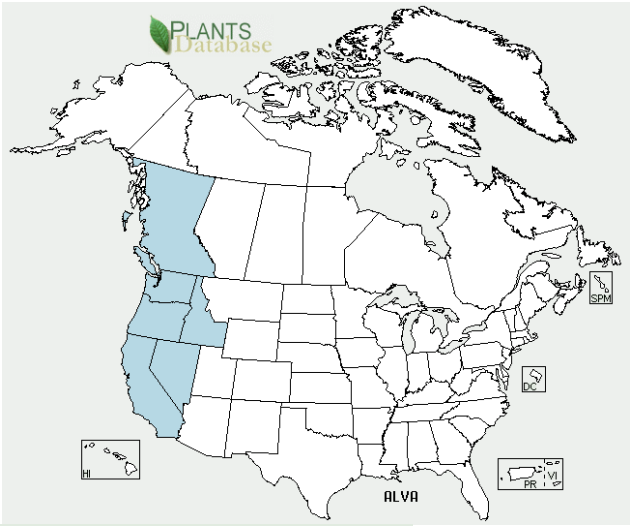
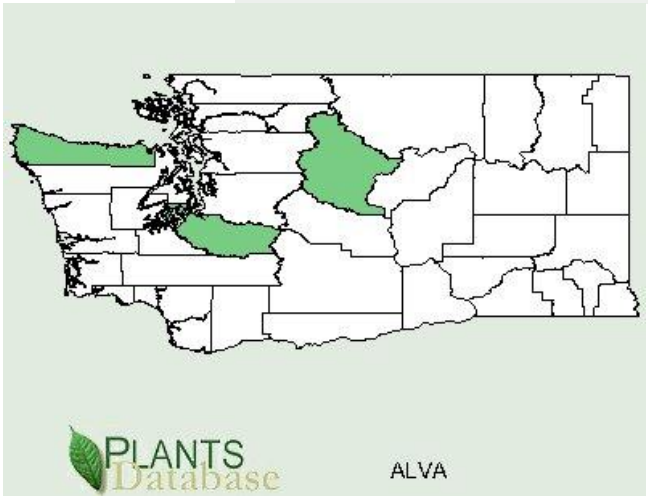
Plant Propagation Protocol for *Allium validum S. Watson*
ESRM 412 – Native Plant Production





Images courtesy of the USDA online.

TAXONOMY	
Family Names	
Family Scientific Name:	Allium validum
Family Common Name:	Pacific Onion
Scientific Names	
Genus:	Alliaceae: genus previously included in Liliaceae (Jepson)
Species:	Validum
Species Authority:	S. Watson
Variety:	
Sub-species:	

Cultivar:	
Authority for Variety/Sub-species:	
Common Synonym(s)	None Found
Common Name(s):	Pacific onion (Kruckeberg), Tall swamp onion (Turner & Gustafson), Swamp Onion (Davies) and Pacific mountain onion (Calflora).
Species Code:	ALVA
GENERAL INFORMATION	
Geographical range:	Allium validum ranges from south British Columbia, south along East side of Cascades to southwest Oregon and Sierran California, East in British Columbia and south to west in Idaho, East Oregon and northeast Nevada (Hitchcock & Cronquist). It is common in these communities: Yellow Pine Forest, Red Fir Forest, Lodgepole Forest, Subalpine Forest, and wetland-riparian (Calflora). See maps above for distribution in North America and Washington state.
Ecological distribution:	Allium validum grows in alpine and subalpine meadow or swamps (Davies).
Climate and elevation range:	This allium lives between heights of 1,700 to 3,700 feet (Davies) or mountain elevation (Kruckeberg) where during the winter the plants die down and are snow covered, ensuring winter dryness. While springtime moisture brings it back to life and to then again to die down in late summer (Davies).
Local habitat and abundance; may include commonly associated species:	Common in its habitat (Turner & Gustafson) of alpine and subalpine meadow or swamps (Davies).
Plant strategy type / successional stage:	No information
Plant characteristics:	This allium is a perennial herb, monocot and a forb (Calflora). It has an onion or garlic like odor from thin strap-shaped or grass-like leaves, has bulbs, flowers are held in clusters called umbels, similar to that of carrots, parsley and other wild, northwest onions (Kruckeberg). Allium validum has a true bulb (Clarke & Toogood).
PROPAGATION DETAILS	
Ecotype:	N/A
Propagation Goal:	Bulbs (Kruckeberg)
Propagation Method:	Seed (Kruckeberg) or vegetative: bulbs (Clarke & Toogood).
Product Type:	Propagules: divided bulb
Stock Type:	No information
Time to Grow:	If propagating by seed, after germination it is best to plunge or take under cover in a cool greenhouse, during

	the winter because of sensitive roots (Kruckeberg and Toogood). No more information
Target Specifications:	No Information
Propagule Collection:	To propagate by dividing a mother bulb from its offsets, detach bublets from the base of the mother bulb when the plant is lifted in early autumn (Seddon & Bicknell).
Propagule Processing/Propagule Characteristics:	No information
Pre-Planting Propagule Treatments:	Seeds may require cold-moist stratification (Young & Young). With bulbs, if there are no bublets, the storage organ needs to wounded by cutting into the basal plate to stimulate the dividing cells to produce small bulblets that can be separated as starts (Clarke & Toogood). After collecting bulblets, they need to dry for a few days in the shade (Foster).
Growing Area Preparation / Annual Practices for Perennial Crops:	Plant in a gritty mixture like sand and loam (Kruckeberg). They need moisture in the summer and drainage in the winter; consider when choosing the growing environment (Davies).
Establishment Phase :	Plant bublets to a depth of 2.5cm in pots of half loam potting compost and half sand, space at 2.5cm. Put them in a cold frame (Seddon & Bicknell).
Length of Establishment Phase:	No information
Active Growth Phase:	Allium Validum will grow best in a cold frame (Seddon & Bicknell).
Length of Active Growth Phase:	This allium's active growth period is in the summer (USDA). In the cold frame, the bulbets should reach flowering size in 2 years (Seddon & Bicknell).
Hardening Phase:	N/A
Length of Hardening Phase:	N/A
Harvesting, Storage and Shipping:	No information
Length of Storage:	No information
Guidelines for Outplanting / Performance on Typical Sites:	The bulbs can be thinned in two or three years (Kruckeberg) and then be planted in the ground at a depth of 7.5cm (Seddon & Bicknell).
Other Comments:	Avoid digging bulbs in the wild, unless the collecting site is obviously disturbed or doomed (Kruckeberg).
INFORMATION SOURCES	

References:	Calflora: Information on California plants for education, research and conservation, based on data contributed by dozens of public and private institutions and individuals, including the Consortium of Calif. Herbaria. [web application]. 2011. Berkeley, California: The Calflora Database [a non-profit organization]. Available: http://www.calflora.org/ (Accessed: May 18, 2011). Clarke, Graham & Toogood, Alan. *The Complete Book of Plant Propagation.* England: Ward Lock Ltd., 1990. Davies, Dilys. *Alliums: The Ornamental Onions.* Oregon: Timber Press, 1992. Foster, Catharine. *Plants-a-Plenty*. Rodale Press, 1977. Harris & Harris. *Plant Identification Terminology: An Illustrated Glossary*. Utah: Spring Lake Publishing, 2004. Hitchcock & Cronquist. *Flora of the Pacific Northwest*. Seattle: University of Washington Press, 1973. Jepson online database. http://ucjeps.berkeley.edu/cgi-bin/get_hort.pl?taxon=Allium%20validum 04/27/11 Kruckeberg, Arthur R., *Gardening with Native Plants of the Pacific Northwest*. Vancouver/Toronto: Greystone Books, 1992. Seddon, George & Bicknell, Andrew. *Plants Plus: A Comprehensive guide to successful propagation of house and garden plants.* Pennsylvania: Rodale Press, 1987. Toogood, Alan. The American Horticultural Society: Plant Propagation. New York: DK Publishing, Inc., 1999. Turner & Gustafson. *Wildflowers of the Pacific Northwest*. Oregon: Timber Press Field Guide, 2006. USDA. 18 May, 2011. *USDA-Natural Resources Conservation Service-Plant Databases:* On the World Wide Web:

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Other Sources Consulted:	Franklin & Dyrness. *Natural Vegetation of Oregon and Washington*. Oregon: Oregon State University Press, 1984. Pojar & MacKinnon. *Plants of the Pacific Northwest Coast*. Lone Pine, 1994. Rose, Chachulski & Haase. *Propagation of Pacific Northwest Native Plants*. Oregon: Oregon State University Press, 1984. Woodward, Penny. *Garlic and Friends.* Australia: Hyland House Publishing Pty Ltd., 1996. Block, Eric. *Garlic and Other Alliums: the Lore and the Science.* Cambridge: The Royal Society of Chemistry, 2010. Van Deven, Louis. *Onions and Garlic Forever.* Illinois: Self Published, 1992. Hartmann, Hudson T., Kester, Dale E. *Plant Propagation: Principles and Practices*. New Jersey: Prentice-Hall, Inc., 1961. Plumridge, Jack. *How to Propagate Plants.* Melbourne: Lothian Publishing Company Pty. Ltd., 1982.
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