

## **Project Summary**

### **Rocky Mountains Cooperative Ecosystem Studies Unit**

**Project Title: Develop Prescriptive Re-seeding Plan for Preserving Hay Field Component at Grant-Kohrs Ranch National Historic Site**

**Type of Project:** Technical Assistance  
**Discipline:** Interdisciplinary  
**Funding Agency:** National Park Service  
**Other Partners/Cooperators:** University of Montana  
**Effective Dates:** 6/1/2012 - 12/31/2015  
**Funding Amount:** \$5,000

**Investigators and Agency Representative:**

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**Project Abstract:** The primary goal of this technical assistance proposal is determine the appropriate seed mix and planting prescription to maintain the Hay Fields Cultural Landscape Component. According to the Grant-Kohrs Cultural Landscape Report, Part Two, Treatment Recommendations (February 2009), "maintaining healthy plant communities representative of...irrigated hayfields and pastures (primarily consisting of introduces pasture grasses) is of primary importance for park management"

This project will help preserve the cultural landscape that contributes to the site's designation as a National Historic Landmark. Appropriate treatment was determined in the 2009 Cultural Landscape Treatment Report for Hayfields, Pastures, and Uplands. This report states that "The overall goal of vegetation management is to sustain the appearance or actual historically appropriate plant communities." The areas to be re-seeded are those whose vegetation is losing either the correct species composition or coverage. The result in a change in the appearance of the fields and ability of it to produce in ways that allows for historically correct use - haying and/or grazing by cattle and horses. Hay fields with alfalfa need to be replanted every seven to ten years to maintain a healthy crop and appearance - it has been over ten years and individual alfalfa plants are becoming very sparse. Other types of vegetation is taking its place, changing the appearance and production level of the field. In some of these hayfields the vegetation is so light that the only reason it is being cut is to maintain a historically correct appearance of the haying pattern.

An effective prescription for no-till seeding of historically accurate vegetative species needs to be developed that can be implemented with the site's equipment. This project will provide direction on seed and variety selection, seeding rates and timing, seed area preparation, soil nutrient testing, irrigation timing, vegetation monitoring of reseeded areas (pre and post seeding composition), and will prepare a report of recommendations for effective no-till seeding prescriptions.

**Outcomes with Completion Dates:**

**Draft final report due by December 31, 2014**

1. Conduct a literature review for no-till seeding recommendations in irrigated pasture settings and for seed/seed variety that would match historically appropriate vegetative species
2. Assist with developing seed rates/timing and evaluation of priority areas for seeding
3. Establish/monitor demonstration plots for no-till seeding with pre and post treatment monitoring
4. Prepare a written report for successful no-till seeding prescriptions.

**Keywords:** seeding treatment, hay fields, cultural landscape, 2009 Cultural Landscape Treatment Report for Hayfields, Pastures, and Uplands, National Historic Landmark, Grant-Kohrs Ranch National Historic Site (GRKO), University of Montana, Division of Biological Sciences