

Plant Propagation Protocol for *Glyceria borealis*

ESRM 412 – Native Plant Production

Protocol URL: <https://courses.washington.edu/esrm412/protocols/GLBO.pdf>



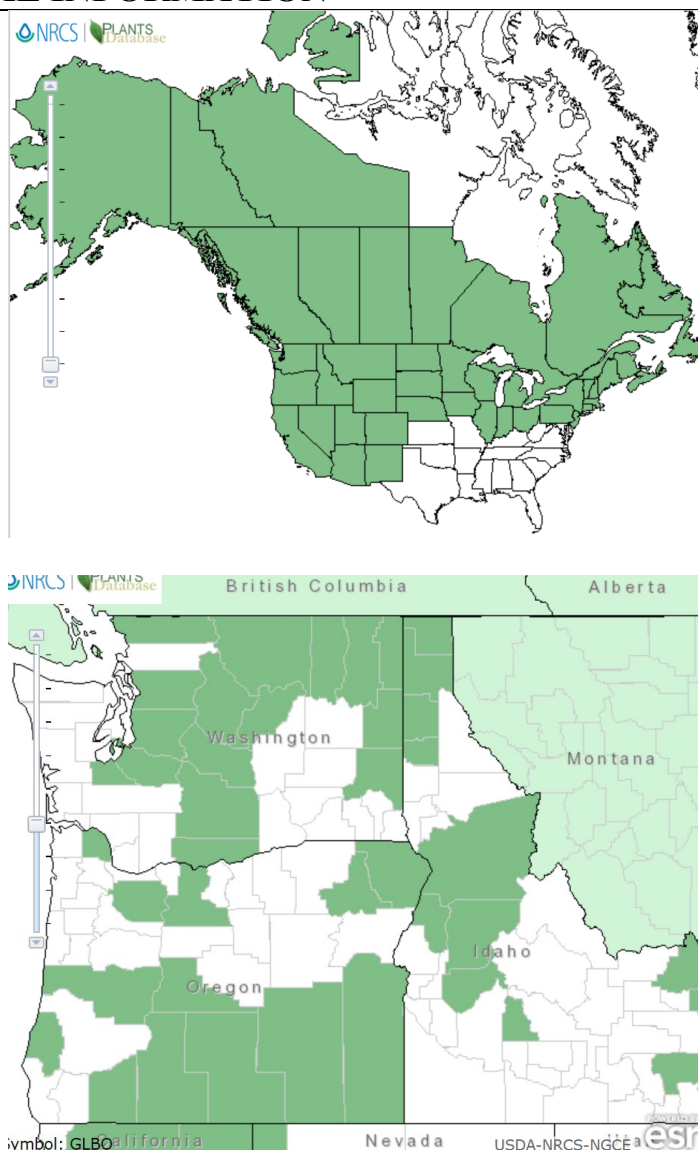
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TAXONOMY¹

Plant Family	
Scientific Name	<i>Poaceae</i>
Common Name	grass family
Species Scientific Name	
Scientific Name	<i>Glyceria borealis</i> (Nash) Batchelder
Varieties	n/a
Sub-species	n/a
Cultivar	n/a
Common Synonym(s)	<i>Glyceria fluitans</i> var. <i>angustata</i> Vasey ex Fernald <i>Panicularia borealis</i> Nash <i>Panicularia fluitans</i> var. <i>angustata</i> (Vasey ex Fernald) Vasey ex Farw.
Common Name(s)	small floating mannagrass, northern mannagrass, boreal mannagrass, boreal glyceria
Species Code	GLBO

GENERAL INFORMATION

Geographical range



Map source: USDA Plant Database²

Ecological distribution

Glyceria borealis can be found in wet habitats with full sun. It is distributed across North America, ranging from Alaska, east to Newfoundland, south to California and New Mexico.³

Climate and elevation range

Pacific Northwest: *Glyceria borealis* is usually found at low to middle elevations.⁴
 British Columbia: elevation ranges between 130 m and 1,655 m, with an average elevation of 960 m.⁵
 Northern Arizona: 2,100 to 2,700 m.⁶

Local habitat and abundance

In the Pacific Northwest, *Glyceria borealis* can be found in wetlands (except bogs), stream banks, and lake shores.⁷

Plant strategy type / successional stage

n/a

Plant characteristics	<i>Glyceria borealis</i> is a rhizomatous, aquatic perennial grass that grows up to 1 meter in height. The leaves are flat and glabrous with 3-5 mm width. Flowers have narrow panicle form and blooms during May to October. ⁸
PROPAGATION DETAILS: by Riley, Lee E. et al., 2018⁹	
Ecotype	Mt Hood National Forest, OR
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Container (plug)
Stock Type	107 ml (6.5 in ³) container
Time to Grow	8 weeks
Target Specifications	Stock Type: Container seedling Root System: Firm plug in container.
Propagule Collection Instructions	Hand collect into paper bags.
Propagule Processing/Propagule Characteristics	n/a
Pre-Planting Propagule Treatments	Due to small seed size and short growing season, seeds are mixed with sand and sown directly into target containers. Growing medium used in these cells consists of 40:20:20:20 peat:composted fir bark:perlite:pumice with Nutricote controlled release fertilizer (18N:6P2O5:8K2O with minors; 140-d release rate at 21C) at the rate of 0.5 gram Nutricote per 107 ml container. Entire racks are sealed inside plastic bags and placed into refrigeration at 1 to 3 °C for 30 days. Cells are checked weekly and kept moist throughout the stratification period.
Growing Area Preparation / Annual Practices for Perennial Crops	Growing Area Preparation: greenhouse growing facility. Annual Practices for Perennial Crops: racks are removed from stratification facilities and placed directly into greenhouses in mid-July. No additional time-release fertilizer is added to medium. Cells are irrigated lightly several times per day to ensure seeds are kept quite moist throughout the germination period.
Establishment Phase Details	Germination is uniform and is usually complete in 1 to 2 weeks. Following germination, plants are fertilized with soluble 12-2-14-6Ca-3Mg at 100 ppm for 1 week.
Length of Establishment Phase	2 weeks
Active Growth Phase	Plants grow quickly during the active growth phase Soluble fertilizer 20-9-20 NPK at 150 ppm is applied weekly for 8 weeks.
Length of Active Growth Phase	8 weeks

Hardening Phase	No dry-down is done to induce dormancy. Seedlings are moved to an outdoor growing area in mid-September.
Length of Hardening Phase	2-3 weeks
Harvesting, Storage and Shipping	Harvest Date: Mid-October Storage Conditions: Seedlings are usually outplanted in fall. No storage except in outdoor growing area. Plants are well irrigated prior to shipping and shipped in containers.
Length of Storage	n/a
Guidelines for Outplanting / Performance on Typical Sites	n/a
Other Comments	Wetland classification: OBL
INFORMATION SOURCES	
References	<p>¹ USDA. "Glyceria Borealis (small Floating Mannagrass)." USDA Plant Database. Accessed May 16, 2020. https://plants.usda.gov/core/profile?symbol=GLBO.</p> <p>² USDA. "Glyceria Borealis (small Floating Mannagrass)."</p> <p>³ Knoke, Don. "Glyceria borealis." Burke Herbarium. Accessed May 20, 2020. http://biology.burke.washington.edu/herbarium/imagecollection/taxon.php?Taxon=Glyceria%20borealis</p> <p>⁴ MacKinnon, A., Pojar, Jim, and Alaback, Paul B. <i>Plants of the Pacific Northwest Coast: Washington, Oregon, British Columbia & Alaska</i>. Rev. ed. (Vancouver: Lone Pine Publishing, 2004), 379.</p> <p>⁵ E-Flora BC. "Glyceria borealis." Electronic Atlas of the Flora of British Columbia. Accessed May 22, 2020. http://linnet.geog.ubc.ca/Atlas/Atlas.aspx?sciname=Glyceria+borealishttp://linnet.geog.ubc.ca/Atlas/Atlas.aspx?sciname=Glyceria+borealis</p> <p>⁶ SEINet Arizona-New Mexico Chapter. "Glyceria borealis." SEINet. Accessed May 20, 2020. http://swbiodiversity.org/seinet/taxa/index.php?taxon=1570&clid=2525</p> <p>⁷ MacKinnon, A., Pojar, Jim, and Alaback, Paul B. <i>Plants of the Pacific Northwest Coast: Washington, Oregon, British Columbia & Alaska</i>. 379.</p> <p>⁸ Knoke, Don. "Glyceria borealis." Burke Herbarium.</p> <p>⁹ Riley, Lee E.; Klocke, Allison. "Propagation protocol for production of Container (plug) Glyceria borealis Plants." Native Plant Network. 2018. Accessed May 13, 2020. https://npn.rngr.net/renderNPNProtocolDetails?selectedProtocolIds=poaceae-2044-gramineae-glyceria</p>
Other Sources Consulted	
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