

Project Summary

Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Impacts of Fuel Treatment Methods on Soils and Management Recommendations for Future Fuel Treatments in Yellowstone National Park

Discipline: Natural Resources
Type of Project: Technical Assistance
Funding Agency: National Park Service
Other Partners/Cooperators: Montana State University
Effective Dates: May 1, 2010 - March 1, 2011
Funding Amount: \$9165

Investigators and Agency Representative:

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Project Abstract:

The question at hand is, "What is the status of current literature describing effects of heavy equipment use and soil stripping on soil types present in the Wildland Urban Interface (WUI) areas of Yellowstone National Park (YNP)?" A synthesis of the literature will be performed in which the current body of literature would be reviewed for relevance, an annotated bibliography would be prepared, and knowledge gaps will be identified. The literature synthesis will be utilized to draft Management Recommendations that address impacts of heavy equipment and soil stripping on soil types found in YNP WUI areas. A research design with sampling methods will outline an approach to gather data on YNP sites that have already been impacted or to utilize upcoming fuel treatment areas to study additional management recommendations. Products include:

1. **An annotated bibliography** of relevant literature and identification of knowledge gaps will be assembled related to soil disturbances. Copies of those research papers will be given to the park in hardcopy or electronic format for future reference and to facilitate an understanding of the science.
2. **A written document describing Management Recommendations** for heavy equipment use during fuel treatments on soil types commonly found in WUI, with references to the literature provided to guide YNP in designing future mitigations for fuel treatments based on soil type.
3. **A written document describing a research design if current literature is inadequate, and a monitoring design with sampling methods** to allow YNP staff to adequately monitor soil impacts of the specified mechanical fuel treatment methods in the future when necessary.
4. **A map** (and spatial data layer) will be provided showing where this information is applicable.
5. **A presentation** will be provided to park fire and resource managers to present and discuss findings. If appropriate, the study will be submitted to *Yellowstone Science* for publication.

Outcomes with Completion Dates: December 31, 2010

Keywords: Wildland Urban Interface (WUI), fuel treatments, heavy equipment, soil impacts, Yellowstone National Park, Montana State University