BOOK REVIEWS

EDITED BY JEFFREY S. MARKS

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The Northern Goshawk: Ecology, Behavior, and Management in North America. By Thomas Bosakowski. 1999. Hancock House Publishers, Blaine, WA. 80 pp., 63 color figures, 3 tables, 3 appendices. ISBN 0-88839-454-3. Paper, $35.—This publication is the first in a proposed series by Hancock House Publishers entitled "Hancock Wildlife Scientific Raptor Series." The publishers are interested in publishing "... serious full-length papers on the ecology, behavior and management of the world's diurnal and nocturnal raptors." Initiating this series with a book on the ecology, behavior and management of the Northern Goshawk (*Accipiter gentilis*) is an excellent idea because similar books have not been written on this controversial species. The book focuses primarily on the widespread North American subspecies, *A. g. atricapillus,* and excludes most information from other subspecies. Thus, unlike books in the Poyser series (e.g., Watson 1997), this book doesn't synthesize and integrate the extensive Eurasian literature on this species with the North American literature, which I found disappointing. The book is organized into six chapters: (1) Introduction to the Northern Goshawk; (2) Feeding Ecology; (3) Habitat Ecology; (4) Reproduction, Nesting Behavior and Population Biology; (5) Survey Techniques; and (6) Habitat Management. Following Chapter 6 are literature cited, data tables and appendices (Appendix A provides forestry conversion factors for nest-site measurements, and Appendices B and C are examples of field data forms).

Bosakowski defines the target audience as "... people keenly interested in North American goshawks or raptors in general." I interpret this to mean the layperson as well as the raptor biologist and have written this review to evaluate the book's potential interest to both audiences.

By far the greatest strengths of the book are its excellent summaries of the species' regulatory (Chapter 1) and management (Chapter 6) history in North America. In the final chapter, Bosakowski writes a thorough and interesting review of the limited published and largely unpublished literature on goshawk management. He ends this chapter with a synthesis of ideas that will be very useful for generating future management plans for this species. His recommendations are thoughtful and scientifically sound, and they convincingly support the notion that biologists can develop sound conservation strategies independent of the sector in which they work (Bosakowski is a wildlife biologist working in the private sector).

However, the chapters on ecology and behavior (Chapters 2 to 4) were not as thorough and informative as the management chapters. With the exception of papers by Bosakowski and colleagues, many recent papers on goshawk ecology were not cited (e.g., Siders and Kennedy 1996, Ward and Kennedy 1996, DeStefano and McCloskey 1997, Erdman et al. 1998, Rosenfield et al. 1998). Because so little of the current literature is incorporated into the book, Bosakowski's summaries of diet, habitat and demography differ little from previous reviews. For example, Squires and Reynolds (1997) wrote an excellent review of the species' ecology and behavior that includes tables with comparable information to Bosakowski's Figures 10 to 12 (diet summaries) and Tables 1 to 3 (habitat and demography summaries). Indeed, the diet data presented in Figures 10 to 12 are only a subset of the more extensive data set in Squires and Reynolds (1997). The fact that Bosakowski does not acknowledge the extensive reviews in Squires and Reynolds is puzzling because he cites this work to support other points in his book.

In addition to the aforementioned topics, Bosakowski summarizes field methods for locating goshawk nests and some of the methods available to quantify goshawk habitat and diet. His discussion of methods is inconsistent in its degree of evaluation, and he does not present any of the methods in a scientific context. For example, his summary of the methods used to locate goshawk nests is very thorough, but he doesn't discuss approaches for

estimating population size and trends with the sample of nests located with the survey techniques. In addition, he goes to great lengths to describe how to calculate food-niche metrics as a post-hoc method of analyzing dietary data, but he provides no insights into the types of *a priori* questions an investigator could address with these metrics, nor does he demonstrate how to interpret them. Perhaps this is beyond the scope of the book, but particularly in a book targeted for the layperson, Bosakowski's approach could promote collecting field data in the absence of a question and an appropriate study design. These types of data are of limited utility in addressing the serious conservation questions concerning species such as the Northern Goshawk.

In terms of presentation and format, the book is well organized and very readable. However, the color figures and tables are not embedded in the text, and the figures are grouped by size and thus are not in numerical order. This makes it difficult to link the graphics with the text.

In summary, I recommend this book to biologists and interested amateurs who desire a summary of Northern Goshawk management in North America, but I do not recommend it as a scholarly review of the ecology and behavior of goshawks. Perhaps it will be appreciated by those who would rather have their knowledge of natural history without the complications of science and scholarship and without the knowledge of the many fascinating recent developments in the study of Northern Goshawk ecology.—**Patricia L. Kennedy, Department of Fishery and Wildlife Biology, Colorado State University, Fort Collins, CO 80523 U.S.A.**

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Birds and Power Lines. Edited by Miguel Ferrer and Guyonne F. E. Janss. 1999. Quercus Publishing, Madrid, Spain. 240 pp., numerous figures and tables. ISBN 84-87610-08-0. Cloth, $40.00.—*Birds and Power Lines* is a compilation of papers dealing with avian interactions with powerlines. This book is timely because of the recent lawsuit between Moon Lake Electric Association (MLEA) and the United States Fish and Wildlife Service (USFWS). In 1999, MLEA was prosecuted by the USFWS for electrocuting 13 birds of prey. This landmark case resulted in MLEA agreeing to a settlement that included a fine and restitution of $100,000. Accordingly, the MLEA case has raised awareness of the electrocution problem.

The book provides a very good discussion on how to properly design studies of collisions and electrocutions. Kjetil Bevanger of the Norwegian Institute for Nature Research states that avian collision/electrocution investigations too often are conducted without properly designed sampling protocols. Chapter I by Bevanger presents schemes for estimating electrocution and collision mortality and also provides methodology for designing sampling procedures for collisions and electrocutions. An excellent section on bias corrections and data analysis is also provided, making this chapter a valuable reference for anyone planning to study avian collisions or electrocutions.

Good examples of collision studies are provided in Chapters II and III from Spain and Sweden, respectively. Brothers Juan and Javier Alonso surveyed 100 km of 220 to 380 kV lines in Spain for

an entire year. They discovered 230 dead birds of 53 species and concluded that collision problems were mostly compensatory. However, collisions may still be a serious problem for endangered species.

Sven Mathiasson presents results from a study of Mute Swan (*Cygnus olor*) collisions in Sweden. The author concludes that collisions can be acute in certain locations but are a minor cause of overall mortality for swans. It is important to mention that whether mortality is additive or compensatory may not be relevant to utility managers in the United States. All migratory birds are protected under the Migratory Bird Treaty Act, and the USFWS may simply require mitigation if collisions occur.

Little has been published on the effectiveness of various measures used to mitigate collisions and electrocutions. In Chapter IV, the Alonso brothers present a paper on the effectiveness of marking overhead static wires to reduce collisions. Transmission lines with a history of collisions were monitored before and after overhead static wires were marked with red PVC spirals to make them more visible. Flight intensity and collision rates dropped by 60% after the wires were marked. These results should be very exciting for managers throughout the world who deal with utility collision problems.

Two chapters (V and VI) address raptor electrocution issues. Chapter V is an overview of North American work that was compiled into the Avian Powerline Interaction Committee (APLIC) publication *Suggested Practices for Raptor Protection on Powerlines: The State of the Art in 1996. Suggested Practices* is the most comprehensive document on the biological and technical aspects of North American raptor electrocutions and can be obtained through the Raptor Research Foundation. Readers looking for a single reference source for North American electrocutions should obtain a copy of *Suggested Practices.*

Suggested Practices does not, however, specifically address electrocution issues on distribution power grids that are constructed differently from those of North American systems. Chapter VI by Guyonne Janss and Miguel Ferrer provides an excellent overview of bird electrocution problems in Europe. Van Rooyen and Ledger also present information on electrocutions in South Africa in Chapter IX.

The chapter by Janss and Ferrer provides a discussion of steel and concrete poles. Although most utility companies in North America construct poles used to support distribution powerlines with nonconductive wood, this practice is changing. Recent alterations in the manufacturing process of steel poles are making steel poles more attractive to North American utility managers. Substituting steel and concrete for nonconductive wood presents new problems for perching birds because the birds can be electrocuted simply by touching one wire and a conductive pole. Janss and Ferrer state that body length becomes the key measurement on conductive poles (versus wingspan on wooden poles) and also note that mitigation measures for conductive poles are different from those for wooden poles.

Chapters VII and VIII address nesting issues on utility lines. Although avian interactions with utility facilities often have negative consequences for the birds, utility structures also can have benefits. Chapter VII by Castellanos, Ortega-Rubio and Arguelles-Mendez discusses the installation of utility structures associated with salt production at the Ojo de Liebre and Guerrero lagoon in Mexico. The structures significantly increased Osprey (*Pandion haliaetus*) production, and nesting success was higher on man-made substrates.

Navazo and Lazo present a paper on the problems associated with birds nesting on transmission line towers in Spain. The authors conducted an extensive survey of 220 and 400 kV lines to evaluate nest-site characteristics. They reviewed 4000 towers and were able to identify problematic structure types by habitat for particular nesting bird species. This paper is a good example of how biologists can develop data as an important tool to allow utility companies to effectively address nesting issues.

Chapter IX addresses collision and electrocution issues in South Africa. Van Rooyen and Ledger state that collisions and electrocutions constitute a significant influence for several threatened species. Although the authors have developed a strategic partnership with ESKOM to reduce problems, they note that little attention has been given to this issue in the rest of Africa. The authors propose that all financial and technical aid packages requiring powerline construction specify that lines are to be constructed "bird friendly."

Birds and Power Lines is the first book to address the international problem associated with avian interactions with powerlines. The book is well written and will be a valuable resource for anyone who studies these issues.—**Richard Harness, EDM International, Inc., 4001 Automation Way, Fort Collins, CO 80525 U.S.A.**