

Sabulina pusilla – Dwarf Sandwort

English name: Dwarf Sandwort

Other English name: Annual Sandwort, Dwarf Stitchwort

Scientific name: *Sabulina pusilla* (S. Watson) Dillenb. & Kadereit

Other Scientific names: *Minuartia pusilla* var. *pusilla* (S. Watson) Mattf.;

Arenaria pusilla S. Watson; *Alsinopsis pusilla* (S. Watson) A. Heller

Family: *Caryophyllaceae* (Chickweed)

Risk status

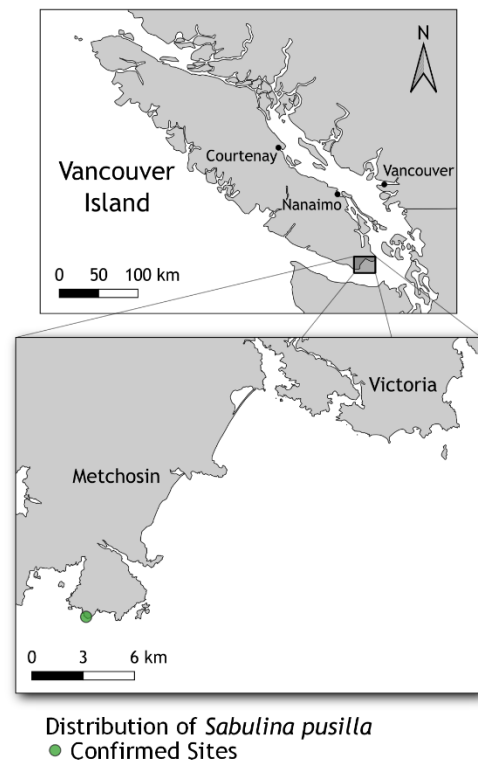
BC: critically imperilled (S1); red-listed

Canada: Endangered

Global: secure (G4)

Elsewhere: Washington, Utah critically imperilled (S1); Nevada imperilled (S2); California, Oregon, Idaho – unranked (SNR)

Range/Known distribution: Dwarf Sandwort is endemic to western North America. It occurs as a disjunct at one Canadian location, at Rocky Point on southern Vancouver Island. The next nearest populations occur in the interior Willamette Valley of Oregon and between the Coastal Ranges and the Rocky Mountains in Washington, Oregon, Idaho, and Nevada. In those areas it characteristically occurs in open, dry soil of Big Sagebrush (*Artemisia tridentata*) and Ponderosa Pine (*Pinus ponderosa*). Dwarf Sandwort is widespread in California, occurring both along the coast and in many mountain ranges, although it appears to be absent at lower elevations in inland California.



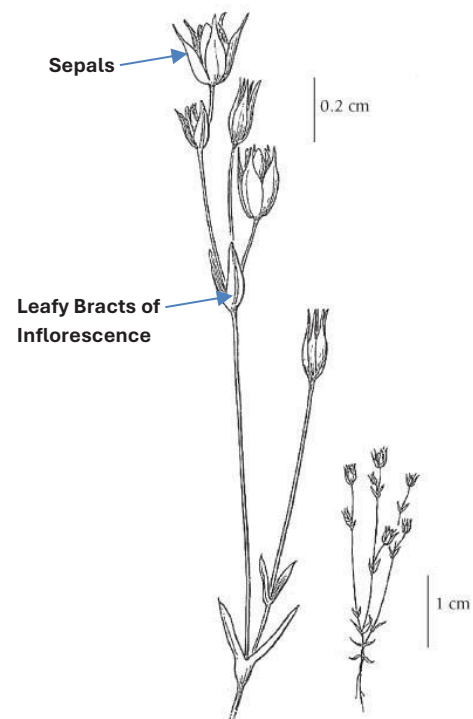
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Field description: Dwarf Sandwort is an herbaceous annual from a weak taproot. The smooth, hairless stems (2-5 cm tall) are erect, simple or branched, and glaucous (grayish or bluish green). The basal leaves and those on the lower stems are linear in shape, 2-4 mm long and 0.5 mm wide. They are opposite, smooth, and hairless and single-nerved. The few upper leaves are similar but slightly smaller. Larger plants may produce several flowers in an open, leafy-bracted inflorescence that can comprise 80% of the overall height of the plant but at Rocky Point the plants are small and few-flowered. The flower petals (sometimes reduced or absent) are elliptical in shape and 1-2 mm long. The sepals are 2-3 mm long, lance-shaped, 3-nerved, and have long to abruptly sharp points. The fruits are egg-shaped 3-valved capsules, 1-2 mm in length, and contain tiny brown and pimpled seeds about 0.3 mm in size.

Identification tips: Slender Sandwort (*Sabulina macra*) has a similar appearance and occurs in much the same habitat as Dwarf Sandwort, at least on Vancouver Island. The two can be easily distinguished, however, because Slender Sandwort has a conspicuously glandular-hairy stem while the stem of Dwarf Sandwort lacks hairs. Dwarf Sandwort's annual life cycle, and long-pointed to sharply-pointed sepals in combination with glabrous (smooth and hairless) stems distinguish it from most other sandwort species found on Vancouver Island. Dwarf Sandwort may be confused with the related Shining Sandwort (*Stellaria nitens*), but petals of the latter are cleft, and its sepals possess broad, membranous margins. Dwarf Sandwort superficially resembles Upright Chickweed* (*Moenchia erecta*) which may account for unsubstantiated records of the latter from Uplands Park, but Upright Chickweed* has flowers with four sepals, four petals and four anthers while the flower parts of Dwarf Sandwort occur in groups of five.



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Life history: In Canada, Dwarf Sandwort likely germinates in January or February. Flowers develop from April to June and seeds are produced in spring or summer. Flowering is likely controlled by temperature rather than by photoperiod. Studies elsewhere have shown that the flowers of Dwarf sandwort lack nectaries and petals are sometimes reduced or absent, which suggests it is primarily self-pollinated. Seeds of related sandwort species require an after-ripening period of high summer temperatures, but it is not known whether Dwarf Sandwort has similar requirements. Dwarf Sandwort occurs in a muddy area frequented by gulls, so its seeds may be dispersed seeds by birds walking in muddy areas as is the case with the similar Oneflower Stitchwort (*Sabulina uniflora*).

Habitat: In British Columbia, Dwarf Sandwort occurs on one flat-topped rocky bluff in the Coastal Douglas-fir zone, about 5 m above sea level. The soil at this site is shallow, nutrient poor, and remains saturated in winter and early spring but dries out so greatly in late spring that the vegetation rapidly desiccates. The vegetation at this site is a low turf with Barren Fescue (*Vulpia bromoides*), Beach Bluegrass (*Poa confinis*), Blinks (*Montia fontana*), cudweed (*Gnaphalium* species), Dwarf Owl-clover (*Triphysaria pusilla*), Early Hairgrass* (*Aira praecox*), Erect Pygmyweed (*Crassula connata*), Few-flowered Shootingstar (*Primula pulchella*), Hairy Cat's-ear* (*Hypochaeris radicata*), Rattail Fescue (*Vulpia myuros*), Red Thread-moss (*Imbriobryum miniatum*), Ribwort Plantain* (*Plantago lanceolata*), Scouler's popcorn flower (*Plagiobothrys scouleri*), Slender Plantain (*Plantago elongata*), Small-leaved Bentgrass (*Agrostis microphylla*), Sticky Chickweed* (*Cerastium glomeratum*), and Thrift (*Armeria maritima*).

Why the species is at risk: There is only one recorded occurrence of this species in British Columbia, measuring only a few square metres in extent. A single small disturbance could destroy the site. The population is also at risk of collapse due to climate changes which alter the soil moisture regime at this site. The presence of invasive species within the subpopulation presents a moderate threat at present but as the diversity of invasive species in the area increases that threat may increase.

What you can do to help this species: The Canada Department of National Defence currently restricts access to the area where Dwarf Sandwort occurs, and periodically monitors the population. This limits the likelihood of trampling damage. The very small size and limited extent of the sole Canadian population make it highly susceptible to stochastic events. This could be mitigated by collecting a small amount of seed with which to establish a garden population and by harvesting seed from that population to reserve in case the naturally-occurring population is lost.

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References

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- Penny, J.L. and B. Costanzo. 2004. COSEWIC status report on the dwarf sandwort *Minuartia pusilla* in Canada, in COSEWIC assessment and status report on the dwarf sandwort *Minuartia pusilla* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. 1-17 pp.
- Wyatt, R. 1984. The evolution of self-pollination in granite outcrop species of *Arenaria* (Caryophyllaceae). I. Morphological correlates. *Evol.* 38(4):804-816

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.