

SALT CEDAR (TAMARIX)

This is a rare and potentially ecological pollutant for Douglas County, Colorado. It is currently on the State Noxious Weed List as a List B species!

- Sticky exudate harms some birds plumage!
- Can reach 70-80% cover
- **GUZZLES WATER@200-500GAL/DAY!**
- Sucks salt out of the soil profile and drops it at its base up to 41,000ppm
- Control with Arsenal or cut stump/basal_Garlon or pure Roundup/Rodeo
- Removal restored water table at one site from 6m deep to < 1m

Description and Variation: Salt cedar plants are spreading shrubs or small trees, 5-20 feet tall, with numerous slender branches and small, alternate, scale-like leaves. The pale pink to white flowers are small, perfect and regular, and arranged in spike-like racemes. The distinct petals and sepals occur in fours or fives. The fruit is a capsule (Hitchcock and Cronquist 1961).



Economic Importance: *Negative* - As an aggressive colonizer that is able to survive in a wide variety of habitats, saltcedar often forms monotypic stands, replacing willows, cottonwoods, and other native riparian vegetation. The stems and leaves of mature plants secrete salt, forming a crust above and below ground that inhibits other plants (Sudbrock 1993). Saltcedar is also an enormous water consumer. A single large plant can absorb 200 gallons of water a day (Hoddenbach 1987), although evapotranspiration rates vary based on water availability, stand density, and weather conditions (Davenport et al. 1982). Saltcedar's high water consumption further stresses native vegetation by lowering ground water levels and can also dry up springs and marshy areas. Paradoxically, saltcedar infestations can also lead to flooding, as its extensive root system can choke stream beds (Rush 1994).

Infestations also have detrimental impacts on wildlife. Saltcedar seeds have almost no protein and are too small to be eaten by most animals. In addition, its scale-like leaves offer little suitable forage for browsing animals (Hoddenbach 1987). Studies indicate that saltcedar is not favored bird habitat. In their study of habitat use by birds along the lower Colorado River,

Anderson and Ohmart (1977) found that saltcedar stands supported only four species per hundred acres, as opposed to 154 species per hundred acres of native vegetation.

Habitat: Seedlings establish most frequently in soils that are seasonally saturated at the surface. It appears to grow best in saline soils (up to 15,000 ppm sodium), but saltcedar is adaptable and tolerant of a wide variety of environmental conditions (Brotherson and Field 1987).

History: It is believed that nurserymen on the east coast made the first introduction of saltcedar to North America in 1823. Saltcedar appeared on the west coast, where it was apparently brought in from eastern nurseries. It was planted as an ornamental in the western United States, but by the 1870's, it was reported to have escaped cultivation. By the 1920's, saltcedar was becoming a serious problem, spreading rapidly through the watersheds of the southwest (Brotherson and Winkel 1986).

Growth and Development: A single mature saltcedar may produce hundreds of thousands of seeds between April and October (Sudbrock 1993). The tiny, hairy, pollen-sized seeds are widely dispersed by wind and water throughout the growing season, and they will germinate within 24 hours of moistening. In Arizona, seeds have been known to germinate in May and June, while floating on water. Early seedling growth is slow, but older seedlings grow rapidly and are tolerant of submergence, saline soils, and drought (Frasier and Johnsen 1991); seedlings may grow up to a foot a month in early spring (Sudbrock 1993). Once saltcedar is established, not even dramatic changes in soil moisture will completely eliminate it, as long as abundant ground water is available (Frasier and Johnsen 1991).

Reproduction: Saltcedar spreads by seed and also resprouts vigorously from roots if the top portion of the plant is damaged or removed. It can also readily establish from cuttings, if buried in moist soil (Frasier and Johnsen 1991).

Response to Herbicides: Studies in New Mexico have shown aerially sprayed imazapyr (Arsenal) provided 90-99 percent control of saltcedar at a cost of \$85/acre. Tank mix applications of imazapyr + glyphosate (Rodeo) also provided 90-99 percent control at a cost of as little as \$60/acre (Duncan and McDaniel 1992). A cut-stump/herbicide method has also been used effectively in southern California (Sudbrock 1993). This approach involves cutting saltcedar as close to the ground surface as possible, then applying herbicide to the cut surface. Roundup (glyphosate) and Garlon 4 (triclopyr) have been effective. Garlon 4 can be diluted one-to-one with either diesel oil or water (Sudbrock 1993).

