

2006 Tamarisk Research Conference
Ft. Collins, CO
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Breakout Session 1: Restoration and Revegetation
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Synthesis

A number of themes from the “restoration and revegetation” session were addressed:

- **Passive vs. active restoration.** Several talks addressed the success of either passive or active restoration as well as multiple methods of active restoration. Active restoration was also specifically addressed in arid lands where passive is not always an option due to harsh environmental conditions.
- **Spatial scales for restoration.** Restoration projects were reported on at a number of different spatial scales including individual sites, watersheds, regions, etc.
- **Species Selection.** Species selection to match the site is very important for revegetation projects especially in xeric riparian areas. In some altered communities *Populus/Salix* forests not an option because of harsh environmental conditions and some *Tamarix* areas never had trees to start with. In these areas, grasses and shrubs may be more appropriate. It is also important to consider availability (seed/poles/containers) of species when making selections for revegetation efforts.
- **Water.** Water was a continuing theme in many talks in the form of flooding, groundwater and precipitation. Hydrograph restoration was another related theme.
- **Removal methods.** The effect of removal methods on restoration outcomes was discussed.

We also identified several areas where there seemed to be debate about conclusions or where participants came out of the session with questions including:

- When is passive/active revegetation best? What are the benefits/drawbacks of each?
- Do we have to remove *Tamarix* to facilitate the next step in restoration projects?
- Is flooding necessary for native species establishment? *Tamarix* establishment?
- What is the role of shade/light availability in *Tamarix* control and native species restoration? How does it differ in different situations?

There were also a number of handbooks or websites that were mentioned in the session with the goal of synthesizing and disseminating information. The group did address the importance of making sure that these vehicles and others like them are adequately distributed to the managers on the ground.

Gaps in the existing knowledge

- Information synthesis
- Wildlife has to be considered in restoration goals. What are the implications of various restoration strategies on wildlife? How do we make transitions between communities without losing habitat? What is happening with smaller organisms (i.e. invertebrates, microbes, etc.)?
- What is happening in systems where *Tamarix* is still sparse and where *Tamarix* has not yet invaded?

- What other processes are going on with succession in existing stands?
- How do other invasive species present with *Tamarix* change strategies and pose challenges to restoration/revegetation?
- How does restoration fit into broader taxonomical/functional discussions such as rare plants, resource plants, biomass for ethanol, and carbon cycling?
- How do restoration/revegetation strategies/challenges in Northern states differ from the Southwest?
- What are germination/establishment requirements for other native species especially xeric riparian species?
- What is the water consumption of other native species?
- How do the priorities of restoration/revegetation differ on private lands?
- Need more research on related social issues, especially as they relate to private land owners, flow regimes, dams, etc.
- How do priorities/challenges/strategies differ in urban areas?
- How do we achieve better dialogue between management agencies, scientists, and land owners to get cross-fertilization of ideas and goals? The group discussed this in some detail and the advantages of websites vs. publications vs. conferences. The group agreed that conferences like this that bring together practitioners and scientists to talk about the research are one of the best forums for communication. However, this conference should be better advertised and would get better attendance if held later in the season (Jan/Feb/Mar).

Novel and cross-disciplinary research opportunities

All the sessions seem to tie back to the “restoration and revegetation” session. All of these areas of tamarisk research are intertwined and need to be considered together. Specific interdisciplinary areas of research that we discussed included enhancing restoration with biocontrol and incorporating policy and other soft sciences that already have tools for education into the research to help to get priorities changed.

We talked a lot about the importance of starting with a goal (from Shafroth talk) and how this could lead to enhanced cross-disciplinary research. The main challenge to this scheme is how to get it into wider use and acceptance especially onto the radar of funding agencies. Land managers (and researchers) feel pressure from funding agencies to look like they are doing something on-the-ground. Funding cycles and RFPs do not generally include planning, research, and monitoring as a part of the process. We need to try to change this mindset so that funding for tamarisk removal projects can include planning, research, removal, revegetation and monitoring as priorities, not just removal.

Policy/management relevant conclusions

Widely disseminating the various information exchange vehicles (handbooks, websites, etc.) that were discussed here will be crucial. We want to broaden the audience to get dialogue with smaller organizations and local groups who are already working and incorporating multiple stakeholders in the process. It is also important to make sure that this information gets beyond the west into areas where tamarisk hasn't yet become a huge problem.

With the new policies that are being formed we need to make sure that we understand how they are going to affect ecology. We also need to emphasize addressing causes and not just symptoms

(driver vs. passenger, from Sher talk) and make sure policies are appropriate for this goal. Restoration is key element that has been missing from weed discussion and we need to have a clear picture of how we want it to influence policy as well as the demonstration projects that have recently been approved by congress. Additionally, we need to remember as we engage incross-disciplinary dialogue that many policies and stakeholders also have counter-incentives to restoration that don't necessarily work with restoration goals (e.g. water diversions and species introductions).