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Review of *This Fragile Land: A Natural History of the Nebraska Sandhills* by Paul A. Johnsgard

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BOOK REVIEWS

This Fragile Land: A Natural History of the Nebraska Sandhills. Paul A. Johnsgard. Lincoln: University of Nebraska Press, 1995. xv+256 pp. illustrations, maps, bibliography, and index. \$35.00 cloth (ISBN 0-8032-2578-4).

Books like this are rarely written. Today, most writings about natural features and charismatic landscapes tend to be of two types: those with subjective, generalized descriptions written for the layperson, or technical articles with great detail but little in the way of human emotion. This book, written by a professor who spent fifteen summers in the Nebraska Sandhills, presents sufficient technical detail to satisfy the professional, but at the same time conveys the images and emotions of the Sandhills plants, animals, and people.

About 50,000 square kilometers—one-fourth of Nebraska—are covered by the Sandhills, making this the largest area of sand dunes in the Western Hemisphere. These dunes, which reach heights of 140 meters above the intervening valleys and overlay sandy geological substrates (among them the famous Ogallala aquifer) that may reach a total depth of 300 meters, are covered with grasslands and associated shrublands, wetlands, and small amounts of forests. In addition to describing vegetation patterns and successional pathways, the author provides engaging accounts of the life histories of several typical sand dune inhabitants, including the burrowing owl, box turtle, yucca moth, long-billed curlew, kangaroo rat, grasshopper mouse, brook stickleback, eared grebe, and cliff swallow and barn swallow.

The large herds of bison that seasonally occupied the Sandhills were largely eliminated by the 1880s and replaced by grazing livestock. Various homesteading acts between 1841 and 1904 encouraged settlement, which probably peaked in the 1920s. Since then, as ranches have become larger, the human population has steadily decreased to an average of about one person per square mile (2.6 kilometers) within the Sandhill region. Invention of the center-point irrigation system in the 1940s allowed irrigation and productive corn farming in parts of the Sandhills. Subsequent drops in international corn prices, declining land values, and federal taxes meant to discourage conversion of natural wetlands to farmlands all reduced the use of large irrigation systems in the Sandhills in the 1980s. Nevertheless, wind erosion from the broken native vegetation, reduction in ground water, and ground water pollution from fertilizers and pesticides all continue to threaten portions of this fragile region.

The book is divided into three broad parts: the first offers a geological and geographical history of the Sandhills; the second describes the current ecology; the last (and shortest) is a discussion of environmental threats to the region. Most chapters include brief vignettes about Sandhills people and culture. The technical discussion is credible, although the lack of specific attribution is somewhat disconcerting to those accustomed to reading the scientific literature. Most of the major ecological themes of the Sandhills are mentioned in the text, although the casual reader may have difficulty identifying the important ones. The intricate relationships between grazing and drainage patterns receive only cursory discussion, although these are important in the currently emerging partnerships among landowners and policymakers who are seeking to manage the Sandhills.

This Fragile Land is very readable, filled with fascinating personal and scientific glimpses of the Sandhills, and provides a substantial amount of documented information. It should be read by all those who know the Sandhills and by all those who would like to know this intriguing and magical landscape. **Paul G. Risser**, *President, Miami University, Oxford, Ohio*.