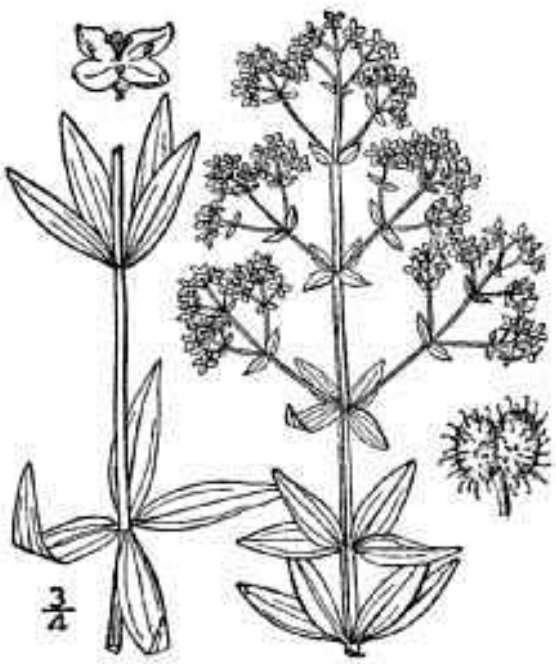
Scientific Name: *Galium boreale* L. **Family:** *Rubiaceae*

Common Names: northern bedstraw, sweet scented bedstraw, fragrant bedstraw



***Galium boreale* line drawing.**

Plant Description

Erect widely distributed perennial forb; slim stems from 20 to 80 cm with linear-lanceolate leaves in whorls of 4.1 to 6.5 cm long by 2 to 12 mm wide, 3-veined and blunt; inconspicuously hairy fruit with a diameter of 2 mm (Gucker 2005). Numerous 4-petaled showy flowers of white to cream colour forming in clusters of 3 at stem tips (Moss 1983).
Fruit: Glabrous to inconspicuously white haired nutlets, 2 mm in diameter (Gucker 2005).
Seed: Large amounts produced, have a barbed seed coat (Robb pers. comm.).

Habitat and Distribution

Common in moist woods, clearings, roadsides and spread widely across Canada and the United States. Tolerant of a wide range of climates (Gucker 2005). Often pioneering in disturbed soils (CYSIP: Botany n.d.).
Seral Stage: Variable, early to late.
Soil: Tolerant of a wide pH range but prefers moist well drained soils (Gucker 2005). Prefers moderate to coarse textured soils, with moderate drought tolerance, no salinity tolerance and no anaerobic tolerance (USDA NRCS n.d.).
Distribution: Circumpolar. Alaska, Yukon, southwestern District of Mackenzie to Hudson Bay, southern Quebec south to California, Texas, Missouri, Ohio, Delaware (Moss 1983).

Phenology

Flowers from May to September depending on the region (Gucker 2005).

Pollination

Insect pollinated (Gucker 2005).

Seed Dispersal

Hooked barbs on seed attach to passing animals (Gucker 2005).

Genetics

2n=22, 44, 55, 66 (Moss 1983).

Symbiosis

No literature found.

Seed Processing

Collection: Collect the seed head and store in a paper bag until processing.
Seed Weight: 0.405 g/1,000 seeds (USDA NRCS n.d.)

0.6 g/1,000 seeds (Gucker 2005).
Harvest Dates: End of July to early August, though it does not drop its seed right away so seed may be collected through to September.
Cleaning: Run the seeds through a sieve to break up dirt and seed or rub seed with gloved hands (Robb pers. comm.).
Storage Behaviour: Likely orthodox; dry prior to cold storage.
Storage: 26% viability was retained when seeds were stored at 15% moisture content at temperatures of -20°C for 7 months (Royal Botanic Gardens Kew 2008). Cool dry storage (Prairie Moon Nursery n.d.).
Longevity: Is a short lived species living less than a year in the soil seed bank (Royal Botanic Gardens Kew 2008).

***Galium boreale* in bloom**

Propagation

Natural Regeneration: Rhizomatous asexual reproduction is most common, in guerrilla clonal growth form (Gucker 2005). Vegetative germination is its primary method of reproduction but also produces seed.
Germination: No literature found.
Pre-treatment: No pre-treatment necessary (Prairie Moon Nursery n.d.).
Direct Seeding: No literature found.
Seed Rate: No literature found.
Vegetative Propagation: No literature found.

Aboriginal/Food Uses

Food: Roots and leaves boiled in teas. *G. boreale* seeds sometimes used as a ground as a coffee substitute (Plants for a Future 2012, Tannas 2004). Young plants can be eaten as a cooked green; one change of water eliminates bitterness (CYSIP: Botany n.d.).
Medicinal: Used in a poultice for general treatment of aches and pains or combined with butter as a salve. Mixed into tea to treat cold and flu symptoms (Gucker 2005).
Stimulates urination and was used to treat bladder infections or kidney stones (CYSIP: Botany n.d., Johnson et al. 2005).
Other: A red dye can be made from the roots (often combined with cranberries) and flowers were used as a perfume (CYSIP: Botany n.d., Tannas 2004).
Used as stuffing material for beds (CYSIP: Botany n.d., Plants for a Future 2012).

Wildlife/Forage Usage

Wildlife: Not common as a nutrient for ungulates, Black bear and ground foraging birds consume more (Gucker 2005).
Plants contribute to habitat for big game and rodents (Gucker 2005).
Livestock: Poor; sometimes consumed by sheep (Tannas 2004).
Grazing Response: Increaser (Tannas 2004).

Reclamation Potential

Successful after transplantation; a sod re-location method was performed (Gucker 2005). Purdy et al. (2005) found populations of *G. boreale* to be frequent and moderately abundant in dry saline habitats while others have noted it as being a common forb in other boreal forest saline areas.

It has also found to have value for soil stabilization because it spreads by rhizomes (Tannas 2004).

Commercial Resources

Availability: Is available for landscaping use in a few nurseries in Alberta. Locally collected seed is recommended for reclamation.
Cultivars: No literature found.
Uses: No literature found.

Notes

Galium boreale is listed as 86% intact (less occurrences than expected) in the Alberta oil sands region (Alberta Biodiversity Monitoring Institute 2014).

Photo Credits

Photo 1: Colin Stone.
Line Diagram: USDA-NRCS PLANTS 2011.

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