

THE USE OF PRESCRIBED FIRE TO ACCOMPLISH RESOURCE MANAGEMENT OBJECTIVES BY INCREASING THE PRODUCTION AND DIVERSITY OF PLANT COMMUNITIES

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ABSTRACT

In Wyoming, the west slope of the Big Horn Mountains and the foothills of the Absaroka Mountains on the eastern edge of the greater Yellowstone ecosystem contain diverse plant communities that support such varied land uses as livestock grazing, wildlife habitat, timber harvest, and recreation. The U.S. Department of the Interior, Bureau of Land Management (BLM) accomplishes specific resource management objectives primarily by managing plant communities for these land uses. Prescribed fire has been used since 1980 to increase plant community diversity, restore fire-dependent forest types, create vegetation mosaics, and increase production of rangelands. Prescribed fire is preferred over herbicide treatments on rangelands for several reasons: (1) cost advantages, (2) herbicides' tendency to simplify plant communities, (3) restrictions against use of herbicides in riparian areas, and (4) the relative ineffectiveness of herbicides against conifer encroachment on rangelands. In forested ecosystems, prescribed fire is used in combination with logging to restore fire-resistant ponderosa pine (*Pinus ponderosa*) stands and to promote aspen (*Populus tremuloides*) regeneration. Where public, state, and private lands are intermixed, BLM conducts prescribed fires in cooperation with private landowners and the Wyoming Game and Fish Department. A significant portion of funds required to conduct prescribed burning is contributed to BLM by the Rocky Mountain Elk Foundation, the Wyoming Game and Fish Department, and public land grazing permittees. Monitoring has shown that prescribed fire is a useful tool for increasing the diversity and production of plant communities in northern Wyoming.

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