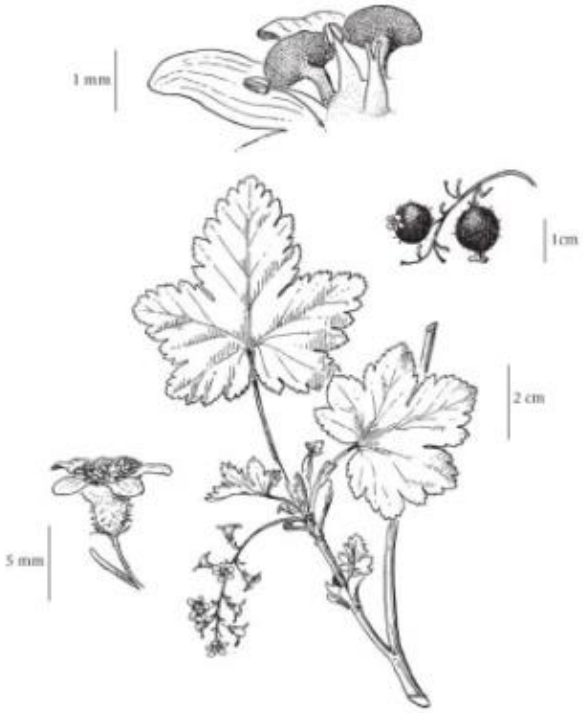
Plant Propagation Protocol for *Ribes Acerifolium*

ESRM 412 – Native Plant Production

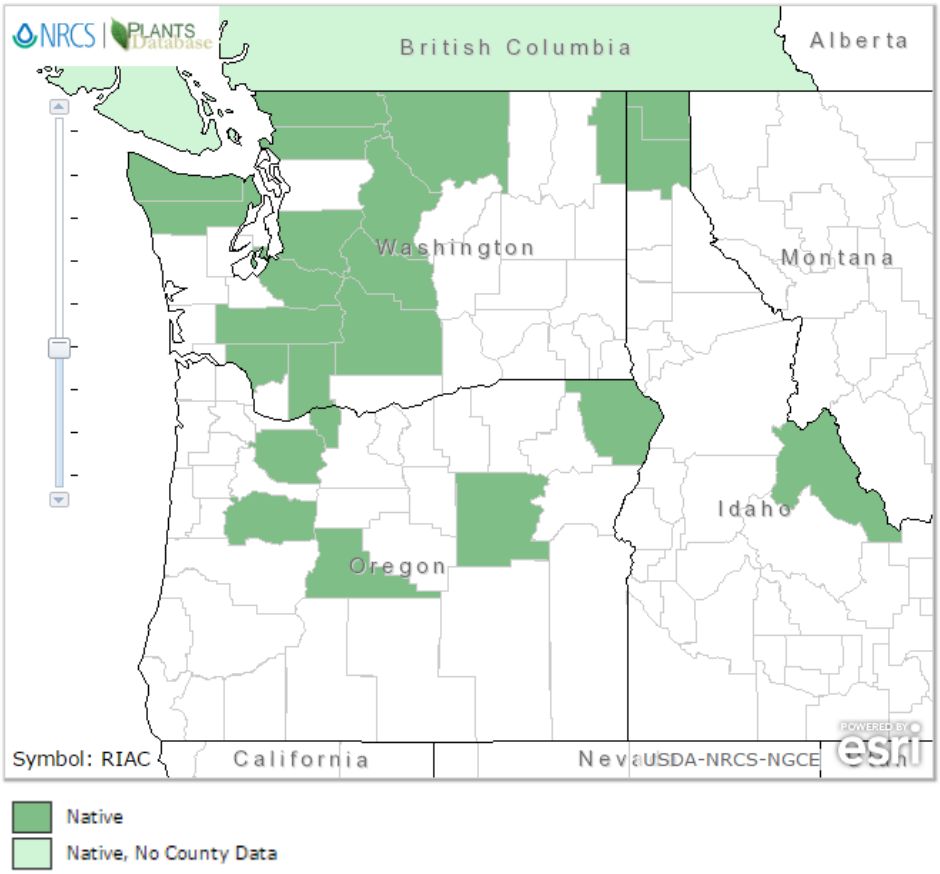
Protocol URL: https://courses.washington.edu/esrm412/protocols/*RIAC.pdf*



Ribes acerifolium

(E-flora BC)

TAXONOMY	
Plant Family	
Scientific Name	Grossulariaceae
Common Name	Currant family
Species Scientific Name	
Scientific Name	*Ribes acerifolium* Howell (USDA)
Varieties	
Sub-species	
Cultivar	
Common Synonym(s)	*Ribes howellii* Greene (RIHO2)
Common Name(s)	Mapleleaf currant, Howell's gooseberry
Species Code (as per USDA Plants database)	RIAC or RIHO2

GENERAL INFORMATION	
Geographical range	 Occurring in the Cascades, Olympia Mountains, and Northeastern Washington; Southern British Columbia south to Oregon, east to Idaho. (Knoke & Giblin, 2017).
Ecological distribution	Stream banks, meadowland thickets, open ridges and rockslides (Knoke & Giblin, 2017). Moist meadows in montane to alpine zones (Klinkenberg, 2017).
Climate and elevation range	Mid to high elevations in the mountains to timberline (Knoke & Giblin, 2017; Pojar & Mackinnon, 1994; Peck, 1961).
Local habitat and abundance	Scattered (Turner & Kuhlmann, 2014), occurs from southern British Columbia mainland south in the Cascades and Olympics to Oregon. (Pojar & Mackinnon, 1994) Found in Olympic National Park, Mt. Rainier National Park, and North Cascades National Park (Native Plants - PNW).
Plant strategy type / successional stage	No species specific data found.
Plant characteristics	Spreading erect shrub, stems under 1 meter tall. The whole plant finely puberulent and covered with stalked glands (Knoke & Giblin, 2017). Blooms mid-summer (Turner & Kuhlmann, 2014).

PROPAGATION DETAILS: SEED	
Ecotype	Wild collected seed, but location was unspecified (Levy-Boyd, 2017).
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Plant
Stock Type	Bareroot or container
Time to Grow	Other *Ribes spp.* indicate 3 years (Rose et al., 1998).
Target Specifications	Shrub to 1m (PFAF, 2017).
Propagule Collection Instructions	No specific data found. *Ribes spp.* fruits should be picked or stripped from the branches as soon as they are ripe, to avoid bird predation. Berries of alpine currants are often allowed to ferment in piles for a few days prior to extraction. Maceration and washing can be used to separate seeds from pulp. Dried seeds should be soaked in water prior to cleaning.
Propagule Processing/Propagule Characteristics	Store in sealed containers at a low moisture content. Temperature is not critical. Seeds are viable for long periods of time. Seeds of several *Ribes* species stored dry at room temperature remained viable for up to 17 years (Pfister & Sloan, 2008).
Pre-Planting Propagule Treatments	Imbided and cold stratified for 90 days at 39F (Levy-Boyd, 2017). *Ribes spp.* seeds normally germinate in spring following dispersal, although some seeds may remain dormant for many years (Moss and Wellner, 1953; Quick, 1954). Most *Ribes spp.* require at least one stratification period of a fairly long duration to break seed dormancy (Rudolf, 1949). Germination rate and total can be increased by wet pre-chilling in sand, peat, or vermiculite or in a mixture of these media. For most species, a second wet chilling and a repeat germination test are necessary to obtain complete germination of viable seed (Pfister & Sloan, 2008). Seed losses from damping-off fungi can be prevented by applying 646 mg of copper oxalate per 100 cm2 of culture surface (Quick, 1941). Dormancy is irregular within seedlots (Pfister & Sloan, 2008).
Growing Area Preparation / Annual Practices for Perennial Crops	No specific data found. For *Ribes spp.*, use mineral soil with humus. (Pfister & Sloan, 2008). Seeds should be sown at a rate of 646 to 860/m2 (60 to 80/ft2) (NBV 1946) or 130 viable seeds/m of row (40/ft) and covered to a depth of 3 to 6 mm (1/8 to 1/4 in) (Pfister, 1974).
Establishment Phase Details	No specific data found. *Ribes spp.* is typically slow to germinate (Pfister & Sloan, 2008).
Length of Establishment Phase	No species specific data found.

Active Growth Phase	No species specific data found.
Length of Active Growth Phase	No species specific data found.
Hardening Phase	Seeds directly sown in field early May (Levy-Boyd, 2017). *Ribes spp.* seeds are recommended to be sown in fall, unless stratified and sown in spring (Pfister & Sloan, 2008).
Length of Hardening Phase	No species specific data found.
Harvesting, Storage and Shipping	No species specific data found.
Length of Storage	No species specific data found.
Guidelines for Outplanting / Performance on Typical Sites	No species specific data found.
Other Comments	Seed propagation from Fourth Corner Nursery was not very successful. Seeds were wild collected (location unspecified) and were three years old (Pfister & Sloan, 2008). Most species can also be propagated readily from hardwood cuttings taken in autumn (Pfister, 1974).
INFORMATION SOURCES	
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	Plant
Stock Type	Bareroot or container
Time to Grow	No species specific data found. *R. lacustre* is 1-2 years (Rose et al., 1998).
Target Specifications	Shrub to 1m (PFAF, 2017).
Propagule Collection Instructions	No specific data found. *Ribes spp.* optimal collection time is November through February, but any time in late fall to early spring should be successful (MacDonald, 1996). Timing of cutting collection largely depends on method of handling of prepared cuttings. (MacDonald, 1996).

	Select well-ripened, vigorous, one-year-old shoots. Optimal length of cutting is 15cm (MacDonald, 1996). Strike cuttings (see 'Growing Area Preparation' below) very soon after collection (Dumroese, 2012).
Propagule Processing/Propagule Characteristics	No species specific data found.
Pre-Planting Propagule Treatments	No species specific data found. Likely similar to other *Ribes spp*.: 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	No species specific data found. Likely similar to other *Ribes spp*.: 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, 2017).
Establishment Phase Details	No species specific data found.
Length of Establishment Phase	No species specific data found.
Active Growth Phase	No species specific data found.
Length of Active Growth Phase	No species specific data found.
Hardening Phase	No species specific data found.
Length of Hardening Phase	No species specific data found.
Harvesting, Storage and Shipping	No species specific data found.
Length of Storage	No species specific data found, but likely similar to other *Ribes spp.* and may extend for the length of time plant experiences winter dormancy (Dumroese, 2012).
Guidelines for Outplanting / Performance on Typical Sites	No species specific data found, but likely similar to other *Ribes spp*.: *R. lacsutre* rooted cuttings may be out-planted after 1-2 years growth (Rose et al., 1998). Should occur after plant is hardened and in winter dormancy (Dumroese, 2012). *Ribes spp*. can harbor a stage of 'white pine blister rust' and should not be grown in the vicinity of pine trees. Plants in this genus are notably susceptible to honey fungus (PFAF, 2017).
Other Comments	*Ribes spp.* can also be propagated by layering and micropropagation (Hartman et al., 2011).

References	Klinkenberg, B. (ed.). (2017). "*Ribes acerifolium*." E-Flora BC: Electronic Atlas of the Plants of British Columbia. Lab for Advanced Spatial Analysis, Department of Geography, University of British Columbia, Vancouver. Web. 23 May 2017. Available at: http://linnet.geog.ubc.ca/Atlas/Atlas.aspx?sciname=Ribes%20acerifolium Dumroese, R. K., T.D. Landis & T. Luna. (2012). Raising native plants in nurseries: Basic concepts. Fort Collins, CO: USDA Forest Service, Rocky Mountain Research Station. Hartmann, T.H., D.E. Kester, F.T. Davies, Jr., R.L. Geneve. (2011). Hartmann and Kester's Plant Propagation – Principles and Practices. 8th ed. Saddle River, NJ: Prentice Hall. Print. Knoke, D. & D. Giblin. (2017). *Ribes acerifolium*. Burke Museum of Natural History and Culture. Web. 23 May 2017. Available at: http://biology.burke.washington.edu/herbarium/imagecollection.php?ID=2115 Levy-Boyd, D. Fourth Corner Nursery Propagator. Personal communication. 4/25/2017. Macdonald, B. (1996). Practical woody plant propagation for nursery growers. Portland, OR: Timber Press. Print. Native Plants PNW: An Encyclopedia of the Cultural and Natural History of Northwest Native Plants. "Mapleleaf Currant." Web. 23 May 2017. Available at: http://nativeplantspnw.com/mapleleaf-currant-ribes-acerifolium/ Moss V.D. and C.A. Wellner. (1953). Aiding blister rust control by silvicultural measures in the western white pine type. Circ. 919. Washington, DC: USDA. 32 p. PFAF. "*Ribes*" PFAF Plant Database. Web. 23 May 2017. Available at: http://www.pfaf.org/user/Plant.aspx?LatinName=Ribes Pfister R.D. (1974). "*Ribes* L." Seeds of woody plants in the United States. Agriculture Handbook No. 450. Washington, DC: USDA Forest Service: 540-542. Print. Pfister, R.D. & J.P. Sloan. (2008) "*Ribes* L." The Woody Plant Seed Manual. Eds. Franklin T. Bonner and Robert P. Karrfalt. Agriculture Handbook No. 727. Washington, DC: USDA Forest Service: 961-968. Print. Available at: https://www.fs.fed.us/rm/pubs_other/wo_AgricHandbook727/wo_AgricHandbook727_961_968.pdf

	Plants Database: "Plants Profile for *Ribes acerifolium* H. (Mapleleaf currant)." USDA NRCS. N.d. Web. 23 May 2017. Available at: https://plants.usda.gov/core/profile?symbol=RIAC Pojar J. & A. McKinnon. (1994). Plants of the Pacific Northwest: Washington, Oregon, British Columbia and Alaska, B.C. Ministry of Forests and Lone Publishing, Canada. Quick, C.R. (1941). Experimental germination of *Ribes* seed, 1940. Serial 111. Berkeley, CA: USDA Bureau of Entomology & Plant Quarantine. 29 p. Quick, C.R. (1954). Ecology of the Sierra Nevada gooseberry in relation to blister rust control. Circ. 937.Washington, DC: USDA. 30 p. Rose, R., C.E. Chachulski & D.L. Haase. (1998). Propagation of Pacific Northwest native plants. Corvallis, OR: Oregon State University Press. Rudolf, P.O. (1949). "First the seed, then the tree." *USDA Yearbook of Agriculture* (1948): Trees. 127–135. Turner, M.T. & E. Kuhlmann. (2014). Trees and Shrubs of the Pacific Northwest. Portland, OR: Timber Press. Print.
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Protocol Author	Elby Jones
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