Plant Propagation Protocol for *Ribes lobbii*
ESRM 412 – Native Plant Production
Spring 2012

Image of *R. lobbii* in flower.
http://biology.burke.washington.edu/herbarium/imagecollection.php?Genus=Cladonia

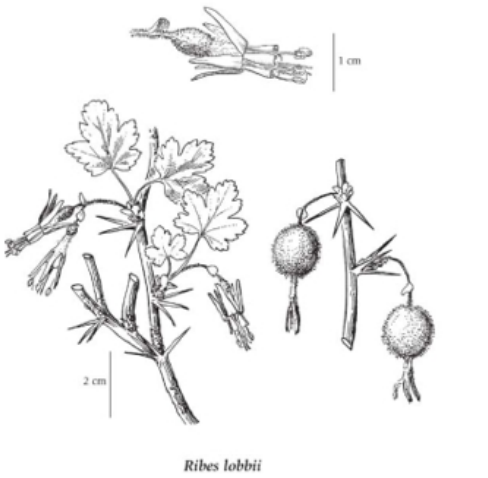
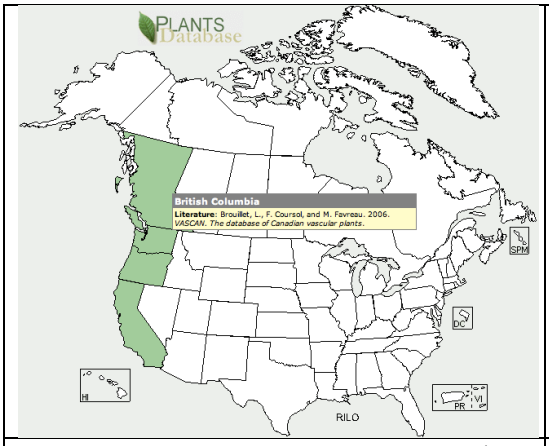
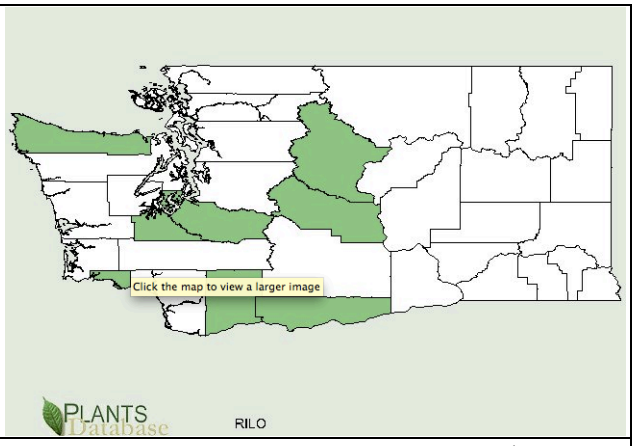


Illustration of *R. lobbii* leaf, stem, flower, and fruit.
http://linnet.geog.ubc.ca/Atlas/Atlas.aspx?sciname=Ribes%20lobbii



United States Distribution Map[1]



Washington Distribution Map[1]

TAXONOMY	
Family Names	
Family Scientific Name:	Grossulariaceae
Family Common Name:	Currant
Scientific	

Names	
Genus:	*Ribes*
Species:	*lobbii*
Species Authority:	A. Gray
Variety:	N/A
Sub-species:	N/A
Cultivar:	N/A
Authority for Variety/Sub-species:	N/A
Common Synonym(s) (include full scientific names (e.g., *Elymus glaucus* Buckley), including variety or subspecies information)	*Grossularia lobbii* (Gray) Colville & Britt.[2,6] *Ribes subvestitum* Hook. non Hook. & Arn.[6]
Common Name(s):	gummy gooseberry, fushia-flowered gooseberry, Oregon gooseberry, lobb's gooseberry
Species Code (as per USDA Plants database):	RILO
GENERAL INFORMATION	
Geographical range (distribution maps for North America and Washington state)	British Columbia to California, primarily the east side of the Cascade Mountain Range, but occasionally to the coast.[1] See maps above for North American and Washington state distribution.
Ecological distribution (ecosystems it occurs in, etc.):	Early-seral communities, open-canopy Douglas-fir forests, lowland valleys, and creek banks.[2,4,6] Montane, east side forests.[3,4]
Climate and	This species occurs in martime to submaritime cool meso-thermal

elevation range	climates; occurrence decreases with increasing elevation and precipitation.[2] At moderate elevations in the mountains.[4,9] Species found in 23 plots in Canada at 212-614 meters (695-2,280 ft.) elevation.
Local habitat and abundance; may include commonly associated species	Sporatic to scattered on very dry to moderately dry, water-shedding or moisture-deficient, nitrogen-medium sites.[2] Tolerates a variety of sandy, loamy, and clay soils with a wide pH range; must be well-drained and sunny.[6] In a Canadian study, *R. lobbii* was found on sites with an average S/SE exposure at 23 plot locations.
Plant strategy type / successional stage (stress-tolerator, competitor, weedy/colonizer, seral, late successional)	Seral
Plant characteristics (life form (shrub, grass, forb), longevity, key characteristics, etc.)	Shade-intolerant, deciduous shrub generally spreading and freely-branched from 1-3 ft. tall and up to 6 ft.[5,6] Finely hairy stems with 3 spines at nodes and hanging fuschia-like flowers of 1-3. Sepals red and folded back with white petioles and anthers extended beyond petals.[2,5] Fruits are edible raw or cooked but considered unpalatable; may have been mixed with salal and serviceberry cakes and incorporated into soups.[6,8] Roots have medicinal properties and were used for treatment of diarrhea as well as a poultice or salve for sores, blisters, and boils. The roots of *R. lobbii* were also boiled with cedar and wild rose roots and woven into rope. It's sharp thorns were used for removing splinters, lancing boils, and tattooing.[6]
PROPAGATION DETAILS	
Ecotype (this is meant primarily for experimentally derived protocols,	N/A

and is a description of where the seed that was tested came from):	
Propagation Goal (Options: Plants, Cuttings, Seeds, Bulbs, Somatic Embryos, and/or Other Propagules):	Plants, Cuttings, Seeds
Propagation Method (Options: Seed or Vegetative):	Seed
Product Type (options: Container (plug), Bareroot (field grown), Plug + (container-field grown hybrids, and/or Propagules (seeds, cuttings, poles, etc.))	Container, bareroot, plug
Stock Type:	
Time to Grow (from seeding until plants	Two years

are ready to be outplanted):	
Target Specifications (size or characteristics of target plants to be produced):	Flowering and seeding maturity.
Propagule Collection (how, when, etc.):	Flowers develop in early summer; fruits follow in mid-late summer and are reddish-brown when ripe.[5,9] Ripe *Ribes* fruits should be picked or stripped immediately from branches and spread out during transport or short-term storage to prevent overheating.[12] Collection of *R. lobbii* seed unpredictable; plants locally uncommon or scattered, and often with few seeds available. Best propagated by vegetative cutting.[11]
Propagule Processing/ Propagule Characteristics (including seed density (# per pound), seed longevity, etc.):	Seed can be stored and remain viable for 17 years or more.[6,12] Seed yield data for *R. lobbii* not found. *Ribes* seed yield varies slightly among species. Average quantity of seed (of species similar to *R. lobbii*) per lb ranged from: 298-515 among 11 samples.[12]
Pre-Planting Propagule Treatments (cleaning, dormancy treatments, etc.):	Fresh *Ribes* fruit should be macerated and washed to separate seed from pulp. Dried fruits can be soaked prior to cleaning. Small amounts can be cleaned in a kitchen blender by covering with water and blending for 15-45 seconds. Following separation of pulp from seed, add more water and allow viable seeds to settle. Seeds can also be washed using a funnel lined with filter paper and then dried on filter paper.[12] Most *Ribes* require at least one fairly long stratification period to break embryonic or physiologic dormancy.[12] Stored seed requires cold stratification (0-5 °C) for 3 months.[6] One germination study washed and cleaned *R. lobbii* seed for 7 days with three daily water rinses. Seed was then passed through a 70-40-70-40-70°F nursery stratification trial with 30% germinating in

	the first week after the last 70° treatment. When passed through a 40-70-40-70°F trial, 10% germinated after the second 40°, 20% germinated after the last 70°. A third trial placed sown seed outside in December and 55% germinated after 13 months in April.[7] Dried berries were taken out of dry storage and placed at 70°°F for six months were then washed and cleaned for 7 days (as per method above). Seed was then passed through 70-40-70-40°F with 30% germination 8-12 weeks after the first 40° treatment and 40-70-40-70°F with no germination at the end.[7] Gooseberry species similar to *R. lobbii* showed significant germination capacity without cold/moist stratification following alternated day/night temperatures (25 and 5-10°C). During these tests, soaking in 2-10% sulfuric acid solution for 5 minutes also improved germination.[12] Treatment with gibberellic acid-3 did not effect germination.[7]
Growing Area Preparation / Annual Practices for Perennial Crops (growing media, type and size of containers, etc.):	The best seeding medium appears to be mineral soil well supplied with humus.[12] In general, *Ribes* seeds should be sown to a depth of 3-6 mm. (1/8 to ¼ in.).[12]
Establishment Phase (from seeding to germination):	Best sown when seeds are ripe in autumn and placed into a cold frame. Stored seed should be sown in early spring.[6] Damping-off of seed during germination can be prevented by applying 646 mg of copper oxalate per 100 cm^2 of culture surface.[12]
Length of Establishment Phase:	Information not found.
Active Growth Phase (from germination until plants are no longer actively	Seedlings can be planted into individual pots when large enough to handle and should be grown in a cold frame.[6]

growing):	
Length of Active Growth Phase:	Information not found.
Hardening Phase (from end of active growth phase to end of growing season; primarily related to the development of cold-hardiness and preparation for winter):	Information not found.
Length of Hardening Phase:	Information not found.
Harvesting, Storage and Shipping (of seedlings):	Should be grown and stored in a cold frame for the first winter.[6]
Length of Storage (of seedlings, between nursery and outplanting):	Propagules should be stored for at least one full season prior to outplanting in the second year.[6,12]
Guidelines for Outplanting / Performance on Typical Sites (eg, percent survival, height or	Should be outplanted in late spring in the second year.[6]

diameter growth, elapsed time before flowering):	
Other Comments (including collection restrictions or guidelines, if available):	*Ribes* sp. are susceptible to honey fungus and are secondary hosts of white-pine blister rust and should not be outplanted near remnant white pine stands.[6]
PROPAGATION DETAILS	
Ecotype (this is meant primarily for experimentally derived protocols, and is a description of where the seed that was tested came from):	N/A
Propagation Goal (Options: Plants, Cuttings, Seeds, Bulbs, Somatic Embryos, and/or Other Propagules):	Plants, Cuttings, Seeds
Propagation Method (Options: Seed or Vegetative):	Vegetative

Product Type (options: Container (plug), Bareroot (field grown), Plug + (container-field grown hybrids, and/or Propagules (seeds, cuttings, poles, etc.))	Container, bareroot, plug
Stock Type:	
Time to Grow (from seeding until plants are ready to be outplanted):	N/A
Target Specifications (size or characteristics of target plants to be produced):	Flowering and seeding maturity.
Propagule Collection (how, when, etc.):	Cuttings of half-ripe wood can be taken in July/August. Should be 10-15 cm. (4-6 in.) in length with a heel and placed into a cold frame. Cuttings can also be taken in November-February from current year's mature wood (hardwood) but should include a heel from the previous year's growth, then placed in a cold frame or sheltered outdoor bed.[6] Most *Ribes* can be propagated readily from hardwood cuttings in fall.[12]
Propagule Processing/ Propagule Characteristics	N/A

(including seed density (# per pound), seed longevity, etc.):	
Pre-Planting Propagule Treatments (cleaning, dormancy treatments, etc.):	N/A
Growing Area Preparation / Annual Practices for Perennial Crops (growing media, type and size of containers, etc.):	*Ribes lacustre* cuttings are best stuck into a well-drained soil with only one or two buds extending from the soil.[13] Cuttings should be placed into a cold frame or sheltered bed growing area.[6]
Establishment Phase (from seeding to germination):	N/A
Length of Establishment Phase:	N/A
Active Growth Phase (from germination until plants are no longer actively growing):	N/A
Length of Active Growth Phase:	N/A

Hardening Phase (from end of active growth phase to end of growing season; primarily related to the development of cold-hardiness and preparation for winter):	Information not found.
Length of Hardening Phase:	Information not found.
Harvesting, Storage and Shipping (of seedlings):	Should be grown and stored in a cold frame for the first winter.[6]
Length of Storage (of seedlings, between nursery and outplanting):	Propagules should be stored for at least one full season prior to outplanting in the second year.[6,12]
Guidelines for Outplanting / Performance on Typical Sites (eg, percent survival, height or diameter growth, elapsed time before flowering):	Should be outplanted in late spring in the second or third year.[6,12]

Other Comments (including collection restrictions or guidelines, if available):	*Ribes* sp. are susceptible to honey fungus and are secondary hosts of white-pine blister rust; should not be outplanted near remnant white pine stands.[6]
INFORMATION SOURCES	
References (full citations):	[1]United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) PLANTS Database. PLANTS Profile: *Ribes lobbii* A. Gray. Accessed at: http://plants.usda.gov/. Accessed on: 5/19/12. [2]The Burke Museum of Natural History and Culture. Species Description. Accessed at: http://biology.burke.washington.edu/herbarium/imagecollection.php?Genus=Ribes&Species=lobbii. Accessed on: 5/19/12. [3]Klinka, K., V.J. Krajina, A. Ceska, and A. M. Scagel. 1989. Indicators Plants of Coastal British Columbia. University of British Columbia Press, Vancouver, B.C. [4]Kruckeberg, A. R. 1996. Gardening with Native Plants of the Pacific Northwest, second edition, revised and enlarged. University of Washington Press, Seattle, WA. [5]Turner, M. and P. Gustafson. 2006. Wildflowers of the Pacific Northwest. Timber Press Field Guide. Accessed at: http://www.pnwflowers.com/flower/ribes-lobbii. Accessed on: 5/20/12. [6]Plants for a Future Plant Database. Description and Propagation of *Ribes lobbii* A. Gray. Accessed at: http://www.pfaf.org/user/Plant.aspx?LatinName=Ribes+lobbii. Accessed on: 5/20/12. [7]Deno, N. C. 1993. Seed Germination Theory and Practice, Second Edition. Pennsylvania State University, PA. [8]Washington State Department of Transportation. Ethnobotony of *R. lobbii*. Accessed at: http://www.wsdot.wa.gov/Environment/CulRes/ShrubsTrees.htm#ribesSPP. Accessed on: 5/20/12.

	[9]Klinkenberg, Brian. Editor. 2012. *E-Flora BC: Electronic Atlas of the Plants of British Columbia*. University of British Columbia, Vancouver. Accessed at: http://linnet.geog.ubc.ca/Atlas/Atlas.aspx?sciname=Ribes%20lobbiiw.geog.ubc.ca/biodiversity/eflora/. Accessed on 5/20/12. [11]Allen, David. 2012. Nursery Manager. Matt Albright Native Plant Center, Olympic National Park, Port Angeles, WA. Conversation on propagation of *Ribes lobbii*, 5/10/12. [12]Woody Plant Seed Manual (USDA FS Agriculture Handbook 727). 2008. United States Department of Agriculture (USDA) Forest Service, National Seed Laboratory. Accessed at: http://www.nsl.fs.fed.us/nsl_wpsm.html. Accessed on: 5/20/12. [13]Rose, R. C. E. C. Chachulski, and D. L. Haase. 1998. Propagation of Pacific Northwest Native Plants. Oregon State University Press, Corvalis, OR.
Other Sources Consulted (but that contained no pertinent information) (full citations):	Garry Oak Ecosystem Recovery Team (GOERT). 2012. Native Plant Propagation Guidelines: Accessed at: http://www.goert.ca/propagation_guidelines/shrubs. Accessed on: 5/20/12. Hartmann, H. T, D. E. Kester, F. T. Davies, Jr., R. L. Geneve. 2011. Hartmann & Kester's Plant Propagation Principles and Practices, 8th Edition. Prentice Hall, New York, NY. Lady Bird Johnson Wildflower Center, Native Plant Database. 2012. Accessed at: http://www.wildflower.org/plants/result.php?id_plant=RILO. Accessed on: 5/20/12. Leigh, M. Grow Your Own Native Landscape: A Guide to Identifying, Propagating, and Landscaping with Western Washington Native Plants. Native Plant Salvage Project, Washington State University Extension. Pettinger, A. and B. Costanzo. 2002. Native Plants in the Coastal Garden, Revised and Updated. Timberland Press, Portland, OR. USDA Forest Service Fire Effects Database. Accessed at: http://www.fs.fed.us/database/feis/plants/shrub/index.html Accessed on: 5/20/12.
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Date Protocol Created or Updated (MM/DD/YY):	5/20/12

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