

Project Summary

Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Determining feasible methodology for restoring campground riparian forest area, Devils Tower National Monument, WY.

Discipline: Natural
Type of Project: Research
Funding Agency: National Park Service
Other Partners/Cooperators: Montana State University
Effective Dates: 9/15/2010 - 6/1/2015
Funding Amount: \$53,400

Investigators and Agency Representative:

NPS Contact: Mark J. Biel, Devils Tower National Monument, PO Box 10, Devils Tower, WY 82714; 307 467-5283 Ext 212; mark_biel@nps.gov

Investigator: Clayton Marlow, 230D Linfield Hall, Montana State University, Bozeman, MT 59717-2900 ; phone (406)994-2486 ; cmarlow@montana.edu

Project Abstract: This project's purpose is to determine the most feasible method and plant species mix for restoration of the Belle Fourche River riparian forest within the Monument. Refinement of regional riparian restoration techniques will be necessary because of the unique conditions that have developed along the 2 mile river reach within DETO. This will be accomplished through soil surveys, shallow groundwater monitoring, establishment of test plots for species/varietal establishment and soil amendments. Trials will identify tree/shrub species adapted to the current soil and groundwater conditions, planting techniques to limit drought and herbicide residual toxicity on planting establishment, and deer browsing control measures to assure long term survival. The research has the potential to immediately restore 2.4 ha of riparian forest habitat in a popular campground and ultimately establish a planning platform for future restoration of the Monument's riparian gallery forests.

Outcomes with Completion Dates: June 1, 2015

- 1) A report documenting the most feasible methodology for riparian forest habitat. The methods may include, but are not limited to, species recommendations, site preparation techniques, soil amendments, irrigation, and deer browse control.
- 2) Riparian soil shall be evaluated for texture, percent coarse fragments, seasonal groundwater levels, stream bank residual Tordon, and 2,4D levels.
- 3) Copies of all field notebooks, photographs, and data to be archived in the park's museum collection located at Mount Rushmore National Memorial.

Keywords: restoration, plant species mix, Belle Fourche River riparian forest, Devils Tower National Monument, Montana State University