Saving Utah's Landscape

BIOCONTROL OF TAMARISK

Photo courtesy of USDA NRCS

Tamarisk

Tamarix ramosissima

This perennial plant grows five to 20 feet tall. Leaves are small and scale-like. Branches are long and slender. The root system is extensive. Saltcedar may exhibit either deciduous or evergreen traits.

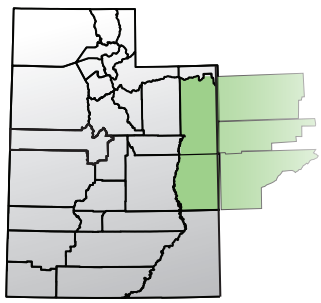
Tamarisk was introduced from Eurasia and is found throughout the United States. It was initially imported to control erosion along river banks and is also widely used as an ornamental. It commonly infests lake and stream banks as well as pastures and rangeland. Large plants can transpire significant amounts of water per day, enough to dry up shallow groundwater ponds and affect streams.

Scientists at the Animal, Plant and Health Inspection Service (APHIS) have been working for years to determine if beetles imported from China and Kazakhstan would effectively consume tamarisk (salt cedar) in the U.S. without threatening desirable vegetation. Ten research sites were established throughout the West, including Delta, Utah, where Gregg Abbott, APHIS entomologist, was the principal investigator. Once research was complete and environmental clearances were obtained, the insects could be released. In 2004, Utah weed supervisors came to the Delta site and collected beetles (*Diorhabda elongata*) for release.

Among those who collected the beetles was Tim Higgs, Grand County Weed Supervisor and Michael S. Johnson, USU Grand County Extension agent. The tamarisk infestation along the banks of the Colorado River and its tributaries is vast, covering thousands of acres. In Grand County, land managers and concerned residents consider tamarisk control one of their greatest natural resource challenges. Higgs, Johnson and crew released the beetles in large numbers at three sites. In 2005, they collected more beetles and released them in the same areas and three other sites.

Late in 2005, they also saw the first indication that the beetles were defoliating the tamarisk. There were about two acres of "brownout" at one site, about 50 feet in diameter browned out at another and scattered defoliation at the third.

Three years after the first releases, defoliation is measured in miles, and by the number of drainages they have entered. Near Moab, the tamarisk beetles have moved at unforeseen rates, defoliating tamarisk as they move. Higgs explains that the beetles return to the tamarisk when it begins to put out new shoots. Researchers believe it takes at least three years for a plant to die after repeated attacks by the beetles. However, biocontrol will not produce a 100 percent kill rate, Higgs warns. Chemicals and mechanical removal will still be necessary to achieve complete eradication of an infestation.



The Middle Colorado River Watershed CWMA focused on using the tamarisk beetle, seen feeding on a healthy plant (top left). The beetles have defoliated a swath of tamarisk near a launch area on the Colorado River (left).

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Government agencies have joined forces to restore campgrounds along the Colorado River, where tamarisk once grew vigorously. They have cut trees and treated some stumps, created fire breaks and restored some areas where the tamarisk have been defoliated. APHIS is working to attain environmental clearances to use the tamarisk beetle on federal lands in Utah.

The amazing tamarisk beetles have brought together a group of people interested in tamarisk control that may not have worked together otherwise. They are interested in monitoring the progress of the beetles and deciding how to treat the land where tamarisk trees have died. The project was undertaken by the Middle Colorado River Watershed Cooperative Weed Management Area, Utah Division of Forestry, Fire and State Lands, Grand County and Utah State University Extension Service.

Middle Colorado River Watershed CWMA Steps to Success:

- The group works with weed supervisors from Uintah and Grand counties, Utah; Mesa, Rio Blanco, and Moffat counties, Colorado.
- The CWMA tackles projects near county boundaries and state lines.
- Partners are available to assist with internal projects within each county.
- The CWMA works on a project basis.
- The group chooses projects that will affect more than one county.
- The CWMA chooses treatments that will be effective.
- Joint projects include:
  - -Surveyed yellow starthistle in Grand County, Utah, and Mesa County, Colorado.
  - -Working together to eliminate purple loosestrife along the Colorado River.
  - -Grand and Uintah Counties are cooperating to treat various weeds in the Book Cliffs.

Partners

Grand County, Utah
Uintah County, Utah
Dixie Conservation District
Mesa County, Colorado

Moffat County, Colorado
Rio Blanco County, Colorado
Bureau of Land Management
Moab, Vernal, Grand Junction and Craig field offices.

National Park Service
Arches, Canyonlands National Parks

Colorado and Dinosaur National Monuments
USU Grand County Extension

Bureau of Indian Affairs
State of Utah, School and Institutional Trust Lands

Colorado Division of Wildlife
Colorado Division of Forestry

What You Can Do:

For those interested in obtaining tamarisk beetles for use on private lands, contact your local county weed supervisor.

Interested residents learn about biocontrol of tamarisk in Grand County (left) while workers inspect tamarisk plant defoliated by *Diorhabda elongata.* (above)

Produced by the Bureau of Land Management, Utah Association of Conservation Districts, Utah Weed Supervisors Association and USU Extension