

## LEMMON'S WILLOW

### *Salix lemmonii* Bebb

plant symbol = SALE

Contributed By: USDA NRCS, Pullman Plant Materials Center, Pullman, Washington



#### Alternate Names

Lemmon willow

#### Uses

**Reclamation:** Lemmon's willow is used for revegetation of riparian areas, native plant community restoration and landscaping.

**Importance to Livestock and Wildlife:** All classes of livestock eat willows in the West, but cattle consume more than others because they frequent riparian areas. Lemmon's willow is palatable to livestock, but its importance in their diets is not reported.

Deer and elk use Lemmon's willow for browse.

Beavers prefer willows as food and building material. Ducks and grouse, other birds and small mammals eat willow shoots, catkins, buds and leaves.

Lemmon's willow provides good cover for mammals and songbirds and provides shade for salmonids.

**Ethnobotany:** Native Americans and others have long used willows for basket making. Willows are also a well-known source of salicin, which is chemically related to aspirin. Willows have also been used by Native Americans for bows, arrows, scoops, fish traps and other items.

#### Status

Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status (e.g. threatened or endangered species, state noxious status, and wetland indicator values).

#### Description

**General:** Lemmon's willow is a multi-stemmed native deciduous shrub. It reaches a mature height of 10 - 16 feet. Flowers appear before or with new leaves. Leaves are alternate, pinnate-veined, entire or inconspicuously toothed, green shiny above and pale glaucous below. Stipules are minute and inconspicuous. Current season twigs are glabrous or sparsely pubescent, becoming strongly glaucous.

**Distribution:** Lemmon's willow occurs in foothills to mid-mountains from Hood River County, Oregon along the east side of the Cascades to the Sierras in California east to Owyhee County, Idaho and Nevada.

For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site.

**Habitat:** Lemmon's willow occurs in riparian habitats which are usually bordered by coniferous forests of lodgepole pine (*Pinus contorta*) or Douglas fir (*Pseudotsuga menziesii*). It also occurs in zones of mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*). It grows near low gradient streams and rivers on floodplains. It is probably an early seral species as are many other willows.

**Associated Species:** Associated shrubs include Geyer (*S. geyeriana*), Drummond (*S. drummondiana*) planeleaf (*S. planifolia*) and Wolf willow (*S. wolfii*). Bog birch (*Betula glandulosa*) and Kentucky bluegrass (*Poa pratense*) are also common.

#### Adaptation

Lemmon's willow is found on well-drained gravelly or sandy soils. In Oregon, it is found on deep, fine-textured alluvium over subsurface soils of various textures ranging from silt to silty clay loam soil. Soil pH ranges from 5.2 to 7.4 and annual precipitation requirement is from 20 to 40 inches.

Shade tolerance is intermediate.

#### Establishment

Lemmon's willow may be propagated via seed or cuttings. Seed is used to produce containerized plants. Cuttings may either be planted directly at the site or planted to produce bareroot or containerized plants. On-

site wild hardwood cutting collections may not root as well as nursery grown stock. Nursery grown cuttings' growing conditions are maintained at a more optimum level, therefore having better carbohydrate storage levels and less potential problems with disease and insects.

Lemmon's willow should be established in the capillary zone in riparian revegetation plantings. Plantings should be protected with appropriate physical barriers such as wire cages or tree protector tubes where there is rodent or beaver activity.

Much information is available for willow establishment, primarily in riparian zones. See reference section.

### **Management**

Lemmon's willow provides important streambank protection by effectively stabilizing soils. Heavy grazing in Lemmon's willow communities can lead to lowered vigor, uneven stem age distribution and dead clumps. Plants recover rapidly when browsing is excluded. Grazing is particularly detrimental to the establishment of willows.

### **Pests and Potential Problems**

Poplar/willow borers are potential problems in stands of Lemmon's willow maintained for cutting production. Borers must be controlled prior to entering the stems. Decadent stems with borer infestation should be pruned from commercial cutting production sites. Consult local/state pesticide recommendations for further control.

Willows plantings, especially during establishment, can be damaged by rodents including beaver, muskrat, mice, voles, etc. either cutting off stems or girdling. Cuttings or plants should be protected from rodent damage, especially in grassy areas where vole/mice populations are active.

### **Environmental Concerns**

None noted.

### **Seed and Plant Production**

Lemmon's willow is easily propagated by use of hardwood cuttings without use of rooting hormone. Seed propagation is also used, but seed must be collected as soon as the fruits ripen. Mature seed loses germination ability rapidly, so planting soon after collection is necessary. Moistened seed may be stored for up to a month in refrigerated sealed containers. Seeds of willow are not generally known to exhibit dormancy. Some native plant propagators prefer seed propagation for added diversity of genetic material and less labor requirement for handling of materials during collection, storage and propagation. (See reference

section for production of hardwood cuttings in cutting blocks or stooling beds.)

### **Cultivars, Improved and Selected Materials**

'Palouse' Lemmon's willow was released as a cultivar by the NRCS Pullman, Washington Plant Materials Center in 1993. 'Palouse' originated from a riparian site near the Crooked River in Jefferson County, Oregon northwest of Redmond at an elevation of 2500 feet. Mature height is 19.7 feet and canopy width is 36.1 feet at Pullman, Washington. 'Palouse' is relatively fast growing, reaching a height of 13.1 feet and canopy width of 11.5 feet in 3 years of growth at Pullman, Washington. 'Palouse' has excellent foliage density. It easily roots from hardwood cuttings without use of rooting hormone treatment. Recorded rooting rate in one study was 85%. Six year old plants produced 522 6-inch hardwood cuttings per plant after being cut back. Production the following year was 225 cuttings per plant. 'Palouse' is available commercially.

### **References**

Brinkman, K. A. 1974. *Salix L. willow*. In: Schopmeyer, C. S. *Seeds of woody plants in the United States*. Agriculture Handbook 450. Washington, DC. USDA, Forest Service, p. 746-750.

Brunsfeld, S.J. & F.D. Johnson 1985. *Field guide to the willows of East-Central Idaho*. Bulletin Number 39. Forest, Wildlife and Range Experiment Station. University of Idaho. Moscow, Idaho. 95 pp.

Crowder, W.A. and D.C.Darris. 1999. *Producing Pacific Northwest native trees and shrubs in hardwood cutting blocks or stooling beds*. Plant Materials Technical Note 38. USDA, NRCS. Spokane, WA.

Edelen, W.J. 1996. Beaver damage prevention alternatives for riparian revegetation projects in Washington State. Biology Technical Note 19. USDA, NRCS. Spokane, WA 4 pp.

Hitchcock, C.L. and A. Cronquist 1964. *Vascular plants of the Pacific Northwest*. Part 2: Salicaceae to Saxifragaceae. Seattle, WA: Univ. of Washington Press.

Hoag, J.C. September, 1993. *How to plant willows and cottonwoods for riparian rehabilitation*. Plant Materials Technical Note 23. USDA, SCS. Boise, ID.

Kirkwood, J.E. 1930. *Northern Rocky Mountain trees and shrubs*. Stanford University Press. Stanford University, CA. 340 pp.

Lambert, S.M. January, 1989. *Streamside revegetation*. Plant Materials Technical Note 12 (Revised). USDA, NRCS. Spokane, WA.

Uchytel, R.J. 1989 *Salix lemmonii*. In: USDA, Forest Service Fire Effects Information System Database. <<http://www.fs.fed.us/database/feis>> [January 22, 2003]. Rocky Mountain Research Station, Fire Sciences Laboratory, Missoula, Montana

USDA, NRCS. 2003. The PLANTS Database, Version 3.5 <<http://plants.usda.gov>>. National Plant Data Center, Baton Rouge, LA 70874-4490

### **Prepared By**

Wayne Crowder, USDA, NRCS, Plant Materials Center, Pullman, Washington

### **Species Coordinator**

Drafted 30jan03 wac; Edited

For more information about this and other plants, please contact your local NRCS field office or Conservation District, and visit the PLANTS Web site <<http://plants.usda.gov>> or the Plant Materials Program Web site <<http://Plant-Materials.nrcs.usda.gov>>

*The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).*

*To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice or TDD). USDA is an equal opportunity provider and employer.*