

Species Act, and it avoids all of the problems and shortcomings associated with species taxa under the phylogenetic species concept.

The area covered is Australia and its territories (e.g. Norfolk and Lord Howe Islands), and extends to Christmas, Cocos, Macquarie, and Heard islands, as well as the Australian Antarctic Territories. Accepted vagrants are treated briefly in a supplementary list covering only the Australian region.

Each species taxon description begins on a new page and, for each, the ultrataxa (subspecies) are presented with a brief description of each with a standard map showing its breeding range and zones of intergradation, if any. Species taxa, whether monotypic or polytypic, are not described. Synonymies for species-group names are not given. Other discussion is brief and often includes taxonomic (including comments on the genus, the species, and ultrataxa) and nomenclature circumscriptions. Because of an ingenious scheme for subdividing Australia into geographic regions and subregions, and using acronyms for habitats (see p. 9), the included information for each species and the ultrataxa is immense. When combined with the detailed citations, this organization provides the reader with full information of the biodiversity and distribution of Australia's passerines. A number of new subspecies is described; these are clearly noted in the text and are listed in Chapter 4 with all other taxonomic changes proposed in this work. Families are introduced on a blue background that makes the start of each family easy to spot simply by looking at the edge of the volume. Each family is delimited and the genera rather briefly discussed. Authors and dates for generic names are not given, nor are generic-group synonymies included.

The same map of Australia, with state boundaries, cities, river systems, mountain ranges, and deserts, is presented on the front and back end pages. Additional maps (fig. 1, p. 9) showing geographic regions and subregions, and historic geographic barriers (fig. 2, p. 787), together with acronyms of habitat types, are provided. Extensive glossaries (27 pp.) for geographic, taxonomic, biological, etc., terms are provided, as is a large bibliography (23 pp.) as well as complete indices of scientific and common names (16 pp.). Although information about the diversity and distribution of Australian birds in this volume is terse, every effort was made by the authors to insure that users can find it.

The scheme followed in this volume allows the presentation of each ultrataxon in a clear and unambiguous way regardless of different opinions on the taxonomic status of the taxon. Hence, the endangered Black-eared Miner, often considered a separate species, is included here as the ultrataxon *Manorina flavigula melanotis* (p. 270), with a full discussion of the evidence supporting or refuting the advocated taxonomic position. In a similar manner, the Varied

Sittella (*Daphoenositta chrysoptera*; p. 428) is treated as a complex of five ultrataxa in a single species rather than five separate species, again with a full discussion of the evidence, in this case, supporting the decision. In this way, the 720 ultrataxa of Australian perching birds are clearly and consistently arranged in 340 species taxa corresponding to the biological species concept such that the information is available and useful to a diversity of ornithologists from the pure systematist to the practical conservation manager.

This initial volume of *The Directory of Australian Birds* is one of the most important works to be published in a number of decades on the diversity and distribution of a continental avifauna. It is certainly the most important such work to appear for Australian birds. Although an outstanding significant reference work for anyone with the slightest interest in the Australian avifauna, I can recommend it to everyone from bird watchers and conservation specialists to scientific ornithologists in all fields as the baseline for the systematics and distribution of Australian passerines. Richard Schodde and Ian Mason are to be congratulated for their several decades of hard work collecting the data needed to write this volume and for producing such an outstanding work. All ornithologists can look forward with anticipation and pleasure to the appearance of the promised two additional books in this series.—WALTER J. BOCK, *Department of Biological Sciences, Columbia University, 1200 Amsterdam Avenue, New York, New York 10027, USA.*

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Restoring North America's Wild Birds: Lessons from Landscape Ecology.—Robert A. Askins. 1999. Yale University Press, New Haven, Connecticut. ISBN 0-300-07967-2. Paper, \$30.00.—Anyone questioning why wild birds are "flagships for conservation" will find their answers in this wonderful book. Robert Askins' eyes-wide-open approach to the task set forth in the title is utterly engaging, and, although clearly for people with avian affinities, it is especially relevant for conservation biologists from all walks of life.

Reading Askins' book was like being a student in a field course! In the first nine chapters (of a total of 10), I romped through the major biomes and habitats of North America, looking at each through the eyes of an experienced and impassioned naturalist-ornithologist. In each chapter, Askins focuses on a region's bird species and communities that are declining, at risk of decline or extinction, or are already extinct. Then, he sys-

tematically employs foreshadowing to prepare readers for the central lesson that "Conservation of birds depends on a clear understanding of both their habitat requirements and how their habitats are sustained." To convey the complexities of this truth, Askins builds each focal ecosystem step by step, attending to historical generative processes (biotic and abiotic), presettlement distributions and species composition of the vegetation, as well as key requirements of the bird species at risk. Then, using copious scientific results woven into a pleasing format, Askins explains what features of the system are needed to maintain species at risk, and, in turn, how these features are generated and maintained. Chapter conclusions extend understanding of processes that maintain the habitat in the condition and at the scale needed by the species at risk, to what it will take to protect those processes.

For me, two aspects of *Restoring North America's Wild Birds* were especially valuable. First, the book destroys certain myths that hinder intelligent bird conservation. The media hype that Neotropical migrants (e.g. wood-warblers) are the only North American songbirds at risk has clouded our professional recognition of other systems in need of scientific study and crisis management, such as grasslands and eastern shrublands. For example, many of us uncritically accept the common perception that the current decline of birds that are characteristic of eastern thickets (e.g. Yellow-breasted Chat [*Icteria virens*], Brown Thrasher [*Toxostoma rufum*], Painted Bunting [*Passerina ciris*]) is not a crisis. If we assume that the eastern seaboard was once a seamless blanket of deciduous forest, we might not opt to manage habitats for those species that enjoyed ephemeral old fields. But Askins lucidly explains how shrublands must have been extensive along the hurricane-battered coasts and oft-flooded riverine corridors in coastal lowlands before European settlement. He points out that coastal and river margins in the East were densely settled before we began accounting for the distributions of shrublands we destroyed, thus challenging the dogma that shrubland birds don't belong in the East owing to their lack of historic existence there.

Second, Askins examines without bias modern human influences on ecosystems and species, therefore encouraging the intellectual means to understand where and how we can fit into a continental scheme of conservation. For example, now that coastal and riverine shrublands are scant in the East, inland old-field communities and some suburban ecosystems serve as refugia for the displaced thicket birds. Askins argues that these habitats should be recognized in regional conservation planning for their ecological roles. Furthermore, the question has been raised as to whether livestock grazing is good or bad for grassland birds. Askins explains how grazing can be both, depending on the nature and history of the ecosystem and the likelihood of its conversion to more de-

structive land uses. Birds of short-, mixed-, and tall-grass prairie (e.g. Mountain Plover [*Charadrius montanus*], Dickcissel [*Spiza americana*], longspurs [*Calcarius* spp.]) historically coexisted with large-bodied grazers, and they currently exhibit adaptations that facilitate coexistence with cattle. Vast areas of grazing lands, therefore, can help maintain some of the continental grassland bird assemblage. Conversely, bird species of the drier deserts, semidesert grasslands, and wooded streamsides cannot tolerate cattle grazing because cattle destroy the habitat itself. Askins argues that, although not a perfect mimic of native herbivory, contemporary cattle grazing represents a tolerable alternative to crop conversion or human settlement for many grassland areas. This means that rural livelihoods can be appropriately fostered in large-scale conservation planning that can cope with regional differences in ecology.

What are the "Lessons from Landscape Ecology"? Each chapter communicates essential concepts of landscape ecology as part of the "story" of how each system works. For example, the importance of geomorphology and spatiotemporal disturbance regimes in guiding the historic development of ecosystems is featured in every chapter. Askins does not solve all of the mysteries of historic bird distributions, and he does not hold back his opinion when facts are insufficient. But logic is pervasive in his historical scenarios. The shifting mosaic of community structure is an obvious concept once we understand how grassland bird assemblages respond to fire and the spatial dynamics of prairie dog "grazing lawns." The enormity of spatial scales relevant to bird conservation and the nature of biological connectedness are inherent in our thinking once we understand where Phainopeplas (*Phainopepla nitens*) spend most of their time in a typical year. When we know the natural history of Red-cockaded Woodpeckers (*Picoides borealis*), crossbills (*Loxia* spp.), Brown-headed Cowbirds (*Molothrus ater*), and the intimacy between pinyon pine and Pinyon Jays (*Gymnorhinus cyanocephalus*), the evolutionary link between scale, process, and the birth and sustenance of wildlife-habitat relationships becomes tangible. Unlike a textbook, *Restoring North America's Wild Birds* educates the reader in much the same way as an elaborate and intensive field course in landscape ecology.

The title of the final chapter suggests that the pieces comprising the conceptual framework of landscape ecology, enchantingly explored in preceding chapters, would be riveted together here into more specific guidelines for protecting processes that sustain bird habitats. Instead, the concluding chapter was more general than I expected, beginning with another case study (the Ivory-billed Woodpecker's [*Campephilus principalis*] demise) to emphasize a basic principle: that the central cause of extinction is loss of large areas of functioning habitat. Arguably, we don't need a new discipline to understand this

point! Askins moves on to general themes of restoration, leaving the reader with a practical vision of "cooperative management." The idea here is that if thinking based on landscape ecology is integrated with human dimensions (e.g. land use economics and policies), we can restore the complex weave of natural landscapes that comprise functioning ecosystems that support our (beloved) native species.

This book is appropriate for all readers with an interest in conservation and/or birds, but the conservation angle is emphasized as the main strength. Because birds are better known biologically than other organisms, a work with similar depth and breadth in community and landscape ecology could not have featured any other taxon. Conservationists dealing with planning at any spatial scale (local, regional, ecosystem management, national, etc.) will find here the kind of insights that spark good ideas for managing ecological communities to favor native species. Although the book is not a procedural manual for conservation, it is clearly more applicable than merely heuristic. I would use this book as recommended reading in undergraduate Landscape Ecology, Conservation Biology, Biogeography, and Wildlife Ecology courses, and as required reading in Avian Ecology and Conservation courses. I will extract parts of it for lectures in my own courses because of its extensive incorporation of scientific findings with relevance to conservation. The book would benefit from an index of concepts (there are taxonomic appendices, chapter notes, and references) to make it more useful in college courses. Ample visuals accentuate the readability; excellent line drawings by Julie Zickfoose and many good photographs enhance the text on most pages, and pithy quotes appear with each chapter heading. *Restoring North America's Wild Birds* should be available in every kind of library because its relevance to conservation crosses all societal boundaries.—KATHRYN E. SIEVING, *Department of Wildlife Ecology and Conservation, University of Florida, Gainesville, Florida 32611, USA.*

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Wetland Birds: Habitat Resources and Conservation Implications.—Milton W. Weller. 1999. Cambridge University Press, New York. xv + 277 pp. ISBN 0-521-63326-5. Cloth, \$74.95. ISBN 0-521-63362-1. Paper, \$32.95.—They are hidden amid the Great Plains, and each spring they awaken from their winter slumber. Life of all forms flourishes within their still waters: stalks of *Typha* and *Scirpus* rise en masse to transform a sea of brown into a carpet of green; larval damselflies and dragonflies crawl to the

water's edge and cast off their shells to become creatures of the air. Predatory mink and giant waterbugs prowl above and below the water's surface. And each spring they are home to the great flocks of migratory birds, many of which will settle in to raise their families. They are, of course, the prairie wetlands, and they rank among the most productive habitats on the face of the earth.

As Milton Weller outlines in *Wetland Birds*, the lifeblood of wetlands is water: it dictates seasonal plant growth and animal succession. Winter snows and spring rains fill ponds and recharge aquifers; small increases in summer temperatures accelerate evaporation, and temporary wetlands disappear while permanent ones shrink. Water control in the Florida everglades, for example, has transformed the annual cycle of seasonal flooding into semipermanent water with community-wide effects, highlighting an important problem: wetlands face the inexorable pressures of human intrusion. North America has lost half of its original wetlands to drainage, and much of the remainder is threatened; the figure is even higher in other regions of the world.

Another author writing about wetland birds might have chosen a more simplistic, taxonomic approach, but Weller, drawing upon a lifetime of experience, does not shrink from the challenge of doing justice to a complex topic. And he succeeds. The real subject of *Wetland Birds* is the intricate web of ecological factors that affect wetland dynamics; bird populations arise as an emergent property of these factors. Weller has done an admirable job of distilling mountains of material into easily digested chapters, 17 in all. Each is a short review of topics, including wetland types, habitat dynamics, foraging strategies, physiological adaptations, population biology, and management concerns. A reference list at the end of each chapter will allow readers access to a much larger underlying literature.

The book is balanced geographically: North American work receives greater attention than other regions, but Weller draws examples from across the globe. And, as someone who has succeeded in working on wetland birds for two decades without studying ducks, the taxonomic balance in this book is welcome. Waterfowl biologists need not worry; they will have plenty to read, but unlike the philosophy of certain management agencies and conservation groups, there is more to life than anseriforms. The layout of the book is handsome, with crisp line drawings and black-and-white photographs, and in this era of upward-spiraling book costs, I would be remiss if I did not draw attention to its modest price. My criticisms of this volume are few. At the risk of being too trendy, I would have liked to see a bit more on the potential effects of global warming on wetlands. This minor item notwithstanding, I can unhesitatingly state that every wetland biologist should have a copy of *Wetland Birds* on his or her shelf. Were I to teach a course