

## Ornithological Literature

Edited by William E. Davis, Jr.

THE GREAT BLUE HERON: A NATURAL HISTORY AND ECOLOGY OF A SEASHORE SENTINEL. By Robert W. Butler. UBC Press, Vancouver, British Columbia. 1997: 167 pp., 30 black-and-white photos, 24 color plates, 17 numbered text figs., 18 tables. \$39.95 (Canadian) (cloth).—This is a very nice book about a very interesting bird—the Great Blue Heron (*Ardea herodias*)—with a particular emphasis on the subspecies that frequents the northwest coast of North America, *A. h. fannini*. However, frequent reference to herons elsewhere broadens the scope and perspective of the book. It is more than just the study of a heron, however, it is the story of the ecology and conservation of a region. Robert Butler is certainly well qualified to tell this story—24 of the more than 150 references cited bear his name as an author. In the brief introductory chapter Butler outlines the aims of the book that include detailing the natural history of the Great Blue Heron, “a worthy symbol of the conservation of coastal habitats,” along the 27,000 kms of fragmented British Columbia coastline. Chapters that follow consider in detail the habitat of the heron (the shores of temperate rainforest), the heron’s food web, the sites where the heron has been studied year around, all with an historical perspective on interactions with man woven through the narrative. There are chapters on foraging, food and diet, social and territorial behavior, colonial nesting, habitat selection, population dynamics, and finally a chapter on the conservation of Great Blue Herons and the Strait of Georgia ecosystem. An epilogue concludes with the optimistic thought that many people are beginning to recognize that the environment provides more than just resources, and that restoring environments will yield great future dividends. Appendices report records of Great Blue Heron colonies, length-mass regression equations for fish, effects of increased disturbance on heron populations, and lists of scientific names of plants and animals.

The book is very well written. It is clear

that the author thoroughly enjoys his research on herons (including night-vision telescopic sleuthing), and his descriptions have an almost poetic touch: “I look back on the long hours spent watching herons catch fish as an enjoyable period of my life. Perched in the shade on a prominent location overlooking spectacular scenery, the smell of the sea and arbutus leaves carried on a warm breeze, gulls and shorebirds busily feeding along the mudflat—it was hard to beat,” or “On calm nights I often slept on the beach beneath the stars. I welcomed the silence of the night after a day in the colony, though the quiet was periodically disturbed by landing calls ringing from the forest.” Even his descriptions of natural history phenomena make for pleasant reading: “The delicate choreographed displays of a threatening heron are exquisite.”

I thoroughly enjoyed reading this book. It contained a great deal of interesting and important scientific information about Great Blue Herons, and a well articulated conservation perspective. I recommend it to anyone interested in avian biology or conservation.—WILLIAM E. DAVIS, JR.

A GUIDE TO THE IDENTIFICATION AND NATURAL HISTORY OF THE SPARROWS OF THE UNITED STATES. By James D. Rising. Illustrated by David D. Beadle. Academic Press, New York. 1996: 365 pp., 27 color plates with captions, 53 color range maps, \$42.00 (cloth).—Until the last three years, those of us fascinated by details of the natural history of sparrows in North America had only Bent’s life histories for a reference. With the publication of *Sparrows and Buntings—A Guide to the Sparrows and Buntings of North American and the World* in 1995, and now this guide, we have substantially more information of a recent vintage at our finger tips. This is a good book. Because of its less ambitious geographic coverage,

there is more information and greater detail for each species in this book.

Sixty-two species, from Olive Sparrow (*Embernagra rufivirgata*) through McKay's Bunting (*Plectrophenax hyperboreus*) are treated. Each species account includes information about identification, similar species, details of plumage color, voice, habits, habitat, breeding behavior, range, history, geographic variation, measurements, and technical references (for further reading). A clearly drawn, easily interpreted, color range map shows breeding, winter, and "all year" ranges for each species. Including state and provincial boundaries on the range maps facilitates their interpretation substantially. Where sufficient data exist, an additional color map, showing relative abundance, based on Breeding Bird Survey information, also is included as part of the species account. Though somewhat useful, the shading of the relative abundance maps is such that it is difficult to distinguish the shades chosen for the two middle classes of the four relative abundance categories mapped. In addition, the two middle categories of 5–20 and 20–50 individuals appear to overlap. One wonders how the computer mapping software dealt with abundances of 20 individuals and how one really should interpret the relative abundance maps.

The book is comprehensive in its coverage. Among the 62 "species" descriptions in the book are a few forms not yet elevated to full species status by the AOU Committee on Classification and Nomenclature in its 1998 check-list. These include Bell's Sparrow [considered a "group" of Sage Sparrow (*Amphispizabelli*) by AOU] and Red, Sooty, and Slate-colored Fox sparrows [considered "groups" of Fox Sparrow (*Passerella iliaca*) by AOU]. There also is substantial treatment of a number of "Alaskan rarities," including Pine (*Emberiza leucocephalus*), Little (*E. pusilla*), Rustic (*E. rustica*), Yellow-breasted (*E. aureola*), Gray (*E. variabilis*), Pallas's (*E. pallasi*), and Reed buntings (*E. schoeniclus*). Two other rare North American species, Yellow-faced (*Tiaris olivacea*) and Black-faced (*T. bicolor*) grassquits, reported occasionally from the southern U.S., also are described. I also appreciated the concise comments and descriptions of subspecies for Savannah Sparrow (*Passerculus sandwichensis*), Song Sparrow

(*Melospiza melodia*), and Dark-eyed Junco (*Junco hyemalis*), including tables of measurements illustrating geographic variation in size. Special introductory sections for most of the genera described in the book provide helpful additional information about intergeneric relationships among the sparrows and identify areas where more research is needed to clarify relationships among species and genera.

The illustrations by David Beadle add significantly to the book's appeal. In addition to excellent color plates, each species account is illustrated by a black-and-white drawing of the species. The artist has done an excellent job of capturing the subtle beauty of plumage colors for this generally somber-colored assemblage of species.

In general this is a good, solid, user-friendly reference book for a challenging group of North American species. It is small enough to be carried in the field, though not necessarily a "field guide" in the traditional sense. I recommend it to anyone as an exceptionally well illustrated, very readable introduction to North American sparrows.—CHARLES R. SMITH.

NATURAL HISTORY OF THE WATER-FOWL. By Frank S. Todd. Ibis Publishing Co., Vista, California. 1996: 490 pp., more than 750 color photographs with captions, 164 range maps, appendix. \$80.00 (cloth).—This visually stunning and informative book effectively portrays the diversity of behavior, ecology, and plumage of the more than 160 species of waterfowl. Its large format (10½" by 13") allows the author to display to best advantage the many fine photos that he has taken in pursuit of waterfowl and other birds, although even the heaviest binoculars will seem like featherweights after lifting this hefty tome! The book begins with introductions to natural history (Chapter 1) and taxonomy (Chapter 2), then proceeds to cover primarily typical waterfowl groups in the next 15 chapters (including chapters on "Waterfowl Oddities" and "Whitewater Ducks"). The chapter on waterfowl natural history includes a nice overview of this group and its adaptations, and many photos are included to illustrate typical comfort movements and postures. The photo legends throughout the book add infor-

mation that is sometimes not present in the text, including general information on birds. The level of detail varies for examples given in this chapter, creating some redundancy with future chapters, and many of the examples are from work on geese and swans. The inclusion of the term "gang rape" (p. 41) is inappropriate and unnecessary since the preferable terminology (forced copulation) is also used in the text, and references to "hyperactive" and "hot-blooded" males in photo legends depicting forced copulation attempts are regrettable and misleading. The taxonomy chapter includes a very brief coverage of past and current thoughts on waterfowl taxonomy. The author recognizes the need for further corroboration of more recent taxonomic treatments of this group (some of which have not been supported by recent findings), and, for consistency with other sources, he uses more traditional groups for subsequent chapters with a few exceptions.

Chapters 3–17 each begin with an overview of the similarities within the group being covered, including movements on land and in the air, basic calls, feeding habits, nesting and egg-laying, flocking, mating and family behavior, and migration. Individual species accounts follow, including descriptions of extinct species and separate accounts for each race. The description of each species is accompanied by a small color range map (on which race distributions are not delineated), and usually several excellent photos of the species in the wild. Valuable information on conservation, captive propagation, and human uses/conflicts is presented in addition to more detailed information on topics outlined in the chapter overview. Incubation period, time to fledging, conditions under which dump nesting data were collected, and nesting density are presented inconsistently within the species accounts, although further details on weight, egg and clutch size, incubation period, and fledging period are presented for each species (and race if appropriate) in the Appendix. Insights from the close observation of captives complement information from extensive field experience in many species accounts. Throughout these accounts, the author has inserted personal experiences and origins of some scientific names that add extra interest for the reader. I especially found interesting

the accounts of endangered species and races within various waterfowl groups.

The accounts of the northern geese (Chapter 5), swans (Chapter 6), and eiders (Chapter 14) are some of the most complete of the volume, demonstrating the author's experience with these groups and also information available from the scientific studies of The Wildfowl and Wetlands Trust in England. These chapters are full of photos, including all of the Canada Goose (*Branta canadensis*) races, and details on the Nene (Hawaiian Goose; *Branta sandvicensis*) reintroduction project and successful Barnacle Goose (*Branta leucopsis*) conservation. Nesting densities for the eiders are well-documented, as is the solving of the mystery of the location of Spectacled Eider (*Somateria fischeri*) wintering areas. Atypical waterfowl, such as the Magpie Goose (*Anseranas semipalmata*; Chapter 3); Cape Barren Goose (*Cereopsis novaehollandiae*), Freckled Duck (*Stictonetta naevosa*), Spur-winged Goose (*Plectropterus gambensis*), Comb Duck (*Sarkidiornis melanotos*), and Pink-eared Duck (*Malacorhynchus membranaceus*) (grouped as "waterfowl oddities" in Chapter 7); and screamers (Chapter 17) are covered quite extensively in accounts that highlight the unusual traits of these species and their continued puzzling taxonomy. The author groups together and covers well the white-water ducks (Blue Duck, *Hymenolaimus malacorhynchus*; Torrent Duck, *Merganetta armata*; and Salvadori's Duck, *Salvadorina waigiuen-sis*) in Chapter 10, describing adaptations to this demanding environment such as their sedentary lifestyle, territorial behavior, and diet of benthic invertebrates.

The sheldgeese and shelducks, sharing strong pairbonds and an aggressive disposition, are described in Chapter 8, including especially good information on the ongoing conflicts with humans when sheldgeese use crop lands. Presented in Chapter 9 is another very pugnacious group of waterfowl that includes three flightless species, the steamerducks. The chapters on the pochards (Chapter 13), sea-ducks (Chapter 15), and stiff-tailed ducks (Chapter 16) present many useful photos and information on feeding and diving adaptations. Also included in these chapters are fascinating accounts of the (probably) extinct Pink-headed Duck (*Rhodonessa caryophylla-*

cea), the extinct Labrador Duck (*Camptorhynchus labradorius*) and Auckland Islands Merganser (*Mergus australis*), and the only waterfowl obligate brood parasite, the extant Black-headed Duck (*Heteronetta atricapilla*). Accounts of the whistling ducks (Chapter 4), including the White-backed Duck (*Thalassornis leucanotus*), are informative but generally short because of a lack of detailed information for many species. This general lack of information available for southern hemisphere ducks is especially evident in short accounts for these species in Chapters 11 (perching ducks) and 12 (dabbling ducks). Chapter 11 covers many of the traditional perching duck group members while recognizing that the taxonomic organization of these ducks is still changing. The account of a well-studied species, the (North American) Wood Duck (*Aix sponsa*), was disappointing in its omission of available information on dump-nesting and other aspects of its natural history. In general, members of the large dabbling duck group receive more complete coverage, including more personal observations and photos by the author, although I found some aspects of the Andean Teal (*Anas flavirostris andium*) and Puna Teal (*Anas puna*) accounts at odds with my own observations.

The Epilogue presents a balanced treatment of threats to waterfowl populations and benefits greatly from the author's own experience with the continued conservation challenges that face this group. Overall, the book is written in a style that is easy to read; a glossary is included to aid the lay reader and the Index at the end of the book facilitates finding information on particular species. Scientific names are not presented in the book except for those of waterfowl species. There are few citations in the text and the bibliography includes mostly books, limiting the use of this volume as a scientific or research reference. Despite a few reoccurring grammatical problems, the writing style conveys well the thrill of viewing waterfowl and the author's enthusiasm about his experiences with this group of birds. This book is a treat to the eyes for anyone that appreciates birds, and in addition, is at the least a good overview of waterfowl natural history. Highly recommended as a visual, general reference book for anyone interested in waterfowl.—GWENDA L. BREWER.

FAIRY-WRENS AND GRASSWRENS *MALURIDAE*. By Ian Rowley and Eleanor Russell, illus. by Peter Marsack. Oxford University Press, Oxford. 1997: 274 pp., 9 color plates, numerous maps, tables and black-and-white line drawings. \$75 (cloth).—This fascinating family of birds is found only in Australia and New Guinea and consists of five genera: emu-wrens (*Stipiturus*) and grasswrens (*Amytornis*) found only in Australia, tree-wrens (*Sipodotus*) and russet-wrens (*Clytomyias*) of New Guinea, and the largest genus, fairy-wrens (*Malurus*) found in both. Several species of fairy-wrens have been intensively studied using color-banded populations and biochemical analyses and the results, particularly those relating to breeding biology, are intriguing and make for fascinating reading.

This fourth volume in Oxford University Press' series on bird families of the world provides a thorough review of this interesting family of birds by authors who have done much of the primary research on several of the species considered. The monograph is divided into two parts: the first consists of eight chapters dealing with various aspects of the biology, behavior, ecology, evolution, and conservation of the Maluridae; and the second consists of accounts of the 5 genera and 25 species that constitute the family. Chapter 2 discusses two centuries of the rather confused taxonomy of the Maluridae, including more recent biochemical studies. Chapter 3 deals with the environment, biogeography, and evolution, including plate tectonics and Gondwana breakup, past and present climates and vegetation, refugia and speciation during the past two million years, changes since human settlement, and the evolution of the Maluridae including the five main lineages of fairy-wrens and the grasswrens. Chapter 4 deals with morphology, locomotion, and feeding behavior of these largely insectivorous, ground, and shrub-dwelling birds. Chapter 5 discusses vocal communication and social organization, and includes a number of sonagrams, and a thorough analysis of courtship displays. The chapter also details the remarkable findings from electrophoresis and DNA fingerprinting studies focused on reproductive biology in fairy-wrens. Although monogamous and mated for life, extra-pair copulations outside of

the territorial family group in one study, accounted for more than three-quarters of the young! Chapter 6 is devoted to co-operative breeding and an analysis of helpers at the nest (mostly surviving young from earlier years). Chapter 7 contains a generalized life history study of the Maluridae, based mostly on long-term studies of fairy-wrens, and includes sections on nests and nest building, eggs, clutch size, number of broods, reproductive success, parasitism and predation, dispersal, and survival rates. Chapter 8, on conservation, traces the clearance and fragmentation of vegetation for agriculture, forestry, and grazing, and accompanying habitat degradation, introduction of alien plants, draining of wetlands, and changes introduced into fire regimes by Europeans. The author's analysis suggests that 5 species and 5 additional subspecies are currently threatened.

In Part II, brief accounts of each genus are followed by detailed accounts of each species. These accounts begin with descriptions of adult males and females in breeding and eclipsed plumages, of immatures and moult sequences, and typically continue with history of taxonomy, weights and measurements, field characters, voice, range and status, habitat, displays, breeding behavior, and life cycle. Each account is accompanied by a range map and sonagram(s). Additional brief accounts of groupings of species within genera are present where needed, e.g., a section on the four chestnut-shouldered fairy-wren species. The eight color plates are excellent. They include, where appropriate, depictions of adult males and females, immatures, eclipsed males, and subspecies. The color of the plates is excellent, although the breast of the Blue-breasted Fairy-Wren (*Malurus pulcherrimus*) appears bluer than I remember it in the field. A color figure, grouped with the plates, contains six photographs of typical Australian habitats. A glossary helps with terms like "sapphire," "spinifex," or "billabong" that might not be familiar to everyone. The bibliography includes more than 500 references.

This is a well-written, thoroughly researched, monograph. I looked through the Acknowledgments for people who I know have done work on malurids—they were all there. This is a comprehensive book, easy to read, and loaded with interesting information

about a fascinating and lovely family of birds. Anyone working on Australasian birds or with interest in avian breeding biology should have this book.—WILLIAM E. DAVIS, JR.

**AVIAN CONSERVATION.** By John M. Marzluff and Rex Sallabanks (Eds.). Island Press, Washington, D.C. 1998: 563pp. (no price given)—*Avian Conservation* is a collection of chapters of which about one half were presented in a symposium of the American Ornithologist's Union and Raptor Research Foundation meeting in 1996. The remaining chapters were solicited by the editors to fill gaps and to provide a land manager's perspective on relevant research for avian conservation. The book is divided into 7 parts and 31 chapters. Part 1 introduces the reader to the past and present approaches taken in conservation. Part 2 reviews a variety of techniques applied in conservation research including genetics, spatial modeling, indicator species concept, and monitoring landbirds. Part 3 provides examples of approaches used to conserve endangered and sensitive species. Part 4 deals with conservation of forested landscapes and Part 5 covers non-forested and urban landscapes. Part 6 examines conservation of birds outside North America and includes the European agricultural environment, research needs and applications for Neotropical birds, and conservation in Israel, Russia, the Mariana Islands and Australia. Part 7 is a discussion on making conservation research relevant to land managers. The aims of the authors are to review current research and identify information.

Marzluff and Sallabanks should be commended for assembling concise reviews of many important topics for conservationists and applications for land managers. Anyone interested in the latest information and status of projects aimed at conserving the Northern Spotted Owl (*Strix occidentalis*), Northern Goshawk (*Accipiter gentilis*), Hawaiian Goose (*Anser sandvicensis*), Red-cockaded Woodpecker (*Picoides boralis*) and others will find this book very useful. Also anyone wishing to apply techniques such as GIS modeling of populations, understanding threats to seabirds, invasions by exotics or affects of urban en-

vironments on birds should read this book. Island Press has published an attractive book in an easy-to-read format.

This book contains a wealth of information and is an excellent review of the topic although it is biased in favor of North American issues—6 of the 31 chapters were devoted to areas of the world outside the USA, 2 of those were written by Americans, and 50 of the 58 contributors were from American institutions. Consequently, the conclusions were strongly biased towards problems perceived by Americans. The topic of bird conservation is immense and the book would have been more successful if it had dealt only with birds that use the USA. A minor annoyance is the assumption by many American authors that all readers know that place names such as Pacific Northwest, Midwestern States, the Snake River, and issues such as the enactment of the Endangered Species Act are in the USA when they are writing for a world-wide audience. Once again, if the book had been focused on birds that use the USA, these terms would have been appropriate. A more important oversight is the small amount of attention devoted to existing conservation programs in the USA and abroad. For example, the North American Waterfowl Management Plan (NAWMP) is the largest and most ambitious avian conservation program undertaken in North America. It has overcome political barriers, raised billions of dollars and set aside 1000s of hectares of wetlands in Canada, the USA, and Mexico. The success of NAWMP has prompted other programs such as the Western Hemisphere Shorebird Reserve Network (WHSRN), Partners in Flight, and the Seaduck Joint Venture. There is no or very little mention of these and many other conservation programs in *Avian Conservation*. Both NAWMP and WHSRN have been in place for many years, with well established newsletters and web sites but only one paper addressed concerns about waterfowl and it focused on the Hawaiian Goose; there were no papers on shorebirds. A few chapters on the status and trends of these and other birds would have strengthened the book considerably. There was no mention of Birdlife International's *Important Bird Areas* program in Europe, the Middle East, Canada, and Mexico, and a similar program by National Au-

dubon Society and the American Bird Conservancy in the US was also overlooked. A review of the many approaches, their successes and failures, and the research questions they require would have greatly strengthened *Avian Conservation*. These oversights suggest that a wide gap remains between the two solitudes of research and conservation management, at least in the USA. The five chapters on land management were written by Americans and for Americans. The superb reviews in *Avian Conservation* will appeal to conservationists world-wide and should be on their shelves as an up-to-date summary of field and a reference source. However, its applicability is limited largely to a North American audience.—ROBERT W. BUTLER.

**RUDDY DUCKS AND OTHER STIFF-TAILS: THEIR BEHAVIOR AND BIOLOGY.** By Paul A. Johnsgard and Montserrat Carbonell. University of Oklahoma Press, Norman, Oklahoma. 1996: 291 pp., 16 color photos with captions, 33 numbered text figures including line drawings and range maps, 19 tables, 13 black-and-white illustrations. \$49.95 (cloth).—The collaboration of these two authors brings together a wealth of experience with wild and captive stiftails, and with studies of waterfowl natural history and behavior in general. The result is a fine book on a fascinating group of ducks that includes excellent illustrations and much detailed information. Although there are few color plates (photos of both sexes of all species covered would be helpful), there are nice illustrations of each species and excellent drawings of display behavior by the first author, many of which are tracings from films or photos.

The first section of the book covers general characteristics of the stiftails, effectively introducing a number of interesting features of this group. The summary chapters that follow make especially good use of the second author's thesis work on a variety of captive stiftails at The Wildfowl and Wetlands Trust in England. Covered as the stiftail group are members of the genera *Heteronetta*, *Nomonyx*, *Oxyura*, and *Biziura*. Although the White-backed Duck (*Thassalornis leuconotus*) and Freckled Duck (*Stictonetta naevosa*) are no

longer considered to be stiftails, some comments are still included where relevant (especially display behavior). Chapter 1 begins with a detailed historical treatment of the taxonomy of the stiftails, and concludes with a synthesis of available information and a discussion of remaining questions (some of which have recently been tackled through genetic analyses). Chapter 2 presents a detailed summary of stiftail morphology and anatomy, including a discussion of the adaptations for diving that these species possess and comparisons between them. Molts and plumages are also treated in this chapter, but in a very general way, with detailed accounts appearing in species chapters when possible. I believe that it would have been helpful to include a clear summary of at least the most common molt patterns of stiftails here as an overview. Chapter 3, General Behavior and Ecology, attempts to summarize the postures and locomotion, comfort movements, time budgets, feeding behavior, habitats, dispersal, migration, and important interspecific interactions of the stiftails. Accounts of comfort movements are unusually complete due to a combination of information obtained by the authors and previous work by Frank McKinney. Time budget data and dive durations are primarily available only from captives, and diet data are presented from previous studies on wild birds. Especially rare for waterfowl are the data on dive durations and activity budgets for ducklings.

Sex ratios, pairbonds, ritualized display behavior, aggression and territoriality, and contributions of display behavior to taxonomic relationships are presented in Chapter 4 (Comparative Social and Sexual Behavior). This chapter also is based on a mixture of data from captive and wild birds. Unfortunately, some of the sample sizes from captives are small, and there is a general lack of data on number of individuals and variability, making it difficult for the reader to interpret the level of support for the authors' statements. Also, the display information focuses almost completely on male displays in this chapter. A table of male stiftail structures and displays makes for an easy comparison of behavioral similarities, and hints at some of the recent findings on the taxonomy of this group using genetic characters. Reproductive and popula-

tion biology are summarized in Chapter 5, including a plea for more studies on species other than the well-known North American Ruddy Duck (*Oxyura jamaicensis*). To underscore this point, the timing of pairbonding, breeding, and nesting, and hatching success, brood behavior, reneating, and annual recruitment in this chapter are only available in any detail for the North American Ruddy Duck. Much of this information was drawn from the same three studies. Information from more species, including data from captives, is summarized for nest site characteristics, eggs and laying behavior, clutch sizes, and duckling weights, often in tables that allow comparisons to be made between the stiftails. Nest parasitism is discussed in some detail, including an indication of reproductive success relative to host nests for North American Ruddy Duck and Black-headed Duck (*Heteronetta atricapilla*), an obligate nest parasite.

The second section of the book, Chapters 6–13, presents species accounts that include vernacular names, range of species and races, measurements and plumage descriptions, identification cues, ecology, annual cycle, social and sexual behavior, nesting and parental behavior, and reproductive success and status. Range maps have been updated and improved from Johnsgard's *Ducks, Geese, and Swans of the World* (1978). In general, the species accounts present a good degree of specific data, and sample sizes are given for measurements and some other data. Plumage and soft tissue descriptions are supplemented by references to the location of photographs or illustrations in the literature, and for each species there are detailed drawings or tracings from film of courtship display postures or sequences in addition to written accounts. Although phonetic descriptions of calls are given, sonagrams would have been useful. Identification of birds in the hand and in the field is noted, and an Appendix features a dichotomous key to in-hand identification with drawings of adults and ducklings.

The section on ecology for each species includes habitat, density, foods, foraging, and a short coverage of competitors, predators, and symbionts. Data on densities, foods consumed, and predators are unavailable for many species, and the discussions of competitors are mostly speculations about diet over-

laps with various waterbirds and other stiff-tails. Symbionts apparently refers to parasitic egg-laying interactions, and these data would appear to have been more appropriate in the section on nest choice. Movements and migrations, molts and plumages, and the breeding cycle are discussed as parts of the annual cycle, with limited information on wild birds for the lesser-known species. Descriptions of the mating system, territoriality, courtship and pairbonding, and copulatory behavior are included under social and sexual behavior. Again, information is limited for wild birds for a number of species, and captive studies have provided the majority of the detailed descriptions of courtship displays and copulation. The use of "rape behavior" is outdated and even in the book's Glossary the reader is instructed to "See forced copulation". The nesting and parental behavior subsection includes nest choice and egg laying, and hatching and brood-related behavior. A mixture of data from wild and captive birds expands the coverage of these topics appreciably, although in general, little information on duckling behavior is known for any of the ducks. Aspects of reproductive success and status for each species were summarized in tables in the first section of the book, so in the species accounts, the focus is primarily on population estimates and conservation challenges (although coverage is a little disappointing on this topic). Brought to light here is the especially alarming predicament of the White-headed Duck (*Oxyura leucocephala*), which is threatened by overhunting, habitat destruction, and hybridization and interactions with the introduced North American Ruddy Duck. The status of most of the southern hemisphere species has been difficult to determine because of a lack of focused studies, but as human activities continue to increase pressure on wetland habitats, we cannot afford our ignorance if these species, and many others, are to survive.

The book is peppered with a number of typographical errors, but it is quite readable and a glossary is included to aid the lay reader. In general, the references throughout both sections of the book do not seem to be as up-to-date as they could have been, probably as a result of delays between preparation and publishing. Some unpublished material supplements the text, and the references section in-

cludes sources not cited in the text. This book goes a long way towards identifying where our gaps in knowledge lie and what future studies are needed on this interesting group of birds. I recommend it as a valuable and quite easy to use resource for researchers and students of waterfowl behavior and ecology or others particularly interested in the stiff-tails.—GWENDA L. BREWER.

**THE NUTHATCHES.** By Erik Matthysen, illus. by David Quinn. T & A D Poyser, London, U.K. U.S. edition published by Academic Press, San Diego, CA. 1998: xx+315 pp., one color plate, many black & white drawings, 17 black & white photos, 103 figs., 29 tables \$39.95.—Books devoted to single bird families are in vogue nowadays and several series are being published. The series coming from the Poyser company of England differs from most in that the books do not attempt to be a field guide and they have no extensive color plates. Instead most of them are thorough studies of the natural history of the species involved.

The nuthatch volume is of that nature. While treating all 24 species of the genus *Sitta*, approximately 60% of the space is devoted to the Eurasian Nuthatch (*S. europaea*). The author has spent a major portion of his professional career studying this species starting with an undergraduate thesis in 1982. The species is treated in 9 chapters: Taxonomy, Morphology and Molt; Habitat and Population Density; Foraging, Food and Hoarding; The Pair and Its Territory; Breeding Biology; Finding a Territory; Dispersal and Migration; Population Dynamics; and Nuthatches in Forest Fragments. Each chapter bristles with data, often of a sort not usually found in avian life history studies. Tables and graphs abound. Besides his own data from Belgium, the author gathered data from the literature from throughout the range of the species. The result is an exemplary life history account.

The other 23 species are treated in four chapters. In so far as possible the species are treated by the same topics as above, but understandably very little is known about some aspects of the biology of some species.

The Mediterranean Nuthatches are three



Red-breasted Nuthatch (*S. canadensis*) look-alikes: Algerian (*S. ledanti*), Corsican (*S. whiteheadi*), and Krueper's (*S. krueperi*) nuthatches. All these have very limited distribution and the Algerian Nuthatch was discovered as late as 1975. The story of the discovery of this species is told in detail. The original population estimate was 12 pairs in a very restricted area but more recently the estimate is somewhere between 500 and a few thousand pairs as the result of the discovery of additional populations. All three of these species are susceptible to threats due to loss of habitat.

The two Rock Nuthatches (*S. tephronota* and *S. neumayer*) have abandoned the forest habitat of the rest of the family and are found on rocky slopes and cliffs in dry regions from Yugoslavia to Pakistan. The two overlap in Iran and eastern Turkey, and it was not realized until 1911 that they were two species.

Fourteen species are covered under the collective heading, Oriental Nuthatches. These range from the Himalayas to the Philippines, and as many as 7 species can be found together in some parts of southeastern Asia. As might be expected many of these are not well known and the treatment is less detailed than for other species. Included in this group are the 195 mm Giant Nuthatch (*S. magna*), the Blue Nuthatch (*S. azurea*), and the Beautiful Nuthatch (*S. formosa*) both of which depart from the drab coloration of most of the family, as well as two more Red-breasted look-alikes.

The final chapter discusses the 4 New World Nuthatches: White-breasted (*S. carolinensis*), Red-breasted (*S. canadensis*), Brown-headed (*S. pusilla*), and Pygmy (*S. pygmaea*). Despite the abundance of these species none of them has been studied to the extent that *S. europaea* has. The Red-breasted is the only migrating nuthatch. The "Dwarf" nuthatches, *S. pusilla* and *S. pygmaea*, are unique in the family in having small, often overlapping, territories, communal roosts, and extra male helpers at the nest.

The evolutionary history of the *S. canadensis* superspecies which consists of one species in northern North America, three species in the Mediterranean region, and two geographically separated species in China presents an interesting puzzle.

David Quinn's black-and-white sketches,

many illustrating behaviors, enhance the book and the single color plate illustrates four species that will be unfamiliar to British and American readers. As of present knowledge this appears to be the definitive work on the family Sittidae.—GEORGE A. HALL.

WORKING FOR WILDLIFE: THE BEGINNING OF PRESERVATION IN CANADA. By Janet Foster, with a foreword and an afterword by Lorne Hammond. University of Toronto Press, Toronto. Second ed. 1998: 297 pp., 38 black and white photographs, 5 maps. \$21.95 (paper).—In 1904, Howard Douglas, Superintendent of Canada's Rocky Mountains Park, learned that Michel Pablo wanted to sell a large herd of bison he kept in western Montana. Although as many as 20 to 30 million of the animals had once roamed the North American continent, by the end of the Nineteenth Century their numbers had been thinned to fewer than a thousand. Pablo's herd, which he estimated at around 360 individuals, represented the largest surviving aggregation of a species that seemed to be rushing headlong into oblivion. Although American conservationists hoped to keep Pablo's bison in the United States, they failed to secure the necessary funds. At Douglas's urging, the Canadian government purchased the herd and shipped it by rail to Rocky Mountains Park.

This story is one of many fascinating episodes that Janet Foster recounts in her study of the origins of Canadian wildlife conservation. According to Foster, the first significant efforts to address wildlife decline in Canada came at the end of the nineteenth century, when a handful of senior federal civil servants began using their position and influence to push a protectionist agenda. Howard Douglas and his dedicated colleagues—Robert Campbell, Director of the Forestry Branch, Department of Interior; James Harkin, Commissioner of Dominion Parks; Maxwell Graham, Chief of the Parks Branch Animal Division; and Gordon Hewitt, Division Entomologist with the Department of Agriculture—are the main protagonists in Foster's account, which begins in the mid 1880s and ends in the early 1920s.

None of this small group was a particularly prominent public figure, and only one, Harkin,

had any formal training in the biological sciences. Yet, working together with provincial officials, other interested citizens, and their counterparts in the United States, they were remarkably successful in transforming their personal commitment to wildlife into federal policy. Fighting a pervasive belief in the superabundance of nature, a national agenda that emphasized settlement and development, a public that seemed largely indifferent to the desperate plight of wildlife, and a tradition that left resource management in the hands of provincial governments, these federal officials established national parks, created wildlife preserves, rallied public support for native species, and pushed through protective legislation and regulations. Aiding this quintet of federal civil servants was a larger cast of characters who receive much less attention in this book, including the ornithologists Hoyes Lloyd, Percy Tavener, James Fleming, and others.

Foster's account of the Migratory Bird Treaty, negotiated in the years around World War I, will be of particular interest to readers of this journal. After more than a decade of lobbying, in 1913 wildlife advocates in the United States finally secured a federal law protecting migratory birds. Fearing that the new legislation might be struck down on constitutional grounds, the bill's supporters then moved to have its provisions introduced into a treaty with Great Britain. Negotiations soon bogged down, however, when officials from the Maritime Provinces balked at the idea of eliminating spring shooting. Foster demonstrates Hewitt's central role in garnering Canadian support for this landmark treaty, which remains in effect to this day.

This book is a second edition of a work first published two decades ago. The environmental historian Lorne Hammond has contributed the only significant additions: a new foreword, which briefly describes the larger context of Foster's book, and a new afterword, which reviews the literature on Canadian wildlife conservation published since the first edition. If Foster were to write her book today, undoubtedly she would pay more attention to the contributions of sportsmen, naturalists, humanitarians, and provincial wildlife officials—all of whom have received much scholarly attention since the first edition. Yet, because her

book is so well written and based on solid archival research, it remains a useful starting point for anyone interested in the early history of wildlife conservation in Canada.—MARK V. BARROW, JR.

**HABITATS FOR BIRDS IN EUROPE: A CONSERVATION STRATEGY FOR THE WIDER ENVIRONMENT.** Compiled by Graham M. Tucker and Michael I. Evans. BirdLife Conservation Series No. 6, BirdLife International, Cambridge, U.K. 1997: 464 pp., 6 appendices. \$45.00 (paper) (in North America, contact via email: BTUCKER@SIPRESS.SI.EDU).—This ambitious compilation from 8 habitat working groups marks the third and final leg of a decadal marathon sponsored by BirdLife to promote the conservation of Europe's birds (the first two culminated in Grimmet and Jones' 1989 *Important Bird Areas in Europe* and number 3 in the BirdLife series, Tucker and Heath's 1994 *Birds in Europe: their conservation status*). Thirteen workshops were held across Europe bringing experts together to prepare conservation strategies for each of the following major habitat types: marine habitats; coastal habitats; inland wetlands; tundra, mires (bogs), and moorlands; lowland Atlantic heathland; boreal and temperate forests; Mediterranean forest, shrubland, and rocky habitats; and agricultural and grassland habitats. For each habitat type, information is provided on current distribution (with maps) and trends, its history, physical and biological processes, and its dominant flora and fauna. In addition, the chief values of habitat to humans is given, and the major threats to the habitat quality and quantity of priority bird species are identified in both text and tables. The last section of each habitat chapter then lists conservation opportunities such as legislation, financial incentives, and policy initiatives, then broad conservation recommendations are given.

The rationale for priority bird rankings is explained early in the book, providing a very useful model for other large-scale bird (or other fauna) conservation efforts around the globe. In this scheme, 5 classes are established of "Species of European Conservation Concern" (or SPECs); SPEC 1 species are of

global concern (rare, endangered, or declining populations), while SPEC 4 and 5 species have favorable conservation status in Europe. Next, priority categories (from A to D) for bird species in each habitat are established using a matrix of SPEC category  $\times$  habitat importance (percent of European population using that habitat). Thus, Priority A species in any particular habitat are those most vulnerable to further losses, while Priority D species are those that are more stable and widespread, with less dependence upon that particular habitat.

Next, the principles and strategies for broad conservation initiatives in Europe are outlined, spanning across international treaties and conventions, economic instruments, and policy doctrine. A dazzling litany of some 25 legislative instruments are reviewed, from global to more local European perspectives, ranging from specifics (agricultural nitrate control policy) to broad measures of biodiversity (so-called Rio Convention of 1992). Then, numerous economic instruments are reviewed (e.g., various European Union, EU, and World Bank funds) followed by other broad initiatives (e.g., Birds and Habitats Directives in EU). It would seem that with this bewildering array of conventions and plans cutting across landscapes and political boundaries, that Europe's conservation needs would all be well taken care of! But alas, as with most large Plans, "the devil is in the details"—developing consensus for habitat protection, harvest criteria, or emission standards among an array of nations with vastly different ideologies and histories in human-nature interactions is difficult.

A survey across the habitat chapters reveals the following order (from most to least) from the perspective of priority species: (1) Agricultural and grassland species—173 species (ca 70% unfavorable conservation status), with 6 Priority A species (4 are SPEC 1); (2) Boreal and temperate forests—114 species (40% unfavorable status), with 2 Priority A species; (3) Inland wetlands—102 species (55% unfavorable), with all 8 Priority A species being SPEC 1; (4) Mediterranean forest, shrubland, and rocky habitats—100 species (65% unfavorable), with 10 Priority A species (1 SPEC 1); (5) Coastal habitats—75 species (70% unfavorable), with 13 Priority A species

(5 are SPEC 1); (6) Tundra, mires, and moorland—73 priority species (37% unfavorable), with only 2 Priority A species (1 SPEC 1); (7) Marine habitats—62 species (45% unfavorable), with 6 Priority A species (1 SPEC 1); (8) Lowland Atlantic heathland—16 species (all small populations), no Priority A or B species.

Some recurrent themes are the need to integrate habitat conservation planning with other sectors and programs using mechanisms such as Environmental Impact Assessment and Strategic Environmental Assessment, to modify established policies within the EU such as Common Agricultural Policy and Common Fisheries Policy to work toward sustaining biodiversity rather using the more myopic traditional focus, to remove economic incentives that destroy habitat and reduce diversity (e.g., non-indigenous tree plantations), to better educate the public about the benefits and ecological services of such natural habitats, and to work to develop standards and criteria for sustainability of habitats across national boundaries. The fact that nearly 40% of Europe's bird species show an unfavorable conservation status is largely due to *intensification*. That is, intensification of farming and silvicultural practices on land, aquaculture and open sea fishing in coastal and marine habitats, and of coastal development, recreation, and tourism, much of the latter especially in Mediterranean Europe.

This book represents an enormous effort by many experts. The details are displayed in the extensive appendices, the figures and tables are very useful in summarizing the vast amounts of species, habitat, and threat information, and the chapters are neatly and coherently packaged so that they can nearly stand alone for those with more specific interests. The approaches taken in prioritizing the species and their threats, and the conservation recommendations made by each habitat working group provide an extremely valuable reference for bird conservationists in *any* continent, not simply Europe. The challenges now lie in translating all of those directives, conventions, and biodiversity initiatives into real Action Plans that can survive the turbulent political and economic seas, especially as the new Euro currency takes hold. This book should be a library requisite for conservation-

ists, land managers, and environmental policy professionals because it transcends issues of bird conservation and prompts us to consider true integration not just of land- and ocean-

scapes and their intersections, but also of ecology, agriculture, forestry, fisheries, economics, and of course, politics.—R. MICHAEL ERWIN.

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## Announcement

The Lincoln Park Zoo Scott Neotropic and Africa/Asia Funds support field research in conservation biology around the world. The Scott Neotropic fund focuses on projects undertaken in Latin America and the Caribbean. The fund emphasizes the support of graduate students and other young researchers, particularly those from Latin America. Since 1986, the fund has awarded over 126 grants in 19 countries. The Africa/Asia fund, launched in 1997, focuses on projects throughout Africa, Asia, and the Pacific. Each fund supports projects of young conservation biologists and between 5 and 15 projects for each fund are

supported each year. The fund awards are seldom greater than US\$7500, and most awards fall in the range of \$3000–\$6000. Initial support is for up to 12 months from the date of award, and the maximum duration of support is two years. The current deadline for receipt of Scott Neotropic proposals is 1 September, and Africa/Asia proposals have no deadline for 1999. For additional information and application procedures go to [www.lpzoo.com](http://www.lpzoo.com), email [steved@ix.netcom.com](mailto:steved@ix.netcom.com), or write to: LINCOLN PARK ZOO SNF/AA FUNDS, % Director of Conservation and Science, Lincoln Park Zoo, Chicago, IL 60614.