

BOOK REVIEWS

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Birds in Kansas: Volume 1.—Max C. Thompson and Charles Ely. 1989. Museum of Natural History, University of Kansas. Public Education Series No. 11. xv + 404 p. paper cover \$14.95. Source: University Press of Kansas, Lawrence, KS 66045.

The atlas of breeding birds in New York State.—Robert F. Andrie and Janet R. Carroll, editors. 1988. Cornell University Press. 551 p. \$29.95. Source: Cornell University Press, 124 Roberts Place, Ithaca, NY 14850.

These books are two examples of the types of information available on bird species in a particular state. Their objectives differ, yet both contribute information that can be used by amateur birders or professional ornithologists. *Birds in Kansas: Volume 1* includes comprehensive accounts of 222 bird species presented in taxonomic order from loons and grebes through woodpeckers. The objective of this book is to educate the people of Kansas, in a nontechnical manner, about the birds of their state. The chapter "Bird distribution and vegetation" concentrates on the relationship between avifaunal diversity and the physiography and vegetation of the state, emphasizing the dependency of bird populations on plant communities. Major habitat types, including disturbed habitats, are discussed with detailed descriptions of their plant communities and examples of associated bird species. Also useful is a discussion of the overall occurrence of these major habitats within the state.

The *Atlas of breeding birds in New York State* (ABBNYS) is the culmination of many hours of work by more than 4,300 volunteers and the realization of an idea inspired by the late Robert Arbib. Its objective is to present a concise, comprehensive treatment of breeding bird data gathered throughout the state of New York over a 6-year period. ABBNYS is technical, well referenced, and a wealth of information concerning the breeding birds of New York State. Breeding distributions of 242 bird species and three hybrids were documented from 1980 through 1985. This book represents a large amount of baseline data (361,582 records) for the state. Methods for the atlas project are outlined in the chapter "Planning and management." Listed are standard criteria used to confirm breeding records which can be particularly helpful to field biologists. An interesting chapter on the prehistoric birds of New York State provides a "chronological perspective" to the book.

Both books present species accounts that include comments on past and present status and distribution, abundance, breeding ecology, and food preferences. Site-specific relative abundance data, however, are not provided. ABBNYS accounts are concise, technical, and written by 19 authors. They are consistent in format and content and concentrate on the breeding season. A table in an appendix details the breeding biology of each species. *Birds in Kansas* accounts are generally more descriptive and include data for all seasons. Pe-

riods of occurrence (extremes and peaks) are reported for migrant species. Account detail varies depending on the amount of information available. Large blank spaces on pages between many of the species accounts unnecessarily add to the length of the book. Identification is not discussed in ABBNYS accounts and *Birds of Kansas* describes only conspicuous field characteristics unless details are needed to resolve confusion between two or more species. Neither book is meant to take the place of a field guide.

In both books, species distribution maps accompany each species account. *Birds in Kansas* maps are small and report bird distribution at the county level. No distinction is made on the maps for breeding season records. Counties with breeding records are sometimes listed in the text. ABBNYS has detailed breeding distribution maps that present data on a 5- × 5-km atlas-block scale. An impressive set of plastic overlays is available (\$12.95) that relates species maps to such physical, biological, and cultural features of New York State as county divisions, percent forest cover, forest cover type, elevation, and mean annual precipitation. A detailed summary of the species distribution map is provided in each species account.

ABBNYS identifies bird species that are listed as endangered or threatened and discusses reasons for their decline. In general, no mention is given to state or federal endangered or threatened status in *Birds of Kansas*. Both texts address habitat changes and their effects on bird species are discussed with specific examples. Both texts are amply illustrated. *Birds in Kansas* provides black and white photographs of varying quality for 178 of the 222 species included in the book. ABBNYS has attractive pen and ink renderings for all species.

Professional ornithologists, whether academics, government personnel, or private consultants, who are responsible for making management decisions, writing environmental impact statements, or assessing habitats with respect to birds can use the information contained in these two books. Since I do ornithological fieldwork for the Illinois Department of Transportation's (IDOT) environmental assessments and impact statements, I find that current distribution data and status descriptions such as those provided in these two books are essential for studies conducted locally or throughout the state. For example, if a new road alignment is planned, I must determine what species of birds are likely to occur in the proposed project area and during what seasons they would be present. Species documentation at a site-specific or, at least, a county level is essential to substantiate evaluations of high-quality seasonal habitats. Distribution maps that accompany species accounts are extremely helpful because they allow quick identification of bird species that must be considered in specific areas of a state. Endangered and threatened species records are particularly important.

Breeding distributions are extremely important in environmental work. In certain cases I must determine

whether a species is currently breeding or has a breeding history at a specific location in order to suggest breeding habitat preservation or mitigation proposals. ABBNYS is an incredible resource for this type of information because it presents data on a 5- × 5-km scale. Because of the necessity for site-specific data, IDOT plans to assist the Illinois Department of Conservation with Illinois' breeding bird atlas program in 1990. IDOT is also contributing all breeding bird data that have been collected in their project areas since 1985. Although the entire state of New York was not atlased, detailed habitat descriptions provided in species accounts can aid in the identification of potential habitat for certain species. Specific breeding records were not the focus of *Birds in Kansas*, although many are mentioned. The use of different symbols in counties and breeding records (or for each season or combination of seasons) on the distribution maps would have provided valuable temporal data for a minimum of effort.

I found comments on foraging and wintering habitats and distribution records for migration and winter seasons the most useful feature of *Birds in Kansas*. I use these type of migration data and habitat descriptions to assess potential stop-over and wintering areas. These habitats are an important life history requirement for many bird species and are especially critical to long-distance migrants. For example, recently I provided IDOT with migration data and arrival and departure dates for heron and waterfowl species that either breed or stop-over at a small lake adjacent to a proposed road-widening project. Access to extreme migration dates, as well as peak dates, was important in the evaluation of this significant habitat and for suggesting temporal restrictions on disturbance that might adversely affect the area or the species using it.

I found the discussions of breeding ecology, habitat preferences, and historical perspectives in both books particularly useful for understanding the behavior and habitat requirements of a species. Descriptions of characteristic or peculiar behaviors, as in *Birds of Kansas*, help me to develop an insight about a species. This kind of insight can facilitate decision-making processes or promote the development of new management strategies. Occasionally, decisions need to be made on the basis of an experienced observer's knowledge of a species, but without the support of hard data.

ABBNYS presents a somewhat depressing but realistic view of the relationship of bird species to changing environments and the presence of man. Endangered and threatened status is addressed and discussed. *Birds in Kansas* does not consistently identify endangered or threatened status. Because IDOT is required by law to address federally listed endangered and threatened species (and elects to consider state-listed species), providing information about these species is typically a high priority in my environmental studies. Detailed information, such as that found in these books, is useful in developing species accounts that are frequently included in my biological assessments.

Overall, both books are comprehensive and informative works that can benefit both the beginning birder and professional ornithologist. Every state should be so fortunate as to have two such complementary books. *Birds in Kansas*: bibliography and index. ABBNYS:

references, index, appendices, and overlays.—PATTI L. MALMBORG, Illinois Natural History Survey, 607 E. Peabody, Champaign, IL 61820.

Where have all the birds gone? Essays on the biology and conservation of birds that migrate to the American tropics.—John Terborgh. 1989. Princeton University Press, Princeton, NJ. xvi, 207 p., illustrated, \$45; paper, \$14.95.

The song of birds that fills the June woods is now being replaced, first by mutterings and now by cries of alarm that something is amiss. Birds that were formerly common in eastern woodlands seem less so; in some localities outright disappearances have been documented. Local factors have been implicated in some studies; yet, the coincidence that most species that have been shown to be declining are also neotropical migrants hints at problems on the wintering grounds as well. Ornithologists are increasingly beginning to pay attention to this situation; a recent symposium on the topic drew more than 300 participants. John Terborgh, in *Where have all the birds gone?*, is the first ornithologist to really bring the message of an impending "silent spring" to the general public. It is unfortunate however that his academic publisher, Princeton University Press, has not marketed this book in the way of other, less rigorous, recent books about the environment.

In a series of well-written essays in this nontechnical account Terborgh begins at his boyhood home in Fairfax, Virginia where the birds he grew up with are conspicuously absent. He stops for a quick look at the waterfowl in nearby Chesapeake Bay, investigates the situation in the Smoky Mountains with former student David Wilcove, and finally lights in the neotropics where he has spent most of his distinguished career studying migrant birds along with primates, frugivory and community ecology. *Where have all the birds gone?* is written for the educated amateur but has much to offer to the professional ornithologist. It is meant to sound the alarm about the imminent and widespread decline among populations of neotropical migrants, but also to examine the evidence that causes Terborgh to state: "My principal message in this book is that if these excesses [of development and population growth] continue unchecked until they run their course, we shall wake someday to a drastically altered spring - one lacking many familiar birds that we have heretofore taken for granted. If we are going to do something to prevent this, we shall have to do so soon. The year 2000 will be too late."

Many ornithologists will dispute this claim. But John Terborgh is no alarmist and is not known for making rash statements. If he is frightened—who are we to ignore his warning?

After raising the question, Terborgh presents a useful discussion of the difficulty of detecting widespread trends—both due to the lack of controls in ecology and the inadequacies of present efforts at avian monitoring. These points are far from academic. They raise the disturbing possibility that it is the inadequacy of our research that prevents us from detecting evidence, which may be present already, of significant impacts on bird populations.

Despite these inadequacies, there are disturbing trends

among long-distance migrants, especially those that require forest interior conditions for nesting. In an extremely thorough review, Askins et al. (1990) conclude that there have been severe population declines during the past 30–40 years among neotropical migrants in suburban and urban forests in eastern North America. Breeding Bird Survey data show that populations of 70% of the forest—breeding neotropical migrants have declined substantially in the past decade, following stable or increasing populations since the late 1960s. However the very few long-term studies in extensive tracts of forest are contradictory.

Following a chapter about ducks, whose population crash has been lovingly monitored and excellently documented by the U.S. Fish and Wildlife Service, most of the book centers on “the mystery of the missing songbirds.” The mystery is not whether they are missing, but where and why. Where have they gone? Have they gone on the breeding grounds, or on the wintering grounds? Twenty years ago no one would have even predicted the question. Few ornithologists did research in the tropics, and fewer yet studied migrants. Those who did, like Dwain Warner, who has watched his long-term study area in southern Mexico disappear, warned of the horrors of deforestation. But many, whose primary experience in the neotropics was in edge habitat near their favorite vacation spot, thought that deforestation would actually help migrants because of an increase in brushy scrub. However, most species winter in habitats that are structurally similar to their breeding habitats. In the Yucatan, three of four species that breed in forest but winter in scrub showed positive population trends but all three scrub-breeders that winter in forest are declining (Askins et al. 1990).

Today there is strong evidence of problems on both summering and wintering grounds. Things actually may not look so well in between either, according to Terborgh, who comments that migration is like a chain—it is only as good as its weakest link.

“Missing songbirds, part I” discusses the situation on the breeding grounds. Research over the past decade has shown tremendous rates of brood parasitism and nest predation in small woodlots. In Illinois, Robinson (1988) found nest predation rates of 80% and parasitism rates of 65% among open cup nesters in forest fragments. Temple and Cary (1988) modelled the impact of these edge-associated events and showed that they could account for regional population declines in fragmented landscapes as well as disappearance of forest-interior birds from the fragments. Given this evidence, one wonders along with Terborgh, why any migrants persist in these remnant habitats. Poor reproductive success plus very low rates of return for individuals between years are suggestive that these habitat islands may be acting as “sinks” for a surplus of dispersing songbirds produced in larger forests in outlying areas.

If this is true, conditions on the wintering grounds may soon deplete any present surplus. The latter half of the book looks south and sees nothing but trouble ahead. Terborgh’s principal scientific contribution in this field has been towards an understanding of the distributional patterns of wintering migrants. The general patterns that have emerged are clear. The proportion of migrants declines as one goes further south and is actually the greatest in the subtropical regions of the

U.S. With a few exceptions, such as the Loggerhead Shrike, population declines have not been detected among species that overwinter in the U.S.

More than half of all neotropical migrants winter in Mexico, the Bahamas, Cuba, and Hispaniola. Species that breed only in the West overwinter almost entirely in western Mexico. Terborgh makes the critical comparison between the 2.2 million square km of primary wintering range for neotropical migrants and the 16 million square km of breeding grounds in the U.S. and Canada. “The unsettling implications is that the felling of one ha of rain forest for cattle pasture in Mexico or the Dominican Republic is equivalent in its effect to the construction of a 5 or 10 ha shopping mall in Connecticut.”

Unfortunately for the birds, despite the recent proliferation of malls in Connecticut, there’s even more than a 10-fold clearing of the forests in Middle America. The “cattle pasture” analogy is right on as well. Unlike existing second growth forests, which provide some habitat for some migrants, no forest birds can make a living in the neo-barren grassland of a cattle ranch. Cattle ranching is a major cause of deforestation in Middle America. Although precise data on deforestation are lacking, available information is alarming. Terborgh cites the example of Costa Rica (p. 170) where deforestation has been extremely rapid in the last half-century and will be essentially complete in the next 5 years. By the year 2000, Costa Rica will have virtually no natural forest remaining outside its parks and reserves. However, it has a lot of cattle ranches.

The situation is no better in the rest of the tropics. Terborgh describes how conversion of the Bachman’s Warbler’s wintering range in Cuba to sugar cane monocultures may have led to the ecological extinction of this species. Projected rates of deforestation in the present decade may make moot the argument about whether any current declines in migrants are due to conditions on the wintering or summering ranges. Especially scary are Terborgh’s data showing that the elevational distribution of migrants coincides with the elevational distribution of people.

One of the most important contributions of this book may be the linking of the fate of migrant songbirds to human population growth. Although the popular media finally has started to pay attention to the environment, they still ignore the taboo subject of population.

Another important contribution is to point out the need for a thorough network for systematic monitoring of bird populations. Present efforts such as the Breeding Bird Survey, sponsored by the U.S. Fish and Wildlife Service (USFWS) and the Breeding Bird Census program, initiated decades ago by the National Audubon Society but essentially dropped recently, are good beginning points. Terborgh outlines a proposal to improve both the quality and quantity of the data base. There is a role for both the professional and the amateur, whose contribution to the basic data in this field has often exceeded that of professionals involved in more “significant” research.

Some steps are already being taken in this arena. The *Journal of Field Ornithology* will soon publish Breeding Bird Censuses, filling a void left by *American Birds*. The Smithsonian Institution is establishing a center for research on migratory birds. Some new money has

been appropriated to the USFWS for studies of migratory birds. However, their commitment and methods for monitoring populations of migratory birds has been strongly criticized (Gradwohl and Greenberg 1989). I recently asked USFWS Director John Turner about this. Turner admitted that they are unlikely to do an adequate job by themselves and called for a cooperative effort to utilize the efforts of the outside community (that's us).

The Manomet Bird Observatory (MBO) recently held a symposium entitled "Ecology and conservation of neotropical land birds." This was the first major meeting on the subject since the landmark symposium hosted by the Smithsonian in 1977 (Keast and Morton 1980). There was no unitary conclusion about which populations are declining and the causes for the declines. The lack of a single conclusion is hardly surprising as even if all populations were declining (which they clearly aren't) it would be manifest in many ways depending upon the characteristics of each species (Wilcove and Terborgh 1984). We have learned much about neotropical migrants in the past decade but a lack of information on their life in the tropics still hampers us.

One of the most shocking data sets was presented by Sid Gauthreaux who used radar images to compare spring migration across the Gulf of Mexico in 1987–1989 to 1965–1967. He calculated that the magnitude of the migration at the one station he analyzed is now about half of what it was in the mid-1960s. There was criticism of his methods, but his conclusions cannot be dismissed lightly. Indeed most of the participants readily agreed with keynote speaker Terborgh that strong conservation measures were needed in the tropics immediately. Passion for action, based on collective experience and knowledge of rapidly accelerating trends, has transcended the traditional scientific reluctance to go beyond the narrow confines of their own data.

Some scientists may question this attitude. Terborgh challenges them to enter the real world where nothing can be gained by waiting. Others might question the exclusive emphasis of this book, as well as the MBO conference, on neotropical migrants. Are we so parochial and narrow to only be concerned about "our" birds (which in reality spend more than half their lives away from us)?

There is even less known about resident birds in the tropics than about neotropical migrants. But just as birds are general environmental indicators, we can consider neotropical migrants as our ambassadors from the tropics. They bring us a message of impending doom—unless. . . .

Terborgh helps the birds carry this message to the public concerned about birds and to those of his colleagues who care to listen. There is some evidence that his message is getting through. Inspired by this book, I will try to assess long-term population changes by repeating historical censuses at the University of Minnesota field station where I'll be teaching this summer. An aide to Congressman Jack Buechner (R-MO) read the book and an article about the MBO meeting, then decided to prepare legislation to declare a "world decade of ornithology" and direct the preparation of a comprehensive plan for monitoring and research on migratory nongame birds in the Western Hemisphere.

When I discussed the proposed legislation with Terborgh, he expressed despair that politicians and the public don't understand exponential processes. Population growth and its linked evil—tropical deforestation—are exponential processes. Scientists, unlike politicians, do understand exponential processes. We ornithologists better take heed of their implications. Terborgh's book is an excellent place to begin.—DAVID E. BLOCKSTEIN, American Institute of Biological Sciences, 730 11th Street N.W., Washington, DC 20001-4521.

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