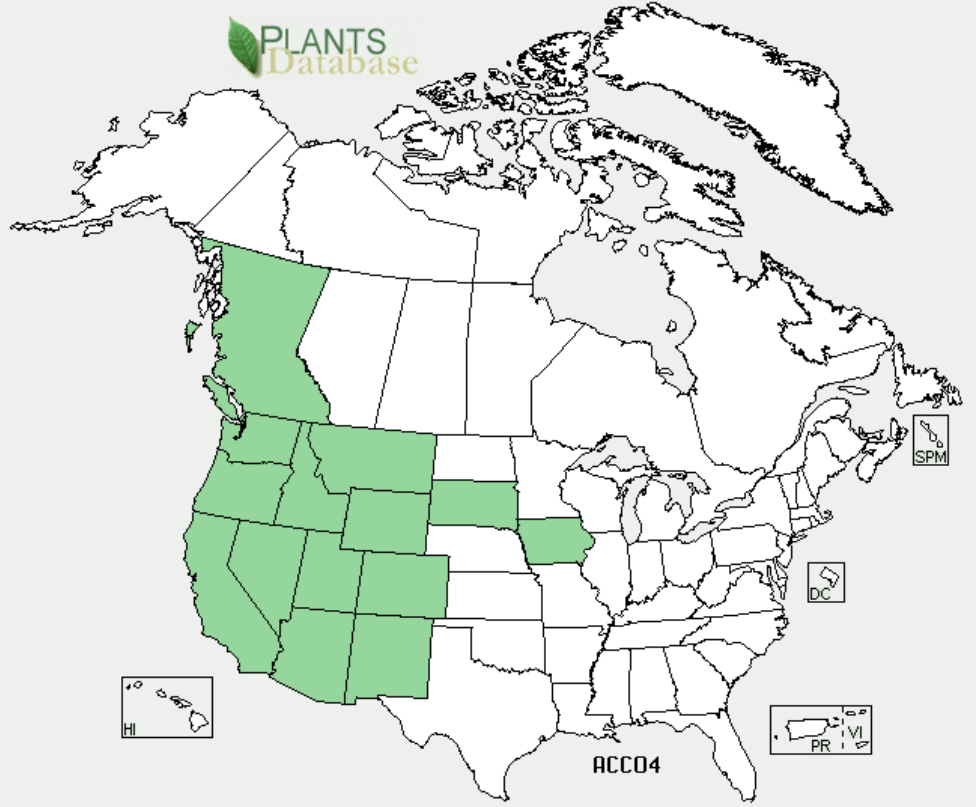
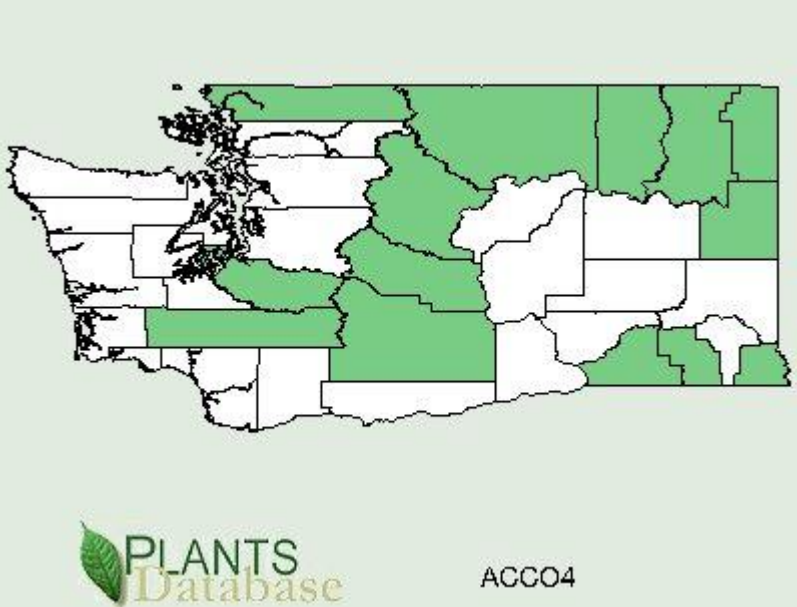


**Plant Propagation Protocol for *Aconitum columbianum***  
**ESRM 412 – Native Plant Production**

<b>TAXONOMY</b>	
<b>Family Names</b>	
Family Scientific Name:	Ranunculaceae
Family Common Name:	Buttercup or crowfoot family (2)
<b>Scientific Names</b>	
Genus:	Aconitum L.
Species:	Columbianum
Species Authority:	Nutt
Variety:	
Sub-species:	
Cultivar:	
Authority for Variety/Sub-species:	
Common Synonym(s):	<i>Aconitum columbianum</i> var. <i>bakeri</i> (Greene) H. D. Harr. <i>Aconitum noveboracense</i> A. Gray ex Coville <i>Aconitum uncinatum</i> subsp. <i>noveboracense</i> (A. Gray ex Coville) Hardin (8)
Common Name(s):	Columbian Monkshood, Northern Monkshood
Species Code (as per USDA Plants database):	ACCO4
<b>GENERAL INFORMATION</b>	

<p>Geographical range (distribution maps for North America and Washington state)</p>	  <p>Arizona, Colorado, Iowa, Idaho, Montana, New Mexico, Nevada, Oregon, South Dakota, Utah, Washington, Wyoming, BC. In Washington it's found in Lewis, Yakima, Pierce, Kittitas, Chelan, Okanogan, Whatcom, Ferry, Stevens, Pend Oreille, Spokane, Asotin, Columbia, and Walla Walla counties. (1)</p>
<p>Ecological distribution:</p>	<p>Moist woods to sub-alpine meadows, mostly along streams. Spring-fed bogs, seep areas, and meadows. (3)</p>
<p>Climate and</p>	<p>Wet areas from 300-3,500 m. (3)</p>

elevation range	
Local habitat and abundance; may include commonly associated species	Montane subalpine, wet soils (7)
Plant strategy type / successional stage	Not Available
Plant characteristic	<i>A. columbianum</i> is an herbaceous perennial with bilaterally symmetric flowers that are blue/violet, sometimes white or cream-colored or blue tinged at sepal margins. It has 2 petals that are distinct and concealed in the hood, they are long-clawed, and spurred at the apex. The upper sepal (the hood) is sac-like, arched, conic-hemispheric to crescent shaped, beaked, and 11-34 mm long from receptacle to the top of the hood. (10, 11)
<b>PROPAGATION DETAILS</b>	
Ecotype:	Not Available
Propagation Goal :	Plants
Propagation Method:	Seeds
Product Type:	Containers (plugs) (5)
Stock Type:	Individual pots in a cold frame (3)
Time to Grow:	Spring to late Spring Early Summer the following year (3)
Target Specifications :	5 ft. in height (6)
Propagule Collection:	Allow pods to dry on the plant and then break open to collect seeds. (10)
Propagule Processing/Propagation Characteristic s:	240,000 seeds per lb. (7)
Pre-Planting Propagule Treatments (cleaning, dormancy treatments, etc):	30-90 day cool moist stratification or plant outside in the fall in moist soil. plant on soil surface and cover with a thin layer of sand (7)
Growing Area Preparation /	Individual pots filled with moist heavy clay soil (3)

Annual Practices for Perennial Crops:	
Establishment Phase (from seeding to germination):	Plant outside in the fall on the surface of moist soil and cover with a thin layer of sand. (7)
Length of Establishment Phase:	Not Available
Active Growth Phase:	Grows well in heavy clay soils, prefers a calcareous soil as well as open, moist woodlands. (3, 7)
Length of Active Growth Phase:	Not Available
Hardening Phase:	Not Available
Length of Hardening Phase:	Not Available
Harvesting, Storage and Shipping:	Not Available
Length of Storage:	Not Available
Guidelines for Outplanting / Performance on Typical Sites:	Plant out in late Spring early Summer, division best done in spring but also can be done in fall. (3)
Other Comments:	All parts are considered poisonous, especially roots and leaves. (9)

### INFORMATION SOURCES

References:	<ol style="list-style-type: none"> <li>1. Aconitum columbianum Nutt./ Columbian Monkshood. [<a href="http://plants.usda.gov/java/profile?symbol=ACCO4">http://plants.usda.gov/java/profile?symbol=ACCO4</a>]. 14 May. 2011.</li> <li>2. Reed College. Ranunculaceae. [<a href="http://academic.reed.edu/biology/Courses/BIO332/plantfamily/family_info/Ranunculaceae.html">http://academic.reed.edu/biology/Courses/BIO332/plantfamily/family_info/Ranunculaceae.html</a>]. 15 May. 2011.</li> <li>3. Schneider, Al. Aconitum columbianum. [<a href="http://www.swcoloradowildflowers.com/blue%20purple%20enlarged%20photo%20pages/aconitum%20columbianum.htm">http://www.swcoloradowildflowers.com/blue%20purple%20enlarged%20photo%20pages/aconitum%20columbianum.htm</a>]. 15 May. 2011</li> </ol>
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Protocol Author:	Austin Sawhill
Date Protocol Created or Updated :	05/16/11

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