

Lotus pinnatus

English name bog birds-foot trefoil

Scientific name *Lotus pinnatus*

Family Fabaceae (Pea)

Other scientific names *Hosackia pinnata*

Risk status

BC: critically imperilled (S1); red-listed

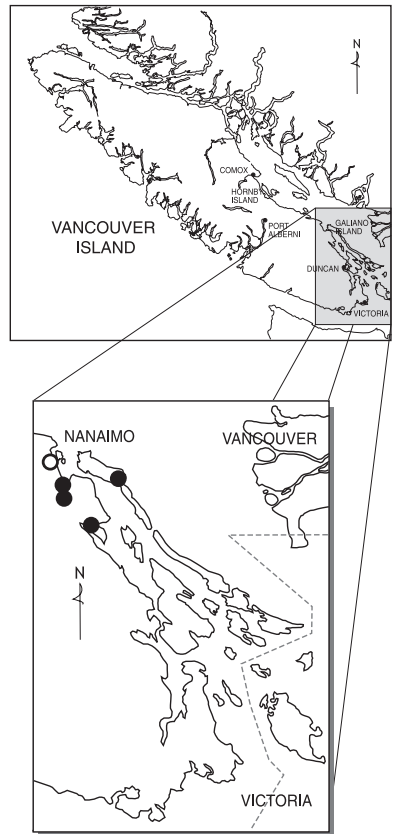
Canada: endangered (N1); COSEWIC: endangered

Global: apparently secure/secure (G4G5)

Elsewhere: California, Idaho, Oregon, and Washington – not ranked (SNR)

Range/Known distribution

Bog birds-foot trefoil occurs in western North America, extending northward from California through Oregon, Washington, and Idaho to British Columbia. In British Columbia, the species occurs near Nanaimo on Vancouver Island, and on Gabriola Island. Currently, in British Columbia there are **5** recently confirmed sites and **1** extirpated site.



Distribution of *Lotus pinnatus*

● recently confirmed sites

○ extirpated sites

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Field description

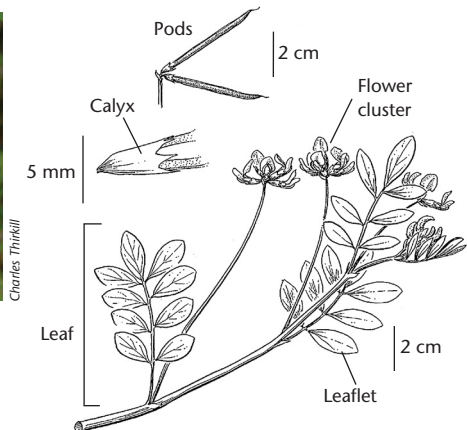
A **yellow and cream pea-like flowering** perennial herb that grows from a thick taproot and short rhizome (underground stem). The sprawling to upright, sometimes solitary stem is hollow, non-hairy or sparsely stiff-hairy, and it grows 15-60 cm long. The alternate leaves are composed of **5-9 elliptic to egg-shaped leaflets** that are arranged along each side of a stalk. The leaves are 4-8 cm long and the leaflets are 1-2.5 cm long. The **3-10 mm long stipules** (leaf-like structures at the base of the leaf stalks) are **thin and narrowly egg-shaped**. **Stalked clusters of flowers grow from the angles between the stems and leaves**. Each cluster has **3 to 12 pea-like flowers** that grow from a central point. A single, thin bract (leaf-like structure) may or may not occur on the stalk below the flower cluster. The two **lowermost fused petals (keel)** are **yellow**, except for the **cream-coloured side petals (wings)**. The flowers are 10-15 mm long. The 4-8 mm long calyx (green outer part of the flower) forms a 2-lipped tube with an upper pair of lance-triangular teeth, and three lower awl-shaped teeth, all much shorter than the tube. The **pods** are thin, 3-6 cm long, non-hairy, and have **5-20 seeds**.

IDENTIFICATION TIPS

This species is most easily found in May and June. There are several species that superficially resemble bog birds-foot trefoil. Vetches (*Vicia* spp.) are often present in similar habitats, but the leaves are smaller in size than those of bog birds-foot trefoil, and a tendrils represents the terminal leaflet in vetches. Seaside birds-foot trefoil (*Lotus formosissimus*) looks very similar to bog birds-foot trefoil except that the side petals of seaside birds-foot trefoil are pinkish-purple, while those of bog birds-foot trefoil are cream-coloured. The introduced birds-foot trefoil (*Lotus corniculatus*) occasionally grows in wet places, but it is usually found in drier, disturbed sites. It also has completely yellow flowers and its leaflets are smaller and more blunt than those of the other trefoils.



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Life history

Bog birds-foot trefoil is a perennial plant that begins to grow in late winter or early spring. Flowering generally occurs between May and the end of June. Flowers likely require cross-pollination to set seed. Honey bees (*Apis mellifera*), bumblebees (*Bombus* spp.) and leaf-cutting bees (*Megachile rotundata*) are potential pollinators for the species. Seed maturation and dispersal begins in July when drought conditions are prevalent, after which the stems die back to the roots and plants enter dormancy until the following year.

Habitat

Bog birds-foot trefoil grows in open, seasonally wet meadows, along the margins of creeks, or in seepages where underground water comes to the surface. The species appears to require contact with cool, seeping water during the growing and blooming period. It grows in sites with shallow (< 15 cm) soils, over gently sloping sandstone or conglomerate bedrock. The plant grows in association with yellow monkey-flower (*Mimulus guttatus*), sea blush (*Plectritis congesta*), white triteleia (*Triteleia hyacinthina*), small-leaved montia (*Montia parvifolia*), Scouler's popcornflower (*Plagiobothrys scouleri*), and American speedwell (*Veronica beccabunga* ssp. *americana*). Elevations: 40-150 m. Bog birds-foot trefoil occurs at the same locations as some red- and blue-listed plants including: dense spike-primrose (*Epilobium densiflorum* – red-listed), Henderson's checker-mallow (*Sidalcea hendersonii* – blue-listed), and Nuttall's quillwort (*Isoetes nuttallii* – blue-listed).

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Why the species is at risk

Habitat loss due to residential development is the greatest threat to the species in British Columbia. Little protection exists for the declining bog birds-foot trefoil populations because most occur on private lands. Recreational off-road vehicle use also contributes to habitat loss, fragmentation, and degradation. Various invasive species have the potential to reduce bog birds-foot trefoil population sizes through competitive exclusion. As a result of fire suppression, native shrubs and trees are also invading some habitats and, once established, would likely reduce habitat quality for bog birds-foot trefoil.

What you can do to help this species

Management practices should be tailored to the needs of the site. Potential management tools will depend on the specific circumstances and may require experimentation 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.**

Sites supporting populations of bog birds-foot trefoil should be protected from development, recreational vehicle traffic, filling with gravel or other materials, and changes in hydrology such as ditching and draining.

References

Donovan, M. 2004. COSEWIC status report on the bog bird's-foot trefoil *Lotus pinnatus* in Canada, in COSEWIC assessment and status report on the bog bird's-foot trefoil *Lotus pinnatus* 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.

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* Refers to non-native species.