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Review of *Changing Prairie Landscapes* Edited by Todd A. Radenbaugh and Patrick Douaud

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Changing Prairie Landscapes. Edited by Todd A. Radenbaugh and Patrick Douaud. Regina: Canadian Plains Research Center, 2000. 199 pp. \$24.95 paper.

In the past decade there has been a slow but steady change in the field of prairie conservation. More and more research is investigating the role of natural ecological processes and factors leading to the declines in many native prairie species. Although this change should be seen as progress, achieving the needed balance between science and practical roots in conservation remains illusive.

In *Changing Prairie Landscapes*, T. A. Radenbaugh and P. C. Douaud strive to increase both the scientific knowledge and more matter-of-fact influences on native prairie—a welcome effort. Originating in a conference held at the Royal Saskatchewan Museum in April 2000, eleven contributions are here collected. Six of them are essentially empirical in nature, and four describe different aspects of cultural or cultural-related changes. Two of the six empirical chapters provide meaningful evolutionary or long-term interpretations of changes in native ecosystems and their biota. P. L. Binda and E. M. Vasu Nambudiri, for example, describe events of the Cretaceous-Cenozoic boundary and question the impacts of such events as described by other authors. M. Boyd's chapter is an informative overview of landscape

and vegetation changes on Folsom (11,000-10,000 BP) and McKean (4,000-3,000 BP) site distributions.

The next three chapters begin to address more recent changes. D. G. Hopkins and G. L. Running add to our understanding of sandhill ecology and stratigraphy, offering refugia- and seed bank-based conservation recommendations to maintain high native species richness and a relatively unknown ecosystem. D. A. Peltzer describes two approaches to conserving grasslands based on ecosystem function, perhaps the key goal in providing ecological services required by humankind. He echoes—as many have—that grassland conservation is easier than restoration. Conservation in the United States has benefitted from the works of Fritz Knopf in his descriptions of declines in numbers and distributions of prairie birds. A. R. Smith and T. A. Radenbaugh add to this understanding with an important addition—information on declines that pre-date development of databases such as the North American Breeding Bird Survey. The remaining empirical chapter by M. M. Boehm and others provides a clear statement of the contribution and role agricultural soils can play in the Kyoto agreement to reduce greenhouse gases and the significance of grassland soils to the challenge of global change.

What sets this volume apart is the inclusion of politics, rural communities, impacts of development such as railroads, and a historical perspective on what many view as our primary challenge: contemporary global change. Unlike many areas, particularly in the United States, populism remains popular at least in Alberta and is, as T. Harrison notes, “as perennial as prairie snows in winter.” Out-migration from the Great Plains during the past few decades is well known and of great concern to remaining residents and politicians. M. R. Olfert and J. C. Stabler argue the future of small communities will depend more on their integration with centers where economic activity is concentrating than on their own economic base. Ignoring this suggestion in some areas of the United States has led to negligible economic growth and declines in human population densities.

The two remaining chapters provide stimulating historical perspectives. There is little question about the prominent role railroads played in the development of human settlements and the uses of native grasslands. A helpful addition to A. Paul’s essay on changing railroad landscapes would be discussions of impacts—both historic and current—on native biota. The analysis of records (1858-1873) of the Smithsonian Meteorological Project for Manhattan, Kansas, by K. Debres, brings to light an important data set, for it challenges some historical accounts and, more importantly, is illustra-

tive of the information required in conservation approaches that rest on historic ranges in variability.

I highly recommend the book as a source of information valuable toward understanding and conserving native grasslands. The book could have profited from a final chapter that attempted to synthesize the lessons to be learned from the ten content chapters. It is possible to come away from the volume feeling that some of what is offered represents the highly specific experiences of its contributors, which may be both a benefit and a shortcoming. Today, most innovative contributions to conservation attempt to consider evolutionary-ecological and human components. This book, from a conceptual and methodological viewpoint, achieves both. **Fred Samson**, *US Forest Service, Northern Region, Missoula, Montana*.