

BOOK REVIEWS

EDITED BY JEFFREY S. MARKS

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Demography of the Northern Spotted Owl.

Edited by Eric D. Forsman, Stephen DeStefano, Martin G. Raphael and R.J. Gutiérrez. 1996. *Studies in Avian Biology*, No. 17. v + 122 pp., 40 figures, 42 tables, 1 appendix. ISBN 0-935868-83-6. Paper, \$20.00.—An unprecedented amount of effort has gone into studying the demographics of the Northern Spotted Owl (*Strix occidentalis caurina*), largely because of controversy surrounding its use of commercially valuable old forests in the Pacific Northwest. This volume results from a 12-d workshop held in Fort Collins, Colorado in December 1993. The workshop was requested jointly by the Secretaries of Agriculture and Interior for the purpose of examining all existing demographic data resulting from mark-recapture studies of Northern Spotted Owls. Some researchers declined to participate, but the results of 11 demographic studies conducted by federal and university scientists were included in analyses completed at the workshop. To give some idea of the magnitude of the effort represented by these studies, the study areas covered an area of 45 846 km², including an estimated 20% of the range of the Northern Spotted Owl. A summary report was prepared following the workshop, submitted to the aforementioned secretaries and included as an appendix in land-management planning documents. This volume expands on that treatment by including background papers not included in the summary report.

The volume is organized in three main sections: Introduction and Methods, Demography of the Northern Spotted Owl and Synthesis. It also contains a comprehensive list of references and an appendix that lists the symbols and acronyms used in the text.

The introductory section contains three chapters. "Biology and Distribution of the Northern Spotted Owl," by R.J. Gutiérrez, provides a brief overview of natural history. The level of information provided seems appropriate for this volume. The review is not intended to be exhaustive, or to supplant existing

literature reviews, so it will add little for readers already familiar with the owl. "History of Demographic Studies in the Management of the Northern Spotted Owl," by R.J. Gutiérrez, E.D. Forsman, A.B. Franklin and E.C. Meslow, provides a good overview of watershed events in the management and conservation of the owl and of how demographic data were used in major planning efforts and decisions. This interesting and informative chapter makes a strong case for the utility of demographic data for management planning and for stimulating new areas of research. The third chapter discusses "Methods for Collecting and Analyzing Demographic Data on the Northern Spotted Owl" (A.B. Franklin, D.R. Anderson, E.D. Forsman, K.P. Burnham and F.W. Wagner). This chapter provides an overview of the demography study areas included in the workshop, field methods used in those studies and analytical methods used in the workshop. Methods, underlying assumptions and potential biases are clearly discussed, making this section highly relevant to readers interested in the Northern Spotted Owl and to those interested in demographic analysis in general.

The demography section contains nine chapters that discuss the 11 study areas included in the workshop (some chapters include two areas). The list of authors includes most (but not all) of the researchers who have been heavily involved with Northern Spotted Owls. Each chapter includes a section on study area(s), field and analytical methods (especially where they deviate from the methods discussed by Franklin et al.), results, discussion and summary. Thus, there is considerable redundancy. This was unavoidable given the nature of the material, however.

This demography section is the heart of the volume in the sense that the chapters present and discuss the results of the individual studies. The chapters are interesting and generally well written, and they contain many details about features unique to individual studies that are lost in the summary chapters. Nevertheless, because these studies parallel each other to such a great extent, I suspect that the average reader will find the summary chapters more interesting.

The synthesis section consists of two concluding chapters. In "Meta-analysis of Vital Rates of the Northern Spotted Owl," K.P. Burnham, D.R. Anderson and G.C. White used all of the demographic data available on the Northern Spotted Owl to estimate vital rates (survival and fecundity) and current status of the population. One of the strengths of the demography studies was that methodology was standardized across studies, so that data sets could be combined in a meta-analysis (a technique for combining results of separate but similar studies). This analysis has greater statistical power than analyses based on individual studies and yielded two lines of evidence suggesting that the population of Northern Spotted Owls is declining: an annual rate of population change (λ) less than 1 and a declining trend in survival rates of adult females. Further, the authors argue that the spatial extent of the studies combined with replication across study areas allows inferences derived from the meta-analysis to be extended to the overall population of Northern Spotted Owls, rather than be restricted to populations of banded birds on each of the study areas.

These results are extremely important from a conservation planning standpoint, but the authors of the chapter on the meta-analysis pointedly refrained from speculating on their implications to land managers. Consequently, a separate set of authors close the volume with a chapter on "Use, Interpretation, and Implications of Demographic Analyses of Northern Spotted Owl Populations" (M.G. Raphael, R.G. Anthony, S. DeStefano, E.D. Forsman, A.B. Franklin, R. Holthausen, E.C. Meslow and B.R. Noon). This chapter provides an excellent and stimulating discussion of the uses, interpretation, limitations and potential biases of demographic data, as well as recommendations for additional analyses. It should provide abundant food for thought for land managers and researchers, and the concepts discussed are relevant to other raptors.

In summary, this is an interesting, useful and important document. The development of strong research programs and techniques may be the most positive result of the controversy surrounding the Northern Spotted Owl and land management. The demographic studies described in this volume are unique because of their spatial extent, the intensive long-term sampling (up to nine years) involved in at least some of the studies and the standardization of methods across studies. These studies, many of which are ongoing, have already made signifi-

cant contributions to land management and to both applied and theoretical research.

The workshop discussed here also was unique. It brought together a wealth of expertise on both Northern Spotted Owls and demographic analysis. The analytical approach was rigorous and thorough, and methods, assumptions and potential biases were clearly documented. Consequently, this volume represents the state-of-the-art in terms of demographic analysis of Northern Spotted Owls. It should thus be a valuable reference for anyone concerned with the biology and conservation of the Northern Spotted Owl. At least parts of this document should be of general interest as well, including the introductory and synthesis sections. The methods and concepts discussed are relevant to anyone interested in analyses of raptor populations.—**Joseph L. Ganey, USDA Forest Service, Rocky Mountain Forest and Range Experiment Station, Flagstaff, AZ 86001 U.S.A.**

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Eagle Studies. Edited by B.-U. Meyburg and R.D. Chancellor. 1996. World Working Group on Birds of Prey and Owls, Berlin, Germany. xiii + 549 pp., numerous figures and tables, 2 color photographs. ISBN 3-9801961-1-9. Paper, \$30.00.—This volume contains 64 papers. The first examines genetic differentiation in five *Aquila* species in Europe, and the final paper discusses satellite tracking of nine eagle species in Europe, Asia and Africa. The other studies deal with 10 species (seven papers cover two species): Osprey (*Pandion haliaetus*; 3 papers), White-tailed Sea-Eagle (*Haliaeetus albicilla*; 18), Bald Eagle (*H. leucocephalus*; 2), Steller's Sea-Eagle (*H. pelagicus*; 1), Lesser Spotted Eagle (*Aquila pomarina*; 18), Imperial Eagle (*A. heliaca*; 10), Golden Eagle (*A. chrysaetos*; 8), Greater Spotted Eagle (*A. clanga*; 4), Steppe Eagle (*A. nipalensis*; 1) and Bonelli's Eagle (*Hieraaetus fasciatus*; 1). Most of the papers (46) are in English; 16 are in German and two in French (the German and French papers contain brief English summaries). Papers range in length from 1 to 44 pages.

Most of the papers were presented at three meetings: the International Symposium on the White-tailed Sea Eagle and the Lesser Spotted Eagle, in 1991 at Zielonka, Poland; the IV World Conference on Birds of Prey and Owls, in 1992 at Berlin, Germany; and the Third International Meeting of the Imperial Eagle Working Group, in 1993 at Királyrét, Hungary. The majority of studies originated in Europe or Asia, including the former Soviet Union, the former Eastern Block, Scandinavia, Japan, Pakistan, India and Israel. The editors recognize the variable quality of the papers and state in the Preface: "Since a large number of the manuscripts were not written in their authors' mother tongue a considerable amount of editorial work was also required. . . ." Considering this enormous task, I found no difficulty overlooking the occasional punctuation errors, awkwardness and verbosity.

Causes of eagle population declines or extirpation and partial recoveries in some areas are reported in many of the papers. Conservation programs described range from the need to protect nest trees to more extensive problems with foraging or migration habitats. For example, for the White-tailed Sea-Eagle in Southern Moravia, authors Mrlík and Horák stress: ". . . the preservation of sufficiently extensive tall and old forests near large water surfaces . . . and the elimination of any wood cutting or other disturbance at breeding sites during nesting . . ." In most areas the problems are complex and broad. Author Rodziewicz reports: ". . . in Poland the nests and their surroundings have been protected by law since 1984, and foresters have a positive attitude towards this protection, at least in some regions . . . in 1987 the Administration of State Forests in Olsztyn (northeastern Poland) employed two ornithologists to deal solely with the protection of rare raptors. Thus more dangerous are the threats to foraging habitat. The great political and consequent economic changes will result in development of agricultural methods with greater intensity. So the problem is not of protecting individual territories, but one of general agricultural policy in the regions of highest Lesser Spotted Eagle density." The essential importance of sustaining prey populations is interestingly described in several papers. Authors Vlachos and Papageorgiou characterize the key to the future of the Lesser Spotted Eagle in Dadia, Greece, as habitat management that will continue to sustain a high density of reptiles. Authors Bahat and Mendelssohn describe fascinating habitat in the Ei-

lat Mountains (southern Negev), Israel, in which two pairs of Golden Eagles foraged primarily on the spiny-tailed lizard (*Uromastix aegyptius*).

The book could be criticized for lacking any apparent theme in a hodgepodge of studies and status reviews. However, there is interesting information on eagle behaviors and distributions that previously has been unknown, or nearly so. The document also may provide valuable baseline records for many areas, especially in countries where research has been difficult to accomplish because of political turmoil. Authors Abuladze and Eligulashvili describe a conservation program they believe is needed for the White-tailed Sea-Eagle in the Transcaucasus, but lament that the program: ". . . is at present impossible because of various political, economic, and social problems." Author Abuladze describes a long-term program for raptor conservation in the Republic of Georgia. He states: "Unfortunately the present political and economic situation prevents this from being implemented. In such conditions, problems concerning wildlife are of little concern. Due to the most recent political circumstances, the research group of professional ornithologists has broken up. One can only hope that the present crisis will not last for ever, so that one day the work begun can be continued with greater efficiency."

Considering the logistical and political difficulties involved in many of the areas, it is impressive that so much good work has been done. In that context, I view this book as an apt tribute to persevering researchers, naturalists, managers and lay people who continue to struggle for the appreciation and protection of raptor populations and their habitats in Europe and Asia. Although this book may not be a high priority for personal purchase in most cases, it should be in university libraries.—**B. Riley McClelland, P. O. Box 366, West Glacier, MT 59936 U.S.A.**

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The Striated Caracara *Phalco boenus australis* in the Falkland Islands. By Ian J. Strange. 1996. Available from I.J. Strange, The Dolphins, Stanley, Falk-

land Islands. 56 pp., 17 color photos, 10 black-and-white photos, 9 figures, 2 tables. Paper, \$17.00.—Printed on glossy paper with two-column format, this publication resembles a high-quality brochure. Seventeen full-page color photographs portray the “Johnny Rook,” as it is known locally—now on a promontory surveying a vast colony of albatrosses, now investigating the author’s rucksack for scraps of food or bright objects to steal, now a flock of 30 or so devouring the beached carcass of a penguin. Mr. Strange, the author of a book on the Falklands (where he has lived most of his life), has studied caracaras with assistance from the National Geographic Society and others. Previous observations on this bird are scanty; some of the best were by none other than Charles Darwin.

After summarizing the history and distribution of *P. australis*, the latter including small islets off Cape Horn, Mr. Strange touches upon all aspects of the general natural history of this bird (e.g., nesting, fledging, behavior of adults and immatures, food and foraging habits). Smaller, fully labeled photographs, as well as the larger ones in color, convey much information. Once with a bounty on its head, or rather beak, the Johnny Rook now exists in tolerable numbers only on a few islets where one lands at the risk of shipwreck. Even on these remote locales, the insatiable demands of the world’s teeming masses for protein and fuel are despoiling the once limitless seas down to their very depths. The seabirds and seals are already showing the effects, and if they go, so goes the caracara. Ian Strange is among the outnumbered few who are striving to save at least a vestige of this wildlife.—**Dean Amadon, Ornithology Department, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024 U.S.A.**

dix. ISBN 0-691-01105-2. Cloth, \$24.95.—In this book, Max Terman provides a chronicle of the first seven years of interaction between himself and an “imprinted” Great Horned Owl (*Bubo virginianus*). The story remains unfinished, with Terman and “Stripey” (the name provided to the owl by one of Terman’s students at Tabor College) still in contact with each other in a barn on Stripey’s territory near the Flint Hills of Kansas. The book is remarkable for several reasons, not least of which is that Terman, through diligence and luck (and the use of radiotelemetry), was able to follow Stripey’s life from inept youth in captivity to membership in the local breeding population of wild owls.

The book is a refreshing blend of natural history observation, muse and candor; in the process of sharing in Stripey’s development we get to know something about Max Terman. Terman begins his narrative by taking us with him to the Hillsboro city park to retrieve a four-wk-old owlet, apparently abandoned by its parents and now starving. From there, we follow Stripey and Terman through the next several years of growth and discovery. Along the way, Terman shares his thoughts regarding the behavior and development of Stripey and other “imprints,” his concerns regarding Stripey’s ability to fit into owl society once released from captivity, his frustrations with his undertaking (especially the ups and downs of using radiotelemetry to follow Stripey’s movements), and his justified satisfaction when he finally witnesses Stripey’s wild offspring after years of effort by Stripey to secure a territory and mate.

Whether or not an imprinted owl can survive and reproduce in the wild is a question near the forefront of Terman’s thoughts, and he belabors this question throughout the book. By book’s end, we know that a young captive owl can “make it” in the wild as an adult, but is Stripey really an owl version of Konrad Lorenz’s greylag geese? I found myself questioning if an owl already four wk of age when exposed to humans is an imprint. I suspect not. I also question that the avoidance of humans was wired into Stripey’s system (p. 16). Nevertheless, because the book is written almost as a dialogue of discovery between Terman and himself, with the imprint question unfolding in parallel with the development of Stripey, his thoughts on this topic (especially regarding the period of fledgling dependency) are informative and fun to follow. And, much to my relief, Terman concludes (p. 146) that many birds considered imprints are ac-

tually "deficit birds," birds not imprinted on humans but lacking a full repertoire of normal acquired behaviors. Terman feels that many deficit birds can make it on their own, and as successfully as wild individuals, if they are carefully monitored upon release and gradually weaned from feeding stations while they learn to hunt. Whether or not this is true, these thoughts should be of special practical interest to rehabilitators.

A few comments peripheral to the book's main topic are incorrect. The Sutton Avian Research Center near Bartlesville, Oklahoma is not a raptor rehabilitation center, but was a center for raptor research, especially the reestablishment of the Southern Bald Eagle (*Haliaeetus l. leucocephalus*), and has since expanded its work to include population-level studies of prairie birds. Margaret Morse Nice was not "reborn as a naturalist" in Columbus, Ohio, but experienced her ornithological epiphany several years earlier on the banks of the Canadian River near Norman, Oklahoma. These inaccuracies detract not a whit from Terman's story of Stripey.

The book is mostly free of typos; I noted only one ("opportunity", p. 190). The black-and-white photographs enhance the narrative (who else has pictures of Stripey on his territory in Kansas?) and help make the bird and setting more personal.

Some, such as Stripey catching food (hot dogs and such) in the air (p. 76), are downright enlightening, especially for people unfamiliar with the ability of Great Horned Owls to capture bats on the wing. A few photographs are of such poor quality, however, that I question whether they should have been published. For instance, the leg-mounted transmitter shown on p. 17 is difficult to discern in the fuzzy photograph, leaving someone unfamiliar with such devices still unfamiliar; the photograph of the author radio-tracking Stripey (p. 84) also contributes little. The computer-generated map of Terman's farm and surroundings (where Stripey was released) helps the reader put place-names mentioned in the text in geographic perspective (although I don't understand why north was oriented to the right), but the visual attractiveness of the map suffers.

Messages from an Owl is entertaining, educational and exposes the reader to the thought processes of a scientist trying to get answers to some perplexing questions. It should appeal to the same professional and lay readership that enjoyed Bernd Heinrich's *One Man's Owl*, although the story of Stripey is carried much farther than that of "Bubo." Also, there is a "surprise ending" that I won't divulge.—**Paul Hendricks, Montana Natural Heritage Program, 909 Locust Street, Missoula, MT 59802 U.S.A.**