

Project Completion Report

Rocky Mountains Cooperative Ecosystem Studies Unit (RM-CESU)

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

Project Code (such as UMT-72 and/or the “P” number): CSURM 271, P13AC00625

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

Funding Agency: National Park Service

Partner University: Colorado State University

NPS Agreement Technical Representative (with complete contact information): Paul McLaughlin

Principal Investigators (with complete contact information): Dr. David J. Cooper, Department of Forest and Rangeland Stewardship, Colorado State University, Fort Collins, Colorado 80523, phone: 970-491-5430, Email: david.cooper@colostate.edu

Start Date of Project: 5/1/2012

End Date of Project: 12/31/2014

Funding Amount: \$11,780.00

Project Summary, including descriptions of products, 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. This project focused on collecting data on ground water levels in the Lulu City and Colorado River potential restoration areas in Rocky Mt. National Park. Wells have been in place since 2005, and this effort focused on collecting data to quantify the water table depth in the study area to help determine where restoration needs were greatest and the type of restoration that should occur. In addition, we collected data on the presence of US Army Corps of Engineers regulated wetlands in the study area, including field data on the presence of hydric soils, hydrophytic vegetation, and wetland hydrologic regimes, and precise maps of the distribution of these wetlands. These data will be used to assist Rocky Mt. National Park in submitting a request for a S404 permit to the COE once final plans for restoration are agreed upon by NPS. These data are integrated into past efforts to quantify the water levels in the study region. They will provide essential baseline data in the effort to determine the most suitable approaches for restoring the Lulu City wetland and riparian zones along the Colorado River.

Number of students participating in this project: undergraduates, graduate students, degrees conferred. 3 graduate students participated in the field and office work for this project.

Lessons Learned from this project: In the study area ground water levels tend to be either too deep or too shallow to support the natural tall willow communities that occurred naturally and that are the desired restoration outcome for the Grand Ditch restoration program. Where water levels are too deep, conifer invasion is highly likely as occurred in the past along the Colorado River upstream from the Lulu City wetland. In most of the Lulu City wetland today, water levels are too high and stable, and support dense and tall Carex dominated communities and are too wet to support tall willow species and communities.