

Plant Propagation Protocol for *[Insert Species]*

ESRM 412 – Native Plant Production

<http://courses.washington.edu/esrm412/protocols/2023/SALI.pdf>

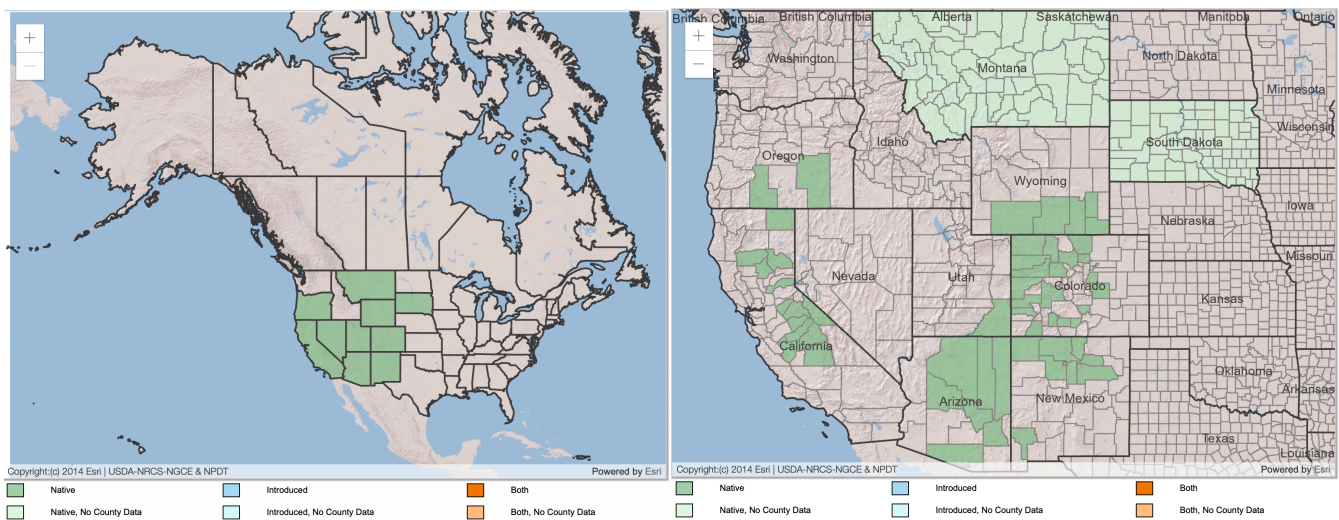
Photo of Willow [7]



Photo of Willow [2]



Map of SALI distribution within the USA and North America. [1]



TAXONOMY

Plant Family

Salicaceae Mira. - Willow Family [1]

Scientific Name

Salix ligulifolia [1]

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| Common Name | Strapleaf Willow ^[3] |
| Species Scientific Name | |
| Scientific Name | <i>Salix ligulifolia</i> C. R. Ball ex C. K. Schneid ^[1] |
| Varieties | <i>Salix cordata</i> Michx. var. <i>ligulifolia</i> (C.R. Ball) L. Kelso <i>Salix eriocephala</i> Michx. var. <i>ligulifolia</i> (C.R. Ball) Dorn <i>Salix lutea</i> Nutt. var. <i>ligulifolia</i> C.R. Ball ^[1] |
| Sub-species | <i>Salix rigida</i> Muhl. ssp. <i>ligulifolia</i> (C.R. Ball) A.E. Murray ^[1] |
| Cultivar | <i>Salix ligulifolia</i> is a cultivar its self, made from a Placer erect willow. ^[2] |
| Common Synonym(s) | <i>Salix cordata</i> Michx. var. <i>ligulifolia</i> (C.R. Ball) L. Kelso <i>Salix eriocephala</i> Michx. var. <i>ligulifolia</i> (C.R. Ball) Dorn <i>Salix lutea</i> Nutt. var. <i>ligulifolia</i> C.R. Ball <i>Salix rigida</i> Muhl. ssp. <i>ligulifolia</i> (C.R. Ball) A.E. Murray ^[1] |
| Common Name(s) | Strapleaf Willow ^[3] Tongueleaf Willow ^[8] |
| Species Code (as per USDA Plants database) | SALI ^[1] |
| GENERAL INFORMATION | |
| Geographical range | OR, CA, MT, WY, SD, CO, UT, AZ, and NM. ^[1] |
| Ecological distribution | A floodplain that experiences temporary flooding, streams that are flooded during certain seasons, wet areas alongside streams, and water sources that slowly seep out from the ground. ^[4] |

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| Climate and elevation range | <p><i>Salix ligulifolia</i>'s climate has an annual Precipitation 8" to 75", summers getting .25 to 2.5 and winters getting 26 to 45 inches of rain fall. Elevation range is 4,000-9,000 ft in wetland areas and 7,000-10,000 ft in subalpine wet areas. [10]</p> <p>This species prefers riparian areas or sites that have high amounts of water and lots of sun light. Very adaptable in a variety of soil types. Although it can withstand high elevations it does best under 2,000 ft in elevation. [2]</p> |
| Local habitat and abundance | <p>This particular type of willow thrives in habitats such as Yellow Pine Forests, Red Fir Forests, Lodgepole Forests, and wetland-riparian areas. It is frequently found alongside various butterfly species, including the Western tiger swallowtail, Morning Cloak, Lorquin's Admiral, Milbert's Tortoiseshell, Satyr Comma, Two-Tailed Swallowtail, and Green Comma. [8]</p> |
| Plant strategy type / successional stage | <p>Primary successional colonizer that can with stand high amount of stress from saturated soils, and is a strong competitor to weeds and grasses. [2]</p> |
| Plant characteristics | <p><i>Salix ligulifolia</i> deciduous tall shrub or low tree, [4] that can reach heights of up to 8 meters. Its leaves are lanceolate and can grow to be more than 13 centimeters in length and are light green color. The leaf edges are slightly serrated, with some leaves having a smooth appearance or some with small bumps. The plant produces clusters of flowers called catkins, which are hairy in texture. The male catkins are short and thick, measuring around 3 to 4 centimeters long, while the female catkins tend to be slightly longer. [8] The branches of the stems have colors that range from yellow-brown, gray-brown, to red-brown. [9]</p> |
| PROPAGATION DETAILS | |
| Ecotype | <p>Placer erect willow collected in 1978 from a site near Auburn in Placer Co., California.[2] As well as general propagation practices adapted from a combinations of <i>Salix</i> species with similar climate ranges.</p> |
| Propagation Goal | <p>Cuttings with roots forming.</p> |

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| Propagation Method | Vegetative propagation ^[5] |
| Product Type | Cuttings in containers ^[2] |
| Stock Type | No information found |
| Time to Grow | 10 months, if planting in the fall. ^[12] |
| Target Specifications | Cuttings about 30 cm long with healthy roots formed at the base. ^[6] |
| Propagule Collection Instructions | Take cuttings from well established woody plants, usually a year old. Cut about a 30 cm long cutting. The cutting of the base should be done at an angle. This can be done around later fall or beginning of spring. ^[6] Best to take cuttings that have two nodes on the section you are trimming. ^[2] |
| Propagule Processing/Propagule Characteristics | N/A |
| Pre-Planting Propagule Treatments | Gather the lengthy cuttings and tie them together using string or twine. Then, place the tied cuttings into a plastic bag along with lightly moistened peat moss. Next, find a cool location, such as a refrigerator, and put the plastic bag there. Try to plant the cuttings day of harvest if capable. If same day sowing is not feasible, then cuttings can be stored in a refrigerator for about a month. ^[11] |
| Growing Area Preparation / Annual Practices for Perennial Crops | You can either place these cuttings in a protected outdoor bed or directly plant them in their permanent location. For planting the cuttings, the ideal option is a mixture of peat moss and sand in a 1:2 ratio that has been adequately dampened. Plant them in appropriate sized container for length of cutting. ^[11] |
| Establishment Phase Details | After you have required the cuttings, place them in a weighty damp soils to start root establishment. ^[6] |
| Length of Establishment Phase | Roots should form at the base of the cutting after ten to twenty days. ^[6] |
| Active Growth Phase | Make sure to provide a layer of mulch to prevent weed growth. This process is quite simple. Make sure the cuttings have plenty of sun. ^[12] |

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| Length of Active Growth Phase | Since this is a cutting method, plants will be continuing to actively grow until they are planted. |
| Hardening Phase | No information found. Plants will naturally go through a hardening phase after out-planting. |
| Length of Hardening Phase | N/A |
| Harvesting, Storage and Shipping | Pots can be brought to out planting site in the fall or winter. ^[2] |
| Length of Storage | Cuttings can be stored for long periods of time as long as nurseries or growers have the capacity and pots to store them in. |
| Guidelines for Outplanting / Performance on Typical Sites | The best time to plant is in the fall when rainy season has come back. Out-planting should begin by clearing the out-planting site of competitive vegetation in order to enhance the establishment rate of the cuttings. If appropriate, you can treat the site with an applicable herbicide. It is best to spread the plants apart by about 2 to 3 feet from each other. Additional water or mulch can be added to the out-planting site during the first summer to help boost the survival rate of the cuttings. ^[2] |
| Other Comments | This genesis type is known for being very easy to grow by vegetative propagation via cuttings. |

INFORMATION SOURCES

References

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2. USDA-NRCS. 2013. Release brochure for 'Placer' erect willow (*Salix ligulifolia*). USDA-Natural Resources Conservation Service, Corvallis Plant Materials Center, Corvallis, OR.
3. Tongueleaf Willow, *Salix ligulifolia*. California Native Plant Society. (n.d.). <https://calscape.org/Salix-ligulifolia-0>
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| Other Sources Consulted | 1. Stuart, J. D., & Sawyer, J. O. (2001). <i>Trees and shrubs of California</i> . University of California Press. |
| Protocol Author | Olivia Anderson |
| Date Protocol Created or Updated | 05/26/23 |