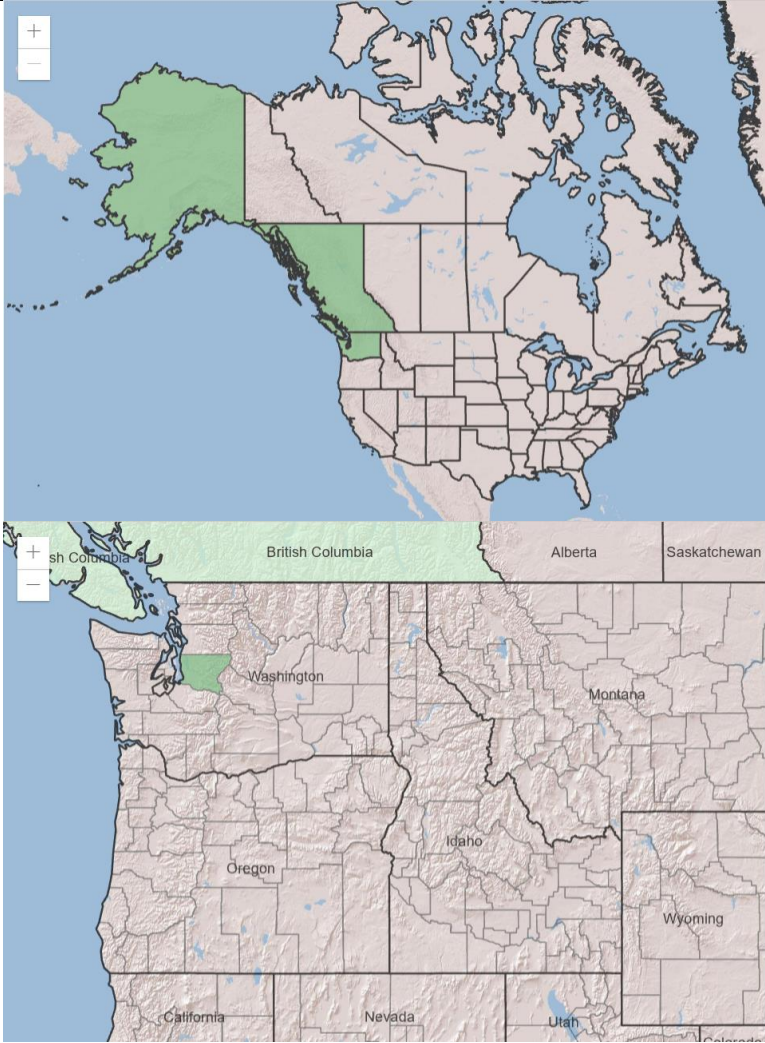


Plant Propagation Protocol for *Cassiope lycopodioides*
 ESRM 412 – Native Plant Production
 URL: <https://courses.washington.edu/esrm412/protocols/2022/CALY4.pdf>

TAXONOMY	
Plant Family	
Scientific Name	Ericaceae
Common Name	Heaths
Species Scientific Name	
Scientific Name	<i>Cassiope lycopodioides</i> (Pall.) D. Don
Varieties	None
Sub-species	None from USDA Plants database.
Cultivar	None
Common Synonym(s)	No information available.
Common Name(s)	Clubmoss mountain heather
Species Code (as per USDA Plants database)	CALY4
GENERAL INFORMATION	

Geographical range	 <p>Images courtesy of USDA Website (4).</p> <p>Occurring in British Columbia (but not NW B.C. and NW Vancouver Island) to AK, Washington; NE Asia (6).</p>
Ecological distribution	Lives in ecosystems that are mesic to dry slopes, heath, and meadows in the subalpine and alpine zones (6).
Climate and elevation range	<p>General Elevation: 750-990m</p> <p>In Washington, <i>C. lycopodioides</i> is found in a steep, rock ravine at elevation of 580-670m (5).</p>
Local habitat and abundance	Commonly found on rock faces and often near waterfalls, streams, or other moist areas.
Plant strategy type / successional stage	No information available.

Plant characteristics	<p>Shrub, Evergreen, Flowers are pendent, solitary, axillary, and a white bell-shape. Shoots are dense, slender, and covered in small ovate, glabrous leaves, which are only 1/12 in. wide. Leaves have no groove on back (3).</p> <div> </div> <div> </div> <p>Images courtesy of Burke Museum (Ben Legler)</p>
PROPAGATION DETAILS: Seed	
Ecotype	No information available.
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Container (plug)
Stock Type	No information available.
Time to Grow	No information available.
Target Specifications	No information available.
Propagule Collection Instructions	No information available.
Propagule Processing/Propagule Characteristics	No information available.
Pre-Planting Propagule Treatments	No information available.
Growing Area Preparation / Annual Practices for Perennial Crops	<p><u>For genus:</u> Sow seeds on a surface of acid humus soil compost. Position in area with partial shade; soil should be loam; moisture well-drained and pH acidic (2).</p>
Establishment Phase Details	Keep in a well-ventilated frame; surface of soil should be covered in sphagnum moss.

Length of Establishment Phase	<p><u>For genus:</u> Minimum germination time is a month but may be much longer and can be delayed until moss is formed on surface of peat (1).</p> <p>No information on the maximum time for germination.</p>
Active Growth Phase	No information available.
Length of Active Growth Phase	No information available.
Hardening Phase	No information available.
Length of Hardening Phase	No information available.
Harvesting, Storage and Shipping	No information available.
Length of Storage	No information available.
Guidelines for Outplanting / Performance on Typical Sites	<p>No information on percent survival or time before flowering.</p> <p>Will reach ultimate height of 10 cm in 10-20 years. Ultimate spread is 0.1-0.5m (2).</p>
Other Comments	None
PROPAGATION DETAILS: Vegetative	
Ecotype	No information available.
Propagation Goal	Plants
Propagation Method	Vegetative
Product Type	Container (plug)
Stock Type	No information available.
Time to Grow	No information available.
Target Specifications	No information available.
Propagule Collection Instructions	Cut shoot tips in late summer or autumn; cuttings should be semi hardwood (1).
Propagule Processing/Propagule Characteristics	No information available.
Pre-Planting Propagule Treatments	No information available.
Growing Area Preparation / Annual Practices for Perennial Crops	Place pots in a cold, shaded frame (1).
Establishment Phase Details	No information available.
Length of Establishment Phase	~3 months

Active Growth Phase	No information available.
Length of Active Growth Phase	No information available.
Hardening Phase	No information available.
Length of Hardening Phase	No information available.
Harvesting, Storage and Shipping	No information available.
Length of Storage	No information available.
Guidelines for Outplanting / Performance on Typical Sites	(Same as seed propagation) No information on percent survival or time before flowering. Will reach ultimate height of 10 cm in 10-20 years. Ultimate spread is 0.1-0.5m (2).
Other Comments	None

INFORMATION SOURCES

References	<ol style="list-style-type: none"> 1. "Cassiope." <i>Alpine Garden Society</i>, http://encyclopaedia.alpinegardensociety.net/plants/Cassiope. 2. "Cassiope Lycopodioides." <i>Royal Horticultural Society</i>, https://www.rhs.org.uk/plants/3173/cassiope-lycopodioides/details. 3. "Cassiope Lycopodioides (Pall.) D. Don." <i>Trees and Shrubs Online</i>, https://treesandshrubsonline.org/articles/cassiope/cassiope-lycopodioides/. 4. "Cassiope Lycopodioides (Pall.) D. Don." <i>USDA Plants Database</i>, https://plants.usda.gov/home/plantProfile?symbol=CALY4. 5. "Cassiope Lycopodioides." <i>Washington State Department of Natural Resources</i>, https://www.dnr.wa.gov/programs-and-services/geology/publications-and-data/publications-and-maps. 6. Klinkenberg, Brian. (Editor) 2020. E-Flora BC: Electronic Atlas of the Plants of British Columbia [eflora.bc.ca]. Lab for Advanced Spatial Analysis, Department of Geography, University of British Columbia, Vancouver. [Accessed: 2022-05-24 12:14:56 PM]
Other Sources Consulted	<ol style="list-style-type: none"> 7. "Cassiope Lycopodioides." <i>Flora of North America</i>, http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=250065631. 8. "Cassiope Lycopodioides." <i>Integrated Taxonomic Information System</i>, https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=23536#null. 9. "Cassiope Lycopodioides." <i>NatureServe Explorer 2.0</i>, https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.130401/Cassiope_lycopodioides.

	10. "Cassiope Lycopodioides: Clubmoss Mountain Heather." <i>Wildflower Search</i> , https://wildflowersearch.org/search?&tsn=23536 .
Protocol Author	Brielle Ann Canares
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