

## Project Summary

### Rocky Mountains Cooperative Ecosystem Studies Unit

**Project Title:** Historic Fire Regimes and Change Since European Settlement on the Northern Mixed Prairie: Effect on Ecosystem Function and Behavior

**Type of Project:** Research

**Funding Agency:** BLM

**Other Partners/Cooperators:** USDS-FS, BIA, MT-DNRC, US FWS, Dept. of Army

**Effective Dates:** 9/27/1999 to 8/30/2004

**Funding Amount:** \$296,738.00

**Investigators and Agency Representative:**

Agency: Bruce Reid, BLM, Lewiston Zone Office, 80 Airport Rd., Lewiston, MT 59457 (406) 538-7461

PI: Ron Wakimoto, Professor of Fire Sciences, and Earl Willard, Professor of Range Sciences. School of Forestry, The University of Montana, Missoula, MT 59812; 406 243-6201; wakimoto@forestry.umd.edu

#### **Project Abstract:**

Wildland fuels have increased during the past half-century due to fire management policies and practices. Fire suppression has led to fuel accumulations, which contribute to more intense, often catastrophic, fires that are more difficult to control. Costs and risk of fire control have escalated, risks to human life are high, and fire-dependent ecosystems have deteriorated. There is a recognized need to evaluate and compare fuel management practices and methods, including prescribed fire and a "no burn" policy. Needed information includes description or definition of what constitutes a natural fire regime, how fire regimes and behavior have changed since European settlement, and how changes affect ecosystem structure and function. This information is mostly unavailable for the Northern Mixed Prairie. Our study objectives are to: 1) synthesize fire, regime, fire behavior, and ecosystem response information throughout the Northern Mixed Prairie ecosystem, 2) collect, analyze and summarize field data, 3) complete and publish final reports, and 4) conduct project completion symposium. The approach is to: 1) review and summarize all records of historic fire regimes and fire behavior and changes since European settlement, 2) review and summarize all records related to the effects of a changing fire regime on the ecosystem, and 3) Conduct field studies on a wide array of previously burned sites to determine how a changing fire regime affects plant species, species constancy, vegetation similarity, community diversity, vegetation structure, fuel loading and predicted fire behavior. This information will provide a scientific basis for fire management through out the region.

#### **Outcomes with Completion Dates:**

Annual progress reports will be provided. In addition, the final products will be provided as follows:

December, 2001: Final report which provides a review of all records concerning a) historic fire regimes and fire behavior in the Northern Mixed Prairie and b) changes in fire regimes and fire behavior which have occurred since European settlement.

**Keywords:** Wildland fuels, historic fire regimes, historic fire behavior, Northern Mixed Prairie

#### **For Administrative Use Only:**

Date Annual Report Received:

Date Final Report Received:

Publications, etc. on file: