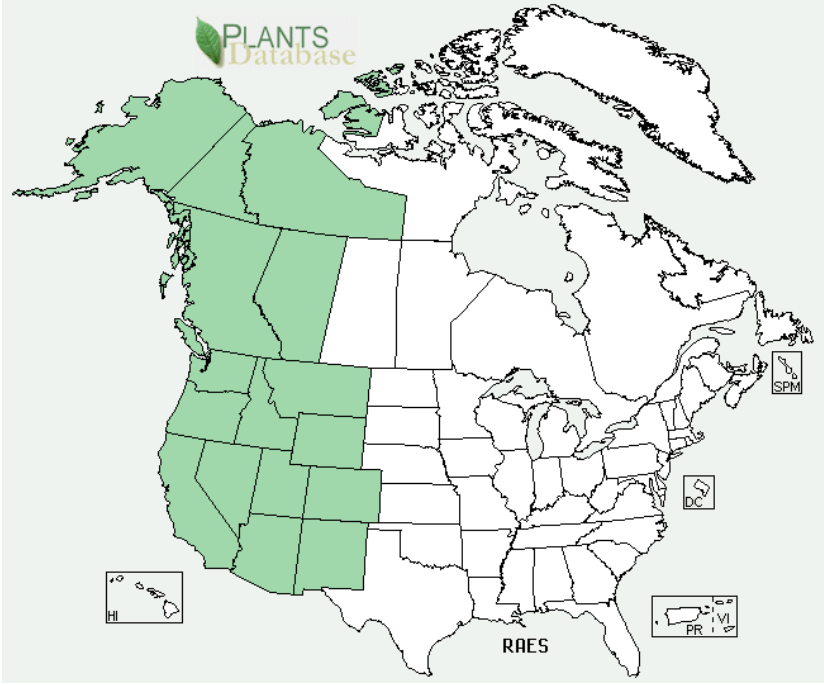


**Plant Propagation Protocol for *Ranunculus escholtzii* Schldl.**  
ESRM 412 – Native Plant Production

<b>TAXONOMY</b>	
<b>Family Names</b>	
Family Scientific Name:	Ranunculaceae
Family Common Name:	Buttercup or crowfoot
<b>Scientific Names</b>	
Genus:	<i>Ranunculus</i>
Species:	<i>escholtzii</i>
Species Authority:	Schtdl.
Variety:	
Sub-species:	
Cultivar:	
Authority for Variety/Sub-species:	
Common Synonym(s)	
Common Name(s):	Eschscholtz's buttercup, Subalpine buttercup, Mountain Buttercup, Snowpatch Buttercup
Species Code	RAES
<b>GENERAL INFORMATION</b>	
Geographical range	

	<p>PLANTS Database RAES</p>
Ecological distribution	<i>Ranunculus escholtzii</i> occurs mainly in mountain meadows, talus slopes, avalanche tracks and along stream-banks and melting snow banks (Pojar). It ranges North to South from Alaska to California as well as Alberta, the rocky mountain states, and Arizona. (Wikipedia)
Climate and elevation range	0-3600 m (Flora of North America). Grows in rocky gravelly soils at edge of snow-melt or other wet cool places in subalpine and alpine areas (Turner)
Local habitat and abundance	
Plant strategy type / successional stage	
Plant characteristics	Forb/herb (USDA). Perennial with fibrous roots; stems 1 to several, erect, hairless, 5-25 cm tall (Pojar)
<b>PROPAGATION DETAILS</b>	
Ecotype	
Propagation Goal	Plants (Luna)
Propagation Method	Seed (Luna)
Product Type	Container (plug) (Luna)
Stock Type:	172 ml conetainers (Luna)
Time to Grow	8 months (Luna)
Target Specifications	4 cm in size with 6 to 10 true leaves. The root system should have a firm plug in the container (Luna).
Propagule Collection	Seeds are hand collected when the achenes turn tan during the month of August. Seeds are collected in paper bags and kept in a well-ventilated drying shed prior to cleaning (Luna).
Propagule	Seeds are cleaned using a hammer mill

Processing/Propagule Characteristics	Seed longevity is unknown. Seed dormancy is classified as physiological dormancy. Seeds/Kg: 3,500,000/kg % Purity: 100% % Germination: 50% (Luna)
Pre-Planting Propagule Treatments	5-month outdoor cold moist stratification. Germination occurs in early spring after snow melt under fluctuating temperatures (Luna)
Growing Area Preparation / Annual Practices for Perennial Crops	Conetainers are filled and sown in late fall and irrigated thoroughly prior to winter stratification. Seedlings germinate in spring under fluctuating outdoor temperatures and are grown under full sun exposure. Seedlings should be irrigated with an automatic irrigation system in early morning until containers are thoroughly saturated. Average growing season is from late April after snowmelt until October 15 <sup>th</sup> (Luna)
Establishment Phase	Seedlings are kept moist during germination. Seedlings emerge in early spring after snowmelt during cool spring temperatures (Luna)
Length of Establishment Phase:	4 weeks (Luna)
Active Growth Phase	Once seedlings are established, plants develop rapid shoot and root growth 2 to 4 weeks following germination. Seedlings have 4 to 6 true leaves 3 weeks after germination. Some individuals were flowering 8 weeks after germination (Luna)
Length of Active Growth Phase:	10 weeks (Luna)
Hardening Phase	Irrigation is gradually reduced from September through October (Luna)
Length of Hardening Phase:	~4 weeks (Luna)
Harvesting, Storage and Shipping	Total Time To Harvest: 8 months Harvest Date: August Storage Conditions: Overwinter in outdoor nursery under insulating foam cover and snow (Luna)
Length of Storage	5 months (Luna)
Guidelines for Outplanting / Performance on Typical Sites	
Other Comments	<i>R. eschscholtzii</i> is a dark requiring species; No germination occurred when seeds were surface sown (Luna)
<b>INFORMATION SOURCES</b>	
References (full citations):	Luna, Tara; Evans, Jeff.; Wick, Dale. 2008. Propagation protocol for production of container <i>Ranunculus eschscholtzii</i> Schlecht. plants (172 ml conetainers); USDI NPS - Glacier National Park, West Glacier, Montana. In: Native Plant Network. URL: <a href="http://www.nativeplantnetwork.org">http://www.nativeplantnetwork.org</a> (accessed 16 May 2011). Moscow (ID): University of Idaho, College of Natural Resources, Forest Research Nursery.

	<p>Pojar, Jim, A. MacKinnon, and Paul B. Alaback. <i>Plants of the Pacific Northwest Coast: Washington, Oregon, British Columbia &amp; Alaska</i>. Redmond, WA: Lone Pine Pub., 1994. Print.</p> <p>"Ranuncululus eschscholtzii Schtdl." <i>USDA Plants Database</i>. United States Department of Agriculture Natural Resource Conservation Service. Web. 16 May 2011. <a href="http://plants.usda.gov/java/profile?symbol=RAES">http://plants.usda.gov/java/profile?symbol=RAES</a>.</p> <p>"Ranunculus Eschscholtzii." <i>Flora of North America</i>. EFloras.org. Web. 18 May 2011. <a href="http://www.efloras.org">http://www.efloras.org</a></p> <p>"Ranunculus Eschscholtzii." <i>Wikipedia, the Free Encyclopedia</i>. Web. 16 May 2011. <a href="http://en.wikipedia.org/wiki/Ranunculus_eschscholtzii">http://en.wikipedia.org/wiki/Ranunculus_eschscholtzii</a>.</p> <p>Turner, Mark, and Phyllis Gustafson. <i>Wildflowers of the Pacific Northwest</i>. Portland: Timber, 2006. Print.</p>
Other Sources Consulted (but that contained no pertinent information) (full citations):	<p>Kozloff, Eugene N. <i>Plants of Western Oregon, Washington &amp; British Columbia</i>. Portland, Or.: Timber, 2005. Print.</p> <p>Niehaus, Theodore F., and Charles L. Ripper. <i>A Field Guide to Pacific States Wildflowers: Field Marks of Species Found in Washington, Oregon, California, and Adjacent Areas : a Visual Approach Arranged by Color, Form, and Detail</i>. Boston: Houghton Mifflin, 1976. Print.</p> <p>Schofield, Janice J., and Richard W. Tyler. <i>Discovering Wild Plants: Alaska, Western Canada, the Northwest</i>. Anchorage: Alaska Northwest, 1989. Print.</p> <p>"Tropicos   Name - Ranunculus Eschscholtzii Var. Eschscholtzii." <i>Tropicos - Home</i>. Web. 17 May 2011. <a href="http://www.tropicos.org/Name/27101471">http://www.tropicos.org/Name/27101471</a>.</p> <p>"WTU Herbarium Image Collection - Burke Museum." <i>ELWHA RIVER VALLEY BIODIVERSITY</i>. Web. 18 May 2011. <a href="http://biology.burke.washington.edu/herbarium/imagecollection.php?Genus=Ranunculus">http://biology.burke.washington.edu/herbarium/imagecollection.php?Genus=Ranunculus</a>.</p>
Protocol Author	Austin Dickson
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