Plant Propagation Protocol for *Allium fibrillum*
ESRM 412 – Native Plant Production
Spring 2026

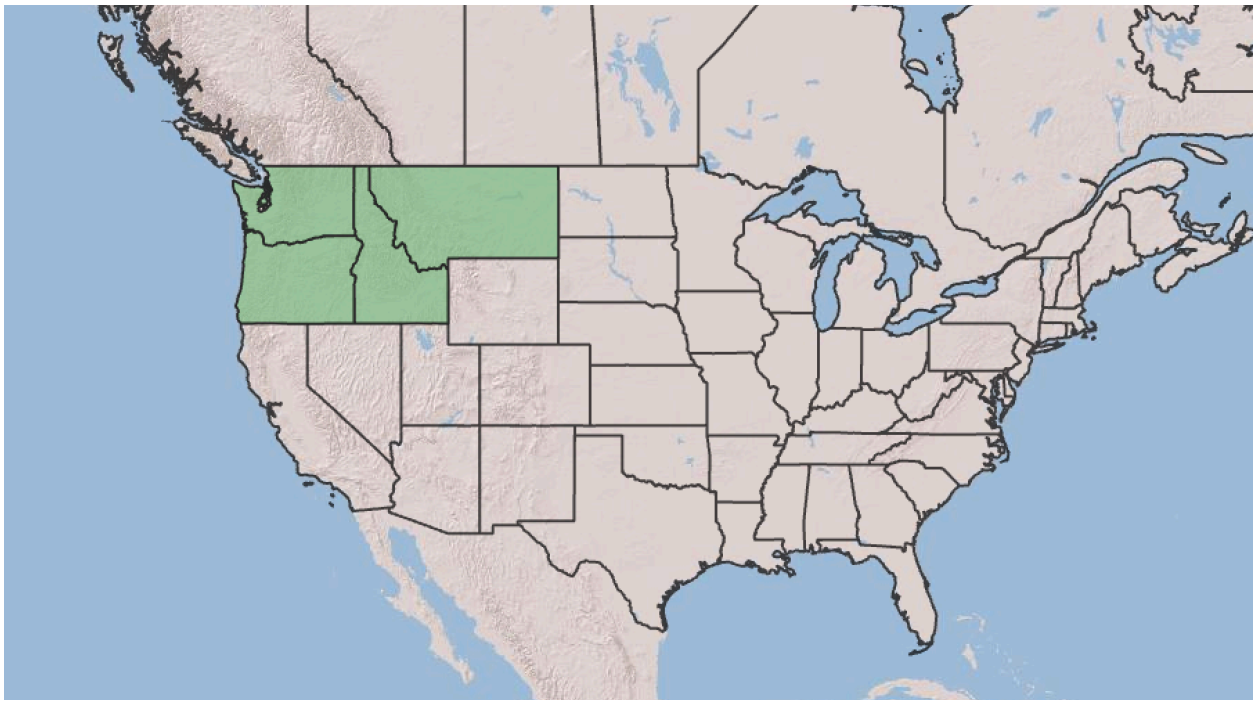

Figure 1

TAXONOMY	
Plant Family	Amaryllidaceae
Scientific Name	*Allium fibrillum* M.E. Jones
Common Name	Cuddy Mountain Onion
Species Scientific Name	
Varieties	No varieties in the USDA Plant Database
Sub-species	No Sub-species listed in the USDA Plant Database
Cultivar	No known cultivars. This is a wild species with no known horticulture documentation
Common Synonym(s)	*Allium collinum* Douglas ex S.Watson *Allium collinum* Douglas in T.J. Howell
Common Name(s)	Cuddy Mountain onion Blue Mountain onion

Species Code (as per USDA Plants database)	ALFI
GENERAL INFORMATION	
Geographical range	*Allium fibrillum* is native to the interior Pacific Northwest and stretches as far as The Rocky Mountains. The range spans Eastern Washington and north-eastern Oregon, through Idaho and stretching into Western Montana (McNeal and Jacobsen 2002; USDA Plants Database 2025). Most commonly the species is found in the Blue Mountains along the border of Washington and Oregon. As well as mountain ranges in western and central Idaho, such as the Cuddy Mountains of Owyhee County.
Ecological distribution	*Allium fibrillum* is found commonly in sagebrush steppe, shrub steppe and montane grassland communities. Typically inhabiting open and rocky slopes, scablands. As well as mountainous meadows within semi-arid and subhumid zones. The species is associated with stable and late successional native plant communities (McNeal and Jacobsen 2002; Eastern Washington University Flora 2025).
Climate and elevation range	The elevation ranges from 300 to 2,600 meters (McNeal and Jacobsen 2002). The climate at these elevations is characterized by cold, snowy winters and warm dry summers. Most of the annual precipitation falls as winter snowpack or spring rain. Annual mean precipitation ranges from 250-400 mm, with the flowering phenology spanning from May through July.
Local habitat and abundance	Allium fibrillum typically grows on open slopes or rocky outcrops, as well as scablands. Usually in damp, shallow soils, despite limited seasonal precipitation, substrates are usually rocky or gravelly and well-drained. Although the species is uncommon on the west of the Cascades and rarely grown in nurseries or restoration efforts, it is not regarded as rare globally (NatureServe rank G4, apparently secure; NatureServe 2025). *Artemisia tridentata*, *Poa secunda*, *Festuca idahoensis* and *Pseudoroegneria spicata* and other native forbs are likely associated species based on the kind of habitat. Literature does not contain any published vegetation plots that included Allium fibrillum.

Plant strategy type / successional stage	*Allium fibrillum* is a stress tolerating plant. It occupies shallow, rocky and nutrient limited soils in semi-arid environments. It is characteristic of stable, late-successional sagebrush and grassland communities.
Plant characteristics	*Allium fibrillum* is a perennial, bulbiferous forb in the Amaryllidaceae family. It is a herbaceous perennial growing from a bulb or a small bulb cluster. Specific data has not yet been collected on longevity, however closely related *Allium cernuum* is documented to live for decades in stable populations.
PROPAGATION DETAILS: FROM SEED	
Ecotype	No species-specific information found. Seed should be sourced from populations within the ecoregion of the proposed restoration site
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Container (plug). (Native Plant Network)
Stock Type	1 + 0 container plugs (Based on congener *Allium cernuum*; Native Plant Network 2025.)
Time to Grow (	Approximately one to two growing seasons from seed to transplant-ready plug. (Based on congeners *A. cernuum* and *A. acuminatum*; Native Plant Network 2025.)
Target Specifications	No information found for *Allium fibrillum*.
Propagule Collection Instructions	Start by collecting seed capsules when they begin to dry and split, typically occurring from July to August, with variations depending on elevation. Then clip capsules by hand into paper bags, dry on screens for 1-2 weeks, then collect 50 or more individuals to maintain genetic diversity.
Propagule Processing/Propagule Characteristics	The seeds are small and black, becoming angular at maturity, which is typical of the genus*Allium* (McNeal and Jacobsen 2002.) There is no specific seed density or longevity data for *Allium fibrillum.* However *Allium* seeds generally retain viability for 2-3 years under cool, dry storage conditions. (Padula and Xia 2022.)
Pre-Planting Propagule Treatments	Stratify in cold, moist conditions at 2-4 °C for 6-8 weeks, this way the seeds break physiological dormancy. (Based on congener *A. cernuum*: Native Plant Network 2025; *A. acuminatum*: Portland State University Seed Bank 2025.) An alternative is using direct fall sowing, allowing natural winter stratification (Native Plant

	Network 2025.) No specific stratification data specific to *Allium fibrillum* found.
Growing Area Preparation / Annual Practices for Perennial Crops	Sow seeds in well-draining soilless medium in tray cells. Maintain consistent moisture and temperatures of 18–23°C during germination (Dumroese et al. 2009.)
Establishment Phase Details	After stratification, move seeds to a warm (18–23°C) condition. Keep medium moist and avoid overhead watering to prevent damping off. Once around 60% of the seeds have germinated, move to full light (Dumroese et al. 2009.)
Length of Establishment Phase	Based on related *Allium* species, 2-12 weeks from the start of germination (Miller Library, University of Washington 2025.)
Active Growth Phase	Maintain a bright light for 14 or more hours a day and temperatures of 16–22°C. Apply dilute balanced fertilizer every two weeks after the first true leaf emerges. (Dumroese et al. 2009.)
Length of Active Growth Phase	8-12 weeks through the first growing season, this is based on related*Allium* data. (Miller Library, University of Washington 2025.)
Hardening Phase	Slowly, over the course of 10-14 days acclimate seedlings to outdoor conditions by increasing the amount of daily sun and wind exposure before out planting (Rose et al. 1997.)
Length of Hardening Phase (	10–14 days. (Rose et al. 1997.)
Harvesting, Storage and Shipping	No specific data for *Allium fibrillum.* From similar species hold hardening plugs in a cool 5–10°C shaded location for up to 2-4 weeks before outplanting. Ship in a ventilated box at 5-15°C (Dumroese et al. 2009.)
Length of Storage	2–4 weeks maximum for actively growing plugs before outplanting. (Dumroese et al. 2009.)
Guidelines for Outplanting / Performance on Typical Sites	No species-specific data was found for *Allium fibrillum*. Outplant into a well-drained rocky or gravelly soils, typically in sagebrush steppe or grassland habitat during fall or early spring. Then give irrigation for 4–8 weeks if precipitation is insufficient. Weed and manage invasive grasses (e.g., *Bromus tectorum*) to reduce competition during establishment. (Copeland et al. 2024.)

Other Comments	No collection restrictions were found, make sure to collect on public lands. They may require a permit if collecting wild populations.
INFORMATION SOURCES	
References	• Figure 1. North American distribution of *Allium fibrillum* (USDA PLANTS Database 2025) • McNeal, Dale W., and T.D. Jacobsen. "Allium Linnaeus." *Flora of North America North of Mexico*, vol. 26, Oxford University Press, 2002, pp. 224–276. • Hitchcock, C. Leo, and Arthur Cronquist. *Flora of the Pacific Northwest*. University of Washington Press, 1973. • Rose, Robin, et al. *Propagation of Pacific Northwest Native Plants*. Oregon State University Press, 1997. • Dumroese, R. Kasten, et al. *Nursery Manual for Native Plants*. USDA Forest Service, Agriculture Handbook 730, 2009. Available at: https://www.fs.usda.gov/rm/pubs_series/wo/wo_ah730.pdf • Dumroese, R. Kasten, and Thomas D. Landis. "The Native Plant Propagation Protocol Database." *USDA Forest Service Proceedings RMRS-P-68*, 2016. Available at: https://www.fs.usda.gov/rm/pubs_journals/2016/rmrs_2016_dumroese_k005.pdf • Phillips, N.B. "Seed and Bulb Dormancy Characteristics in New World *Allium* L. (Amaryllidaceae): A Review." *International Journal of Botany*, vol. 6, no. 3, 2010, pp. 228–234, doi:10.3923/ijb.2010.228.234. • Shojaeiyan, A., et al. "Overcoming seed dormancy of mooseer (*Allium hirtifolium*) through cold stratification, gibberellic acid, and acid scarification." *Journal of Forestry Research*, vol. 23, no. 1, 2012, pp. 31–37, doi:10.1007/s11676-012-0314-9. • Padula, Marcos, and Yaming Xia. "Welsh Onion (*Allium fistulosum* L.) Seed Physiology, Breeding, Production and Trade." *Plants*, vol. 11, no. 3, 2022, p. 343, doi:10.3390/plants11030343. • Copeland, S.M., et al. "A matter of timing: sagebrush steppe restoration seeding outcomes altered by species responses to warmer spring temperatures and interannual weather variation." *Restoration Ecology*, vol. 32, 2024, doi:10.1111/rec.70330.

	• Native Plant Network. "Propagation Protocol for *Allium cernuum*." University of Idaho, College of Natural Resources, Forest Research Nursery, Moscow, ID. npn.rngr.net/renderNPNProtocolDetails?selectedProtocolIds=liliaceae-allium-119. • Native Plant Network. "Propagation Protocol for *Allium acuminatum*." USDA NRCS Pullman Plant Materials Center, Pullman, WA.
Other Sources Consulted	• USDA NRCS Plants Database. "*Allium fibrillum* M.E. Jones plant profile." plants.usda.gov/plant-profile/ALFI. • NatureServe Explorer. "*Allium fibrillum*." explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.149899/Allium_fibrillum. • Burke Herbarium Image Collection. "*Allium fibrillum* specimen images." burkeherbarium.org. • Eastern Washington University Flora. "*Allium fibrillum*." inside.ewu.edu/ewflora/allium-fibrillum/. • Plants of the World Online (Kew Science). "*Allium fibrillum*." powo.science.kew.org. • Consortium of Pacific Northwest Herbaria. Specimen records for *Allium fibrillum*. cpnwh.org.
Protocol Author	Eli Durand
Date Protocol Created or Updated	04/27/26