

**KEY FACTORS AND CONSTRAINTS IN RESTORATION OF NATIVE PLANT  
COMMUNITIES IN ARID, MONOTYPIC INFESTATIONS OF SALT CEDAR  
(*TAMARIX* SPP.) – STRATEGIES AND TECHNIQUES**

**TAMARISK RESEARCH CONFERENCE SUBMISSION #2**

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**ABSTRACT**

Critical knowledge gaps exist regarding vegetative recovery in aridic, monotypic saltcedar (*Tamarix* spp.) stands with no (desirable) understory. Formulation of revegetation strategies that provide site stabilization, resistance to further saltcedar and secondary weed infestation, and acceptable habitat values for affected wildlife species becomes particularly problematic in monotypic saltcedar stands under biological, fire and herbicidal (i.e., non-mechanical) control scenarios. Amount and density of standing biomass (live and dead) remaining after control poses limitations in relation to seeding and planting techniques, seed interception in aerial (broadcast) applications, and seedbed preparation methods. Undisturbed soil surfaces impacted by saltcedar leaf litter accumulation, salinity, hummocky micro-relief, and nutrient limitations restrict potential for successful revegetation. Long duration of saltcedar occupation may deplete desirable microbial communities, particularly arbuscular (endo)mycorrhizae symbiotic and host-specific to native revegetation species. Selected results of innovative revegetation strategies at study sites on the Rio Grande and the Colorado River will be discussed that address three primary requisites for successful restoration on these site types: a) moisture capture and conservation; b) proper native species selection; and c) growth medium augmentation. These factors often include: soil surface and rhizosphere manipulation methods to facilitate removal of standing dead biomass, increase precipitation capture, improve soil moisture retention, and create micro-sites exhibiting lower salinity and increased protection from environmental extremes for improved seed germination; salinity remediation; seeding methodologies, including use of seed coating techniques; and mycorrhizal inoculation methods.

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