



# **Wyoming Guidelines for Managing Sagebrush Communities with Emphasis on Fire Management**

**November 15, 2002**

## **FORWARD**

Beginning with the wildfire season of 1988 in the western U.S., and continuing to the present, considerable attention has been paid to the issue of fire fuels accumulation in natural ecosystems, largely as a result of decades of aggressive wildfire suppression practices. In response to this issue, a trend has emerged among many land and natural resource management agencies to develop prescribed fire programs as a tool for controlling fuels accumulation, as well as an ecosystem management tool. In recognition of this trend and the potential effects major burning programs could have on the Wyoming landscape (particularly sagebrush ecosystems), and as partners in species and habitat management, the Director of the Wyoming Game and Fish Department and the State Director of the USDI - Bureau of Land Management in Wyoming decided in the spring of 1999 to cooperatively assemble an interdisciplinary team to examine the issue of prescribed burning in sagebrush ecosystems, and as appropriate, to describe some basic operating principles, or guidelines, for conducting prescribed fire operations in sagebrush habitats. The information presented in this paper is the product of that effort. Cooperating agencies and individuals representing them are as follows: Wyoming Game and Fish Department: Gary Butler, Steve Kilpatrick, Mark Fowden, Bill Gerhart; Bureau of Land Management: Dave Roberts, Ken Stinson, Vicki Herren, Tom Rinkes; U.S. Forest Service: Dave Sisk, Rod Dykehouse, Dave Scott, and Natural Resource Conservation Service: Dick Rintamaki. Reviews of this document have been provided by both agency personnel and other subject matter experts.

The team recognizes that chemical, mechanical and biological treatments can also be effective tools for the management of sagebrush communities. Brief discussions of these tools are provided; however, the emphasis of these guidelines is on fire management. All treatments have the potential to result in both positive and negative impacts, depending on site-specific characteristics and objectives.

This document focuses on the health and ecological processes of the basic vegetation resource as it functions in the role of cover and food for wildlife. The field of view presented here examines the vegetation resource holistically on the landscape level. Wyoming's wildlife species have different habitat requirements. These guidelines are not customized to fit the needs of any individual species that might be found in the sagebrush ecosystem. Instead the information presented herein should be the base, or foundation, tier of a multi-tiered evaluation process that may be used for the planning of any project proposal in the sagebrush ecosystem. **Additional evaluation tiers for specific species management (e.g., sage grouse, mule deer, pronghorn, etc.) should overlay these guidelines when evaluating any given project proposal.** These fire management guidelines cover several of the most prominently occurring species of sagebrush found in Wyoming.

Management of sagebrush ecosystems is controversial. There are at least two separate “schools of opinion” regarding management of sagebrush: 1) aggressive, pro-active management of sagebrush; and 2) a more conservative, “hands-off” approach to sagebrush community management. Supporters of any combination of these management approaches hold strong views and have supporting literature and other documentation. The approach presented in this document leans toward the “pro-active management” of sagebrush ecosystems, but primarily promotes the collaborative planning and execution of resource management based on circumstances present for each specific management site and landscape.

Cite this document as follows:

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## **ABSTRACT**

It is estimated over 153 million acres of the western United States are dominated by various sagebrush species and approximately 58,000 square miles (37 million acres) of Wyoming are covered by thirteen different types of sagebrush. Such sagebrush communities evolved as dynamic landscapes with climatic and edaphic variation driving changes in fire frequencies, and in adaptive development of different sagebrush species. Investigations indicate the historic sagebrush-steppe ecosystem was a mosaic of successional (age) classes created and maintained by fire regimes ranging in frequency from 10-110 years, or more, as well as other factors depending on sagebrush species and specific geographic area. The diversity and juxtaposition of sagebrush community type, age class and associated vegetative community types provide habitat for approximately 87 species of mammals, 297 species of birds and 63 species of fish, reptiles and amphibians. Human-induced fire suppression and repetitive domestic livestock and wild ungulate herbivory have led to successional stages across the landscape. Prescribed fire, wildland fire use, and herbivory management can be effective tools available to managers for maintaining and enhancing sagebrush types and associated communities. If sagebrush treatments are planned, prescriptions must be carefully designed and tailored to the sagebrush species, herbaceous understory, and associated wildlife species. This paper provides recommendations for landscape-scale management of nine species/subspecies/varieties of sagebrush found in Wyoming: Wyoming big sagebrush (*Artemisia tridentata* ssp. *wyomingensis*); mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana* var. *pauciflora*); Vasey big sagebrush (*Artemisia tridentata* ssp. *vaseyana* var. *vaseyana*); basin big sagebrush (*Artemisia tridentata* ssp. *tridentata*); plains silver sagebrush (*Artemisia cana* ssp. *cana*); mountain silver sagebrush (*Artemisia cana* ssp. *viscidula*); Wyoming threetip sagebrush (*Artemisia tripartita* ssp. *ruplicola*); tall threetip sagebrush (*Artemisia tripartita* ssp. *tripartita*), and black sagebrush (*Artemisia nova*).

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