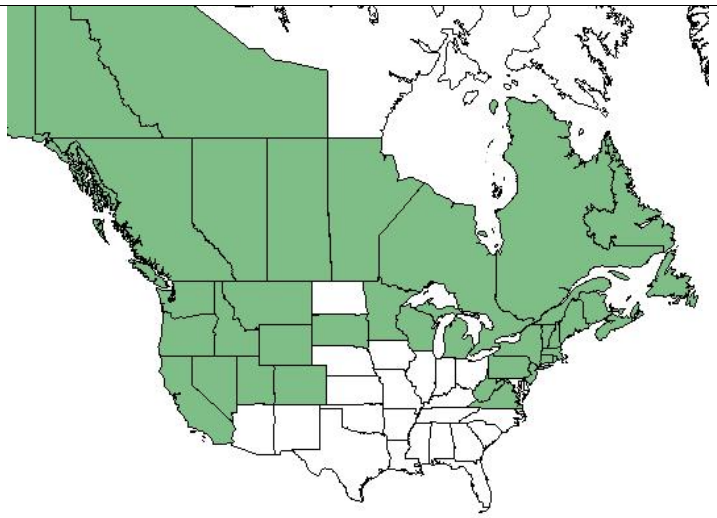
Plant Propagation Protocol for *Ribes lacustre*

ESRM 412 – Native Plant Production

Protocol URL: https://courses.washington.edu/esrm412/protocols/*RILA.pdf*

TAXONOMY	
Plant Family	
Scientific Name	Grossulariaceae
Common Name	Currant
Species Scientific Name	
Scientific Name	*Ribes lacustre* (Pers.) Poir. (USDA 2016)
Varieties	N/A
Sub-species	N/A
Cultivar	N/A
Common Synonym(s)	*Limnobotrya lacustris* (Pers.) Rydb. *Ribes oxycanthoides* L. var *lacustre* Pers. (USDA 2016) *Ribes echinatum* Dougl. *R. grossularioides* Michx. *R. parvulum* Rydb. (Pfister 1974)
Common Name(s)	Prickly currant Swamp gooseberry Swamp black currant (Pfister 1974) Black gooseberry (Rose et al 1998) Black swamp gooseberry (Pojar 1994)
Species Code (as per USDA Plants database)	RILA
GENERAL INFORMATION	

Geographical range	 Range of *R. lacustre* in the US and Canada (USDA 2016)  Range of *R. lacustre* in the PNW coastal area (Pojar 1994)
Ecological distribution	Moist woods and streambanks to drier forested slopes and subalpine ridges, to the shoreline in BC and Alaska. Often on rotting wood (Pojar 1994). Additionally, alluvial soils. Moderately shade tolerant but grows vigorously in canopy openings (Rose et al 1998).
Climate and elevation range	Black gooseberry is found in cool, moist climates. It occurs from 7,700 to 10,500 feet in Utah, 7,000 to 11,400 feet in Colorado, 5,500 to 10,700 feet in Wyoming, and 3,000 to 8,700 feet in Montana. At the southern extremes of its range (California, Utah, Colorado, and West Virginia), black gooseberry occurs in cool, high-elevation forests (Carey 1995).
Local habitat and abundance	Plant is fairly common and locally abundant throughout the Pacific NW, in both west and east side habitats (Pojar 1994, Rose et al 1998). This species is an alternate host plant for white pine blister rust (Pfister 1974).

Plant strategy type / successional stage	Vigorous growth in canopy openings (noted by Rose et al 1998) indicates that it may be a pioneer/seral species.
Plant characteristics	Spreading or upright deciduous shrub that reaches 1-1.5 m in height. May grow individually or in extensive thickets. Prickles along young stems (smooth stems when older), and small 5 lobed leaves. Drooping racemes with 5-15 flowers. Perennial (Rose et al 1998).
PROPAGATION DETAILS (Seed)	
Ecotype	Unable to find specific site information, though data sources on propagation were developed in western OR and BC (Rose et al 1998)
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Plant
Stock Type	Bareroot or Container
Time to Grow	3 years (Rose et al 1998)
Target Specifications	Plants 6-8 inches in height, with outward growth (Sound Native Plants 2016).
Propagule Collection Instructions	The fruits are a bristly, purple black berry that is 8.5 mm in diameter. Collect seeds when the fruit ripens in August. Black gooseberry begins producing seed at 3-5 years, with a good crop every 2-3 years (Rose et al 1998). Seeds should be picked or stripped as soon as they are ripe to lessen loss to birds (Young and Young 1986).
Pre-Planting Propagule Treatments	If the seed is not extracted immediately, the berries should be spread out to dry. If dried, soak fruit in water prior to cleaning. To clean seed, macerate the fruit and wash the pulp off of seeds (Rose et al 1998). Maceration may be most efficiently accomplished by running small quantities of the berries with water in a blender with rubberized blades for 15 to 45 seconds. After the blender has separated the seed from the pulp, add water and allow the sound seed to settle. The pulp, empty seeds and excess water can be decanted. Take the sound seeds remaining in the blender and wash it into a funnel lined with filter paper. Dry the seeds on the filter paper (Pfister 1974). Scarification: Germination will improve if seeds are soaked in 2-10% sulfuric acid for 5 minutes (Rose et al 1998). Stratification: If spring sowing, seeds must be cold, moist stratified at 0°C for 120-200 days (Vories 1980). Experiments found that this will brought the germination rate up to 48%, out of seeds with a viability of 61%. Alternatively, germination may be

	achieved without prior stratification by alternating diurnal temperatures. Generally, *Ribes* species seeds may remain dormant for many years and are slow to germinate (Pfister 1974). Seeds remain viable for long periods of time when stored in sealed containers at low moisture content (Pfister 1974). Seeds viable for up to 17 years (PFAF 2016).
Growing Area Preparation / Annual Practices for Perennial Crops	Seed is usually sown in the fall to a depth of .3-.6 cm in a moist mineral soil supplied with humus and covered with 5-7.5 cm of mulch (Rose et al 1998). If seeds are sown in the spring, they should be stratified (Pfister 1974). Plants intended for bare root harvest may be sown in an outdoor bed (Dumroese 2012), in a cold frame (PFAF 2016).
Establishment Phase Details	Unable to find many specific details, but should occur in the spring following fall seed sowing. If growing as container plants, transplant the seedlings into individual pots and grow in a cold frame when they are large enough to handle (PFAF 2016).
Length of Establishment Phase	Unable to find specific details.
Active Growth Phase	Unable to find specific details, but should occur over the spring and summer following the establishment phase.
Length of Active Growth Phase	Unable to find specific details.
Hardening Phase	Unable to find specific details, but hardening should occur over the 2nd fall and winter they are in the nursery.
Length of Hardening Phase	Unable to find specific details.
Harvesting, Storage and Shipping	Should occur after plant is hardened and in winter dormancy (Dumroese 2012).
Length of Storage	May extend for the length of time plant experiences winter dormancy (Dumroese 2012).
Guidelines for Outplanting / Performance on Typical Sites	Outplant bareroot plants after 2 years (if seeds were sown in the fall – adjust if sown in spring) (Rose et al 1998). Easily grown in a moisture retentive but well-drained loamy soil. Tolerant of shade, though being in shade will lessen fruit production. Plant is hardy to about -20°c. Should not be grown in the vicinity of pine trees (PFAF 2016).
Other Comments	Plant not considered rare, seeds may be collected according to normal good practices.
PROPAGATION DETAILS (Vegetative)	
Ecotype	Unable to find specific site information, though data sources on propagation were developed in western OR and BC (Rose et al 1998)

Propagation Goal	Rooted cuttings
Propagation Method	Vegetative
Product Type	Propagules (cuttings)
Stock Type	Bareroot or Container
Time to Grow	1-2 years
Target Specifications	Unable to find specific information, beyond a healthy cutting with adequate root system
Propagule Collection Instructions	Take hardwood cuttings 15-20 cm long from one year old wood in the fall (Rose et al 1998). Strike (into the cold frame, described below) very soon after collection (Dumroese 2012).
Propagule Processing/Propagule Characteristics	Unable to find additional relevant information.
Pre-Planting Propagule Treatments	Make a flat bottom cut just below a bud and a slanted top cut about 1.3 cm above (Rose et al 1998).
Growing Area Preparation / Annual Practices for Perennial Crops	Stick the cuttings in well-drained soil with only one or two buds extending from the soil (Rose et al 1998). Plant in a cold frame (PFAF 2016). Outdoor bed should be deep enough for the cuttings to easily fit within.
Establishment Phase Details	Unable to find specific details.
Length of Establishment Phase	Unable to find specific details.
Active Growth Phase	Unable to find specific details.
Length of Active Growth Phase	Unable to find specific details.
Hardening Phase	Unable to find specific details.
Length of Hardening Phase	Unable to find specific details.
Harvesting, Storage and Shipping	Rooted cuttings may be outplanted after 1-2 years growth (Rose et al 1998). Should occur after plant is hardened and in winter dormancy (Dumroese 2012).
Length of Storage	May extend for the length of time plant experiences winter dormancy (Dumroese 2012).
Guidelines for Outplanting / Performance on Typical Sites	Outplant bareroot plants after 1-2 years (Rose et al 1998). Easily grown in a moisture retentive but well-drained loamy soil. Tolerant of shade, though being in shade will lessen fruit production. Plant is hardy to about -20°c. Should not be grown in the vicinity of pine trees (PFAF 2016).
Other Comments	Plant not considered rare, seeds may be collected according to normal good practices.
INFORMATION SOURCES	
References	Carey, Jennifer H. 1995. Ribes lacustre. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). Available: http://www.fs.fed.us/database/feis/ [2016, April 16].

	Dumroese, R. K., Landis, T. D., & Luna, T. (2012). *Raising native plants in nurseries: Basic concepts*. Fort Collins, CO: United States Dept. of Agriculture, Forest Service, Rocky Mountain Research Station. Pfister, R. W. (US Department of Agriculture). (1974). *Seeds of woody plants in the United States* (Vol. 450, Agricultural Handbook). Washington, D.C.: U.S.D.A. PFAF (Plants For A Future). (n.d.). Ribes lacustre Plants Database. Retrieved April 16, 2016, from http://www.pfaf.org/user/Plant.aspx?LatinName=Ribes lacustre Pojar, J., MacKinnon, A., & Alaback, P. B. (1994). *Plants of the Pacific Northwest coast: Washington, Oregon, British Columbia & Alaska*. Redmond, WA: Lone Pine Pub. Rose, R., Chachulski, C. E., & Haase, D. L. (1998). *Propagation of Pacific Northwest native plants*. Corvallis: Oregon State University Press. Sound Native Plants. (2016, April 18). Ribes lacustre question [E-mail to the author]. USDA NRCS National Plant Data Team. (n.d.). Plants Profile for Ribes lacustre (prickly currant). Retrieved April 16, 2016, from http://plants.usda.gov/core/profile?symbol=rila Voires, K.C. (1980). *Growing Colorado Plants from Seed: A State of the Art* (Vol 1, Shrubs). Ogden, Utah: U.S.D.A. Forest Service. Young, J. A., & Young, C. G. (1986). *Collecting, processing, and germinating seeds of wildland plants*. Portland, Or.: Timber Press.
Other Sources Consulted	Dirr, M., & Heuser, C. W. (2006). *The reference manual of woody plant propagation: From seed to tissue culture*. Portland, OR: Timber Press. Hitchcock, C. L., & Cronquist, A. (1973). *Flora of the Pacific Northwest: An illustr. manual. Illustr. by Jeanne R. Janish*. Seattle: Univ. of Washington Press.

	Potash, L. L., & Aubry, C. A. (1997). *Native plant notebook: Mt. Baker-Snoqualmie National Forest* (2nd ed.). Sedro-Woolley, WA: North Cascades Institute.
Protocol Author	Regina Wandler
Date Protocol Created or Updated	04/16/2016

2003 *Ribes lacustre* propagation protocol:

Plant Data Sheet: Black gooseberry/ swamp currant (*Ribes lacustre*)

Range

Black gooseberry occurs throughout Canada from Newfoundland to the Yukon Territory and in Alaska. It extends south into the continental United States in the Coast and Cascade ranges to northern California, in the Rocky Mountains to central Colorado and northern Utah, in the Great Lake States, and in the Appalachian Mountains. Black gooseberry also occurs in the Black Hills of the Great Plains region [(1)].

Climate, elevation

Black gooseberry is found in cool, moist climates. It occurs from 7,700 to 10,500 feet in Utah, 7,000 to 11,400 feet in Colorado, 5,500 to 10,700 feet in Wyoming, and 3,000 to 8,700 feet in Montana. At the southern extremes of its range (California, Utah, Colorado, and West Virginia), black gooseberry occurs in cool, high-elevation forests [(1)].

Local occurrence (where, how common)

In our area, black gooseberry is widespread and common.

Habitat preferences

Black gooseberry prefers moist woods and streambanks to drier forest slopes and ridges. It is often found on rotting wood [1,4].

Plant strategy type/successional stage

Black gooseberry is moderately shade tolerant, but grows vigorously in canopy openings. It establishes in partial shade or full sun after disturbance and then persists in the understory of closed canopy forests. Seedlings are suppressed on sites with more than 75 percent full shade [1].

Associated species

Due to its wide range, black gooseberry is found with many species. Some examples in our region include western red cedar, western hemlock, devil's club, leafy moss (Mnium spp.), oak fern (Gymnocarpium dryopteris), Schreber's moss (Pleurozium schreberi), common ladyfern (Athyrium filix-femina), and horsetail (Equisetum spp.). In clearcuts in the Olympic Mountains, it is often found with oceanspray (Holodiscus discolor), thimbleberry (Rubus parviflorus), and common snowberry (Symphoricarpos albus) [1].

May be collected as: (seed, layered, divisions, etc.)

Black gooseberry can be propagated by seed or vegetative cuttings.

Collection restrictions or guidelines

Vegetative cuttings should be collected in the fall. Collect seed promptly when the fruit ripens in autumn to prevent bird herbivory. The fruit should be macerated, and the seed extracted and dried [3].

Seed germination

Seed is best sown in a cold frame as soon as it ripens in the autumn. If stored, the seed requires four to six months of cold stratification at about 0°C for 120-200 [2,3]. It should then be planted early in the spring. Germination is best when the seed is sown less than 1 cm deep in moist soil. Place seedlings in individual pots when they are large enough to handle and grow them in a cold frame for their first winter. They can be potted up or installed in the late spring of the following year [3].

Seed life (can be stored, short shelf-life, long shelf-life)

Under normal storage conditions the seed can remain viable for 17 years or more [3].

Recommended seed storage conditions

Most *Ribes* species store well when sealed in a container with a low moisture content. Variable temperatures do not appear to significantly affect viability [2].

Vegetative Propagation

Cuttings of half-ripe wood can be collected in July or August and should be 15-20 cm long and with a heel. They should be planted immediately in well drained soil. One or two buds should be exposed. Cuttings of mature wood of the current year's growth, preferably with a heel of the previous year's growth, can be collected from November to February and placed in a cold frame or sheltered bed outdoors [3].

Propagation recommendations
Propagation by seed and cuttings are both widely recommended.

Soil or medium requirements (inoculum necessary?)
Black gooseberry is easily grown in moist but well-drained loamy soil [3].

Installation form
Plants can be installed as contained plants at a year or two old. Direct seeding is not recommended.

Recommended planting density
Shrubs should be planted three to five feet on center depending on desired density and anticipated mortality [5].

Normal rate of growth or spread; lifespan
Mature height is typically 1.5-2 meters [1].

Sources cited

(1) Carey, J. H. (1995). Ribes lacustre. Fire Effects Information. United States Forest Service, United States Department of Agriculture. http://www.fs.fed.us/ database/feis/index.html. Retrieved May 21, 2003.

(2) Pfister, R. *Ribes* L. Currant, gooseberry. Woody Plant Seed Manual. United States Forest Service, United States Department of Agriculture. http://wpsm.net. Retrieved May 18, 2003.

(3) Plants for a Future. *Ribes lacustre*. http://plants.gardenbed.com/57/5633_cul.asp. Retrieved May 18, 2003.

(4) Pojar, J. & MacKinnon, A (eds.) (1994). Plants of the Pacific Northwest Coast. Vancouver, BC: Lone Pine.

(5) Sound Native Plants. http://www.soundnativeplants.com. Retrieved May 18, 2003.

Data compiled by (student name and date)
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