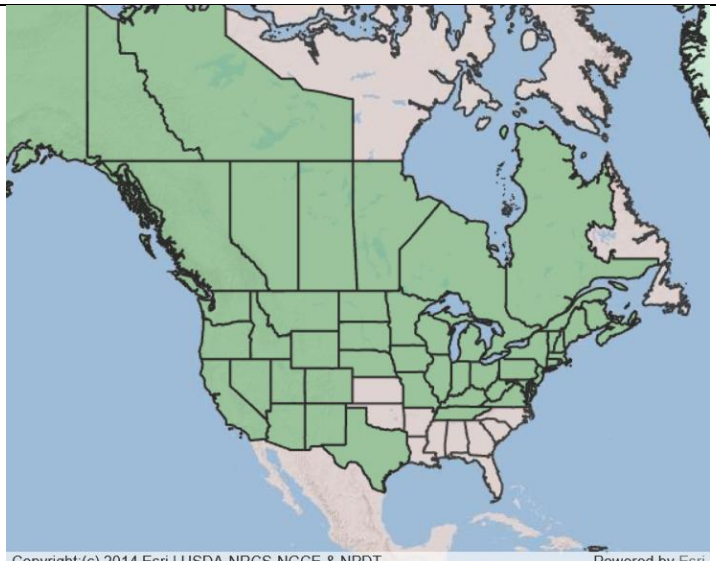
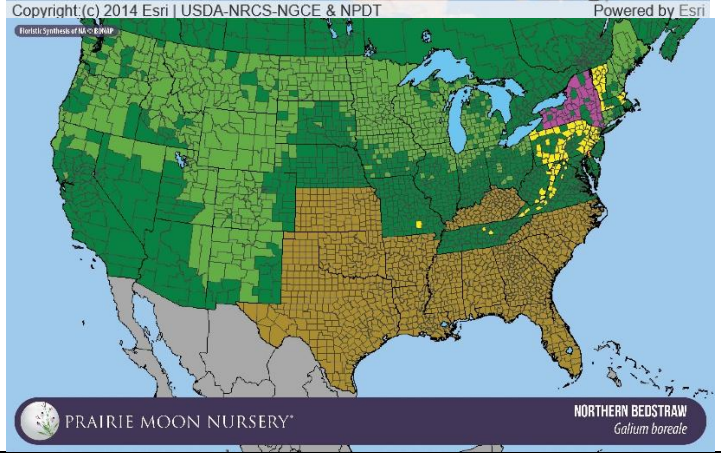
Plant Propagation Protocol for *Galium boreale* (Northern Bedstraw)
ESRM 412 – Native Plant Production
URL: https://courses.washington.edu/esrm412/protocols/*2026/GABO2.pdf*

Image by Ben Legler
https://burkeherbarium.org/imagecollection/photo.php?Photo=wtu008230&Taxon=Galium%20boreale&SourcePage=taxon

TAXONOMY	
Plant Family	
Scientific Name	Rubiaceae
Common Name	Madder/coffee/bedstraw family
Species Scientific Name	
Scientific Name	Galium boreale L.
Varieties	var. *hyssopifolium* (Hoffm.) DC. var. *intermedium* DC. var. *linearifolium* Rydb. var. *scabrum* DC. var. *typicum* G. Beck.
Sub-species	ssp. *septentrionale* (Roem. & Schult.) H. Hara ssp. *septentrionale* (Roem. & Schult.) Iltis
Cultivar	n/a
Common Synonym(s)	*Galium hyssopifolium Hoffm.* *Galium septentrionale Roem. & Schult.*

	Galium strictum Torr.
Common Name(s)	Northern Bedstraw
Species Code (as per USDA Plants database)	GABO2
GENERAL INFORMATION	
Geographical range	 
Ecological distribution	Widely distributed on both sides of the Cascades crest in Washington; Alaska to California, east across much of North America; circumboreal (Burke Herbarium).
Climate and elevation range	Minimum growth temperature: -33°F (USDA) Elevation range: 15-2000 m.
Local habitat and abundance	General: Mesic habitats from sea level to subalpine (WNPS). Eastern Washington: mesic sites in grasslands of the Palouse Prairie and in open coniferous woods (Skinner).

	WTU-Burke Museum herbarium specimens collected from Oregon, Idaho and Washington (between 1999 to 2004) were associated with: Sedges, rushes, Bromus, *Phleum*, *Alopecurus*, *Poa*, *Potentilla*; *Pinus* and *Populus tremuloides*; *Pinus contorta*, *Artemesia arbuscula*, *Salix exigua*, *Juncus* sp.; and at lower elevations ninebark, *Ribes* and snowberry.
Plant strategy type / successional stage	Stress tolerant: wide geographical distribution, climate, and elevation range. Spreads by creeping roots and self-seeding.
Plant characteristics	Forb/herb; Subshrub; perennial with lifespan of >2 years. 12-24 in. high; many-branched; narrow leaves are in whorls of four; topped by masses of tiny white flowers (Lady Bird Johnson Wildflower Center).
PROPAGATION DETAILS: FROM SEED	
Ecotype	Paradise Creek drainage near Pullman, WA.
Propagation Goal	Plants
Propagation Method	Seed
Product Type	Container (plug)
Stock Type	10 cu.
Time to Grow	4 months
Target Specifications	Tight root plug in container.
Propagule Collection Instructions	Seed is collected in September when the inflorescence is dry and the seeds are brown in color. Seed can be stripped from the stalks by hand or entire stalks can be cut. Plants hold their seed well, shattering is not generally a problem. Harvested seed is stored in paper bags at room temperature until cleaned.
Propagule Processing/Propagule Characteristics	Small amounts are rubbed to free the seed, then cleaned with an air column separator. Larger amounts are threshed with a hammermill, then cleaned with air screen equipment. Clean seed is stored in controlled conditions at 40°F and 40% relative humidity. Seed density: 725,760 seeds/lb (USDA).
Pre-Planting Propagule Treatments	Germination was equally low for seeds from a Wisconsin source either without pretreatment or after 2 months cold moist stratification (Green & Curtis 1950). Maguire and Overland (1959) found 4 weeks of cold moist stratification resulted in 84% germination, while untreated seed germinated at 64%. For this ecotype, germination without pretreatment is high. Trials conducted at the PMC comparing untreated seed with cold, moist stratified seed showed no benefit from stratification.

Growing Area Preparation / Annual Practices for Perennial Crops	In January seed is sown in the greenhouse in 10 cu. in. Ray Leach Super cell conetainers filled with Sunshine #4 and covered lightly. Head space of ¼ to ½ inch is maintained in conetainers to allow deep watering. A thin layer of coarse grit is applied to the top of the planting soil to prevent seeds from floating during watering. Conetainers are watered deeply.
Establishment Phase Details	Medium is kept moist until germination occurs. Germination usually begins in 10-12 days and is complete in 3 weeks.
Length of Establishment Phase	3 weeks
Active Growth Phase	Plants are watered deeply every other day and fertilized once per week with a complete, water soluble fertilizer containing micro-nutrients
Length of Active Growth Phase	2-3 months
Hardening Phase	Plants are moved to the cold frame in late March or early April, depending on weather conditions. They are watered every other day if the weather is cool, and every day during hot, dry spells.
Length of Hardening Phase	2-4 weeks
Harvesting, Storage and Shipping	Information not provided for this ecotype.
Length of Storage	Information not provided for this ecotype.
Guidelines for Outplanting / Performance on Typical Sites	Transplanting is done in early May by using an electric drill and portable generator to drill 1.5 inch diameter holes at the planting site. Survival in seed increase plantings without competing vegetation exceeds 95%. Transplanting into sites with existing vegetation reduces survival and vigor depending on weather conditions following planting. Flowering and seed production may occur the same year as transplanting.
Other Comments	Propagation information taken from Skinner's protocol for *Galium boreale L.* Skinner notes that no insect problems have been noted. It may also be possible to propagate this species from pieces of the rhizome or from divisions, though propagation by seed is the only method of reproduction listed on the USDA plant profile.
INFORMATION SOURCES	
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