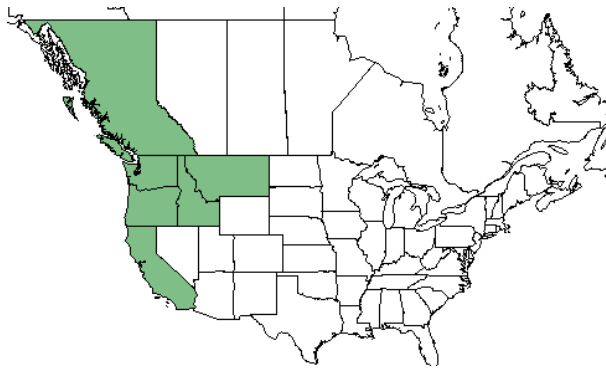
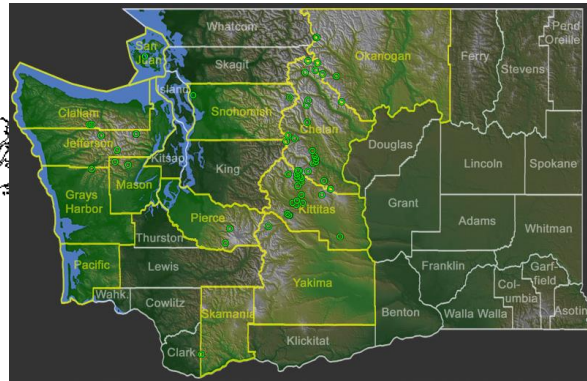


Plant Propagation Protocol for *Lewisia Columbiana*
ESRM 412 – Native Plant Production



Source: USDA Plants Database



WTU Herbarium

TAXONOMY	
Plant Family	
Scientific Name	Portulacaceae
Common Name	Purslane family
Species Scientific Name	<i>Lewisia columbiana</i>
Scientific Name	<i>Lewisia Columbiana</i> (Howell ex A. Gray) B.L. Rob. – Columbian lewisia ^[5]
Varieties	
Sub-species	<i>Lewisia Columbiana</i> var. <i>Columbiana</i> <i>Lewisia Columbiana</i> var. <i>rupicola</i> <i>Lewisia Columbiana</i> var. <i>wallowensis</i> ^[5]
Cultivar	
Common Synonym(s)	
Common Name(s)	Columbian lewisia
Species Code (as per USDA Plants database)	LECO3 ^[5]
GENERAL INFORMATION	
Geographical range	This species is native to the Pacific Northwest and British Columbia.
Ecological distribution	Prefers rocky slopes and crevices ^[2] .
Climate and elevation range	This species grows in cold climates at mid to high elevations ^{[2][3][5]} .
Local habitat and abundance	This species grow on both sides of the Cascade mountains in Washington ^[2] .
Plant strategy type / successional stage	It is somewhat hardy and can grow in neutral to acidic, nutritionally poor soil. Semi-shade or no shade is preferred ^[4] . However, it does not tolerate poorly draining soils. It can live on the moisture from its leaves when other sources of water is not readily available.

Plant characteristics	<i>Lewisia Columbiana</i> is a flowering evergreen perennial herb. It grows from a taproot and caudex unit ^[1] .
<p style="text-align: center;">PROPAGATION DETAILS^[7]</p> <p>The information below is from protocol information on <i>Lewisia pygmaea</i>, due to limited information on <i>Lewisia Columbiana</i>. These species share many similar characteristics.</p>	
Ecotype	
Propagation Goal	Plants
Propagation Method	Seed
Product Type	
Stock Type	Container
Time to Grow	7 months
Target Specifications	4 cm tall with 6 to 10 true leaves
Propagule Collection Instructions	Seeds are collected once flowers have bloomed in mid summer. This should be done when the corolla turns papery and the disseminule breaks away from the stem.
Propagule Processing/Propagule Characteristics	Seeds are cleaned by hand.
Pre-Planting Propagule Treatments	Seeds can be stored for 5 years in cool, dry conditions. 60-90 cold stratification at 1-3 degrees Celsius is required.
Growing Area Preparation / Annual Practices for Perennial Crops	Grown in outdoor nursery setting in conetainers. The growing medium is 6:1:1 milled sphagnum peat, perlite, and vermiculite with osmocote controlled release fertilizer (13N:13P2O5:13K2O; 8 to 9 month release rate at 21C) and Micromax fertilizer (12%S, 0.1%B, 0.5%Cu, 12%Fe, 2.5%Mn, 0.05%Mo, 1%Zn) at the rate of 1 gram of Osmocote and 0.20 gram of Micromax per conetainer.
Establishment Phase Details	Seedlings emerge after 14 days. True leaves appear 3 weeks after germination.
Length of Establishment Phase	6 weeks
Active Growth Phase	During this time, 4 to 6 true leaves are produced and the plants reach flowering maturity within the first year.
Length of Active Growth Phase	16 weeks
Hardening Phase	During this time, the plant begins to harden and irrigation frequency should be gradually reduced from September to October.
Length of Hardening Phase	4 weeks
Harvesting, Storage and Shipping	After 7 months from initial germination, harvesting can be done in September. The plant needs to be kept insulated to prevent any freezing.
Length of Storage	5 months
Guidelines for Outplanting /	

Performance on Typical Sites	
Other Comments	
INFORMATION SOURCES	
References	
Other Sources Consulted	
Protocol Author	Patrick Kuo
Date Protocol Created or Updated	05/24/2017

- [1] *Columbian lewisia*. Retrieved from <https://www.inaturalist.org/taxa/144056-Lewisia-columbiana>
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- [3] Hagan T. 2004. *Lewisia columbiana*. Retrieved from http://www.wnps.org/plants/lewisia_columbiana.html
- [4] *Lewisia columbiana* – (Howell.)B.L.Rob. Retrieved from <http://pfaf.org/user/Plant.aspx?LatinName=Lewisia+columbiana>
- [5] *Lewisia columbiana* (Howell ex A. Gray) B.L. Rob. *Columbian lewisia*. Retrieved from <https://plants.usda.gov/core/profile?symbol=LECO3>
- [6] *Lewisia columbiana*. Retrieved from http://practicalplants.org/wiki/Lewisia_columbiana#Propagation
- [7] Luna T, Evans J, Wick D. 2008. *Lewisia (pygmaea)*. Retrieved from <https://nnpn.rngr.net/renderNPNProtocolDetails?selectedProtocolIds=portulacaceae-lewisia-131>