

Project Completion Report Rocky Mountains Cooperative Ecosystem Studies Unit (RM-CESU)

Project Title: Promote Preservation of Resources through Monitoring at Grant-Kohrs Ranch NHS

Project Code: H1200-09-0004 PR1586120004 MSU-242

Type of Project (Research, Technical Assistance or Education):

Funding Agency: National Park Service

Partner University: Montana State University

NPS Agreement Technical Representative: Christine Ford, Integrated Resources Program Manager, Grant-Kohrs Ranch NHS

NPS Technical Expert: Jason Smith, Integrated Resources Program Manager, Grant-Kohrs Ranch NHS

Principal Investigator: Bret E. Olsen, PhD, Professor of Range Ecology, Animal and Range Sciences Department

Start Date of Project: March 1, 2012

End Date of Project: March 1, 2014

Funding Amount: \$18,233

Project Summary, including descriptions of project deliverables, work accomplished and/or major results. If the information is restricted (e.g. location of endangered species or cultural resources), indicate the title and location of the final report. Also add web sites where project-related information may be found.

The CESU agreement was initiated with Montana State University and Principle Investigator Dr. Bret Olsen, Professor of Range Ecology, to provide two interns to monitor natural resources at Grant-Kohrs Ranch NHS (GRKO). NPS project funds were through the Youth in Partnership (YIP) program.

Because of the CESU agreement, the monitoring program at GRKO met the YIP programs' objectives of promoting a conservation ethic in young interns and using their monitoring work to direct preservation of resources. The YIP program at GRKO achieved the Call to Action, Item 2, Step by Step, specifically by creating a deep connection between two young interns and GRKO through a series of diverse experiences.

The interns received orientation to the history and purpose of the National Park Service and GRKO to understand how their work would contribute to the organizational missions. On site mentoring and work plan direction for the project was provided by GRKO Resource Manager. Monitoring standards and protocols were provided/taught by GRKO resource, Montana State University, NPS Inventory & Monitoring, and NPS WASO water rights staff.

The student interns accomplished the following tasks during their June through August season:

1. Produced a soil and vegetation data set for each fenced pasture/hayfield utilizing the NRCS Web Soil Survey
2. Identified vegetative key species and key areas and completed a forage inventory for each pasture
3. Created a comparison table of NRCS Web Soil Survey data with field collected forage inventory data and updated estimated Animal Unit Months (AUMs) table by pasture/hayfield.
4. Completed a Riparian Health Assessment for four small streams
5. Determined age classes of key plant species in upland pastures
6. Completed GPS mapping of invasive plants over more than 750 acres
7. Assisted NPS Inventory and Monitoring staff in completing vegetation, soil, and water quality sampling
8. Completed and updated Columbian ground squirrel and beaver surveys
9. Assisted with irrigation water flow measurements and data processing
10. Photographed and created PowerPoint presentation of birds and vegetation at GRKO; and
11. Assisted with historic ranch work and interpretive events

Data or presentations (where applicable) for all tasks are available for review at the GRKO Resource Management Office. The valuable data collected through the interns' efforts is being used to communicate and facilitate resource stewardship.

Training opportunities for the interns included GRKO All Staff Safety Day, Montana Range Days, GRKO Teacher's Workshop, Montana Avian Science Center monitoring, NPS ROMN I&M vegetation and soil monitoring, NPS ROMN I&M water quality sampling, NPS WASO water flow measurement, MSU student training on forage sampling.

Here is a quotation from an email sent by one of the YIP interns to the PI and GRKO Resource Manager, regarding her summer experience at GRKO: "I wanted to let you both know about the great opportunity that came up for me to work on a water quality project for my senior project. There were many people who applied to the project for their senior project, but I was able to use all the work I did over the summer with the water quality specialists to my benefit when I applied, and I was one of 2 people who got the project! I'm so excited and can't wait to start working on it. I will be monitoring a local creek over the course of the quarter as part of an on-going project to measure the creek's water quality. I wanted to thank you both again for such a great summer filled with so many learning experiences."

Number of students participating in this project: undergraduates, graduate students, degrees conferred. The two undergraduate interns selected were a fourth year Environmental Management and Protection student under the Natural Resources and Environmental Sciences department at Cal Poly, San Luis Obispo; and a sophomore at Montana State University working towards a double-degree in Rangeland Ecology and Management and Equine Science.