

INVISIBLE CONNECTIONS: WHY MIGRATING SHOREBIRDS NEED THE YELLOW SEA

Kam, J. van de, Battley, P., McCaffery, B., Rogers, D., Hong, J.-S., Moores, N., Yung-Ki, J., Lewis, J. & Piersma, T. 2010. Collingwood, Victoria, Australia: CSIRO Publishing. 160 pp., color photos, illustrations. Soft Cover. ISBN 9780643096592. AU\$49.95.

Invisible Connections is largely a photo essay of the migration of shorebirds that pass through the Yellow Sea. Its purpose is to raise public awareness of the importance of the Yellow Sea to Asian and North American shorebirds. I laud scientists who take the time to produce books for a general audience, and this is a nice example of this outreach. The text summarizes some current views of migration and information on the migration of shorebirds through Asia; it will be of interest to students of migration. The text is matched with evocative images taken mainly by Jan van de Kam of the tundra breeding grounds, the migration route and the winter quarters.

The writing is clear and consistent, although there are several authors whose first language is not English. The authors bring to life some of the latest information on transoceanic crossings. The Bar-tailed Godwit *Limosa lapponica* launches a nonstop, week-long flight from Alaska to New Zealand. Other species, such as the Ruddy Turnstone *Arenaria interpres*, also make long continuous flights, but many species require several stops along the way. All of these birds need to fuel various legs of the journey, and this is where the Yellow Sea and a network of wetlands are required. It

is hard to imagine a conservation challenge more daunting than saving the Yellow Sea, where 600 million people live on its shores. Furthermore, the Yellow Sea is part of a network of wetlands spanning the southern and northern hemisphere that are under immense pressure to provide for human needs. This book clearly lays out the requirement for international cooperation.

Invisible Connections is wonderful book meant for the general public, and so some latitude in writing is to be expected. My only quibble is with a map purporting to show the world's most important areas for shorebirds. It did not include most of the well-known sites of the Western Hemisphere Shorebird Reserve Network, such as San Francisco Bay, Delaware Bay, Panama Bay and western Mexican mudflats, while the "large estuaries of Great Britain" were included. Regardless, this book would make a lovely gift to anyone interested in birds and to biologists who would like an introduction to the migration of shorebirds through Asia.

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ALBATROSS: THEIR WORLD, THEIR WAYS

De Roy, T., Jones, M. & Fitter, J. 2008. Buffalo, New York & Richmond Hill, Ontario: Firefly Books. 240 pp. Hardcover. ISBN 978-1-55407-415-0. US\$49.95.

A reader's first impression of *Albatross: Their World, Their Ways* comes from the stunning photographs of these magnificent ocean wanderers gracing the cover and throughout the book. Obviously taken with an eye only a seasoned professional photographer would have, the photos not only portray each species of albatross and its environment, but often do so under the most enhancing of background light, producing strikingly brilliant images. Beyond the photographs, the authors and expert contributors describe the natural history, ecology and conservation of albatrosses along with the scientific investigations and adventure behind obtaining much of this knowledge. Within the text of all the writers, sheer admiration and respect for these amazing birds resonate.

The book is organized into three general sections. In *Part One: Spirits of the Ocean Wild*, De Roy introduces the reader to all of the albatross species (the authors follow the 22 species recognized by Birdlife International) and many of their remote island breeding colonies. In *Part Two: Science and Conservation*, Jones provides historical perspective, including developments in human history so strongly contributing to the current imperiled status of many albatross species, followed by 18 experts who describe their experience and perspectives in albatross science and conservation.

In *Part Three: Species Profiles*, Fitter provides in-depth species accounts, detailing the natural history and current status of each species.

De Roy's lead chapters portray her absolute fascination with and admiration for albatrosses, even beyond what her beautiful photographs portray. Her writing details the lives of these birds and their continued persistence despite the many challenges, both natural and anthropogenic, that they face. Her steadfast focus on the celebration of these birds is exemplified in her casual mention of the incredible hardships that she (and co-authors) endured while traveling the seas in a small sailboat to visit some remote albatross colonies in the Southern Ocean. Between De Roy's photographs and text, the reader experiences the lives and the remarkable diversity of albatrosses, from their oceanic travels to their remote breeding colonies in habitats ranging from rock spires to dense forests.

In the chapter *Albatrosses and Man through the Ages*, Jones begins by recounting why humans possess a remarkable fascination with and respect for albatrosses. A common theme in gaining such an appreciation resonates through encounters with albatrosses on the high seas described by seafarers ranging from Prince Charles while

aboard a Royal Navy warship and scientists aboard research vessels to “rough, unruly, and chiefly illiterate” sailors on the crowded decks of tall ships. Unfortunately, by the mid-19th century, the vast animal resources of the earth’s most remote oceans and islands were being exploited as the industrial revolution progressed and nations sent ill-equipped seamen to acquire resources from and to settle distant lands; thus began the commercial exploitation of albatross populations on land, which continued into the mid-20th century. Effects of these exploits at breeding colonies persisted even after the direct killing stopped, through introduced species that prey on albatrosses, destroy nesting habitat or transmit diseases. In recent decades, the increased demand for seafood and the proliferation of driftnet, longline and trawl fisheries became the greatest threat to many albatross species. One contributor noted that “several decades of high seas commercial fishing is threatening millions of years of evolution.” This problem stems from both albatrosses and fisheries converging on some of the ocean’s most productive waters. Albatrosses are efficient, long-distance scavengers, so scavenging behind fishing vessels is simply exploiting an available food source. Fortunately, there are success stories in mitigating albatross mortality in fisheries, ranging from regulating waste discharge or setting gear at night when albatrosses are less active to using streamer lines that keep albatrosses away from baited hooks and trawl net cables. Despite great progress in bycatch mitigation, albatrosses still hold the dubious distinction of being among the most endangered family of birds, with 82% of albatross species having a threatened status.

The individual chapters, authored by leading albatross scientists and conservationists, provide the readers with up-to-date information on the biology and conservation of albatrosses globally. Topics covered include, among others, flight dynamics (describing how an albatross was able to travel 10 000 kilometers in 14 days using only twice the amount of energy of a bird at rest), population dynamics, migration, conservation on land and at sea and the effect of changing climate and ocean conditions on albatross populations. Julian Fitter wrote the final section of the book, providing detailed species accounts and a quick reference table. For each species, Fitter provides 1–2 pages of text summarizing taxonomy, conservation status, species

description, morphometrics, population size and range, breeding biology, diets and threats. Fitter’s accounts are concise but densely packed with the most current data available; they are an excellent reference in themselves.

My criticisms of this book are few and very minor. The photo captions are printed in such light-colored text that they are difficult to read. In Part 3, the Introduction to Albatrosses (*Diomedea* spp.), Mollymawks (*Thalassarche* spp.), and Gooneys (*Phoebastria* spp.) section lacks the overview paragraph of *Phoebastria* provided for the other two groups. Also, the *Where to See Albatrosses* section is limited. While it is understandably impossible for this list to be exhaustive, I would suggest at least listing a webpage that could be updated, and soliciting expert and local knowledge. For example, in the North Pacific alone, one of the easiest places to see Laysan Albatrosses (*Phoebastria immutabilis*) is at Kilauea Point National Wildlife Refuge on Kauai, Hawaii. Midway Atoll was the only location in Hawaii noted in the book, which is far more difficult and costly to reach, although well worth a visit nonetheless. Also, one need not travel as far as Attu in the Aleutian Islands of Alaska to reliably see Short-tailed *P. albatrus* along with Black-footed *P. nigripes* and Laysan *Diomedea immutabilis* albatrosses. There are also pelagic birdwatching trips from numerous ports along the west coast of North America (only central California was listed) where albatrosses are consistently observed. While it is understandable that not all locations could be included, directing the reader to a comprehensive list or information exchange would be most helpful.

In summary, this is an exceptional collection of current knowledge, lore and photographs of these ocean wanderers that inspire wonder in anyone who has encountered them. For those who have not yet been so fortunate to see albatrosses in the wild, this book will provide as close of an encounter as possible without finding them on a remote island — or, better yet, on the high seas where albatrosses are best observed in their element.

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HEALTH OF ANTARCTIC WILDLIFE

Kerry K.R. & Riddle M.J. (Eds). 2009. New York: Springer. 470 pp. Hardcover. ISBN 978-3-540-93922-1. US\$309.00

This book provides a thorough overview of the current state of knowledge on health and disease in Antarctic wildlife. It also focuses on current information gaps and on the real and perceived risks to wildlife health from human activities in the Antarctic environment. The terms “health” and “disease” are used in their broadest sense to encompass the presence of pathogens as part of normal ecological processes as well as those situations in which they can pose deleterious effects to wildlife populations. In addition, both infectious and non-infectious causes of disease are discussed.

The text is aimed at a broad audience, including veterinary and biological scientists, policy-makers and administrators. It is

therefore invaluable for scientists studying health and disease in the Antarctic and provides critical insights to those responsible for the management of this territory. The book combines comprehensive reviews of the literature with case reports, detailed treatment of specific issues such as measuring stress in wildlife or impact of tourism, and workshop reports with thorough risk assessment and prospective response plans. Despite this range of material, the book flows easily, as it is thoughtfully and carefully edited. The 17 chapters are presented in two parts: “Wildlife Disease,” which consists of reviews, case studies and health assessments, and “External Factors,” which covers the environmental, administrative and legal aspects.

The first part (chapters 1–9) reviews the range of diseases reported in Antarctic animals and presents case studies of mortality events in Adélie Penguins *Pygoscelis adeliae* and New Zealand Sea Lions *Phocarctos hookeri*, as well as health assessments of Weddell *Leptonychotes weddellii* and Leopard *Hydruga leptonyx* seals. The review chapters are thorough and include references to older literature and technical reports that are hard to access for those not based in institutions focused on Antarctic research. Most information is about phocid seals and birds, with little emphasis on cetaceans and otariids, but this presumably reflects the knowledge base to date. The reviews are not restricted to lists of pathogens but provide some interpretation of findings to date and useful comments on significance and future research needs and directions. Unfortunately, the seabird section focuses mainly on flying birds and leaves out detailed reports on penguins. While the authors of this section refer to previously published reviews, it would have been nice to have all the information in one place. The case report chapters are detailed and complete, present some new data and illustrate the difficulties of performing health studies and mortality investigations in Antarctica. The two seabird cases discussed include a description of infectious bursal disease virus (IBVD) in selected species and an unusual mortality event affecting Adélie Penguins. Both cases highlight the importance of unbiased evaluations; it was found that IBDV was not introduced to Antarctica by humans and that the penguin mortality was caused by trauma and severe weather conditions instead of disease.

The second section of the book discusses factors that can influence health, some unique to Antarctica and some more general, such as stress. The section on Antarctic weather describes climatic characteristics that make this continent and its wildlife unique and discusses future climate-change scenarios and their potential impact on disease patterns, all of which are timely observations necessary for adaptive planning. The chapters on the impacts of human activities, including human settlements, pollution, fisheries bycatch, sewage and tourism, are very detailed and present abundant information that combines public and animal health aspects. Some chapters focus on documented human impacts on wildlife health (i.e., from fisheries), while others expand on potential risks and threats and the need for detailed monitoring and for implementing preventive measures. Sewage treatment seems to be a critical aspect on which there is no unique or high-standard approach; that should come to the attention of managers. The information presented in this section is useful not only to readers interested in Antarctica, but also to those involved in coastal management worldwide. The final two chapters on programs, treaties and legal framework will

be valuable to managers and policy-makers, as they detail how these agreements deal with animal health, the importance of applying a precautionary approach and the need to focus on prevention. Overall, the information is succinctly presented, and the references are extensive, providing details of where to access further literature. Although there is no evidence to suggest that human activity has introduced exotic diseases into Antarctic wildlife to date, human activities have affected the previously pristine Antarctic environment, and these effects are clearly presented and steps to minimize risks described.

There are six appendices. Three contain relevant, practical information for conducting health and mortality investigations of Antarctic wildlife. They include detailed protocols on sample collection for pathological analysis (Appendix A, limited to birds) and for toxicological analysis (Appendix B) as well as a response plan for unusual mortality events (Appendix F). The other three appendices are reports from recent workshops on diseases of Antarctic wildlife, which expand on risk assessment of the introduction and spread of pathogens by human activity and recommend practical preventive measures. All of the appendices provide useful and straightforward information for management and field operations involving wildlife health in Antarctica (and anywhere else).

In summary, this book is a comprehensive collection of discussions, reviews and case studies that look at what is known, what must be taken into consideration in the near future and what ramifications human activities across the globe have on Antarctica. It also poses a number of scenarios (legal, political and environmental) for governments and policy-makers in the context of the Antarctic governance system. This book is thus a high-quality text that I thoroughly recommend to all those working for the conservation of Antarctica, including managers and policy-makers entrusted with the protection of this vulnerable continent. A significant drawback to the reach of this invaluable text might be its cost, which, at \$309, could be prohibitive for some of its potential readers (i.e., students).

The Antarctic is an extraordinary place, a living laboratory and a crucial driver of the global weather system. Its environment is fragile and vulnerable, and our responsibility to better understand and better conserve its extraordinary qualities is paramount. Contributions such as this book bring us a step forward in this direction.

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