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Review of *Mountains and Plains: The Ecology of Wyoming Landscapes* by Dennis H. Knight

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Mountains and Plains: The Ecology of Wyoming Landscapes. Dennis H. Knight. New Haven: Yale University Press, 1996. 338 pp. Illustrations, maps, figures, tables, notes, references, index. \$18.00 paper (ISBN 0-300-06856-5).

Wyoming is a remarkable place, a showcase for ecological pattern and process; and this is an excellent book with an exceptional range of information, a book appropriate in vision to its magnificent subject. Dennis Knight has produced a wide-ranging general ecology, sure to be effective as a college-level textbook not only in Wyoming, but across the Great Plains, the Rockies, and even the Great Basin. Despite its title, it is not stubbornly or even preponderantly about landscape ecology. Read "landscape" in a panoramic, common sense way rather than as a technical term. The book treats ecology on many scales: bioregions, ecosystems, landscapes, communities, and often the autecology of species and homeostatic individuals making a living in a physically challenging place.

Seventeen chapters are arranged in six sections. Section I sets the stage, reaching deeply into geologic time for the foundations of present patterns. Sections II through IV discuss ecosystems along streams, on the Plains and in the basins, and in the foothills and mountains, respectively. The remarkably diverse landscapes of the Yellowstone Plateau, the Tetons and Jackson Hole, and the Black Hills and Devils Tower get their own chapters in Section V. Section VI explores sustainable management briefly but thoughtfully.

Knight focuses deliberately on plant ecology for cogent reasons. Vegetation is what we see in the landscape, and solar-powered vegetation integrates the physical environment, producing opportunity for the rest of the macrobiota. There is strong emphasis here on biotic response to the abiotic environment, but symbioses are not neglected. Knight comments on wildlife throughout, and occasionally one wishes he had commented more. The central role of bison and prairie dogs in grassland ecosystems receives appropriately prominent attention, but the fundamental importance of pocket gophers to the alpine landscape gets minimal mention. Knight emphasizes humans as agents in ecological pattern and change, and in summary observes wisely that "making a living in a semiarid, cool climate is problematic and must be viewed as experimental."

Illustrations are excellent. Line art is consistently high in quality and style—simple, informative, direct. Concept maps and flow diagrams model processes in each regional ecosystem. Numerous high-quality black-and-white photographs are integrated well with the text.

Some 1400 citations make the References a veritable bibliography of the ecology of the Interior West, though I found it curious that Merritt Cary's

classic "Life-zone Investigations in Wyoming" (*North American Fauna* 42:1-95, 1917) was not cited. There is an extensive glossary, especially useful in a book so rich in detail, a book as likely to be consulted as a reference as to be read straight through.

Mostly vernacular names of plants and animals are used in the text; appendices list technical names. The remarkable level of accuracy in the book's writing and editing makes the work virtually error-free.

Mountains and Plains will be accessible to a generation of college students, visitors, managers, and policymakers, which is a good thing. Wyoming (and the Interior West generally) deserves and demands stewardship informed by the wisdom of its landscapes—and informed by this fine book about them. **David M. Armstrong**, *Department of Environmental, Population, and Organismic Biology, University of Colorado, Boulder*.