

Project Summary

Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Response of a prairie ecosystem on the Northern Great Plains to prescribed fire
Type of Project: Research
Funding Agency: BLM
Other Partners/Cooperators:
Effective Dates: October 1, 2001 thru December 30, 2001
Funding Amount: \$11,500.00
<p>Investigators and Agency Representative (include name, address, phone, email): Primary Contact: Brad Sauer, Fire Management Specialist, Central Montana Fire Management Zone, Montana BLM, Lewistown, MT. 406-538-1986</p> <p>Principle Investigator: Dr. Clayton Marlow, Professor of Range Science at Montana State University. 406-994-2486</p>
<p>Project Abstract:</p> <p>The natural communities of the northern great plains have endured several monumental changes in grazing/browsing use, demographics, and modification of natural processes. The one constant has been the presence of wildlife, though that too has probably become less frequent with the change from native American to European societies and the increase in fire suppression.</p> <p>A change in the historic fire regime on sites in the Armells creek drainage of central Montana appears to have precipitated a change in wildlife habitat, streamflow, riparian conditions within the watershed through alteration of the plant community, changes in size of shrubs and trees and the proportion of grassland, shrubland and closed forest community types. The overall outcome of the altered fore regime has been a significant increase in the number of conifers, specifically ponderosa pine and two species of juniper. The increase has led to a closure of existing forest canopy and invasion of former sagebrush/grassland communities by conifers. Further changes in the natural processes of the breaks community types have resulted from the interruption of surface water flow through the increase of evapotranspiration from greater conifer numbers. Additionally, sprouting shrubs historically present on the site, such as chokecherry and currant, appear to be declining in productivity and vigor due to the encroachment of conifers and associated shading, the lack of stimulation by fire and the reduction of available shallow groundwater.</p> <p>Objectives:</p> <ol style="list-style-type: none"> 1. Describe, map and provide quantitative documentation of the pre-burn status and components of the soil, surface water, shallow groundwater and vegetative communities in the proposed burn units, for the purpose of evaluating the opportunity for conducting a replicated study of the outcomes of prescribed fire. 2. If conditions support replicated study, use the survey data as the pre-burn baseline database. 3. Work with BLM personnel to develop funding proposals to continue this effort for ten years post-burn to document the effects of elevated groundwater on spring flow. Riparian vegetation succession, changes in upland and forest vegetation, use of habitat by ungulates, rodents, small mammals, avian, and other species.
<p>Outcomes with completion dates (reports, publications, workshops, videos, etc.): Summary report and copy of all data: 12/30/01</p>
Keywords: Armells Creek, prescribed fire, prairie ecosystem

For Administrative use only:

Date Annual Report Received:

Date Final Report Received:

Publications, etc. on file:

Attach any appropriate supporting materials.