

Sustaining western grasslands and associated wildlife: An introduction

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This publication is the result of a half-day symposium, "Ecology, management, and sustainability of western grassland ecosystems," held at The Wildlife Society's First Annual Technical Conference, September 22-26, 1994 in Albuquerque, NM. The symposium was sponsored by The Wildlife Society's Working Group on Sustainable Use of Ecosystem Resources and was organized by members Deborah Finch, Gale Wolters, and Bertie Weddell. The scope of this working group is the assembly, study, and transfer of information pertaining to the conservation of wildlife through sustainable uses of ecosystem resources throughout the world. Its goals are to facilitate communication and exchange of information among members of The Wildlife Society interested in applying the ecosystem management concept to wildlife conservation; enhance knowledge and technical capabilities of wildlife professionals in the definition, assessment, and implementation of sustainable uses of ecosystem resources; and increase public awareness and appreciation of the effects of resource uses on wildlife and of the role of sustainable resource use in wildlife management. For more information about this working group, see its charter at the end of this volume.

The purpose of the symposium was to review and synthesize information about the structure, function, and components of steppe and desert grassland ecosystems in the western United States with special emphasis on the ecological roles and requirements of wildlife species. Western grasslands under private and agency ownership have traditionally been managed primarily for livestock and crop production. Applied scientific studies have heavily emphasized methods and analyses

aimed at improving plant productivity, increasing livestock weight and numbers, and solving problems that affect economic return. A scientific foundation for maintaining and monitoring populations and communities of grassland wildlife, especially nongame species, in concert with commodity production is not well-established for most grassland ecosystems in western North America. This publication is designed to draw attention to some wildlife topics that have been particularly neglected for western grasslands.

The timing of this publication is especially appropriate because:

1. Scientists are reporting ecosystem endangerment, species endangerment, and animal population declines in many North American grasslands (Finch 1994; Knopf 1994; Flather et al. 1994; Noss et al. 1995; Samson and Knopf 1996);
2. Land-managing agencies with an ecosystem management orientation such as Bureau of Land Management and U.S. Forest Service are showing increasing interest, concern, and emphasis on nontraditional uses for grasslands such as recreation, wildlife viewing, birdwatching, hunting, and fishing (e.g., *Birds of Cimarron National Grassland*, Cable et al. 1996; USDA Forest Service 1996);
3. Professional societies such as the Society of Range Management as well as government and nongovernment organizations are flagging rangeland health and rangeland wildlife as topics of concern (USDA Forest Service, 1992; National Research Council 1994; Krausmann 1996); and
4. Local ranching communities accustomed to using government lands for rearing livestock are expressing uneasiness about tighter permit restrictions and perceived threats to their stockraising traditions and livelihoods.

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Monitoring data and syntheses of existing information are needed to address these shifts in values and resolve conflicting problems.

This publication represents a cross-section of the papers orally presented at the symposium as well as some additional papers solicited afterwards. Each paper was reviewed by a minimum of two peer referees prior to editorial review and publication. The publication begins with a review of climate, phenology, and disturbance factors in steppe and desert ecosystems by Bertie Weddell, followed by an analysis of effects of grazing on grassland ecosystems by Linda Wallace and Mel Dyer. Paulette Ford and Guy McPherson review information on the ecology and role of fire in short-grass prairie, especially in relation to how fire affects vegetation, arthropods, birds, and mammals.

Three papers review the literature on wildlife topics of special interest. Norm Scott provides a comprehensive synthesis of information on the evolutionary ecology and current status of reptiles and amphibians inhabiting North American grasslands. Habitat and roost requirements of bat species using southwestern grasslands are summarized by Alice Chung-MacCoubrey. Deborah Finch and Wang Yong supply an original analysis comparing the population trends, migration, and stopover habitat use of grassland-breeding sparrows to emberizids that breed in other habitats.

The volume ends with a paper by Mike Wolfe highlighting a progressive ecosystem management approach used by an experimental ranch in Utah. Managing for wildlife and livestock production, the ranch successfully demonstrates methods for achieving economic return while maintaining and enhancing land health and biological diversity. In summary, this publication should be of value to land managers, range conservationists, wildlife biologists, ecologists, and private citizens interested in sustaining the ecological health, productivity, and biological diversity of western grassland ecosystems.

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