

## *Lupinus lepidus*

**English names** prairie lupine, elegant lupine, Pacific lupine

**Scientific name** *Lupinus lepidus*

**Family** Fabaceae (Pea)

**Other scientific name** *Lupinus lepidus* var. *lepidus*

**Risk status**

BC: critically imperilled (S1); red-listed

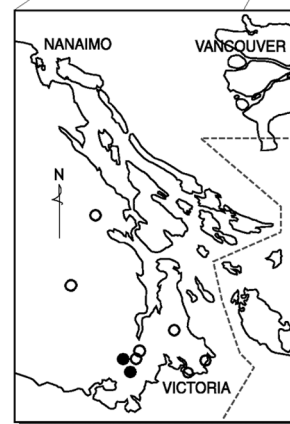
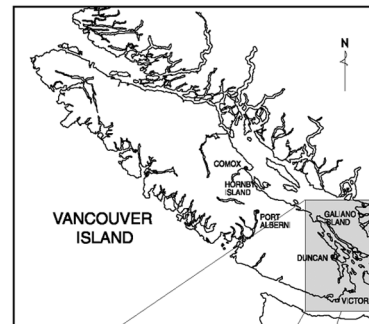
Canada: critically imperilled (N1); COSEWIC: endangered (2000)

Global: secure (G5)

Elsewhere: Oregon, Washington – reported (SNR)

**Range/known distribution**

Prairie lupine ranges from southwestern British Columbia south through Washington and Oregon, west of the Cascade Mountains. Although prairie lupine has been reported from Idaho, these reports are likely based on taxonomic confusion with Kettle Falls lupine (*Lupinus minimus*). In British Columbia, prairie lupine is known only from southeastern Vancouver Island in a rough triangle between the Municipality of Oak Bay in Victoria, the Municipality of Langford, and just north of Duncan. Prairie lupine has been extirpated from at least 7 sites and there are currently only 2 extant populations, both on mountains in Langford. One of the remaining populations consists of a single locality and the second population is composed of many (currently 23) scattered sites.



Distribution of *Lupinus lepidus*

- recently confirmed sites
- extirpated or historical sites



## *Lupinus lepidus*

### Field description

Prairie lupine is a perennial that grows 20-45 cm tall from a **woody stem base**. Most of the leaves form a rosette at the base of the plant with a few alternate leaves found up the flowering stems. The leaves are palmately compound (divided like fingers on a hand), with 5-9 leaflets, each measuring 1-5 cm long. The leaves and stems are **covered with white, silky hairs**. The pea-like flowers are arranged in an elongated inflorescence (raceme). The **flowers range in colour from blue, white to purple**. The **largest upper petal is bent backward below the mid-point**. The hairy seedpods have 2-4 hard, brown seeds.

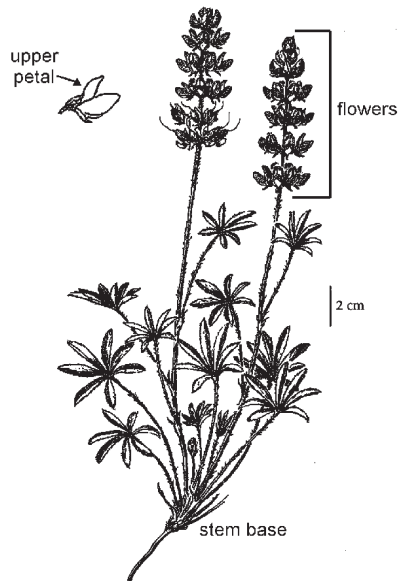
### IDENTIFICATION TIPS

Identification of lupines is difficult because many species are highly variable and some species can interbreed with each other. The woody stem-base of prairie lupine distinguishes it from two hairy annual species, dense-flowered lupine (*L. densiflorus* var. *densiflorus*) and two-coloured lupine (*L. bicolor* ssp. *bicolor*). Although there are four other perennial lupines with blue flowers and dense white hairs, they do not occur in Garry Oak and associated ecosystems.



*Lupinus lepidus*

Carrina Maslovat



## *Lupinus lepidus*

---

### **Life history**

Prairie lupine persists in the seed bank and populations can re-emerge after several years absence. Abrasion of the seed coat increases germination and new seedlings develop in the spring, summer and fall. Most plants flower by mid-June in their second year of growth and set seed in mid-July. Most, but not all, die after flowering and setting seed. Seed set is high (60-70%) in medium to large plants but low (0-10%) in small plants. Seeds are actively dispersed short distances when the seedpods snap open at maturity.

The roots of lupines have associations with both nitrogen-fixing bacteria and mycorrhizae fungi. The role of disturbance is not fully understood for this species. Some extirpated populations occurred beside roads or rail lines and were regularly mowed. The remaining extant populations occur in pristine habitats, which have no history of disturbance.

### **Habitat**

Prairie lupine occurs in well-drained, very dry sites with full sun and shallow soil (5-35 cm). Historically, elevation ranged from 30-420 metres although only the higher elevation (305-420 m) sites are still extant. The aspect is predominantly southeast to southwest. The plants occur either near or on top of wind-swept hilltops, generally occurring on gentle slopes or ledges in steeply sloping terrain. A few sites have early-season seepage. The remaining two populations of prairie lupine occur in locations that lack the usual suite of invasive species. Associated species include Roemer's fescue (*Festuca idahoensis* var. *roemeri*), dune bentgrass (*Agrostis pallens*), California oatgrass (*Danthonia californica*), and long-stoloned sedge (*Carex inops*) as well as mosses (including *Racomitrium* sp.) and lichens.

### **Why the species is at risk**

The vast majority of potential prairie lupine habitat has been destroyed by development, including two historic sites that were destroyed during sewer line construction and roadwork. Remaining habitat has been largely degraded by the invasion of exotic shrubs and grasses to the degree that it is no longer suitable habitat for prairie lupine. Trampling from hiking, bicycles and off-road vehicles damages plants and creates soil disturbance, which in turn increases invasion by exotic plants. Fire suppression has increased fuel loads causing potential future fires to be much more destructive than previously. Fires also create disturbed areas favoured by invasive plants. Isolated populations may have limited genetic variability to respond to environmental changes. Variation in weather patterns from year to year causes extreme fluctuations in population size and may affect prairie lupine's ability to persist in the long-term.

---

Species at Risk in Garry Oak and Associated Ecosystems in British Columbia





## *Lupinus lepidus*

---

### **What you can do to help this species**

This plant is so rare that no action should be taken at the site without expert advice and inspection. Management practices should be tailored to the specific circumstances at the site. Potential management tools will depend on the specific circumstances and may require experimentation on artificially established populations prior to implementation. **Before taking any action, expert advice must be obtained and no action taken without it. Please refer to the introductory section of this manual.**

Public and private landowners should be made aware of new populations of this species if they are discovered, and appropriate management practices suggested. Management needs include removal of invasive shrubs and limiting access to sensitive areas. Existing populations should be monitored on an ongoing basis to determine their viability, as well as for any negative impacts stemming from trampling, fire suppression and weed encroachment.

### **References**

- Maslovat, C. 2009. Personal Communication. Botanist, Salt Spring Island, BC.
- Parks Canada Agency. 2006. Recovery Strategy for Multi-species at Risk in Maritime Meadows Associated with Garry Oak Ecosystems in Canada. In Species at Risk Act Recovery Strategy Series. Ottawa: Parks Canada Agency.
- Roemer, H. 2008. A Survey for the Endangered Prairie Lupine (*Lupinus lepidus*) in the Sooke Hills. Unpublished report prepared for Capital Regional District Parks. Victoria, BC.
- Ryan, M and G.W. Douglas. 1996. COSEWIC Status Report on the Prairie Lupine *Lupinus lepidus* var. *lepidus* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa.

For further information, contact the Garry Oak Ecosystems Recovery Team, or see the web site at: [www.goert.ca](http://www.goert.ca)

Line art reprinted with permission of the University of Washington Press. Photograph reprinted with permission of Carrina Maslovat.

© 2008

\*Refers to non-native species.

---

Species at Risk in Garry Oak and Associated Ecosystems in British Columbia