

Tamaricaceae—Tamarix family

***Tamarix chinensis* Lour.**

saltcedar or five-stamen tamarisk

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Synonym. *T. pentandra* Pall.

Growth habit, occurrence, and use. Saltcedar (*Tamarix chinensis* (Lour.)) and smallflower tamarisk (*T. parviflora* DC.) hybridize in the Southwest (Baum 1967; Horton and Campbell 1974) and are deciduous, pentamerous tamarisks that are both commonly referred to as saltcedar. Saltcedar is a native of Eurasia that has naturalized in the southwestern United States within the last century. It was introduced into the eastern United States in the 1820s (Horton 1964) and was once widely cultivated as an ornamental, chiefly because of its showy flowers and fine, graceful foliage. However, saltcedar has been an aggressive invader of riparian ecosystems in the Southwest (Reynolds and Alexander 1974) and is the subject of aggressive eradication campaigns. It achieves heights of 12 m and trunk diameters of 0.5 m in southern New Mexico and trans-Pecos Texas (Everitt 1980). Although considered a threat to native vegetation, saltcedar has been utilized for browse, firewood, and lumber and also to produce premium honey (Everitt 1980). Saltcedar is halophytic and tolerates an extreme range of environments from below sea level to above 2,100 m (Everitt 1980). Though a riparian plant, it is also drought tolerant and can survive indefinitely in non-saturated soils, making it a "facultative phreatophyte" (Turner 1947). In some areas, saltcedar thickets are valued nesting habitat for white-winged doves (Reynolds and Alexander 1974). Saltcedar can naturally reproduce vegetatively from roots and can layer when foliage is buried by sediment (Everitt 1980). These prodigious reproductive capabilities are well suited to colonizing riverbanks and disturbed areas (Horton and others 1960). Because saltcedar is a heavy water user, it spreads rapidly along drainages and flood plains—for example, the infested area increased from 4,000 to 364,000 ha in 41 years (1920 to 1961), (Robinson 1965)—and has required extensive eradication or control efforts.

Flowering and fruiting. The pink to white flowers, borne in terminal panicles, bloom from March through September. A succession of small capsular fruits ripen and split open during the period from late April through October in Arizona (Horton and others 1960). Seeds are minute and have an apical tuft of hairs (figures 1 and 2) that facilitates dissemination by wind. Large numbers of small short-lived seeds are produced that can germinate while floating on water, or within 24 hours after wetting (Everitt 1980).

Collection, extraction, and storage. Fruits can be collected by hand in the spring, summer, or early fall. It is not practical to extract the seeds from the small fruits. At least half of the seeds in a lot still retained their viability after 95 weeks in storage at 4.4 °C, but seeds stored at room temperature retained their viability for only a short time (Horton and others 1960).

Figure 1—*Tamarix chinensis*, saltcedar: longitudinal section through a seed.

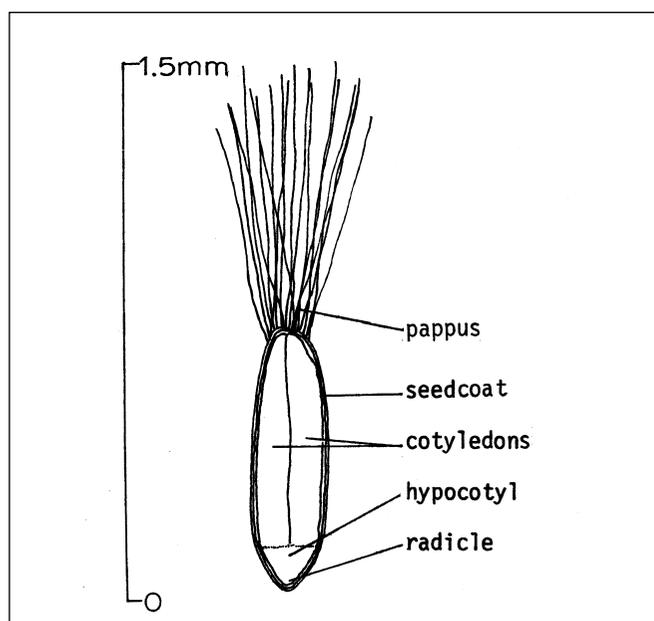
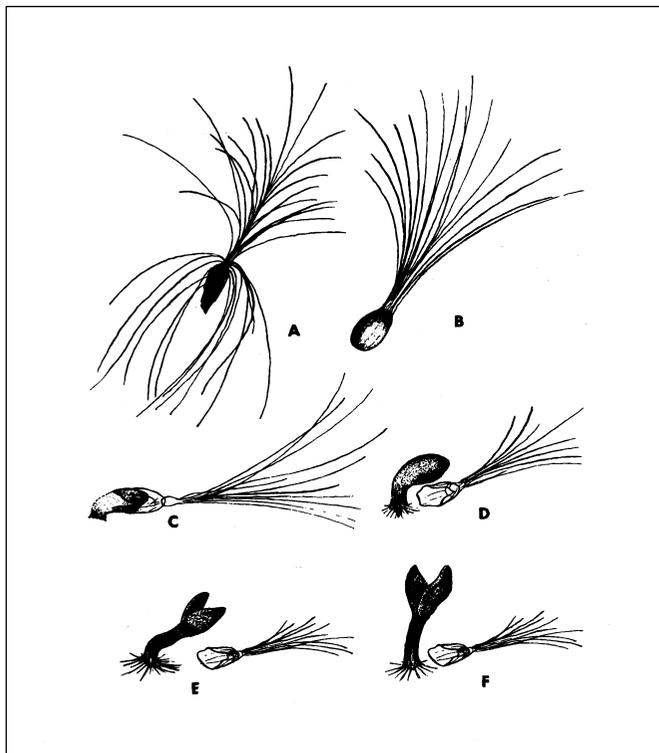


Figure 2—*Tamarix chinensis*, saltcedar: dry seed (A) and seedling development at the following intervals after moistening the seed—several hours (B), 8 hours (C), 24 hours (D), 40 hours (E), 48 hours (F) (drawings by Dennis C. Jackson, from Horton and others 1960).



Germination tests. Fresh seeds usually germinate within 24 hours after imbibing water (figure 2). No pretreatment is necessary. Germination tests have been run in moist soil in covered petri dishes at room temperature. The germination rate after 24 hours averaged 78% and the percentage germination after 6 days was 88% (Horton and others 1960). Seed can survive up to a year in cold storage (Merkel and Hopkins 1957).

Nursery practice. Germination and survival is favored by fine-grain sediment. Bare, sunny, saturated soil is ideal for the first 2 to 4 weeks of life, but survival is limited because of slow early seedling growth (Everitt 1980). Top height averages about 2.5 cm (1.0 in) 30 days after emergence, and seedlings average only 10 cm (4 in) tall after 60 days. At this time, roots are about 15 cm (6 in) long. Soil must be kept continuously moist during this establishment period; 1 day of drought can kill most seedlings (Reynolds and Alexander 1974).

Saltcedar is also readily propagated from cuttings. Cuttings will root during any season, if planted in moist soil at 16 °C (Gary and Horton 1965). Hardwood cuttings should be at least 2 cm ($3/4$ in) thick. A peat and perlite medium under mist works well with softwood cuttings, but root systems may be sparse and difficult to handle (Dirr and Heuser 1987). Seedlings are hearty after they become established and can withstand severe drought (Horton and others 1960). Softwood cuttings should be weaned from mist as soon as rooting begins to avoid decline from excessive moisture (Dirr and Heuser 1987).

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