English name Coastal Slender Cinquefoil

Other English name none

Scientific name *Potentilla gracilis* Douglas ex Hooker var. *gracilis*

Other scientific name *Potentilla alaskana* Rydberg, *P. blaschkeana* Turczaninow ex Lehmann.

Family *Rosaceae* (Rose Family)

Risk status

BC: imperilled (S2); red-listed

Canada: Threatened

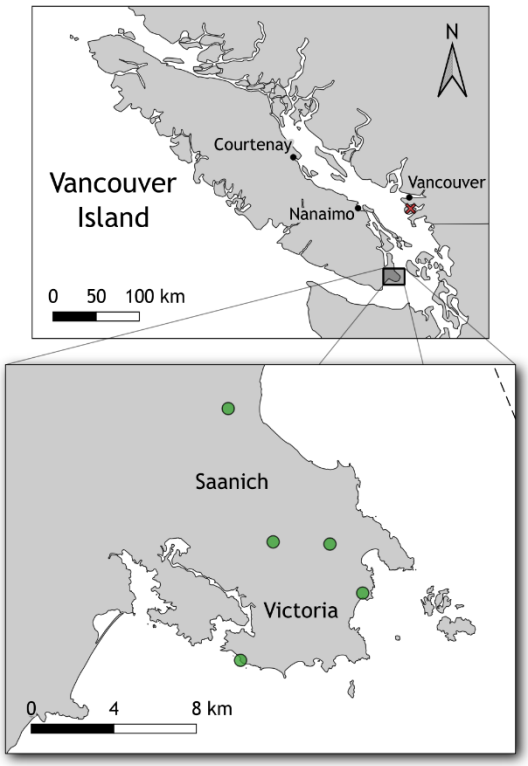
Global: not ranked (G5TNR)

Elsewhere: Yukon unknown (SU), Alaska, Oregon, Washington not ranked (SNR)

Taxonomic note As with many species of cinquefoil, the taxonomy of Slender Cinquefoil at the species level is complicated by the fact that the plants exhibit facultative pseudogamous agamospermy, which allows them to produce seed embryos asexually. In this process, the embryo in the seed is produced without being fertilized, although pollination (and self-pollination is often sufficient) is necessary to produce the seed's endosperm (the tissue in the seed that produces the nourishment necessary for the growing embryo). Slender Cinquefoil and its close relatives also hybridize freely. Unsurprisingly, this means that variation in Slender Cinquefoil is particularly messy; its varieties are rather poorly defined and difficult to differentiate. In the Flora of North America, Ertter and Reveal (2016) explained that in *Potentilla gracilis* as a whole, "taxonomic recognition is given to only the most distinctive extremes and that mostly at the varietal level". They observed that from southern Washington to southern Alaska the leaflets grow increasingly broad, which reflects a transition from Coastal Slender Cinquefoil (*P. gracilis var. gracilis*) to var. *fastigiata*. The British Columbia Conservation Data Centre has chosen to treat all *Potentilla gracilis* that occur in south coastal BC as var. *gracilis*.

Range/Known distribution In Canada, Coastal Slender Cinquefoil has been reported from six locations (five extant). The extant populations were all reported from the Victoria area, while the extirpated population was reported from Lulu Island, in the delta of the Fraser River.

In the United States, Ertter and Reveal (2016) described Coastal Slender Cinquefoil as "confined mainly to meadows west of the Cascade Mountains, from northwestern California northward through western Oregon to southern Washington".



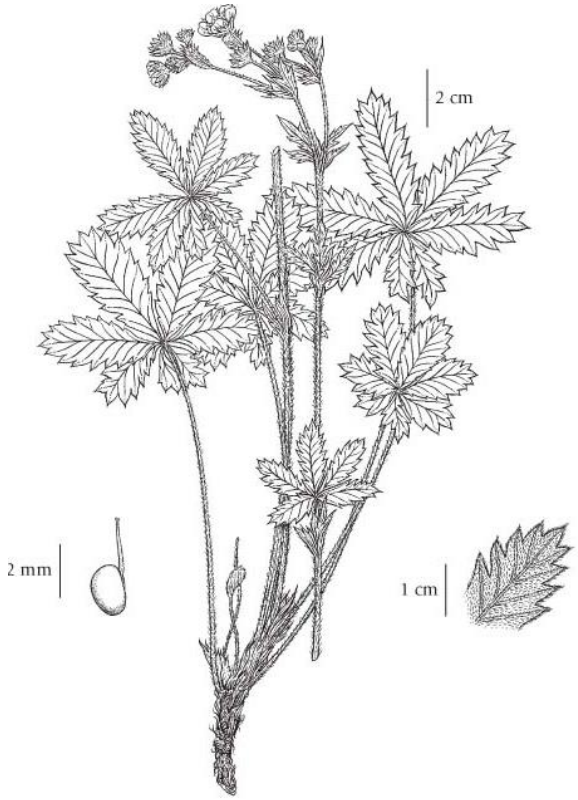
Distribution of *Potentilla gracilis var. gracilis*
Confirmed Sites
Extirpated Sites

Field description Coastal Slender Cinquefoil is a tall (4-10 dm) perennial arising from a robust, branched caudex (a semi-woody stem base). The leaves are divided into seven to nine leaflets arising from a common base. The basal leaves have long (10-25 cm) stalks and their leaflets are fairly narrow and 1.5-3.0 cm long. The bicolored leaflets are themselves divided almost to the midrib into 7-10 teeth per side. The upper surfaces of the leaflets are green, with sparse, straight hairs. In contract, the lower surfaces of the leaflets are white to grey with abundant short white hairs, as well as some longer hairs on the leaf veins. There are usually 1-2 stem leaves, which are smaller and have short stalks, or are attached directly to the stem.

The flowers are borne in a branched, bracted inflorescence, and are erect or ascending rather than spreading. Each flower has a floral cup (hypanthium) which is composed of the fused lower portions of the calyx, the corolla and the stamens and envelops the ovaries. The five densely hairy calyx lobes alternate with an outer series of similar, but smaller bracts. The seven to ten petals are bright yellow and divided for 5-12 mm, exceeding the calyx lobes. The twenty stamens are arranged in a ring inside the petals. The numerous 20-40 carpels are arranged in a central mass within the floral cup. The dry, single-seeded fruits (achenes) are 1.2-1.8 mm long.

Identification tips Within its range in Canada, most other low-elevation cinquefoils either have three leaflets per leaf or the leaflets are arranged pinnately rather than palmately. Avens (*Geum* spp.) are sometimes confused with cinquefoils but those species occurring within the Canadian range of Coastal Slender Cinquefoil also have pinnately compound leaves.

The two species most likely to be confused with Coastal Slender Cinquefoil are Sulphur Cinquefoil* (*P. recta*) and Norwegian Cinquefoil (*P. norvegica*), which both have yellow flowers and palmately-compound leaves. The flowers of Sulphur Cinquefoil are pale yellow rather than bright yellow, its leaves are mostly arranged along the stem rather than at the base, and its leaflets are green below. Norwegian Cinquefoil is an annual or biennial rather than a perennial, and its leaves are not whitish below.



Potentilla gracilis var. gracilis

Life history In Canada, the seeds of Coastal Slender Cinquefoil germinate in the spring and the plants take 2-3 years to reach flowering size. Shoot dormancy break dormancy in February and March. Most plants reached their peak size in May. It flowers in late May or June and (as noted above) it mostly produces seed embryos asexually, although it is capable of sexual reproduction. It does not produce rhizomes or runners, so it does not expand vegetatively. Above-ground shoots die back in July and August.

Habitat In Canada, Coastal Slender Cinquefoil occurs in Garry Oak woodlands and upland meadows. Native shrubs are rarely abundant. The native herbaceous layer is dominated by perennial forbs such as Pacific Sanicle (*Sanicula crassicaulis*), Barestem Desert-parsley (*Lomatium nudicaule*), Spring Gold (*L. utriculatum*), Great and Common Camas (*Camassia leichtlinii* and *C. quamash*), Yarrow (*Achillea millefolium*), and Field Chickweed (*Cerastium arvense*). Native bunchgrasses such as California Oatgrass (*Danthonia californica*) and Blue Wildrye (*Elymus glaucus*) are often present and occasionally abundant.

Why this species is at risk The greatest threats come from habitat loss and invasive species, while altered fire and hydrological regimes and trampling are significant secondary threats. Several populations may have been destroyed as properties were developed, without ever being reported. Most of the remaining populations are protected from habitat loss at present.

Several invasive species have become abundant in meadows supporting Coastal Slender Cinquefoil and compete with it for space, water, and nutrients. These include shrubs such as Scotch Broom* (*Cytisus scoparius*) and English Ivy* (*Hedera helix*, which forms creeping mats); a diverse assemblage of forbs including Hairy Cat's-ear* (*Hypochaeris radicata*), Ribwort Plantain* (*Plantago lanceolata*), Sheep Sorrel* (*Rumex acetosella*), Small Hop-clover* (*Trifolium dubium*), and Common Vetch* (*Vicia sativa*); and several grasses including Orchard Grass* (*Dactylis glomerata*), Common Velvet Grass* (*Holcus lanatus*), Kentucky Bluegrass* (*Poa pratensis*), Sweet Vernal Grass* (*Anthoxanthum odoratum*), Barren Fescue* (*Vulpia bromoides*), Soft Brome* (*Bromus hordeaceus*), Ripgut Brome* (*Bromus diandrus* ssp. *rigidus*), Barren Brome* (*Bromus sterilis*), Hedgehog Dogtail* (*Cynosurus echinatus*), and hairgrasses* (*Aira praecox* and *A. caryophyllea*).

Altered fire regimes allow forest ingrowth, shading out Coastal Slender Cinquefoil. Several populations have probably decreased, and some are nearing extirpation, because of trampling, which has caused direct damage as well as habitat degredation due to erosion.

What you can do to help this species Populations should be fenced where there is a threat of trampling. Invasive shrubs should be removed. Controlling herbaceous weeds is an expensive ongoing endeavour but should be considered where populations of Coastal Slender Cinquefoil are at risk of extirpation.

If the threats are significant, and if extensive surveys confirm that there are few viable populations in Canada, a COSEWIC status report should be prepared to provide a basis for its legal protection.

References

B.C. Conservation Data Centre. 2024. BC Species and Ecosystems Explorer. B.C. Minist. of Environ. Victoria, B.C. Available: https://a100.gov.bc.ca/pub/eswp/ (accessed Mar 15, 2024)

Ertter, B., and J.L. Reveal. 2016. Potentilla. In: Flora of North America Editorial Committee, eds. 1993+. Flora of North America North of Mexico [Online]. 25+ vols. New York and Oxford. Vol. 9. http://floranorthamerica.org/Potentilla. Accessed March 23, 2024.

For further information, contact the Garry Oak Ecosystems Recovery Team, or see the web site at: www.goert.ca

*Refers to non-native species