

SALT CEDAR

(*Tamarix chinensis*, *T. parviflora*, *T. ramosissima*)

Description: Saltcedar, also referred to as tamarisk or tamarik, is a member of the Tamaricaceae or tamarisk family. Saltcedar is a deciduous shrub or small tree that can grow from 5 to 30 feet tall. Trunks of the trees are slender upright, or branched, and covered with smooth reddish-brown bark that becomes ridged and furrowed with age. Leaves are deciduous, appressed, small, gray-green, and scalelike. Flowers are 5 petaled, pink to white in color, and crowded into numerous clusters on the end of twigs. Seeds are reddish-brown and extremely tiny.



Saltcedar

Saltcedar is considered a noxious weed under North Dakota state law, thus landowners are required to eradicate or control the spread of the plant.

Plant Images:



Young plant



Root



Flowers

Distribution and Habitat: Saltcedar is native to Eurasia. The plant can establish along waterways, streams, canals, banks, and drainage areas. Saltcedar is also found in areas where soils are exposed to an extended period of moisture. The plant can tolerate alkali soil conditions, grow on highly saline soils, and tolerate drought conditions. Saltcedar often grows in association with mesquite, willows, and cottonwoods.

Life History/Ecology: Saltcedar can spread by seed and vegetative regrowth. After seedlings germinate, saltcedar grows very rapidly and develops into a small flowering tree within one to two years. Flowering usually begins in early to mid-April and continues through July. Seeds are shed throughout the growing season and usually germinate after 24 hours. A single saltcedar plant can

produce as many as 500,000 seeds that can remain viable for up to one year. The plant is also able to regenerate through the root system and produce new shoots if top growth has been removed. The extensive root system can reach depths of over ten feet.

History of Introduction: Saltcedar is native to southern Europe, northern Africa, and eastern Asia. The plant was introduced into the United States in the early 1800s as an ornamental and to prevent soil erosion along streams. The plant quickly became an escaped ornamental and has become naturalized along streams, canals, and river banks in the western states. Saltcedar was sold in North Dakota as an ornamental for many years and has escaped to waterways. The plant has spread into North Dakota along the Yellowstone and Missouri Rivers from Montana and has been reported along the shores of Lake Sakakawea. Currently in North Dakota, saltcedar has been reported in Williams, Stark, Mountrail, Burleigh, Morton, McKenzie, Dunn, Emmons, Bowman, Hettinger, Billings, Grant, Adams, Barnes, Oliver, Kidder, Pembina, Slope, Richland, McLean, Golden Valley, and Sargent counties.

Effects of Invasion: Saltcedar is an aggressive plant that can quickly create a monoculture along lakes and waterway areas. Saltcedar is classified as a phreatophyte, meaning that the plant uses very large amounts of groundwater. A single plant is capable of transpiring over 200 gallons of water per day, thus the total water flow along drainages can be reduced or completely eliminated. Saltcedar displaces native riparian plants and alters animal habitats. Native birds and animals generally will not eat the seeds or feed on the leaves of the plant. The plant prevents native plant species from re-establishing by exuding salts from the leaves which increase the salinity of the surrounding soil. Dense stands of saltcedar can have a major impact on the hydrologic balance of the area. The plant can choke waterways or reduce the width of a normal channel of a river, thereby obstructing flood waters and impeding river flow.

Control:

Saltcedar is an invasive species that is very difficult and expensive to control once established. Management objectives should involve monitoring, prevention, early detection, and local eradication. Stress or disturbances imposed by control measures may increase the flowering and seed production of the plant, therefore more than one management technique may need to be implemented or repeated. The entire root system of the plant must also be removed to prevent resprouting. Once saltcedar is removed, a competitive stand of desirable plant species should be established to prevent reinvasion of the plant. Monitoring should be continued to detect and remove any saltcedar plants that may have been produced from seeds that were transported over long distances.

Mechanical - Control methods include mowing, burning, chopping, chaining, and disking. However, these methods usually only suppress saltcedar temporarily and will not eradicate infestations. Saltcedar is also able to resprout vigorously from the root crown following mechanical control methods. These methods can be labor intensive and expensive and may be more effective on small infestations. A root plow pulled by a bulldozer has become a standardized method for saltcedar control, providing good to excellent control. Root plowing is the most effective when the soil is relatively dry and when combined with follow-up treatments such as hand grubbing resprouts or applying herbicides. Root plowing may affect desirable vegetation and could lead to wind erosion.

Saltcedar typically resprouts following a prescribed burn. Saltcedar is generally top-killed by burning, but plants may be able to sprout from the remaining root crown. However, burning may manage saltcedar infestations by eliminating the closed canopy, slowing the rate of invasion, and allowing desirable vegetation to respond, thereby increasing biodiversity. One study in Utah found that prescribed burns conducted in July killed 64 percent of saltcedar infestations, compared to 9 percent

mortality with a September burn and 4 percent mortality with an October burn. Prescribed burns combined with a follow-up treatment of herbicide can also be effective in reducing resprouting plants.

Chemical - There are a few herbicides available for saltcedar control. Imazapyr can provide good saltcedar control when applied to plants that have green leaves. Triclopyr or Garlon 4 can be combined with the cut stump method. After saltcedar stems are removed at ground level, triclopyr should be applied on the cut surface of the stem.

Contact your local county extension agent for recommended use rates, locations, and timing.

Biological - Two biological control agents have been released in the United States for saltcedar control. A mealy bug, *Trabutina mannipara*, and leaf beetle, *Diorhabda elongata*, have been released. The mealy bug is not adapted to colder, drier environments. The leaf beetle was recently released in Montana, but has not been released in North Dakota at this time.

Cattle, goats, and sheep will graze saltcedar plants if desirable vegetation is lacking. Saltcedar has little nutritional value and cattle will only graze young seedlings early in the year.

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Salt cedar photograph courtesy of Intermountain Herbarium, Logan, Utah

Young plant photograph courtesy of Ron Lang, USDA-APHIS-PPQ, Montana War on Weeds (mtwow.org).

Root photograph courtesy of Dean Cline, North Dakota Department of Agriculture

Flower photograph courtesy of North Dakota University, NDSU Extension Service.