



## Statement of Research and Monitoring Need Riparian Restoration Monitoring

### Background

Several DMG partners are participating in riparian restoration projects. These projects involve removing exotic weeds such as salt cedar (*Tamarix ramosissima*). Salt cedar out-competes native flora, provides little wildlife forage, uses massive amounts of water, and is often so dense that many animals cannot reach the associated water sources. In most cases, riparian zones that are salt cedar monocultures revert to an early native seral stage once the salt cedar is removed.

Agencies are removing salt cedar by cutting trees and then treating the stumps with a herbicide. Areas are then retreated with spot applications of herbicide to resprouts over the following three years. Sometimes, in large salt cedar monocultures, a controlled burn removes salt cedar. After the burn, resprouts are treated with herbicide.

Sometimes, native vegetation such as willows (*Salix spp.*) and Fremont cottonwood (*Populus fremontii*) are planted as poles after salt cedar removal. These plantings have not survived as well as expected, especially in burned.

The opportunity exist for DMG partner agencies to use existing MOU's or enter into agreements with chemical companies to provide public lands for weed control research. The DMG should initiate an effort to partner with these companies to help conduct monitoring and research on salt cedar control projects.

### Monitoring and Research Need

To better conduct riparian restoration, more information is needed about the biophysical processes when salt cedar, especially when a salt cedar monoculture, is removed and native vegetation reintroduced. The DMG has identified the following monitoring and research goals:

1. Monitoring for the effectiveness and recovery rates of “hands-off” natural revegetation in desert riparian zones that have had salt cedar monocultures removed.
2. Monitoring for irenvasion of salt cedar or invasion of other exotics.
3. Monitoring for the comparative success of techniques for replanted native vegetation in desert riparian zones that have had salt cedar monocultures removed.

4. Inventory, monitoring, and comparison of biological diversity and hydrological properties in riparian zones that have had salt cedar monocultures removed, salt cedar monocultures left in place, and those that have never invaded.
5. Evaluate the use of mesquite (*Prosopis spp.*) in lieu of cottonwood or willow.
6. Monitoring and research of the effects of salt cedar control (fire, mechanical, and herbicide) on both natural and introduced native vegetation. Comparison of biodiversity between sites that have received salt cedar control treatments and those that have not.
7. Interpretation of findings. Draft management and treatment recommendations.

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