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Review of *Ecology and Conservation of Great Plains Vertebrates* Edited by Fritz L. Knopf and Fred B. Samson

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Ecology and Conservation of Great Plains Vertebrates. Edited by Fritz L. Knopf and Fred B. Samson. New York: Springer, 1997. xi+320 pp. Figures, tables, notes, references, index. $109.95 cloth (ISBN 0-387-94802-3).

Focusing on the plight of natural ecosystems in the Great Plains, Fritz Knopf and Fred Samson give prominent coverage to the region's "charis-

matic megafauna" and provide an excellent overview of the ecology and conservation of most vertebrate taxa. The editors granted their individual authors considerable leeway, resulting in contributions that are authoritative but unintegrated with each other. For example, in the Preface and most of the chapters, the Great Plains includes the tall grass prairie as well as the short and mixed grass prairie traditionally associated with the Great Plains region. In chapters on wetlands and fishes, tall grass prairie is explicitly excluded, and the latter chapter confines itself to the Central and Southern Plains.

The book has three sections, the first of which considers habitats and landscapes. The initial three chapters describe gradients in Great Plains vegetation structure and the effects of grazing and fire; wetlands and their formative processes, hydrology, plant communities, exotic vegetation, and vertebrate assemblages; and river dynamics and riparian vegetation. The section's final chapter, seeming somewhat out of place, offers a detailed examination of the ecology and management of ungulates, including cattle. The second section, dealing with vertebrate assemblages, opens with a chapter examining the historical and recent landscapes of the Nebraska sandhills and their vertebrate fauna. Its remaining chapters focus on three taxonomic groups: fishes, birds, and mammals. Birds are covered in chapters on the effects of fire, grazing, and drought in Kansas; the effects of fire on density of breeding birds in North Dakota; and the ecology of migratory shorebirds and management of their habitats. The excellent chapter on small mammals, both geographically and topically comprehensive, lists the species, discusses natural and anthropogenic factors affecting abundance, and examines important ecological relationships.

The third section consists of a single chapter by the editors on conservation issues, emphasizing the importance of diversity, biotic integrity, and sustaining ecological processes. It briefly reviews drought, fire, and grazing as ecological drivers of prairie ecosystems, tabulates estimates of prairie loss, and discusses threats to vertebrate populations in aquatic and terrestrial habitats. It also recommends monitoring population trends of seventy-two endemic vertebrates of the Great Plains as indicators of ecosystem health. Detected declines would lead to research to identify causes.

This volume, number 125 in Springer's Ecological Studies series, provides a wealth of organized information, including data not published elsewhere; historical and recent references following each chapter; and a comprehensive index almost one-tenth the book's length. Do these strengths justify the high price? Potential buyers should consider possible weaknesses, which include the lack of integration mentioned earlier. Thirty-nine

of the seventy-two species Knopf and Samson advocate monitoring are listed in tables but unmentioned in the text: the book does best with mammals (two of seventeen are only in tables) and worst with fishes (twenty-nine of thirty-four are only in tables). Another weakness is the index: common names are listed only under the first word of the name, requiring one to know the full, correct name. Reptiles and amphibians receive limited coverage, mentioned only if they occur in wetlands of short or mixed grass prairie, or in the Nebraska sandhills. Two errors should be noted: Figure 8.17 is a duplicate of one on the previous page (the correct figure is available at www.npwrc.usgs.gov); and chapter 11 implies that species richness and alpha diversity are synonymous. **Rolf R. Koford**, *U.S. Geological Survey, Biological Resources Division, Iowa Cooperative Fish and Wildlife Research Unit, Iowa State University.*