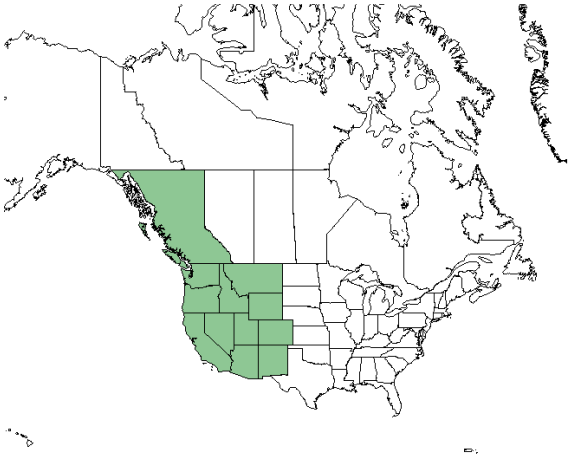
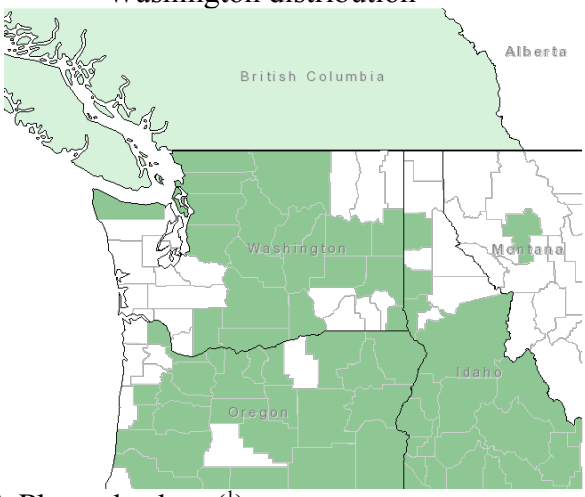
Plant Propagation Protocol for *Allium acuminatum*
ESRM 412 – Native Plant Production Spring 2015
Protocol URL: https://courses.washington.edu/esrm412/protocols/*[USDASpeciesCode.pdf]*

North America distribution



Washington distribution



Source: USDA Plants database([1])

TAXONOMY	
Plant Family	
Scientific Name	Liliaceae[1]
Common Name	Lily
Species Scientific Name	
Scientific Name	*Allium acuminatum* var. *cuspidatum* Fernald[4]
Varieties	
Sub-species	
Cultivar	
Common Synonym(s)	
Common Name(s)	Hooker's onion, tapertip onion, Kerzenlauch, näbböl[10]
Species Code (as per USDA Plants database)	ALAC4[1]
GENERAL INFORMATION	
Geographical range	In Western third of North America, in all states in and west of the Rocky Mountains and in British Columbia. In Washinton, in most counties in the central and eastern regions of the state, as far west as King County, as well as in Clallam County on the Olympic Peninsula (see maps above).[1]
Ecological distribution	Open, rocky sites, sometimes moist to dry forest openings,[2] In Garry Oak woodlands, grasslands and steppe zones[3] where participation ranges from 10-60 inches per year.[6]
Climate and elevation range	Low elevations[2, 3]

Local habitat and abundance	Sandy, nitrogen medium, shallow soils, intolerant of shade.[3] This plant thrives in an area with a fire regime of every 3-5 years.[5] Is an indicator species for the health of habitats for the endangered sage grouse.[7] This plant is not commonly found and may be hard to propagate for large scale projects.[8]
Plant strategy type / successional stage	Early seral[8] herb/forb.[2]
Plant characteristics	Perennial forb, grows from a deeply-rooted, greyish brown, egg-shaped bulb, fibrous roots on top. Has 2-3 basal leaves. Has rose-colored flowers, upright umbels with 7-25 flowers. Blooms from May to June.[3] Grows as tall as 30 cm.[2]
PROPAGATION DETAILS	
Ecotype	Bulb size varies slightly depending on population throughout the Western United States.[7]
Propagation Goal	Bulbs.
Propagation Method	Seeds, with dividing bulbs[3]
Product Type	Potted or plug individual.[3]
Stock Type	
Time to Grow	3 years.[3]
Target Specifications	Bulbs large enough to harvest for outplanting will be 3-5 mm.[3]
Propagule Collection Instructions	Seeds are collected in July when capsules begin to split. Flower heads are collected and processed after collecting.[3]
Propagule Processing/Propagule Characteristics	There are 253,691 seeds per pound,[3]
Pre-Planting Propagule Treatments	Flower heads are placed in a paper bag and shaken to dislodge seeds. Seeds are separated from chaff with an air column separator. Seeds should be stored at 40 degrees F and at 40% humidity.[6] Germination requires stratification. Some seeds germinate with 30 days of cool, moist stratification but best results come when seeds are placed in flats and left outside in fluctuating spring conditions.[3]
Growing Area Preparation / Annual Practices for Perennial Crops	Seeds are sown in a cold frame structure, watered only in dry spells through the winter. They will germinate in March as temperatures increase.[3]
Establishment Phase Details	When seedlings are large enough to handle, remove them from and plant them in pots.[3]
Length of Establishment Phase	2 months[3]
Active Growth Phase	Water plants as needed and fertilized weekly with a water-soluble fertilizer. In June, move plants to lath

	house. Plants go dormant in July. Water and fertilizer are reduced. This is done for three growing seasons. Divisions occur in the growing season and divisions can be separated and planted.[3]
Length of Active Growth Phase	3 years[3]
Hardening Phase	Plants are stored in the lath house over winter. An insulating material is added if there is no snow cover is present to protect from extreme cold.[3]
Length of Hardening Phase	3 years, each winter[3]
Harvesting, Storage and Shipping	Bulbs are harvested in the fall of the third growing season by sieving out soil. Store in a dry place before planting that fall to spring.[3]
Length of Storage	Brief. Should be planted on the site or in pots in the planting season in which it was harvested.[3]
Guidelines for Outplanting / Performance on Typical Sites	Germinates do well on dry sites and rot on wet sites, even those that are well drained. This species does not do well with competition.[3] Outplantings may need protection from rodents initially.[6]
Other Comments	This plant is a host for at least three mycorrhizal fungi, including *Puccinia blasdalei, Puccinia granulispora* and *Uromyces aemulus*.[9]
INFORMATION SOURCES	
References	See references below
Other Sources Consulted	See references below
Protocol Author	Joe Neumann
Date Protocol Created or Updated	April 21, 2015

References:

[1]USDA Plant database. Plants.usda.gov. Accessed April 21, 2015.

[2]Pojar J., McKinnon A.,1994. *Plants of the Pacific Northwest: Washington, Oregon, British Columbia and Alaska*. 2004 Edition. B.C. Ministry of Forests and Lone Publishing, Canada.

[3]Garry Oak Ecosystem Recovery Team. http://www.goert.ca/propagation_guidelines/forbs/allium_acuminatum. Accessed April 21, 2015.

[4]Flora of North America. http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=242101329. Accessed April 21, 2015.

[5]Horton, Lindsey. May 2005. Intervention in Succession: Method for Applying Succession Theory in Landscape Design with a Focus on Vegetation Succession in Western Washington (master's thesis). Washington State University.

[6]Skinner, David M. 2004. Propagation protocol for production of container *Allium acuminatum*

Hook. bulbs; Natural Resources Conservation Service - Pullman Plant Materials Center, Pullman, Washington. In: Native Plant Network. URL: http://www.nativeplantnetwork.org (accessed 21 April 2015). Moscow (ID): University of Idaho, College of Natural Resources, Forest Research Nursery.

[7]Adair, Robert; Johnson, RC; Hellier, Barbara; Kaiser, Walter. 2006. *Collecting Tapertip Onion*. Native Plants. Summer 2007.

[8]Federal Highway Administration. Novermber 2007. *Roadside Vegetation: An Integrated Guide to Establishing Native Plants.*

[9]Washington State University website. http://pnwfungi.wsu.edu/programs/searchHostResultDetail.asp?hostID=1040&geography=. Accessed April 21, 2015.

[10]USDA Germplasm Resources Information Network website. http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl?316540. Accessed April 21, 2015.

Original plant protocol:

Plant Data Sheet Species (common name, Latin name)

Allium acuminatum, Hooker's or Tapertip onion

Range East of the Cascades, Washington to California, east to Wyoming; also in northwest Washington and Vancouver Island, British Columbia

Climate, elevation Common in dry, open, often rocky areas, low to moderate elevations in the mountains

Local occurrence (where, how common) Uncommon.

Habitat preferences Dry, sunny, brushy or wooded slopes/summits/ & flats; in volcanic areas

Plant strategy type/successional stage Herb/forb.

May be collected as: (seed, layered, divisions, etc.) Seeds in late summer.

Propagation recommendations (plant seeds, vegetative

parts, cuttings, etc.) Reproduction by seeds. Seed - sow spring in a cold frame. Prick out the seedlings into individual pots when they are large enough to handle - if you want to produce clumps more quickly then put three plants in each pot. Grow them on in the greenhouse for at least their first winter and plant them out into their permanent positions in spring once they are growing vigorously and are large enough. Division in spring. Very easy, the plants divide successfully at any time in the growing season and the divisions can be planted straight out into their permanent positions if required.

Soil or medium requirements (inoculum necessary?) Medium to course soils. pH between 6 and 8.

Care requirements after installed (water weekly, water

once etc.) Requires little moisture.

Normal rate of growth or spread; lifespan

Rapid growth rate. 1 foot mature height. Short lifespan.

Sources cited

1 UW Herbarium

http://www.washington.edu/burkemuseum/collections/herbar

ium/index.php

2 USDA-NRCS Plants Database

http://plants.usda.gov/java/profile?symbol=ALAC4 3 http://www.puc.edu/Faculty/Gilbert_Muth/Allium.htm 4 Plants for a Future:

http://www.pfaf.org/database/plants.php?Allium+acuminatu m

Data Compiled by Robert Franco 5/27/06