

potential as a monitoring tool. Peterson and Best provide important warnings regarding the interpretation of perturbation experiments (including the need for controls, pretreatment data, and long-term posttreatment monitoring). Further, Rotella et al. discuss the importance of estimating detectability (through estimating distances in which birds can be detected) in avian censuses.

The last section, entitled simply Latin America, presents some much needed information on the ecology and conservation of grassland birds south of the United States. Papers by Cavalcanti (on the Cerrado region of Brazil), Tubaro and Gabelli (on the Pampas Meadowlark, *Sturnella defilippii*), and da Silva (on seedeaters of the genus *Sporophila*), among others, should help expose North American readers to the fact that grassland-bird problems are not limited to our continent. Basili and Temple (through two papers in this section) also highlight the fact that population declines of one North American grassland breeder, the Dickcissel (*Spiza americana*) may result from human-caused mortality on their Venezuelan wintering grounds. However, that section, in particular, would have benefited from more contributions related to grassland birds spanning the Americas.

In conclusion, this book has much to offer avian ecologists, especially those interested in grassland ecosystems. It is well worth its relatively modest cost and should be included in all university libraries.—ERIC K. BOLLINGER, *Department of Biological Sciences, Eastern Illinois University, Charleston, Illinois 61920 USA. Email: cfekb@eiu.edu*

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The Birds of Pennsylvania—Gerald M. McWilliams and Daniel W. Brauning. 2000. Cornell University Press, xiv + 479 pp., 67 black-and-white photographs, 44 maps, ISBN 0-8014-3643-5. Cloth, \$39.95.—Pennsylvania, the home of Wilson, Audubon, and Bartram in the historic era, and Todd, Sutton, Parkes, Gill, and Parker in more modern times, has been a keystone state to American ornithology. The study of American birds was practically founded

at the Academy of Natural Sciences in Philadelphia and continues through that institution and the Carnegie Museum in Pittsburgh. Hawk Mountain Sanctuary rides the backbone of the state's Kittatinny Ridge, inspiring raptor research, education, and conservation around the world. Pennsylvania recently became the first state to list its Important Bird Areas. Yet, in spite of Pennsylvania's significant contribution to ornithology, there were no statewide bird references until the last decade. Amazingly, McWilliams and Brauning's book is the first comprehensive book about the state's birds since Warrens' *Birds of Pennsylvania* published in 1890.

McWilliams and Brauning's book is a successor to Earl Poole's unpublished manuscript (circa 1960) and benefits from the many detailed observations made in W. E. C. Todd's magnificent *Birds of Western Pennsylvania* (1940). Brief works by E. L. Poole (1964) and M. Wood (1979) gave only cursory species accounts, but did provide mileposts on bird ranges from which to compare those described in the present book.

Although Pennsylvania has a reputation as an urban center, most of the state is rural. Approximately 59% of its area is covered with diverse forest types. Indeed, Pennsylvania is a stronghold for many eastern forest birds. A large percentage of the world's Scarlet Tanagers (*Piranga olivacea*), Worm-eating Warblers (*Helminthos vermivorus*), and Wood Thrushes (*Hylocichla mustelina*) live here (Rosenberg and Wells 1996). With its large forest cover and geography, Pennsylvania has high responsibility for the conservation of several of the Watch List species such as Golden-winged Warbler (*Vermivora chrysoptera*), Cerulean Warbler (*Dendroica cerulea*), Louisiana Waterthrush (*Seiurus motacilla*), and the species already named. The western reclaimed strip mines may support the largest Henslow's Sparrow (*Ammodramus henslowii*) populations in the Northeast. The state's line of ridges provide a major highway for diurnal raptors, whereas its woods and thickets are vital stopping points for many migrating songbirds. Because this book covers the relationships of many bird species to Pennsylvania's physical features, it is not only valuable for academic and recreational uses, but pertinent and timely for bird conservation.

After a forward by Pennsylvania native, Kenn Kauffman, and a preface that puts this publication in its historical context, the authors present a thorough and insightful review of "Historical Perspectives on Bird Populations and Habitats" in the Introduction. This 24-page review is a must-read for anyone interested in the state's ornithology. It puts into perspective modern bird populations in light of what we know of the state's history, geography, and ecology. The Introduction also guides the reader through the seasonal changes of bird distribution and movements as well as the state's geographical and ecological units. Convenient maps show physiographic provinces, counties, popular birding spots, and

Breeding Bird Survey (BBS) routes. The authors define what they mean by their various relative abundance and frequency of occurrence categories, Records Committee standards of bird sighting documentation, and bird location abbreviations used throughout the text. The Introduction lists many regional bird publications on which, in part, this book is based.

The meat of the book is the large species-accounts section that describes the general status, habitat, seasonal status and distribution, history, and some additional comments for each of the 428 species reported in Pennsylvania. That section also covers breeding, winter, passage migration, or vagrant records for each species as applicable. Although succinct, those accounts are rich in detail. They reflect a thorough review of published and unpublished bird records. Some of the most intriguing parts of those accounts concern the species' history. The comment sections review pertinent taxonomic, identification, or conservation issues (including the state species of special concern listings).

I found that, in almost all cases, the habitat descriptions and migration patterns match my own impressions. The description of migration gives the general time frame for migration in the state, including the weeks when migration generally starts and ends, and its peak times during the migratory period; however extreme dates for each season are not provided. That might disappoint some readers, but the authors do provide many aberrant early and late migrants to spice up the accounts.

The skills and experiences of the two authors complement each other, resulting in a well-rounded account of Pennsylvania's bird life. McWilliams served for over a decade on the Pennsylvania Ornithological Record Committee (PORC) and has been as a dedicated observer of birds and natural history of Erie County, especially Presque Isle. Brauning coordinated the state's breeding-bird atlas, served as its book editor, and works as a wildlife biologist for the Pennsylvania Game Commission. The species accounts benefit from the authors' respective experiences and skill, and reflect their understanding of the problems often associated with bird identification and the interpretation of bird records and data collection. A large number of the state's field workers who contributed data reviewed earlier drafts of the manuscript (including myself), providing other perspectives to the resulting product.

The Birds of Pennsylvania makes good use of a wealth of data contributed primarily by avid birders over the last two decades. The *Atlas of Breeding Birds in Pennsylvania* (Brauning 1992) built a sound foundation on the summer distribution of the state's birds. The Atlas also organized and energized the state's birding community. From the Atlas network emerged the state's bird journal (*Pennsylvania Birds*), founded and edited by Frank and Barb Haas, and the

Pennsylvania Society for Ornithology (PSO). Many of the details found in the species accounts of this book originated from the journal's seasonal summaries, PSO members, PORC reports, and Brauning's many contacts through PGC projects. The authors also make good use of Audubon Christmas Count and BBS route data.

The range maps show relative abundance of some of the state's most common breeding birds in much the style of *The Summer Atlas of North American Birds* (Price et al. 1995), but with somewhat higher definition. Breeding-range maps are shown for only those species for which are adequate data to produce detailed maps. The species accounts are built upon the Atlas data, but the Atlas maps are not reproduced here. The abundance maps illustrated here supplement the nonquantitative range maps provided by the Atlas. As such, these books are companion books. The black-and-white photographs of 67 species give evidence of many of the most interesting and well-documented rare bird sightings.

Because I have a very favorable impression of this book, I hesitate to mention any deficiencies. However, given the rich history of Pennsylvania bird artists and illustrators, I found the illustrations rather disappointing. Where are the reminders of the great artwork of Audubon, Sutton, and Poole? Except for the striking cover, we are left with many uninspiring and sometimes blurry black-and-white photographs of those species least representative of the state's avifauna (although many serve as convincing documentation). The birds of Pennsylvania, and those that have illustrated them in the past, deserve better consideration. I was disappointed with the lack of Breeding Bird Census (BBC) data that are readily available in the literature and from cooperators. For example, the Introduction mentions high breeding densities of some species in old growth forest, but the species accounts fail to provide the data where they might give the reader a better idea of the state's breeding population densities in a variety of habitats (an ecological and conservation issue). It would be helpful to see a summary of the state's rich set of BBC data, if not in this book, perhaps in a future edition. Banding data are hardly mentioned, but perhaps that information is difficult to access and integrate into the species accounts. It would also be interesting to see a summary of hawk count data for which the state is so famous. Many of the species accounts give the details of rare-bird reports but neglect other large data sets I have already mentioned. I have listed elsewhere (Gross 1998) those groups of birds most in need of population surveys (night birds, marsh birds, diurnal raptors, etc.) for which this book should serve as an inspiration for more work. These are minor complaints, and the lack of some data may not be the fault of the authors, and may come forth in later editions.

Hats off to McWilliams, Brauning, and their many contributors, on a very fine book. I heartily recommend it. It is a work for which the authors can be justly proud. This book ably fills a void in the literature and deserves a space on the bookshelf next to the *Atlas of Breeding Birds in Pennsylvania* (Brauning 1992). It is an essential reference that belongs in all university libraries of the region or any library that aspires to have a good ornithological collection. Birders and academics alike should own it. I hope to see updated and improved editions of this standard reference book in years to come.—DOUGLAS A. GROSS, 144 Winters Road, Orangeville, Pennsylvania 17859 USA. E-mail: dougross@sunlink.net

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- cut. 462 pp., 64 color plates, numerous maps and line drawings. ISBN 0-300-07920-6. Cloth, \$50.—Humans are fascinated with owls, and many birders and ornithologists seem to have an insatiable appetite for books on this enigmatic group of predators. Authors with little direct experience with owls have been quick to exploit this fascination, resulting in a spate of owl books that leave much to be desired. Thus, the appearance of a new book coauthored by noted owl researcher Claus König was welcome news to those of us who have been less than satisfied with several of the recent owl books produced by nonspecialists. König and his colleagues (most notably Petra Heidrich and Michael Wink) have been very active in describing new species of owls based on the application of molecular techniques and the understanding that vocalizations provide valuable clues about species limits in strigiforms. The notion that the number of owl species in the world has been vastly underestimated is reflected in the fact that 10 years ago, Hume and Boyer (1991) recognized only 151 species (13 tytonids, 138 strigids). Owing in large part to the work of König and his colleagues, del Hoyo et al. (1999) recently recognized 205 species of owls (16 and 189, respectively). In this new book, König et al. go even further than *Handbook of the Birds of the World* in recognizing 18 tytonids and 195 strigids, for a grand total of 213 species. Two species have been described since König et al. went to press (Rasmussen 1999, Rasmussen et al. 2000), and several more are in the works. Thus, the species tally in the next few years is likely to be much larger than that treated by König et al.
- The stated purpose of the book is to serve as an identification guide and an information source on the ecology and biology of owls. The introductory material includes brief but sound treatments of morphology and anatomy, topography, food habits, behavior, breeding biology, vocalizations, taxonomy, and conservation. Also included is a 19-page chapter by Wink and Heidrich entitled "Molecular Evolution and Systematics of the Owls (Strigiformes)" in which they summarize their research on owl phylogeny on the basis of mitochondrial DNA.
- The meat of the book occurs in its illustrations and species accounts. Each species is depicted in a color plate (oftentimes three or more illustrations per species), and the species accounts provide a range map and information on identification, vocalizations, distribution, movements, habitat, physical description, measurements, geographic variation (when present), habits, food, breeding, and status and conservation. The book includes an erratum sheet to correct mistakes on one of the plates and on five of the range maps. At least one other map, that for the recently rediscovered Forest Owlet (*Athene blewitti*), however, also is in need of correction (see Rasmussen and Colar 1998). Each species account concludes with a list of references.

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Owls: A Guide to the Owls of the World—Claus König, Friedhelm Weick, and Jan-Hendrik Becking. 1999. Yale University Press, New Haven, Connecticut.