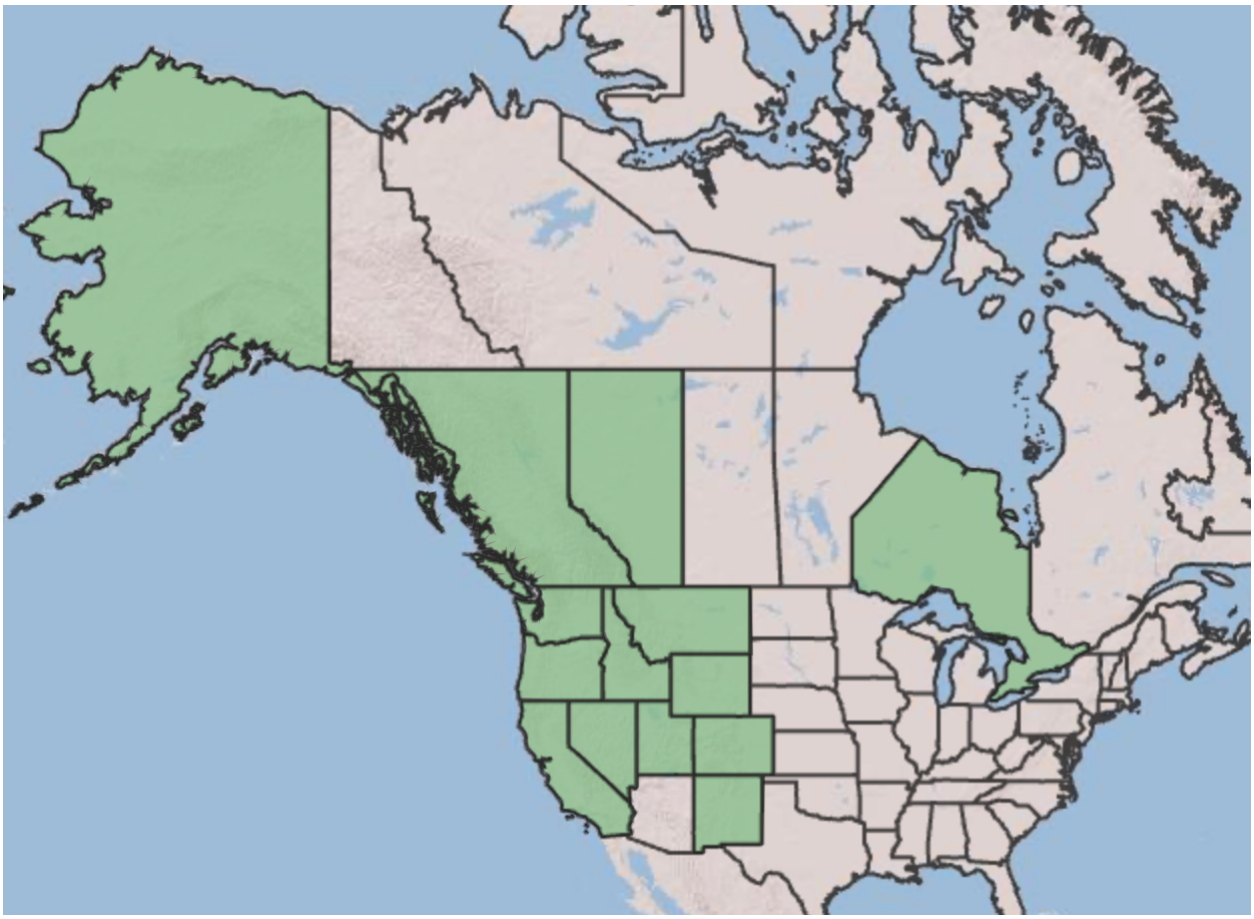
Plant Propagation Protocol for *Agrostis humilis*
ESRM 412 – Native Plant Production
URL: https://courses.washington.edu/esrm412/protocols/*2024/AGHU.pdf*



TAXONOMY	
Plant Family	Poaceae Barnhardt [1]
Scientific Name	Agrostis Humilis [1]
Common Name	Mountain Bent Grass [1]
Species Scientific Name	Agrostis spp. [5]
Scientific Name	Agrostis humilis Vasey [1]
Varieties	N/A
Sub-species	N/A
Cultivar	N/A
Common Synonym(s)	Alpine bentgrass [1]
Species Code (as per USDA Plants database)	AGHU [1]

GENERAL INFORMATION	
Geographical range	This species is native to California, but found in Canada, Alaska, Montana, Colorado and New Mexico.[2] See map for reference
Ecological distribution	The ecological distribution of the habitat encompasses moist to dry, subalpine or alpine meadows and slopes, typically occurring at elevations ranging from 1500 to 3350 meters.[2]
Climate and elevation range	AGHU occurs mostly in Alpine meadows, between elevations of 1500 to 300 meters.[2] Alpine meadows receive a high volume of winter snow, harsh winds, and cold night temperatures create the signature climate of the alpine, which is home to a unique array of plants and animals.[3]
Local habitat and abundance	Alpine Bentgrass is commonly found in subalpine and alpine meadows as well as on slopes in moist to dry conditions at elevations ranging from 1500 to 3350 meters. Its abundance is highest in regions of high altitude, with moist and well drained soils. However, it is currently on the endangered species list in California.[4]
Plant strategy type / successional stage	AGHU typically exhibits a colonizer or pioneer successional strategy. It is often one of the first plant species to establish and thrive in disturbed or open areas, such as those found in alpine and subalpine habitats. This species is well-adapted to harsh environmental conditions and is capable of quickly colonizing and stabilizing disturbed soils, contributing to early successional stages in mountainous ecosystems.[5]
Plant characteristics	Perennial Grass [2]
PROPAGATION DETAILS	
Ecotype	N/A
Propagation Goal	Plants; For Landscape use, Restoration, Research[5]
Propagation Method	Seed
Product Type	Container (plug)
Stock Type	
Time to	4-6 weeks[6]
Target Specifications	Alpine Bentgrass (Agrostis humilis) typically forms dwarf tufted plants, reaching around 6 inches in height. Its spikelets are awnless and very small, measuring less than 2 mm in length.[2] The plant features mostly basal leaves with ligules ranging from 0.5 to 2 mm, and proximal blades measuring 2 to 15 cm in length and 1 to 4 mm in width, often flat or slightly folded.[6]
Propagule Collection Instructions	To collect propagules for Alpine Bentgrass (Agrostis humilis), wait until late summer or early autumn when seeds are mature. Identify the characteristic dwarf tufted plants with tiny awnless spikelets before carefully harvesting seed heads. Store the collected seeds in a cool, dry place, labeled with the species name, collection date, and location. [2,4]
Propagule Processing/Propagule Characteristics	Alpine Bentgrass (Agrostis humilis) seeds have an average density of around 2.6 million seeds per pound and can remain viable for 2 to 3 years under proper storage conditions, with germination typically requiring cool temperatures and consistent moisture. [3]
Pre-Planting Propagule Treatments	Do not need stratification or treatment. The seeds can be held in cold, dry storage for over one year prior to planting with little to no change in germination rate. [9,10]
Growing Area Preparation / Annual Practices for	Plant in medium or fine textured soil with partial shade, seed bed should be firm can be planted alone or with other native grasses without effecting performance. This grass is very sun tolerant and can do well with full spring and summer sunlight. [1,2]

Perennial Crops	
Establishment Phase Details	The best time to plant seeds is between September and April.[9] Ensure the planting site has well-prepared soil with adequate drainage and sufficient moisture. Monitor soil moisture levels regularly and provide irrigation as needed to support seedling growth.[3]
Length of Establishment Phase	Alpine Bentgrass seeds germinate within 7 to 21 days under optimal conditions.[11]
Active Growth Phase	Actively grows in spring and summer (2), for the first 4-6 weeks after planting short, frequent watering is required if there is no rainfall to maintain the desired moisture[9]
Length of Active Growth Phase	6 months, from spring to early fall [2,10]
Hardening Phase	N/A [9]
Length of Hardening Phase	N/A [9]
Harvesting, Storage and Shipping	Store them in a cool, shaded area with moist roots until shipping, then package securely to prevent damage during transit, minimizing shipping time to reduce stress.
Length of Storage	Information was hard to find, however seed viability assessments have shown results of 2-3 years under proper storage conditions. This entails cold temperatures, and little to no moisture reaching the seed. [3]
Guidelines for Outplanting / Performance on Typical Sites	As a pioneer species, seeds should have a very effective growth pattern at outplant site. [5] Still, continue to monitor site and identify and remove potential invasive or unwanted species.
Other Comments	California Rare Plant Rank: 2B.3 [4]
INFORMATION SOURCES	
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