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BOOK REVIEWS

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Shorebirds. An Illustrated Behavioural Ecology.—Jan van de Kam, Bruno Ens, Theunis Piersma, and Leo Zwarts. 2004. KNNV Publishers, Utrecht, The Netherlands. 368 pp. ISBN 90-5011-192-0. € 49.95 (cloth).

For those with an interest in shorebirds (or waders for much of the world), the release of a book that focuses on the behavioral ecology of these fascinating waterbirds is a rare and welcome event. Further discovering that the book centers on studies by the strong Dutch group of ecologists led by Bruno Ens, Theunis Piersma, and Leo Zwarts with photos by Jan van de Kam, stimulates the interest even further as this group has excelled in publishing results of their innovative, collaborative studies of coastal shorebirds ranging from the Arctic down into western Africa.

Opening the book, the first thing that struck me was its stunning graphic nature. KNNV Publishers should be commended; this is not a dry science book with a few illustrations thrown in to break up space. There are over 290 breathtaking photos liberally distributed throughout the volume, almost all by the senior author Jan van de Kam. The photos alone make this book worth buying due to their high quality and interesting composition; for instance see his photos of shorebirds with young on and around the nest in the chapter ''Reproduction''. Additionally, Dick Visser, who has made so many scientific figures for these Dutch writers in the past, deserves special acknowledgment for creating most of the book's figures that are, without exception, visually pleasing and informative. All who create scientific figures for publication would benefit by studying his art.

Scientifically, the book is strong, but reading the first two chapters reveals a discrepancy between the book's title and its contents. When first published in Dutch, the book was called the ''Ecologische Atlas van de Nederlandse Wadvogels'' which literally translated means ''Ecological atlas of the Netherland's mudflat birds''. The first chapter, ''Tidal Areas'', describes some of the physical and biological characteristics of tidal flats around the world, but especially those of northwestern Europe. The second chapter, ''Portrait Gallery'', attractively presents information on the common waterbirds (most are shorebirds but not all as evidenced by species accounts of birds like the Great Cormorant [*Phalacrocorax carbo*], the Spoonbill [*Platalea leucorodia*], and the Common Eider [*Somateria mollissima*]) of northwestern Europe, including distribution maps and life-history summaries.

Of the six book chapters, not until the third chapter, ''Migration'', does the book delve into the behavioral ecology of shorebirds. This chapter describes the flyways and some of the sites that waterbirds use, primarily along the East Atlantic Flyway. There is talk about different migration patterns of shorebirds, details on how shorebirds make decisions about migration, discussion on how they navigate, and fascinating information on the migration physiology of shorebirds. Reading along, it becomes clear that this publication is not really a book designed to synthesize the behavioral ecology of shorebirds. Rather, this book is an illustrated celebration of the results of years of study by this group of eminent ecologists fascinated by factors influencing life history cycles of various coastal waterbirds occurring along the East Atlantic Flyway. Behavioral ecology is one of the key, but not only, connecting themes of the book.

The next chapter, ''Food'', goes from presenting research on decisions shorebirds make when foraging (most of this chapter is dedicated to the migrating and wintering periods) to the ecology of certain common prey items of shorebirds such as the ragworm (*Hediste diversicolor*) and fiddler crabs (*Uca* spp.). The authors present studies attempting to answer various questions. Do shorebirds forage optimally? Why are certain prey selected and not others? Like the ''Migration'' and ''Food'' chapters, the ''Reproduction'' chapter focuses almost entirely on shorebirds. A variety of topics are covered ranging from a discussion of what is fitness, to sexual selection, to techniques for studying reproduction in birds, including DNA fingerprinting. While awkwardly organized, solid, stimulating science is packed into the chapters and studies are well referenced (although reading through the 1010 literature citations, roughly 98% of them were by European authors despite a significant body of literature on shorebirds from other parts of the world). The final chapter, ''Looking into the future'', begins with the question ''Is the increasing human pressure on our planet's limited resources threatening the survival of waterbirds?''. Mirroring the whole book, this chapter jumps around in mysterious ways with subheadings ranging from ''Counters and twitchers'' to ''What is carrying capacity'' to ''The convention circus''. However, the contents are interesting and informative, and the chapter's spatial scale is more global than that of others.

If you are in search of a clear outline of behavioral ecology or a book to organize a graduate level class around, this is not the book I would recommend. Topics bounce around too much, there is an inadequate table of contents (pictures and figures are not even referenced), and coverage of various topics is spotty. Nevertheless, there is an incredible amount of useful information in this book. Those who are interested in shorebirds, other waterbirds, and coastal wetland re-

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lated issues will be engaged by this quirky and thoroughly enjoyable book. It is a fascinating blend of top-rate science and popular writing, chock-full of great graphics, and well worth reading. Its price, roughly $65.00 (US), while not cheap, is a deal in this day of expensive books.—NILS WARNOCK, Wetlands Ecology Division, PRBO Conservation Science, Stinson Beach, CA 94970. E-mail: nwarnock@prbo.org

Life along Land's Edge: Wildlife on the Shores of Roebuck Bay, Broome.—Danny I. Rogers, Theunis Piersma, Marc Lavaleye, Grant B. Pearson, and Petra de Goeij. Photos by Jan van de Kam. 2003. Department of Conservation and Land Management, Kensington, NSW, Australia. 162 pp. ISBN 0-7307-5540-1. AU$39.95 (hardcover).

This book is a delight for bird enthusiasts, as well as for people interested in bird habitats and international conservation. Its focus is Roebuck Bay near Broome, northern Australia, a location of global importance for long-distance migrants along the Asian-Australasian flyway. As this tastefully designed book shows, the unique location of Roebuck Bay has sparked much of the Australian research on shorebird migration and stopover ecology conducted by hundreds of skilled amateurs and international researchers.

Written by a fascinating Australian-Dutch ensemble of at least six ''mudbashers''—birdwatchers, doctoral students, and senior scientists—this publication is a gem. It does an outstanding job of combining the pure fascination of migratory birds with brilliant habitat descriptions and presentations of scientific findings. Without doubt, the attractive layout and design, the maps, and above all the outstanding shorebird and habitat photos by the international wildlife photographer, Jan van de Kam, will enchant the arm-chair reader as well as the (shore-) bird enthusiast, avian researcher, and scholar; these photographs are thrilling and must be among the world's best on the subject.

Studies by the authors started in Roebuck Bay in 1996, and this globally important stopover site for long-distance shorebird migrants became famous for its intense mudflat studies, shorebird radio-telemetry, wader cannon-netting, and leg-flagging and banding projects (including being the home of leg-flag and band recoveries from such far away locations as Papua New Guinea, China, Korea, Japan, Mongolia and Russia). Roebuck Bay also hosts the Broome Bird Observatory and draws in ''waderologists'' and researchers alike from the entire world. Its natural beauty, high species diversity and huge bird abundance make Roebuck Bay a convenient but spectacular paradise for ''shorebirdoholics.'' This brilliant overview of birds and their fragile habitats will not only provide the reader with a detailed description of the geology, tides, beaches, mudflat ecosystem processes, food webs, and human history but will also help the reader to understand why the tropics have the most productive mudflats and consequently attract huge numbers of migratory shorebirds.

The 162 pages, divided into eight chapters, deal with issues like ''Why is Roebuck Bay so special?'', ''Tropical Seasons,'' ''Australian Birds,'' and ''People and the Bay.'' I really like the table that provides for more than 20 shorebird species the minimum estimates of the flyway population as well as the highest single counts in Roebuck Bay. Advanced and complex research questions such as mudflat ecology, energy balance of migrants, heat stress, fuel, and predator-prey issues are well explained. The index of plants and animals is very helpful and well arranged, too.

As displayed in the superbly colorful photographs, the Roebuck Bay area offers not only extensive sand beaches and mudflats, but also mangrove forests, salt marshes, and plains, all of which support a distinct assemblage of species (e.g., plants, mussels, snails, crabs, lobsters, fish, snakes, birds and manatees).

I also enjoyed the short section on Aboriginees, who had already valued locations like Roebuck Bay for thousands of years due to their productive ocean and wildlife. The international pearling industry was attracted to the area in the 1880s, but declined; tourism is probably now the major player in Broome. Thus, shorebird habitat in Roebuck Bay has remained relatively intact over the past century but is constantly challenged nowadays.

This book is attractive to a wide audience ranging from naturalists to birdwatchers, tourists, and conservationists. It is not a purely scientific treatise, but is suitable as an introductory textbook on migratory shorebirds and their habitats and could be used as an additional reading for undergraduate students. Complex biological topics are explained in delightful and lay terms. For my taste, the short chapter on conservation challenges facing Roebuck Bay could be longer and more explicit, especially regarding the devastating impacts of development and infrastructure. However, the beauty of this book, as well as the location and creatures it describes, all speak for themselves. Without any doubt this a major publication for Australia and for every international bird, migration, and shorebird habitat enthusiast.—FALK HUETTMANN, Biology and Wildlife Department, Institute of Arctic Biology, University of Alaska-Fairbanks, Fairbanks, AK 99775, USA. E-mail: fffh@uaf.edu

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