



FACT SHEET: SALT CEDAR

Saltcedar

Tamarix aphylla, *T. chinensis*, *T. gallica*, *T. parviflora*, and *T. ramosissima*

Tamarisk family (Tamaricaceae)

NATIVE RANGE

Eurasia and Africa

DESCRIPTION

Most saltcedars, or tamarisks, are deciduous shrubs or small trees growing to 12-15 feet in height and forming dense thickets. *Tamarix aphylla* is an evergreen tree that can grow to 50 feet tall and tends to flower during the winter. Saltcedars are characterized by slender branches and gray-green foliage. The bark of young branches is smooth and reddish-brown. As the plants age, the bark becomes brownish-purple, ridged and furrowed. Leaves are scale-like, about 1/16 inch long and overlap each other along the stem. They are often encrusted with salt secretions. From March to September, large numbers of pink to white flowers appear in dense masses on 2-inch long spikes at branch tips.



ECOLOGICAL THREAT

Saltcedars are fire-adapted species and have long tap roots that allow them to intercept deep water tables and interfere with natural aquatic systems. Saltcedar disrupts the structure and stability of native plant communities and degrades native wildlife habitat by outcompeting and replacing native plant species, monopolizing limited sources of moisture, and increasing the frequency, intensity and effect of fires and floods. Although it provides some shelter, the foliage and flowers of saltcedar provide little food value for native wildlife species that depend on nutrient-rich native plant resources.

DISTRIBUTION IN THE UNITED STATES

Saltcedar occurs in the intermountain region of the western United States, throughout the Great Basin, and California and Texas. The maps below from left to right are: *Tamarix aphylla*, *T. chinensis*, *T. gallica*, *T. parviflora*, and *T. ramosissima*.



HABITAT IN THE UNITED STATES

Saltcedar establishes in disturbed and undisturbed streams, waterways, bottomlands, banks and drainage washes of natural or artificial waterbodies, moist rangelands and pastures, and other areas where seedlings can be exposed to extended periods of saturated soil for establishment. Saltcedar can grow on highly saline soils containing up to 15,000 ppm soluble salt and can tolerate alkali conditions.

BACKGROUND

Saltcedar was introduced to the western U.S. as an ornamental shrub in the early 1800s.

BIOLOGY & SPREAD

Saltcedar spreads vegetatively, by adventitious roots or submerged stems, and sexually. Each flower can produce thousands of tiny (1/25-inch diameter) seeds that are contained in a small capsule usually adorned with a tuft of hair that aids in wind dispersal. Seeds can also be dispersed by water. Seedlings require extended periods of soil saturation for establishment.





MANAGEMENT OPTIONS

Management of saltcedar requires a long term commitment to maintain at low levels and prevent reinfestation. A variety of methods have been used in the management of saltcedar, including mechanical, chemical and biological. The most effective management probably involves a combination of these. Mechanical techniques include hand-pulling, digging, root-cutting, use of weed eaters, axes, machetes, bulldozers, fire and flooding. Removal by hand is generally recommended for small infestations of saplings under 1-inch diameter. Root-cutting and bulldozing may be effective but are costly, labor intensive and may cause extensive damage to soils and lead to resprouting. Fire has been used with some success, but because saltcedars are fire-adapted, they readily resprout after fire. Flooding can be used to control salt cedar if root crowns remain submerged for at least three months.

Chemical

For extensive infestations of saltcedar, chemical control has been shown to be the most effective method. Cautious use of herbicides aids in restoration of saltcedar infested sites by allowing repopulation by native plant species. Systemic herbicides (e.g., those that kill the plant from the root up) are recommended for saltcedar management and application methods include foliar sprays, cut stump

treatments, basal bark treatments, and aerial sprays. Because tamarisk usually grows in or adjacent to streams, wetlands and other waterways, it is important to use products registered for aquatic application.

Biological

Fifteen insects are being investigated as potential biological control agents for saltcedar. Two of these, a mealybug (*Trabutina mannipara*) and a leaf beetle (*Diorhabda elongata*), have preliminary approval for release. Five others are being tested within the United States and an additional eight species are under study overseas. Final approval for release of the mealybug and the leaf beetle is pending resolution of concerns regarding their potential impact to the southwestern subspecies of the willow flycatcher (*Empidonax traillii extimus*), a federally endangered bird. In parts of its range where native willows, its natural nest trees, have been replaced by saltcedar, the willow flycatcher now utilizes it for this purpose. Concern is over the possibility that, due to the environmental damage caused by tamarisk, native plant species may not be able to replace it if the biological control agents succeed in eliminating it.

USE PESTICIDES WISELY: Always read the entire pesticide label carefully, follow all mixing and application instructions and wear all recommended personal protective gear and clothing. Contact your state department of agriculture for any additional pesticide use requirements, restrictions or recommendations.

NOTICE: mention of pesticide products on this page does not constitute endorsement of any material.

CONTACTS

For more information on the management of saltcedar, please contact:

- Curt Deuser, National Park Service, Lake Mead National Recreation Area, curt_deuser at nps.gov

OTHER LINKS

- <http://www.invasive.org/search/action.cfm?q=Tamarix>
- http://www.hear.org/starr/hiplants/images/thumbnails/html/tamarix_aphylla.htm

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Plant Conservation Alliance's Alien Plant Working Group

Weeds Gone Wild: Alien Plant Invaders of Natural Areas

<http://www.nps.gov/plants/alien/>

REFERENCES

- Baum, B.R. 1978. The genus *Tamarix*. The Israel Academy of Sciences and Humanities, Jerusalem.
- Carman, J.G. and J.D. Brotherson. 1982. Comparisons of sites infested and not infested with saltcedar and Russian olive. *Weed Science* 30:360-364.
- DeLoach, C.J., M.J. Pitcairn, and D. Woods. 1996. Biological control of saltcedar in Southern California. In: Joe DiTomaso and Carl E. Bell, eds., *Proceedings of the Saltcedar Management Workshop*, Rancho Mirage, California, pp. 30-31.
- Howe, W.H. and F.L. Knopf. 1991. On the imminent decline of Rio Grande cottonwoods in central New Mexico. *Southwestern Naturalist* 36(2):218-224.
- Hudson, Laura E. 1999. Climatic and hydrologic effects on the establishment of *Tamarix ramosissima* in the cold desert of northern Wyoming (Bighorn Lake). M.S. Thesis, University of Montana, Missoula.
- Jackson, N.E. 1996. Chemical control of saltcedar (*Tamarix ramosissima*). In: Joe DiTomaso and Carl E. Bell, eds., *Proceedings of the Saltcedar Management Workshop*, Rancho Mirage, California, pp. 21-27.
- Swearingen, J. 2009. WeedUS Database of Plants Invading Natural Areas in the United States. <http://www.invasive.org/weedus/>.
- The Nature Conservancy. Tamarisk: Element Stewardship Abstract. In: *Wildland Weeds Management & Research Program*, Weeds on the Web.
- USDA, NRCS. 2009. The PLANTS Database (<http://plants.usda.gov>). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.