

## **Project Summary**

### **Rocky Mountains Cooperative Ecosystem Studies Unit**

**Project Title:** Climate Change, Biological Invasion, and Water Management in Western Riparian Forests

**Discipline:** Natural  
**Type of Project:** Research  
**Funding Agency:** USGS  
**Other Partners/Cooperators:** Colorado State University  
**Effective Dates:** 9/1/2014 - 8/31/2019  
**Funding Amount:** \$114,990

**Investigators and Agency Representative:**

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**Project Abstract:**

The goal of this research is to obtain more information on effect of changes in streamflow and sediment regimes due to climate change, as well as effect of changes in streamflow and sediment regimes due to major restoration actions such as dam removal, on riparian communities. In addition, more research is needed on potential, ne major biological invaders in riparian ecosystems.

The specific objectives of this project are to:

1. Predict effects of climate change on the relative timing of native riparian tree seed dispersal and snowmelt peak streamflow in the Upper South Platte River Basin.
2. Assess the current abundance and distribution of non-native Siberian elm in Colorado and New Mexico riparian ecosystems, and evaluate effects of human disturbance, seed sources, and environmental conditions on its invasion.
3. Examine effects of water regulation on forest succession, geomorphology, and soil properties along the Elwha River.
4. Predict effects of increasingly intermittent flows under climate change on riparian vegetation and biological invasion along small streams in the Upper Colorado River Basin.
5. Begin development of a review paper on effects of increasingly intermittent flows under climate change on riparian and riverine biota.

**Outcomes with completions dates:** August 31, 2019

**Keywords:** climate change, biological invaders, water management, western riparian forests, USGS, Colorado State University