(OLDEMEYER)

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Houston, D. B. THE NORTHERN YELLOWSTONE ELK. ECOLOGY AND MANAGEMENT. Macmillan Publishing Co., Inc., New York. 474pp., illustrated. 19[illegible].

This book is the culmination of ten years of research by Dr. Houston on the northern Yellowstone elk herd. In addition to the data personally collected, Dr. Houston has incorporated information from management surveys, research, and historical records which date back to the early 1900's. As such, the book is an accumulation of virtually all that is known about elk in the northern Yellowstone ecosystem. Because the book deals almost exclusively with that ecosystem, it may not be as widely read as two recently published books by Boyce and Hayden-Wing (1979) and Thomas Toweill (1982) which are more general treatments of elk.

The book begins with an introduction which includes the purpose of the research and the hypotheses to be tested. It then proceeds with chapters on: the study area, the elk population-history and numbers, the elk population-seasonal distribution, the elk population-dynamics, physiological ecology, elk behavior, the vegetation-statics and dynamics, elk-habitat relationships, relationships among species of herbivores, elk-carnivore relationships, and management. Those chapters are followed by ten appendices encompassing over half the book, 20 pages of references, and a thorough index.

Few, if any, treatments of a single species contain such extensive historic information as this book. This is particularly evident in the three chapters dealing with the elk population and the chapter on the vegetation. Part of the chapter on the vegetation is based on an interpretation of vegetational changes which are illustrated in photos taken in the late 1800's and during Dr. Houston's tenure during the 1970's. The rest of that chapter is based on vegetation measurements made on permanent transects from 1930 to 1978. Physiological ecology and elk behavior are given less emphasis and these chapters are considerably shorter. The chapter on elk-carnivore relationships is likewise short, but contains quantitative information on elk as a food for carnivores. The chapters on elk-habitat relationships and relationships among species of herbivores contain much of the author's personal data and appear to reflect much of his research emphasis with the latter chapter incorporating considerable information from his recent predecessors. The narrative portion of the book ends with a short but definitive set of management recommendations for the vegetation, elk, other ungulates, and carnivores in Yellowstone National Park.

The appendices contain a variety of supporting documentation and information. From my point of view, the most interesting was Appendix V, Comparative Photographs. This appendix contains 51 plates of pairs of photographs taken up to 100 years apart which show obvious changes in vegetation over time.

I found few typographical errors in the text. Some of the drawn figures were difficult to interpret (e.g., Fig. 2.2 on p. 6). I thought that some statistical analyses were not biologically meaningful (e.g., the correlation between area occupied by elk with time on p. 30). All in all, the book is a complete treatment of the northern Yellowstone elk herd, and will be of interest to those familiar with Yellowstone National Park or who want a detailed analysis of a dominant species in a single ecosystem.--John L. Oldemeyer, Ecology Branch, Denver Wildlife Research Center, Fort Collins, CO 80524.

Merritt, J. F., editor. WINTER ECOLOGY OF SMALL MAMMALS. Special Publication of Carnegie Museum of Natural History, Number 10. 380pp., 1984. Price $45.00 (cloth).

This volume, comprising 37 original papers, is a significant contribution to our understanding of the winter ecology of small mammals. The papers are the result of an international colloquium held at the Powdermill Nature Reserve of the Carnegie Museum of Natural History in October of 1981. The 45 invited participants from six nations included specialists in several disciplines whose common interest was the importance of snow to the ecology of winter-active small mammals.

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