

Project Summary
Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Pre- and Post-Restoration Monitoring, Drakesbad Meadow, Lassen Volcanic National Park, California

Discipline: Natural
Type of Project: Technical Assistance
Funding Agency: National Park Service
Other Partners/Cooperators: Colorado State University
Effective Dates: 5/1/2012 - 5/31/2014
Funding Amount: \$23,141

Investigators and Agency Representative:

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Investigator: David Cooper, Department of Forest, Rangeland and Watershed Stewardship, Colorado State University, Fort Collins, CO 80523, Phone: 303-499-6441; dcooper@rm.incc.net

Project Abstract: The purpose of this study is to collect hydrologic data and vegetation composition and cover data for Drakesbad Meadow during 2012 and 2013. These data will support an analysis of the effects of the larger scale restoration work (ditch filling) on the meadow's hydrologic regime and vegetation. Summer of 2012 measurements will be pre-restoration data, and measurements made in summer 2013 will be post-restoration data.

An existing monitoring well and piezometer network was established by Patterson and Cooper (2007) in 2001 through 2003 and data are available from these wells for the years 2001-2004. We propose to collect biweekly data from all wells during 2012 and 2013. A subset of wells will be instrumented with pressure transducers that will measure water levels hourly during the summer. Since Drakesbad Meadow hydrology is driven by snowmelt and ground water discharge from hillslope spring complexes, the meadow water levels slowly decline during the summer, and biweekly measures will provide a suitable set of data to compare pre- and post-restoration water tables.

All data will be entered into spreadsheets and graphically presented to LAVO staff and to Joel Wagner (NPS Water Resources Division) in the fall each year. After the summer of 2013, we will provide an analysis, well by well, on hydrologic changes that occurred due to restoration.

At each well, a 10 m² circular plot would be analyzed each summer to quantify the composition and canopy cover by species of all vascular plants occurring at each well. A comparison of these data with vegetation data collected in the summer of 2003 would be performed at the end of the project. Vegetation changes that occurred over the 11-year study period due to implementation of restoration work will be described and quantified.

Outcomes with Completion Dates:
Submit final report and data files to NPS - May 2014

Keywords: long-term monitoring, wetland ecology, Drakesbad Meadow, Lassen Volcanic National Park, California, Colorado State University