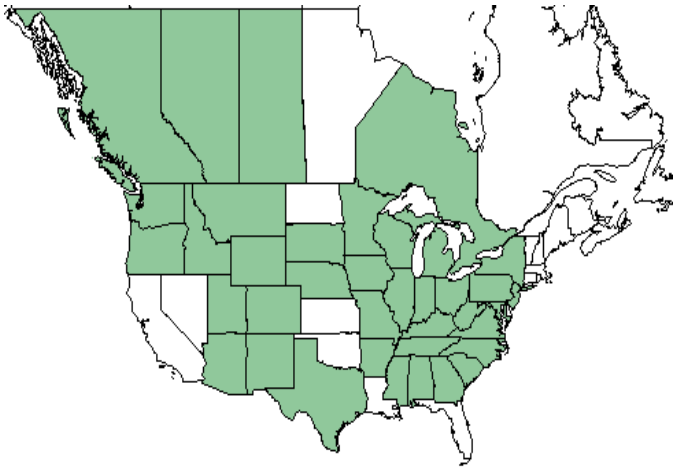
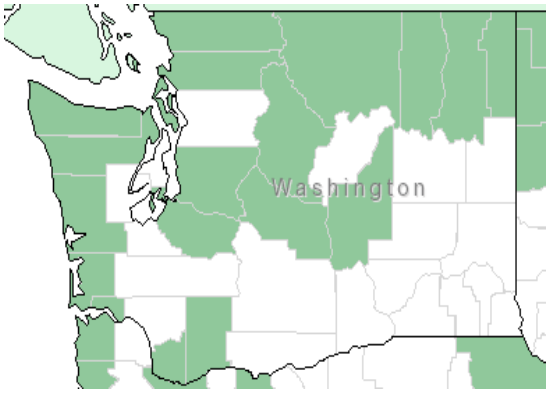
Plant Propagation Protocol for *[Insert Species]*
ESRM 412 – Native Plant Production
Protocol URL: https://courses.washington.edu/esrm412/protocols/ALCE2.pdf



North American Distrbution [10]



Washington State Distribution [10]

TAXONOMY	
Plant Family	Liliaceae [10]
Scientific Name	Allium cernuum Roth [10]
Common Name	nodding onion[10]
Species Scientific Name	
Scientific Name (A full scientific name consists of Genus, epithet, and authority- e.g., Elymus glaucus Buckley. Protocols are prepared for species, which may include multiple varieties, sub-species, and/or cultivars.)	Allium L, Allium cernuum Roth [10]
Varieties (those varieties that are recognized in the USDA Plants database; report name and authority for each variety)	none
Sub-species (those sub-species that are recognized in the USDA Plants database; report name and authority for each sub-species)	none
Cultivar	
Common Synonym(s) (include full scientific names, including variety or subspecies information)	Allium allegheniense, Allium cernuum var. cernuum, Allium oxyphilum, Allium recurvatum [11]
Common Name(s)	

Species Code (as per USDA Plants database)	ALCE2 [10]
GENERAL INFORMATION	
Geographical range (distribution maps for North America and Washington state)	Nodding onion has a widespread range. In the Pacific Northwest, it may be found from British Columbia, south through eastern Washington to the Columbia River, where it is found westward to the coast. It may also be found south through the west side of the Cascades to Lane County, OR and it is also found along the Oregon coast to Lincoln County. [11]
Ecological distribution (ecosystems it occurs in, etc)	It occurs on rocky soils in glades, bluff edges, open woods, dry meadows and prairies throughout its native range. [2]
Climate and elevation range	122 to 2400 meters [4]
Local habitat and abundance (may include commonly associated species)	Common. [14] Pseudotsuga menziesii, Juniperus scopulorum, Acer glabrum, Amelanchier spp., Vaccinium spp., Mahonia repens, Holodiscus discolor, Thalictrum occidentale, Arnica cordifolia, Calamagrostis rubescens.[3]
Plant strategy type / successional stage (stress-tolerator, competitor, weedy/colonizer, seral, late successional)	Drought tolerant. Pioneer seral stage. [3]
Plant characteristics (life form (shrub, grass, forb), longevity, key characteristics, etc.)	Perennial, Forb/herb [10]
PROPAGATION DETAILS (Report one type of propagation in section; duplicate section as needed for multiple types of propagation)	
Ecotype (this is meant primarily for experimentally derived protocols, and is a description of where the seed that was tested came from)	
Propagation Goal (Options: Plants, Cuttings, Seeds, Bulbs, Somatic Embryos, and/or Other Propagules)	Bulbs/ Propagules
Propagation Method (Options: Seed or Vegetative)	seed
Product Type (options: Container (plug), Bareroot (field grown), Plug + (container-field grown hybrids, and/or Propagules (seeds, cuttings, poles, etc.))	Propagules
Stock Type	
Time to Grow (from seeding until plants are ready to be outplanted)	Unavailbale

Target Specifications (size or characteristics of target plants to be produced)	Prick out the seedlings into individual pots when they are large enough to handle. [6]
Propagule Collection Instructions (how, when, etc)	Shake dried seed heads into collecting bag. [3] Seed capsules remain green until just before they dehisce when they turn tan or straw-colored. At this time–usually Sept. to Oct.–squeeze open the capsules. If the seeds are black or turning black, collect. Air-dry and store in a refrigerated container up to three years. [1]
Propagule Processing/Propagule Characteristics (including seed density (# per pound), seed longevity, etc)	Number of Seeds per Kilogram: 2,600,000. Seed Viability: 75% [3]
Pre-Planting Propagule Treatments (cleaning, storage, dormancy treatments, etc)	Seed needs scarification and cold, moist stratification. Start at least 3 months before outdoor night temperatures are reliably in the 10 C (50 F) range. Scarify seed by rubbing between two sheets of sandpaper to scrape seed coat. Then mix seed with a moist but not wet, seed starting mix. Place mixture in a labelled, sealed plastic bag and store in refrigerator for 6 to 8 weeks. [9] Seeds can be cold stratified and then germinated at 10º C. Germination is equal in light and dark. Best method of treatment is to sow fresh seeds outdoors in containers or flats soon after collection, and allow to dormancy to be broken naturally. [3] 30 days of moist stratification. [7]
Growing Area Preparation / Annual Practices for Perennial Crops (growing media, type and size of containers, etc)	Propagate by seed sown in containers in a cold frame when ripe [5]
Establishment Phase Details (from seeding to germination)	14-30 days [8]
Length of Establishment Phase	
Active Growth Phase (from germination until plants are no longer actively growing)	Unavailbale
Length of Active Growth Phase	
Hardening Phase (from end of active growth phase to end of growing	Unavailbale

season; primarily related to the development of cold-hardiness and preparation for winter)	
Length of Hardening Phase	
Harvesting, Storage and Shipping (of seedlings)	Unavailbale
Length of Storage (of seedlings, between nursery and outplanting)	Unavailbale
Guidelines for Outplanting / Performance on Typical Sites (eg, percent survival, height or diameter growth, elapsed time before flowering)	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. [6] Seedlings are very small and will take several years before flowering. After germination, seed pans can be set into the ground and held for two to three years before thinning the bulbs. [3]
Other Comments (including collection restrictions or guidelines, if available)	
INFORMATION SOURCES	
References (full citations)	
Other Sources Consulted (but that contained no pertinent information) (full citations)	
Protocol Author (First and last name)	Emma Woods
Date Protocol Created or Updated (MM/DD/YY)	05/13/15

References

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