Plant Propagation Protocol for *Salix arbusculoides*
ESRM 412 – Native Plant Production
URL: https://courses.washington.edu/esrm412/protocols/*2023*/*SAAR3.pdf*

(Weyland, Phyllis)

(Burke Museum)

(USGS)

TAXONOMY	
Plant Family	
Scientific Name	*Salicaceae*
Common Name	Willow family
Species Scientific Name	
Scientific Name	*Salix arbusculoides* Andersson
Varieties	No varieties found
Sub-species	No sub-species found
Cultivar	
Common Synonym(s)	*Salix acutifolia* auct. non Hook. *Salix humillima* Andersson *Salix Humillima* Andersson var. *puberula* (Andersson) Andersson *Salix saskatchevana* Seemen
Common Name(s)	littletree willow, peachleaf willow
Species Code (as per USDA Plants database)	SAAR3
GENERAL INFORMATION	
Geographical range*	AK (N) CAN (N) *see distribution map above

Ecological distribution	Occurs in both upland and lowland forests, and along edges of alpine and arctic tundra. (3)
Climate and elevation range	Variable climate conditions (6) Needs moist conditions, performs poorly in dry locations; 0-2000 m (3)
Local habitat and abundance	Along streams, lakeshores in montane and subalpine zones, and upland sites, openings in spruce forests, treed bogs, moist to mesic fens (2,3,6). Grows best in deep, moist alluvial bottomlands (4).
Plant strategy type / successional stage	Commonly an early seral species that invades fresh alluvium deposits, glacial outwash, and silty alluvial deposits (4). It is also common after fire in open wet sites (4). Can colonize and establish during low water periods on floodplains. Withstands flooding and silting (4). Low shade tolerance (1,4) and fire-adapted, sprouting from the root crown and roots (1,4).
Plant characteristics	Dioecious 3.3-4.5 m tall shrub to 7.5-9 m tall trees, branches erect, flexible at base; twigs red-brown, smooth to sparsely hairy (4, 6). Leaves are alternate, shallow, green, hairless above and white finely hairy beneath, 2.5-7.5 cm long (4). Flowering occurs mid May - early July (2). Reproduction occurs through cuttings, and seed dispersal, sometimes through underground rhizomes (4)
PROPAGATION DETAILS - Seed (5) **This information is for Salix species in general**	
Ecotype	No information.
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Container (plug)
Stock Type	No information.
Time to Grow	1 year
Target Specifications	When roots have fully occupied the container but not so that they are root-bound.
Propagule Collection Instructions	Seedlings started from cuttings collected from stooling beds or the wild. Collection done

	after leaves have fallen from the stems (late fall/early winter) and before buds swell in the spring.
Propagule Processing/Propagule Characteristics	No information.
Pre-Planting Propagule Treatments	Cutting/sections sealed in plastic and stored at temperatures slightly below freezing (28-30 F). Prior to striking, stems are first cut into 4-6” long sections with at least 2 buds. Terminal bud must be ½” from the top of the cutting.
Growing Area Preparation / Annual Practices for Perennial Crops	Container: TreepotsTM with 1,2,3,4 gallon capacity Media: Grower’s Gold Mix, composed of 40% pine/fir bark, 35% Canadian sphagnum peat moss and 25% screened volcanic pumice. Media is pre-moistened and has starter fertilizer (6-10-6)
Establishment Phase Details	Seedlings are pushed into the media with only the terminal bud above the media surface. Containers are stored with ample space between them to ensure more light and space to grow.Several weeks after transplanting, isobutylidene diurea top dressing applied. Seedlings fertilized just once per year. Seedlings are irrigated 1-2 times per week through overhead fixed irrigation.
Length of Establishment Phase	1 month
Active Growth Phase	Seedlings irrigated based on moisture content of containers, in the morning. In high temperatures, they are watered every 2-3 days for up to 4.5 hours. Seedlings are monitored for pests, but have unlikely occurrences. They are handweeded every 6 weeks.
Length of Active Growth Phase	3 months
Hardening Phase	Reduction in frequency of irrigation. For winter freezes in the low teens, seedlings stored in unheated greenhouses or tree storage facilities. The bottom inch of the root plug is pruned.
Length of Hardening Phase	3 months
Harvesting, Storage and Shipping	Containers are transported in enclosed refrigerated and non-refrigerated trucks. No need for seedling extraction from the pot or storage prior to shipping.
Length of Storage	No information.

Guidelines for Outplanting / Performance on Typical Sites	No information.
Other Comments	No information.
INFORMATION SOURCES	
References	(1) USDA, NRCS. 2023. Salix arbusculoides Andersson. The PLANTS Database. National Plant Data Team, Greensboro, NC USA. https://plants.usda.gov/home/plantProfile?symbol=SAAR3 (2) TWC. 2023. Salix arbusculoides (littletree willow). Lady Bird Johnson Wildflower Center. https://www.wildflower.org/plants/result.php?id_plant=SAAR3 (3) eFloras (2008). Salix arbusculoides Andersson. Missouri Botanical Garden, St. Louis, MO & Harvard University Herbaria, Cambridge, MA. http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=242445637 (4) USDA. n.d. SPECIES: salix arbusculoides. Fire effects information system (FEIS) https://www.fs.usda.gov/database/feis/plants/shrub/salarb/all.html (5) Steinfeld, David. 2003. Propagation protocol for production of Container (plug) Salix plants 1,2,3 and 4 gallon containers; USDA FS - J Herbert Stone Nursery Central Point, Oregon. In: Native Plant Network. US Department of Agriculture, Forest Service, National Center for Reforestation, Nurseries, and Genetic Resources. https://npn.rngr.net/propagation/protocols?SearchableText=salix&getNPNScientificTitle=&getNPNFamilyScientific=&getNPNStateName=&getNPNProductType=&getNPNOrganizationName=&getNPNCompanyName=&formSubmitted=1 (6) Klinkerberg, B. 2020. Salix arbusculoides Andersson. E-Flora BC: Electronic Atlas of the Plants of British Columbia. Lab for

	Advanced Spatial Analysis, Department of Geography, University of British Columbia, Vancouver. http://linnet.geog.ubc.ca/Atlas/Atlas.aspx?sciname=Salix%20arbusculoides (7) Consortium of Pacific Northwest Herbaria Specimen Database (CPNWH). 2023. https://pnwherbaria.org/data/results.php?SourcePage=search.php&submit=+Search+&TaxonomicGroup=&Family=&Genus=Salix&Species=arbusculoides
Other Sources Consulted	(8) FWS. n.d. Littletree willow (Salix arbusculoides). U.S. Fish and Wildlife Service. https://www.fws.gov/species/littletree-willow-salix-arbusculoides (9) Densmore, R.V., M.E. Vander Meer, and N.G. Dunkle. 2000. Native plant revegetation manual for Denali National Park and Preserve. U.S. Geological Survey, Biological Resources Division, Information and Technology Report USGS/ BRD/ITR-2000-0006. 42 pp. https://pubs.usgs.gov/itr/2000/0006/report.pdf (10) NatureServe. 2023. NatureServe Network Biodiversity Location Data accessed through NatureServe Explorer . NatureServe, Arlington, Virginia. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.157020/Salix_arbusculoides
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