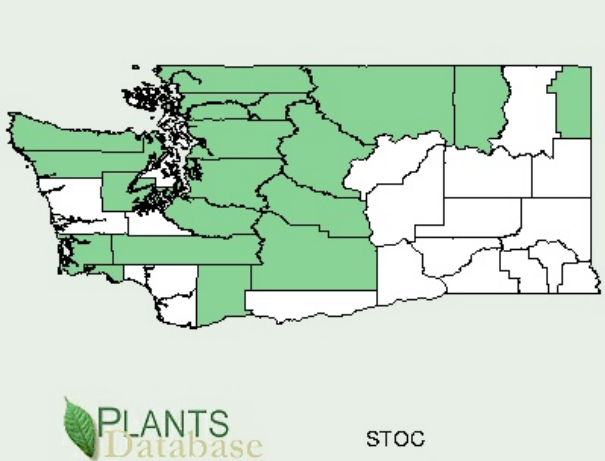


Plant Propagation Protocol for *Stenanthium occidentale*
 ESRM 412 – Native Plant Production

TAXONOMY	
Family Names	
Family Scientific Name:	Liliaceae
Family Common Name:	Lily family
Scientific Names	
Genus:	<i>Stenanthium</i>
Species:	<i>occidentale</i>
Species Authority:	A. Gray
Variety:	
Sub-species:	
Cultivar:	
Authority for Variety/Sub-species:	
Common Synonym(s):	<i>Stenanthella occidentalis</i> (1). <i>Stenanthium rhombipetalum</i> (2).
Common Name(s):	Western featherbells (1), Bronze-bells (3), Mountain bells (4), Western stenanthium (5).
Species Code:	STOC
GENERAL INFORMATION	
Geographical range:	

	<p>Range of the plant is from Klamath Ranges to south Washington, to Montana and Western Canada. Also stretching into northern California (5,6,7).</p>  <p>PLANTS Database STOC</p> <p>Specific spots in Washington include near sea level around the Olympic Peninsula and the Columbia River Gorge (2).</p>
<p>Ecological distribution (ecosystems it occurs in, etc):</p>	<p>This plant likes to grow in yellow pine forest, red fir forest, and in wetland-riparian ecosystems (8). Its characteristic of subalpine forests (9).</p>
<p>Climate and elevation range</p>	<p>1500–1900 meters (5,10).</p>
<p>Local habitat and abundance; may include commonly associated species</p>	<p>The plant likes to be in sun or part shade in a moist or wet soil with good drainage (5,11). Considered a wetlander (12). The habitat can range from rocky slopes to meadows and stream banks. On the west coast the species is seen at sea level (7). In the Rocky Mountains it grows at the timberline (7). Other sources have found that the plant is sporadic in non-forested communities and open-canopy forests where water comes from late snow melt sites. A few associated species are <i>Salix lasiolepis</i>, <i>Juncus ensifolius</i>, <i>Agrostis exarata</i> (13).</p>
<p>Plant strategy type / successional stage:</p>	
<p>Plant characteristics (life form (shrub, grass, forb), longevity, key characteristics, etc)</p>	<p>The species is a deciduous, narrowly egg-shaped bulb-forming perennial (9,11). The Bulb is 1-2 cm long and the stems of the plant sparingly leafy with spreading rootstalks (6, 12).</p> <p>Plant can grow to 30 cm tall (5,11). Flowering stems can grow to 40 cm tall (11). One branched panicle can have up to 25 flowers (11).</p> <p>The leaves are basal, grasslike, and 12-28 cm long (5, 6 12,). The flowers are bell shaped and fragrant. Color can be yellowish-green to maroon (5,11). Flowers are very fragrant, 1.5 cm long and bloom from early to late summer (6,11). The 6 tepals of the flower are turned up and pointed with a decorated stem side (7). The flowers hang pedant like (7).</p>

	Capsule fruits that are 2 cm long and seeds are winged, flat, and oblong (5,11).
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PROPAGATION DETAILS	
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Ecotype:	
Propagation Goal:	
Propagation Method:	
Product Type:	There is difficulty growing this plant in the field and is best in containers (5).
Stock Type:	
Time to Grow:	
Target Specifications:	
Propagule Collection:	
Propagule Processing/Propagule Characteristics:	
Pre-Planting Propagule Treatments:	
Growing Area Preparation / Annual Practices for Perennial Crops:	
Establishment Phase:	
Length of Establishment Phase:	
Active Growth Phase:	
Length of Active Growth Phase:	
Hardening Phase:	
Length of Hardening	

Phase:	
Harvesting, Storage and Shipping:	
Length of Storage:	
Guidelines for Outplanting / Performance on Typical Sites:	
Other Comments	<p><i>Stenanthium occidentale</i> is the only native species in western North America (7). There is no present information on the propagation of this species.</p>
INFORMATION SOURCES	
References:	<ol style="list-style-type: none"> 1. United States Department of Agriculture (USDA). Nation Resources Conservation Services, Plant Database. http://plants.usda.gov/ (accessed on 5/28/09) 2. Burke Museum of Natural History and Culture. http://biology.burke.washington.edu/herbarium/imagecollection.php?ID=2508 (accessed on 5/28/09) 3. Pojar, J. and A. MacKinnon. 1994. <i>Plants of the Pacific Northwest Coast Washington, Oregon British Columbia & Alaska</i>. BC Ministry of Forests and Lone Pine Publishing, Vancouver, British Columbia, Canada. p. 111. 4. Robson, Kathleen A., Richter, Alice, Filbert, Marianne. 2008. <i>Encyclopedia of Northwest Native Plants</i>. Timber Press, Inc. Portland, Oregon. 5. Harlow, Nora and Jakob, Kristin. 2003. <i>Wild Lilies, Irises, and Grasses: Gardening with California Monocots</i>. University of California Press, Berkeley and Los Angeles, California. 6. Taylor, T.M.C. <i>The Lily Family (Liliaceae) of British Columbia</i>. Department of Botany. The University of BC. A. Sutton. 7. Strickler, Dee. 1990. <i>Alpine Wildflowers</i>. The Flower Press, Columbia Falls, Montana. 8. Calflora.org Information on Wild California Plants for Conservation, Education, and Appreciation. http://www.calflora.org/cgi-bin/species_query.cgi?where-taxon=Stenanthium+occidentale (accessed on 5/28/09). 9. E-Flora BC: Electronic Atlas of the Plants of British Columbia

	<p>(accessed on 05/29/09: http://linnet.geog.ubc.ca/Atlas/Atlas.aspx?sciname=Cerastium%20arvense).</p> <p>10. James C. Hickman, editor. 1993. <i>The Jepson Manual Higher Plants of California</i>. Regents of the University of California http://ucjeps.berkeley.edu/cgi-bin/get_JM_treatment.pl?Stenanthium+occidentale (accessed on 5/28/09).</p> <p>11. Robson, Kathleen A., Richter, Alice, Filbert, Marianne. 2008. <i>Encyclopedia of Northwest Native Plants</i>. Timber Press, Inc. Portland, Oregon.</p> <p>12. Kruckeberg, Arthur R. 1996. <i>Gardening with Native Plants of the Pacific Northwest</i>. Greystone Books, Douglas & McIntyre Ltd., Vancouver, British Columbia, Canada.</p> <p>13. California Native Plant Link Exchange http://www.cnplx.info/nplx/nplx?page=coincident&taxon=Stenanthium+occidentale&available=t&action=t#results (accessed on 5/28/09).</p>
Other Sources Consulted:	<p>Native Plant Network. http://www.nativeplantnetwork.org/ (accessed on 5/28/09).</p> <p>UK Plants for the Future: Database Accessed (5/28/09): http://www.ibiblio.org/pfaf/cgi-bin/arr_html?Acer+macrophyllum&CAN=LATIND</p> <p>Pettinger, April and Contanzo, Brenda. 2003. <i>Native Plants in the Coastal Garden</i>. Timber Press, Portland, Oregon.</p> <p>Spurr, Joy. 1978. <i>Wild Shrubs</i>. Pacific Search Press, Seattle Washington.</p> <p>Rose, Robin, Chachulski, Caryn E.C., Haase, Diane L. 1998. <i>Propagation of Pacific Northwest Native Plants</i>. Oregon State, University Press, Corvallis, Oregon.</p> <p>Young, J.A., and C.G. Young. 1986. <i>Collecting, processing, and germinating seeds of wildland plants</i>. Timber Press, Portland, Oregon.</p> <p>Arbury, Jim, Bird, Richard, Honour, Mike, Innes, Clive, Salmon, Mike. 1997. <i>The Complete Book of Plant Propagation</i>. The Taunton Press, Newtown, CT.</p> <p>Jefferson-Brown, Michael and Howland, Harris. 1995. <i>The Gardener's Guide to Growing Lilies</i>. Timber Press Inc, Portland, Oregon.</p> <p>Jefferson-Brown, Michael. 1989. <i>A Plantsman's Guide to Lilies</i>. Hazel Watson & Viney Ltd, Great Britain, England.</p> <p>Jefferson-Brown, Michael. 1990. <i>Lilies. Their Care and Cultivation</i>. Cassell</p>

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