AgriLIFE RESEARCH & EXTENSION
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Biological Control of Saltcedar: Using Natural Enemies to Combat An Invasive Weed Competing with Texas' Water Resources

Background

Saltcedar is an exotic and invasive shrub that has spread throughout the rivers, streams and lakes of west Texas. Extensive stands of saltcedar deplete valuable ground and surface water resources, reduce stream flow, increase soil salinity, compete with forage grasses and native plants and degrade wildlife habitat. Saltcedar can be controlled by herbicides and mechanical means, but these methods are expensive. If applied improperly, these techniques can also kill desirable native plants. In its native range in Central Asia and the Mediterranean, more than 350 species of insects feed on saltcedar. When saltcedar was introduced into the US, almost all of these were left behind. Dr. Jack DeLoach, Research Entomologist with the Agricultural Research Service, has studied these natural enemies for their potential to biologically control saltcedar. A small leaf beetle, Diorhabda elongata, was the first exotic natural enemy approved for release in the US after extensive studies showed this species only fed on saltcedar.

In 2006, a Saltcedar Biological Control Implementation program was initiated by Texas Cooperative Extension in cooperation with USDA-ARS. Beetles have been released at multiple sites in the Upper Colorado River and Pecos River watershed. Sites are being monitored to document beetle dispersal and impact on saltcedar growth and survival.

Objectives

- Establish the saltcedar leaf beetle in the field on the Upper Colorado River, Pecos River and ultimately wherever saltcedar is present.
- Document populations increase of beetle and their dispersal during the season.
- Determine the impact of beetle feeding on saltcedar growth and survival.
- Determine best methods for integrating biological control with herbicidal control.
- Educate land owners, land managers and public and private agencies about the role of biological control of saltcedar.
- Develop programs with Texas Cooperative Extension, to provide educational and technical information on biological control of saltcedar to NRCS, land and water resource agencies and managers, land owners and others interested in controlling saltcedar.

Benefits

- Effective biological control of saltcedar can enhance water quantity and quality in West Texas.
- Biological control is self-perpetuating, sustainable, highly specific to the target weed and relatively inexpensive.
- Suppression of saltcedar can restore riparian habitats, benefiting wildlife and improve rangeland.

Team Members

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For more information see the biological control of weeds in Texas website: http://bc4weeds.tamu.edu

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