

Project Summary
Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Continuation of Restoration Effectiveness Program in Rocky Mountain National Park

Discipline: Natural
Type of Project: Technical Assistance
Funding Agency: National Park Service
Cooperators: Colorado State University
Effective Dates: 7/1/2015 - 12/31/2018
Funding Amount: \$50,000

Investigators and Agency Representatives:

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Project Abstract: Human caused disturbances and vegetation restoration needs in Rocky Mountain National Park (RMNP) are increasing due to repair or improvements to park infrastructure and increasing visitor use. Increases in invasive exotic plants like Canada thistle (*Cirsium arvense*) and cheatgrass (*Bromus tectorum*) infestations are expanding. Twenty years ago, cheatgrass rarely inhabited sites above 8,000 feet elevation, but it currently is found at sites up to 9,500 feet in RMNP. A comprehensive exotic treatment and vegetation restoration effectiveness monitoring program is needed to make science based and informed decisions on treating invasive plants and restoring disturbed park lands and important wildlife habitats. Information from this monitoring program will benefit RMNP, other National Park Service units, regional land managers, and advance the field of restoration ecology.

Rocky Mountain National Park's existing vegetation restoration program does not meet current needs for statistically valid data. Existing exotic treatment and native plant restoration monitoring protocols need to be reviewed, updated, and properly implemented. This project will provide a science based restoration management program using an adaptive management approach that will develop a treatment and monitoring handbook for exotic plant treatments and effective restoration of native plants. The methodology and results will also provide a framework to adaptively change treatments, restoration techniques, and monitoring in the face of future physical environmental changes (e.g. wildland or prescribed fire, floods, human caused disturbances, and climate change).

Rocky Mountain National Park will collaborate with Colorado State University (CSU) College of Agricultural Sciences researchers during a three-year project to develop and implement an adaptive management restoration and monitoring program that will measure the effectiveness of vegetation restoration activities.

Outcomes with Completion Dates:

Final Synthesis Report - October 31, 2018.

Keywords: vegetation, restoration, monitoring, Rocky Mountain National Park, Colorado State University