

Project Summary
Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Monitoring water levels and vegetation cover, and producing a Jurisdictional Wetland Delineation Map and Report, in the Grand Ditch Restoration study area in Rocky Mountain National Park, Colorado

Discipline: Natural
Type of Project: Technical Assistance
Funding Agency: National Park Service
Other Partners/Cooperators: Colorado State University
Effective Dates: 6/10/2013 - 12/31/2014
Funding Amount: \$11,780

Investigators and Agency Representative:

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Project Abstract: This project addresses two needs for the continued planning and permitting for the Grand Ditch Restoration effort, (1) long term data collection, and (2) jurisdictional delineation of wetlands in the restoration area.

Long term monitoring of ground and surface water levels is critical to the design of restoration projects. Monitoring wells and staff gauges were established in the Grand Ditch restoration area in 2005, and have been monitored annually since that time. These data provide excellent information for understanding the water levels that occur in the three main restoration study areas, Lulu Creek, Colorado River, and Lulu City wetland. It's important to keep monitoring water levels because these sites have changed substantially due to sediment erosion over the past 5 years.

Colorado State University will monitor water levels in all study sites weekly or biweekly during the summer of 2013. This work will start as soon as snow has melted from the upper Colorado River valley. All data will be added to existing spreadsheets on water levels in monitoring wells. These data will be analyzed in the fall and a report produced identifying water level changes through time, and the implications of water level to restoration design.

All wells and staff gauges are in place for this portion of the study. No additional installations are necessary. At the end of each year, the data will be used to produce graphs of water levels through time for each well.

These data will also provide guidance for the development of planting plans for the Lulu Creek, Colorado River and Lulu City wetland restoration efforts. Data will be added to existing cross sections and profiles of channel, floodplain and valley to increase their validity. We will use all of the cross sections to create a synthetic cross section showing a sloping land surface away from a stream, and the plant species and communities that are distributed along the gradient. This average land surface-water table depth-vegetation model would be used for developing the land grading and planting plan for the major desirable riparian communities.

The second task is to delineate jurisdictional wetlands and waters of the US according to the US Army Corps of Engineers protocols, using the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (US Army Corps of Engineers, 2010). Wetlands will be identified and boundaries determined using the COE manual, and a map of wetlands developed.

Outcomes with Completion Dates:

Draft Final Report - 4/30/2014
Final Report - 5/31/2014

Keywords: wetlands, monitoring, restoration, Grand Ditch, Rocky Mountain National Park, Rocky Mountain I&M Network, Colorado State University