

**Project Summary**  
**Rocky Mountains Cooperative Ecosystem Studies Unit**

**Project Title:** Long-term Evaluations of Tamarisk Control and Management Efforts at Bent's Old Fort National Historic Site, La Junta, CO

**Discipline:** Natural  
**Type of Project:** Technical Assistance  
**Funding Agency:** National Park Service  
**Other Partners/Cooperators:** Colorado State University  
**Effective Dates:** June 1, 2010 - March 1, 2012  
**Funding Amount:** \$5,000

**Investigators and Agency Representative:**

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**Project Abstract:** A decades-long effort at controlling riparian tamarisk infestations along the Arkansas River and at Bent's Old Fort NHS (BEOL) resulted in successful removal of plants from more than 350 acres. Monitoring and targeted re-treatments have maintained this level of tamarisk control. Re-vegetation at treatment sites was allowed to occur naturally and has resulted in different patterns of native and invasive plant species establishment at former treatment sites.

Since treatments began at BEOL the extent of - and investment in - tamarisk removal efforts at other invaded sites along the lower Arkansas River has increased greatly. This project allows a unique opportunity to study the long-term impacts of tamarisk removal and control along a gradient of riparian conditions, with different treatment options. Removal techniques used by BEOL can be compared to other methods used at other sites along the River.

**Proposed Tasks:** Researchers will establish vegetation sampling plots at multiple former treatment locations at the BEOL site. Data from the plots will be collected over a number of years, as funding allows. Sampling plots will be stratified based on the initial classification of dominant vegetation type (i.e. native versus non-native and/or invasive), along with other significant environmental factors. Data collected at each sampling plot will include: (1) history of tamarisk control, (2) height, number and diameter of live tamarisk stems, (3) estimates of total aboveground biomass, (4) cover and density of plant species, (5) soil variables. Soil samples taken in the plots will be used for greenhouse seed bank studies, as funding allows, to determine seed presence and viability. This project will also include comparison of data collected from BEOL treatment locations with studies currently being conducted at other tamarisk control sites along the Arkansas River.

**Outcomes with Completion Dates:** September 30, 2011.

- Literature review and compilation of existing information
- Final Report of monitoring data collected and compared to other site data
- Compilation of historic data from Bent's Old Fort tamarisk control project. Comparison of monitoring data, photographs, compilation of maps from project file
- Article for NPS or other environmental publication

**Keywords:** Tamarisk, vegetation sampling plots, Arkansas River, Colorado State University, Bent's Old Fort National Historic Site