dugongs and manatees, the only fully aquatic herbivorous mammals, live in the coastal waters, rivers and lakes of more than 80 subtropical and tropical countries. Symbols of fierce conservation battles, sirenian populations are threatened by multiple global problems. Outlining the current conservation status of the sirenian taxa, this unique study will equip researchers and professionals with the scientific knowledge required to develop proactive, precautionary and achievable strategies to conserve dugongs and manatees. Supplementary material is available online at: www.cambridge.org/9780521888288. By Helene Marsh, Thomas J. O'Shea, John Elliott Reynolds, John E. Reynolds III. PDF | On Jan 1, 2013, Nicholas D. Pyenson published Ecology and Conservation of the Sirenia: Dugongs and Manatees by Helene Marsh, Thomas J. O'Shea, and John E. Reynolds | Find, read and cite all the research you need on ResearchGate. O'Shea; John E. Reynolds III. Review by: Nicholas D. Pyenson. The Quarterly Review of Biology, Vol. 88, No. 1 (March 2013), pp. 42-43. Published by: The University of Chicago Press. Stable URL: <http://www.jstor.org/stable/10.1086/669272> . Accessed: 02/04/2013 00:10. By: Helene Marsh(Author), Thomas J O'Shea(Author), John E Reynolds III(Author), John G Robinson(Foreword By). Outlining the current conservation status of the sirenian taxa, this unique study will equip researchers and professionals with the scientific knowledge required to develop proactive, precautionary and achievable strategies to conserve dugongs and manatees. Contents. Helene Marsh is Professor of Environmental Science and Dean of Graduate Research Studies at James Cook University, Townsville, Australia. She is an international authority on the conservation biology of dugongs, sea turtles and coastal cetaceans, and led the team that developed the United Nations Environment Programme global Dugong Action Plan. A synthesis of the ecological and related knowledge pertinent to understanding the biology and conservation of dugongs and manatees. Saved in: Bibliographic Details. Main Author: Marsh, Helene. Other Authors: O'Shea, Thomas J., Reynolds III, John E.