

Plant Propagation Protocol for *Poa alpina*

ESRM 412 – Native Plant Production

URL: <https://courses.washington.edu/esrm412/protocols/2026/POAL2.pdf>



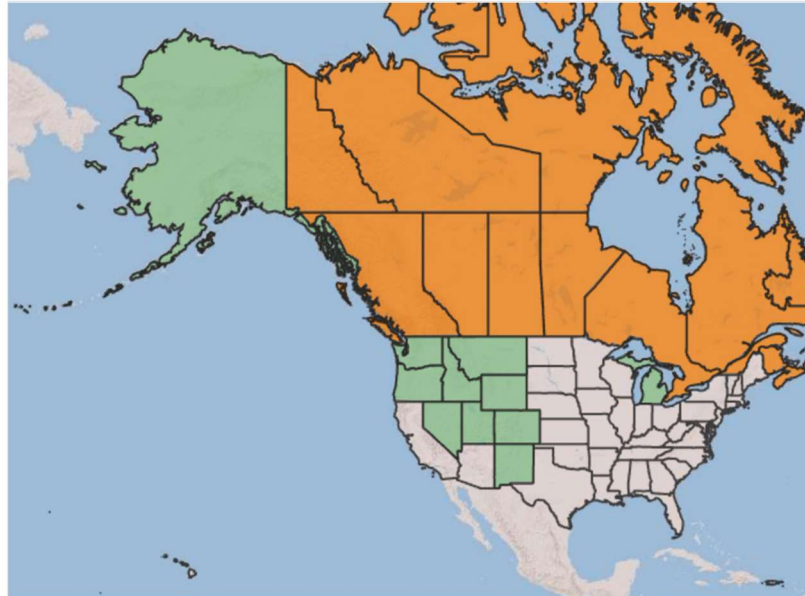
Alpine Bluegrass (*Poa alpina*) mature plant with inflorescence

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TAXONOMY	
Plant Family	
Scientific Name	Poaceae (Barnhart) ^{2,3,4,5,6}
Common Name	Grass Family ^{2,3,4,5}
Species Scientific Name	
Scientific Name	<i>Poa alpina</i> L. ^{2,3,4,5,6}

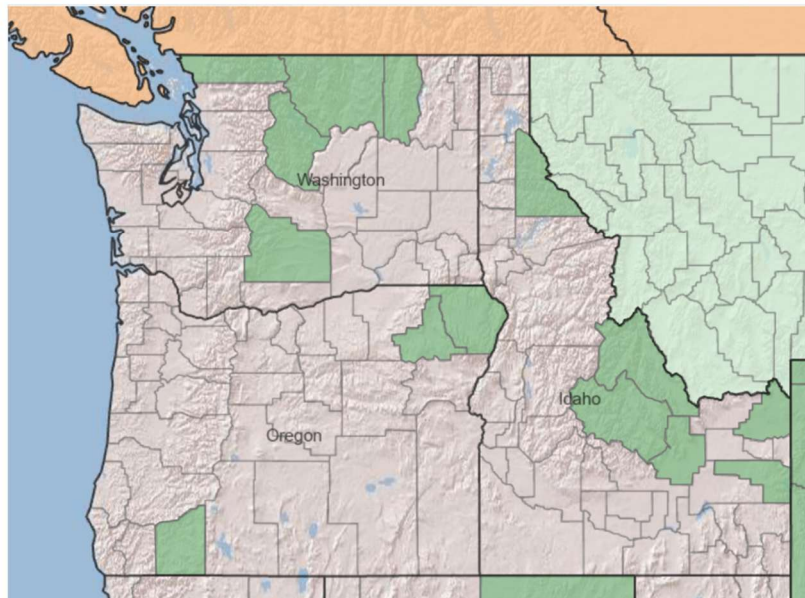
Varieties	No varieties recognized ²
Sub-species	None officially recognized by the USDA PLANTS database, ² but various floras and herbarium records identify two distinct sub-species: <i>Poa alpina</i> L. ssp. <i>Alpina</i> ^{3,4,6} <i>P. alpina</i> ssp. <i>vivipara</i> (L.) Arcang ^{7,8}
Cultivar	A limited number of cultivars have been produced for use reclaiming and revegetating disturbed alpine sites: <i>Poa alpina</i> 'Gruening' ⁹ – 'AEC Blueridge' ¹⁰ – 'AEC Glacier' ¹¹
Common Synonym(s)	<i>Poa alpina</i> L. var. <i>vivipara</i> (No authority listed) ² <i>Poa alpina</i> L. ssp. <i>vivipara</i> (L.) Arcang. ² <i>Poa vivipara</i> (L.) Willd. ²
Common Name(s)	Alpine bluegrass ^{2,3,4,5,7,12}
Species Code (as per USDA Plants database)	POAL2 ^{2,13}
GENERAL INFORMATION	
Geographical range	Circumboreal to circumpolar, widely distributed through the subalpine and alpine to arctic regions of North America and Eurasia. ^{3,4,5,9} In North America <i>P. alpina</i> ranges from Alaska east through Canada and south through the Pacific Northwest, Intermountain West, and Rocky Mountain regions of the United States. Populations also extend into northern Michigan from Canada. ^{3,4,5,7,9} Within the Pacific Northwest (PNW) populations are limited to subalpine and alpine areas, producing a somewhat sporadic distribution across Washington, Oregon, and Idaho. ^{2,3,4,5,13}

Geographic range cont.



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■ Native	■ Introduced	■ Both
■ Native, No County Data	■ Introduced, No County Data	■ Both, No County Data



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■ Native	■ Introduced	■ Both
■ Native, No County Data	■ Introduced, No County Data	■ Both, No County Data

Note: Distribution maps adapted from USDA PLANTS Database²

Ecological distribution

Poa alpina is a facultative (FAC) to facultative upland (FACU) species² that grows in subalpine and alpine ecosystems such as sunny meadows,^{7,13} tundra, ridges⁵ and talus slopes, often in disturbed areas.^{6,12} It is often associated with limestone or other calcareous substrates, but can be found in a wide range of fine to coarsely textured soils.^{9,12}

<p>Climate and elevation range</p>	<p><i>P. alpina</i> primarily grows in cold alpine, subalpine, and arctic climates with short growing seasons. It is most common at mid to high elevations between 1500-3000 m.^{6,14} It requires around 61-140 cm (24- 55 in) of precipitation annually, exhibits moderate drought tolerance, and tolerates temperatures down to -36°C (-33°F).² A minimum 120 frost free days are needed for healthy growth.²</p>
<p>Local habitat and abundance</p>	<p>Locally found on rocky slopes, talus slopes, gravelly soils and disturbed areas, and seepage areas.^{6,7,12} Soil conditions range from moist to dry and fine to coarse in texture.¹² <i>P. alpina</i> generally grows is scattered, dense clumps, but may occasionally form sod under favorable conditions.^{5,7}</p> <p>Commonly associated with other tough alpine species such as yarrow (<i>Achillea millefolium</i>), paintbrush (<i>Castilleja spp.</i>), common juniper (<i>Juniperus communis</i>), and harebell (<i>Campanula rotundifolia</i>).⁷</p>
<p>Plant strategy type / successional stage</p>	<p><i>P. alpina</i> is a stress-tolerant, early successional species adapted to a wide range of harsh and often nutrient poor environments.^{2,7,9} It frequently colonizes disturbed alpine areas but may not tolerate encroachment of larger woody species.⁷ Due to its rapid growth and seed production, this species is suitable for use in reclaiming disturbed sites and managing erosion, and several cultivars have been developed specifically for this purpose.^{9,10,11}</p>
<p>Plant characteristics</p>	<p>A long-lived perennial, densely caespitose bunchgrass growing in compact tufts or clumps, occasionally forming small sod patches.^{2,5,7,13} Plants are generally 10–40 cm tall with mostly basal leaves 2-5 mm wide.^{5,7,9} The inflorescence is a 2-6 cm long, open, pyramidal panicle.^{4,5,6,7} Leaves grown the previous year often form a noticeable thatch around the base of the plant.⁹</p> <p>Reproduction may be either sexually, through wind pollination, or asexual, through apomictic seed production or viviparous bulbils formed in the inflorescence.^{15,16} Flowering generally occurs June-August, with seed maturing in late summer.^{3,10,11}</p>

PROPAGATION DETAILS: FROM SEED – Container Production

<p>All information adapted from Luna T, Evans J, Wick D, Hosokawa J. Propagation protocol for production of Container (plug) <i>Poa alpina</i> L. plants 172 ml conetainers¹⁷ unless otherwise noted</p>	
Ecotype	Seeds collected from subalpine meadows at 2032 m in elevation along Logan Pass in Glacier National Park, MT. ¹⁷
Propagation Goal	Plants ^{17,18}
Propagation Method	Seed ^{17,18}
Product Type	Container (Plug) ^{17,18}
Stock Type	172 ml conetainers ¹⁷
Time to Grow	About 8 weeks ¹⁷
Target Specifications	Healthy container seedlings roughly 6 cm in height and with a well-established root system forming a firm plug within the container. ¹⁷
Propagule Collection Instructions	Seed should be collected by hand from mature inflorescences in August once they turn tan. Seeds are then collected using scissors and temporarily placed into paper bags. Mature seed should be light tan in color. Seeds should be air dried prior to any cleaning treatments. ¹⁷
Propagule Processing/Propagule Characteristics	Roughly 2,200,000 seeds per kg (1,100,000 seeds per lb) ² If seed storage is required it is seen to last at least 7 years when stored in sealed containers at 3-5°C. Germination does decrease significantly following storage to 35%, down from 98% for fresh 1 year old seed. ¹⁷
Pre-Planting Propagule Treatments	Seeds should be cleaned by hand using clippers and an air blower to remove chaff. ¹⁷ Seeds are non-dormant ¹⁸ and require no stratification period prior to sowing. ¹⁷
Growing Area Preparation / Annual Practices for Perennial Crops	Initial growing area is a greenhouse maintained at 21-25°C during the day with a drop to 16-18°C at night. ¹⁷ Seeds are initially sown into 172 ml conetainers filled with 70% 6:1:1 peat, perlite, and vermiculite mix, and 30% sand. Media

	should be fertilized at a rate of 1 gram Osmocote 13-13-13 controlled release fertilizer and 0.20 gram Micromax fertilizer (12%S, 0.1%B, 0.5%Cu, 12%Fe, 2.5%Mn, 0.05%Mo, 1%Zn) per 172 ml container cell. ¹⁷
Establishment Phase Details	Direct sow seeds and cover with medium. Keep medium slightly moist during the establishment phase. Seeds should be expected to germinate within 1-2 weeks. ¹⁷
Length of Establishment Phase	About 2 weeks ¹⁷
Active Growth Phase	Seedlings remain in the greenhouse until mid May when they are moved to the outdoor nursery for the remainder of the year. Watering is initially done by hand, but then switches to automatic irrigation once moved outdoors. Watering should be done in the early morning until containers are entirely leached. Fertilize with general 20-20-20 liquid fertilizer until the desired root tightness is obtained. Shoot and root development should be rapid. ¹⁷
Length of Active Growth Phase	Active growth lasts about 5 weeks, or until the end of the growing season. ¹⁷
Hardening Phase	Plants not outplanted during the season are given a final irrigation prior to overwintering outdoors under an insulating foam cover and snow (if present). ¹⁷
Length of Hardening Phase	Hardening period lasts approximately 5 months ¹⁷
Harvesting, Storage and Shipping	Seedlings are often harvested 6 to 8 weeks after sowing, typically in late summer through July and August. Plants that are overwintered outdoors should be insulated under a foam cover and snow (if present). ¹⁷
Length of Storage	Seedlings may be stored for approximately 5 months ¹⁷
Guidelines for Outplanting / Performance on Typical Sites	No guidelines or performance notes provided ¹⁷

Other Comments	A permit is likely required for the collection of seeds or other vegetative material from wild populations on public land. Those wishing to gather propagation materials should check with the appropriate agencies before collection. Always obtain necessary permissions from landowners prior to accessing private property.
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PROPAGATION DETAILS: VEGETATIVE

Note: Poa alpina is rarely if ever propagated vegetatively,² and as such no information is available for this species. It is recommended propagation is done by seed, but if vegetative propagation is required, crown division or tissue culture may be possible.^{17,19}

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