Plant Data Sheet

Lupinus arcticus or Lupinus latifolius, Arctic lupine

http://www.mun.ca/biology/delta/arcticf/images/b4261016.jpg

http://www.mun.ca/biology/delta/arcticf/images/b4261017.jpg

Range: Throughout British Columbia, Alaska, Northwest Territories, Alberta, and Washington State.

Climate, elevation: Thrives in mid to high elevations of sub-alpine and alpine meadows. It can survive cold winters with annual averages being as low as -30 degrees Fahrenheit. Prefers full sun to partial shade.

Local occurrence (where, how common):
Below is a county map of Washington with their distribution colored in green.

http://plants.usda.gov/java/county?state_name=Washington&statefips=53&symbol=LUAR2

Habitat preferences: Well drained soil with a rocky texture. They are also found in wet meadows, tundra, mossy sedge flats, low ridges in the Arctic Islands, and grassy alpine slopes.

Plant strategy type/successional stage (stress-tolerator, competitor, weedy/colonizer, seral, late successional): Early successional (pioneer), seral, and climax species. Terrestrial herbaceous perennial living 3-10 years. Fixes nitrogen, improving soil fertility. Attracts butterflies.

Associated species:
Senecio triangularis (arrow-leaved groundsel),
Erigeron peregrinus (subalpine daisy),
Valeriana sitchensis (Sitka valerian),
Veratrum viride (Indian hellebore),
Arnica spp. (arnicas),
Pedicularis spp. (louseworts),
Castilleja spp. (paintbrushes),
Antennaria lanata (woolly pussytoes),
Anemone occidentalis (western pasqueflower),
Caltha leptosepala (white marsh-marigold),
Heracleum lanatum (cow-parsnip),
Erythronium grandiflorum (glacier lily),
Ranunculus eschscholtzii (subalpine buttercup),
R. nivalis (snow buttercup),
Oxyria digyna (mountain sorrel), and
Artemisia norvegica ssp. *saxatilis* (mountain sagewort).

May be collected as: (seed, layered, divisions, etc.): Seed, or by dividing the rootball.

Collection restrictions or guidelines: Collect and sow seeds in the spring or fall. Collection dates in

northwestern BC range from early July to the end of August. Seeds dehisce and can be difficult to collect. Use a bag or bucket before seeds are too ripe, or cut whole seed stock when some of the pods, usually the top ones, turn a dark black or brown. The remaining seeds will ripen in the pod under the sun while curing.

Seed germination (needs dormancy breaking?): Faster germination when using a combination of hot water or acid scarification and stratification. Presoaking is necessary to leach away inhibitory chemicals and induce germination. Direct seeding is also a possibility when done directly after collection and requires no treatment.

Seed life (can be stored, short shelf-life, long shelf-life): Seeds are long-lived in nature and subsequently have a very long shelf life when frozen. In 1967, frozen seeds found in an old lemming whole where dated to be 10,000 years old and germinated within 48 hours once optimum conditions had been met.

Recommended seed storage conditions: Keep in cool dry conditions or freeze.

Propagation recommendations (plant seeds, vegetative parts, cuttings, etc.): Plant seeds, seedlings, or divide

Soil or medium requirements: Plant seeds in a loam, sandy loam, or gravelly soil such as a sand-peat mix.

Installation form (form, potential for successful outcomes, cost): Seed, seedling, or division.

Recommended planting density: Unknown at present. Smith and Smith 2000 recommends 60-100 PLS seeds per linear meter and 75-120 cm between rows.

Care requirements after installed (water weekly, water once etc.): Does not tolerate drought. Spot spray with herbicide to keep area weed free, especially from encroaching grasses. Irrigate is possible.

Normal rate of growth or spread; lifespan: Decumbent reaching 3 inches to 1 foot with overall spread.

Sources cited:

Growing and Using Native Plants in the Northern Interior of B.C.. Pg. 71-72 28, April 2006. <http://wlapwww.gov.bc.ca/wld/documents/fia_docs/native_seed_manual/natplant_manual2.pdf>.

USDA. United States Department of Agricultre. Natural Resouces Conservation Service. Plants database. Plants Profile. Lupinus arcticus S. Wats. arctic lupine. 26, April 2006. <http://plants.usda.gov /java/profile?symbol=LUAR2>.

Gillett, J.M. et al. Fabaceae of the Canadian Arctic. Lupins arcticus s. Wats. subsp. arcticus. <http://www.mun.ca/biology/delta/arcticf/fab/www/faluar.htm>.

Close-up of inflorescence. N.W.T., Tuktoyaktuk, 21 July 1981, J.M. Gillett 18726. CAN.

Plant habit. Plants growing on dry hillside with Castilleja, at N.W.T., Tuktoyaktuk, 21 July 1981, J.M. Gillett 18726. CAN.

Crescent Bloom. Lupinus arcticus. 26 April, 2006. <http://www.crescentbloom.com/plants/specimen /LU/Lupinus%20arcticus.htm>.

Encyclopidia Britannica. Seed and Fruit. Germination > Dormancy and lifespan of seeds. 28 April, 2006 <http://www.britannica.com/eb/article-75927>.

Hebda, Richard. Royal BC Museum. Natural History, Arctic Lupine. 26, April 2006. <http://www.royalbcmuseum.bc.ca/nh_papers/nativeplants/lupinus.html>.

Pojar, J. and A.C. Stewart. Chapter 18: Alpine Tundra Zone. Pg. 226-227. 28, April 2006. <http://www.for.gov.bc.ca/hfd/pubs/docs/Srs/Srs06/chap18.pdf>.

Data compiled by Linda Arnoldi on 26, April 2006.