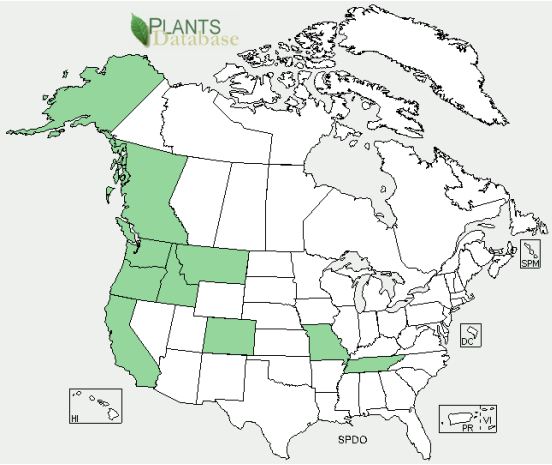
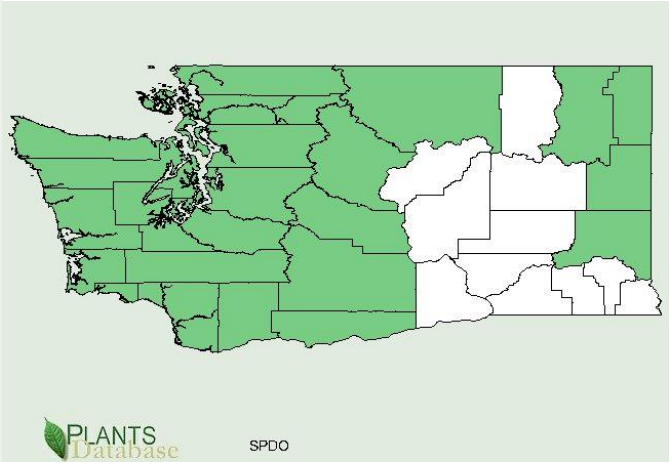
Plant Propagation Protocol for *Spiraea douglasii*

ESRM 412 – Native Plant Production



US and Canada Distribution



Washington State Distribution

From PLANTS Database

TAXONOMY	
Plant Family	
Scientific Name	Rosaceae
Common Name	Rose Family
Species Scientific Name	
Scientific Name	*Spiraea douglasii* Hook.
Varieties	*Spiraea douglasii* Hook. var. *douglasii* *Spiraea douglasii* Hook. var. *menziesii* (Hook.) C. Presl
Sub-species	None
Cultivar	None
Common Synonym(s)	None.
Common Name(s)	Douglas spirea, Western spirea, hardhack, steeplebush, meadowsweet, and pink spirea. (Darris 2009)
Species Code (as per USDA Plants database)	SPDO
GENERAL INFORMATION	
Geographical range	See above maps for distribution.
Ecological distribution	Found in riparian areas, grows in moist to waterlogged soil and is shade and salt intolerant. (Schopmeyer) (The PLANTS Database)
Climate and elevation range	Found at 0-6,500 ft. in cool mesothermal climates while decreasing in abundance with elevation, latitude, and distance from coast. (Darris 2009, Klinka)
Local habitat and abundance	Found throughout Western Washington (The PLANTS Database), common to occasionally dominant in wet sunny sites. (Klinka) Major part of bog and swamp communities (Esser) and commonly associated with *Juncus effuses, Myrica gale, Rubus spectabilis, Gualtheria shallon*. (Klinka)
Plant strategy type / successional stage	Generally seral but does colonizes clearcuts in Washington State. (Esser) Tolerates seasonal inundation and sprouts from rhizomes

	after fire. Capable of dominating favorable sites forming dense colonies, competing even with *Phalaris arundinacea* L. (Rose) (Darris 2009). Particularly invasive in sites with uniform shallow water depth. (Leigh)
Plant characteristics	Multistemmed cane-like deciduous shrub ranging from 0.5 to 2 m. Alternate, oblong to oblanceolate, serrated green leaves. (Darris 2009, Field Guide) Shallow fibrous root system. (Plant Selection Guide) 2-8 inch panicle of small pink flowers from June to September. Spreads by rhizomes and by seeds from follicles. (Rose) Seeds are likely spread by wind and animals. (Esser)
PROPAGATION DETAILS	
Ecotype	None
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Plug
Stock Type	Styro 77/170 ml, 415D (Hudson)
Time to Grow	9-10 months (Hudson)
Target Specifications	N/A
Propagule Collection Instructions	Seeds should be collected in late summer or early fall when follicles dry and turn brown, extract by shaking or tumbling. (Darris 2009).
Propagule Processing/Propagule Characteristics	1,030,400 seeds per pound (The PLANTS Database). No specific seed longevity located but seeds are viable when kept dry and cool at least into the spring following collection, meaning at least 8-9 months. (Hudson)
Pre-Planting Propagule Treatments	If not planted immediately, store seeds in cool dry conditions. Cold stratification is required for germination if stored. (Robson) 2 months in plastic bag with tissue at 2°C; 24 hour soak prior to stratification. (Hudson)
Growing Area Preparation / Annual Practices for Perennial Crops	100% peat (Hudson)
Establishment Phase Details	Temperature: 24 C days, 20 C nights Germinate in greenhouse. (Hudson)
Length of Establishment Phase	N/A
Active Growth Phase	N/A
Length of Active Growth Phase	N/A
Hardening Phase	N/A
Length of Hardening Phase	N/A
Harvesting, Storage and Shipping	Cold storage starting in mid-November following leaf shedding. (Hudson)
Length of Storage	N/A
Guidelines for Outplanting /	Will flower within a few years of germination. (Robson)

Performance on Typical Sites	
Other Comments	Vigorous, slow to stop growth in fall. (Hudson) Can seed successfully directly after collection if seeds haven't dried. (Darris 2002, Darris 2009).
PROPAGATION DETAILS	
Ecotype	
Propagation Goal	Plants
Propagation Method	Vegetative
Product Type	Bareroot
Stock Type	N/A
Time to Grow	Hardwood cutting takes 5 months from cutting to outplanting. (Rose)
Target Specifications	N/A
Propagule Collection Instructions	Semi-hardwood cuttings can be taken in summer and fall from semi mature wood. Cut distally. 15- 20 cm hardwood cuttings can be taken in December and January. (Darris 2002, Rose)
Propagule Processing/Propagule Characteristics	N/A
Pre-Planting Propagule Treatments	For semi hardwood cuttings store in a bucket of cold water for two weeks and then store in plastic bags in a cooler until April. Dip in rooting hormone before planting. (Darris 2002, Rose) For hardwood cuttings dip in rooting hormone before planting. 5000 ppm IBA solutions will increase rooting. Fungicide treatment of Captan-talc should not be used in conjunction (Darris 2002).
Growing Area Preparation / Annual Practices for Perennial Crops	Semi-hardwood cuttings should be placed in 1 to 1 peat perlite mix. Hardwood cuttings should be placed in potting mix. (Rose)
Establishment Phase Details	Keep cuttings under mist and bottom heat. (Rose)
Length of Establishment Phase	N/A
Active Growth Phase	N/A
Length of Active Growth Phase	N/A
Hardening Phase	Cold harden before outplanting. (Rose)
Length of Hardening Phase	N/A
Harvesting, Storage and Shipping	N/A
Length of Storage	N/A
Guidelines for Outplanting / Performance on Typical	Outplant in late March or April. (Rose) 90-100% success with hardwood cuttings, live stakes are described as having fair to

Sites	good potential. (Darris 2002)
Other Comments	Mulch, first year irrigation, and weed suppression will help establishment. (Darris 2009) Will also propagate from layering, spring root cuttings, and root suckers. (Darris 2002)
INFORMATION SOURCES	
References	Darris, Dale. *Ability of Pacific Northwest Native Shrubs to Root from Hardwood Cuttings (with Summary of Propagation Methods for 22 Species)*. Tech. no. 30. Portland, Or.: USDA NRCS, 2002. Web. 23 Apr. 2014. <http://www.nrcs.usda.gov/Internet/FSE_PLANTMATERIALS/publications/orpmctn3859.pdf>. Darris, Dale, and Pete Gonzales. "Rose Spirea Fact Sheet." *NRCS Plant Fact Sheet*. USDA NRCS, Sept. 2009. Web. 23 Apr. 2014. Esser, Lora L. 1995. Spiraea douglasii. Fire Effects Information System. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. <http://www.fs.fed.us/database/feis/> Web. 23 Apr. 2014. *Field Guide for the Identification of Common Riparian Woody Plants of the Intermountain West and Pacific Northwest*. Aberdeen, ID: USDA NRCS, 2008. Web. 23 Apr. 2014. <http://www.nrcs.usda.gov/Internet/FSE_PLANTMATERIALS/publications/idpmcpu7428.pdf>. Hudson, Shelley, and Carlson, Michael. *Propagation of Interior British Columbia Native Plants from Seed*. Victoria, B.C.: British Columbia, Ministry of Forests, Research Program, 1998. Web. 23 Apr. 2014. <http://www.for.gov.bc.ca/HFD/Pubs/Docs/Mr/Mr093/Mr093.pdf>. Klinka, K. *Indicator Plants of Coastal British Columbia*. Vancouver: U of British Columbia, 1989. Print. 222 p. Leigh, Michael. *Grow Your Own Native Landscape: A Guide to Identifying, Propagating & Landscaping with Western Washington Native Plants*. Olympia, WA: Native Plant Salvage Project, Washington State U Cooperative Extension, Thurston County, 1999. Print. 63 p. "Plant Selection Guide." *Slope Stabilization Plant Selection Guide*. Washington State Department of Ecology, n.d. Web. 23 Apr. 2014. Robson, Kathleen A., Alice Richter, and Marianne Filbert. *Encyclopedia of Northwest Native Plants for Gardens and Landscapes*. Portland, Or.: Timber, 2008. Print. 492 p. Rose, Robin, Caryn E. C. Chachulski, and Diane L. Haase. *Propagation of Pacific Northwest Native Plants*. Corvallis: Oregon State UP, 1998. Print. 168 p.

	Schopmeyer, C.S. *Seeds of Woody Plants in the United States*. Washington, D.C.: United States Department of Agriculture. Forest Service, 1974. Print. 791-793 p. *Spiraea douglasii* Hook. USDA, NRCS. 2014. The PLANTS Database (http://plants.usda.gov, 23 April 2014). National Plant Data Team, Greensboro, NC 27401-4901 USA.
Other Sources Consulted	Karrfalt, Robert P. "S Genera." *The Woody Plant Seed Manual*. By F. T. Bonner. Washington, D.C.: U.S. Dept. of Agriculture, Forest Service, 2008. N. pag. *National Seed Laboratory*. USDA Forest Service. Web. 23 Apr. 2014. Kruckeberg, Arthur R. *Gardening with Native Plants of the Pacific Northwest*. Seattle: U of Washington, 1996. Print. 126-127 p. Pettinger, April, and Brenda Costanzo. *Native Plants in the Coastal Garden: A Guide for Gardeners in the Pacific Northwest*. Portland, Or.: Timber, 2003. Print. "Propagation Protocol Database." Propagation Protocol Database. Web. 23 Apr. 2014.
Protocol Author	Ben Saari
Date Protocol Created or Updated	4/23/2014

APPENDIX A.
Western Spiraea, *Spiraea douglasii*

Range
Alaska to California, east to Idaho.

Climate, elevation
Moist areas to water-logged soils (peat), full sun. Reportedly shade intolerant. Sea level to 6000 feet

Local occurrence (where, how common)
Commonly distributed in Western Washington in low to mid-elevations.

Habitat preferences
Moist areas, swamps, lake margins and damp meadows, sea level to subalpine. Coniferous forests.
Ben Legler

Plant strategy type/successional stage (stress-tolerator, competitor, weedy/colonizer, seral, late successional)
It can be invasive, crowding out other native plants, especially in wetland areas. Occurs mostly in seral communities. Pioneer species in clearcut areas.

Associated species
Juncus ensifolius, Carex vesicaria, C. sitchensis, C. obnupta, Epilobium glandulosum, Angelica genuflexa, Equisetum arvense, Veratrum californicum, Alnus viridis ssp. sinuata, Lonicera involucrata, Cornus sericea, Vaccinium caespitosum, Elymus glaucus, Blechnum spicant, Pteridium aquilinum, Achillea millefolium, Carex eurycarpa, Rosa woodsii, and Ribes lacustre.

May be collected as: (seed, layered, divisions, etc.)
Seed, hardwood and softwood cuttings, divisions.

Collection restrictions or guidelines
Bag seedheads to capture ripening seed. Allow pods to dry on plant; break open to collect seeds. Collect seed in the fall.

Seed germination (needs dormancy breaking?)
Fresh seed germinates easily without any pretreatment while dry seed may require one to two months of cold stratification. Seeds should be soaked for 24 hours before stratification in mesh bags in peat.

Seed life (can be stored, short shelf-life, long shelf-life)
Can be stored for at least one year.

Propagation recommendations (plant seeds, vegetative parts, cuttings, etc.)
Can be grown from **s**eed, softwood hardwood cuttings, root cuttings, or division. Responds well to bottom watering.

Soil or medium requirements (inoculum necessary?)
100 percent peat.

Installation form (form, potential for successful outcomes, cost)
Rooted plants to 6' tall in containers; bareroot & cuttings 18"-24" tall

Recommended planting density
Plants 3+ feet on center, cuttings 2+ feet on center.

Care requirements after installed (water weekly, water once etc.)
Requires consistently moist soil; do not let dry out between waterings.

Normal rate of growth or spread; lifespan
Fast growing, to 3-6 feet tall and spreads easily, forming monocultures. Short-lived, less than 50 years.

Sources cited

Hudson, Shelley and Michael Carlson. Propagation of Interior British Columbia Native Plants from Seed. http://www.for.gov.bc.ca/HFD/Pubs/Docs/Mr/Mr093/Mr093.pdf

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Rose, Robin et al. 1998. Propagation of Pacific Northwest native plants. Corvallis : Oregon State University Press

AllRefer.com Reference: http://reference.allrefer.com/

Burke Museum Herbarium: http://www.washington.edu/burkemuseum/collections/herbarium/index.php

The Theodore Payne Foundation California Native Plant Library http://www.theodorepayne.org/gallery/glossary.htm

WSU Master Gardener Native Plant Guide: http://gardening.wsu.edu/nwnative/

Washington State Dept. of Ecology: Controlling Erosion Using Vegetation. http://www.ecy.wa.gov/programs/sea/pubs/93-30/index.html

Dave's Garden: http://davesgarden.com
WACD Plant Materials Center: http://www.kccd.net/Roy_Bach_Plant_Sale/Plant_Guide.pdf

King County: Role and Use of Vegetation: http://dnr.metrokc.gov/wlr/biostabl/PDF/9305BnkStbCh6.pdf

National Tree Seed Laboratory: USDA Forest Service: http://www.nsl.fs.fed.us/

Data compiled by:
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