English name: Branched Clover

Other English name: Macrae's Clover

Scientific name: *Trifolium dichotomum* Hook. & Arn.

Other scientific name: *Trifolium macraei* H.&A. in Hook. var. *dichotomum* (H. & A.) Brew. & Wats., *Trifolium albopurpureum* Torr. & A. Gray var. *dichotomum* (Hook. & Arn.) Isely

Family: *Fabaceae* (Pea Family)

Risk status

BC: imperilled (S2); red-listed

Canada: N2

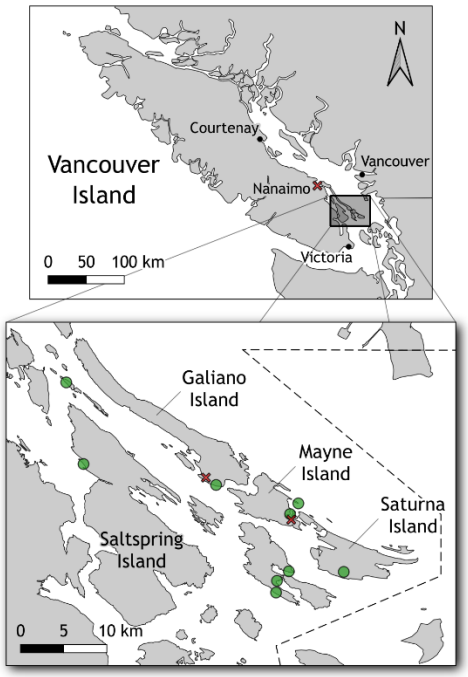
Global: secure (G4?)

Elsewhere: Washington, Oregon, California not ranked (SNR),

Range/Known distribution: In Canada, Macrae's Clover is known from twelve locations, eight extant, from the Nanaimo area and the southern Gulf Islands. It is also known from the nearby San Juan Islands of Washington State.

There is a gap in distribution between the San Juan Islands and the central Willamette Valley of Oregon. From there, it ranges south in the Cascade and Coast Mountains of Oregon to central California.

It was also collected from the waste area of a nineteenth-century wool carding factory in Massachusetts.

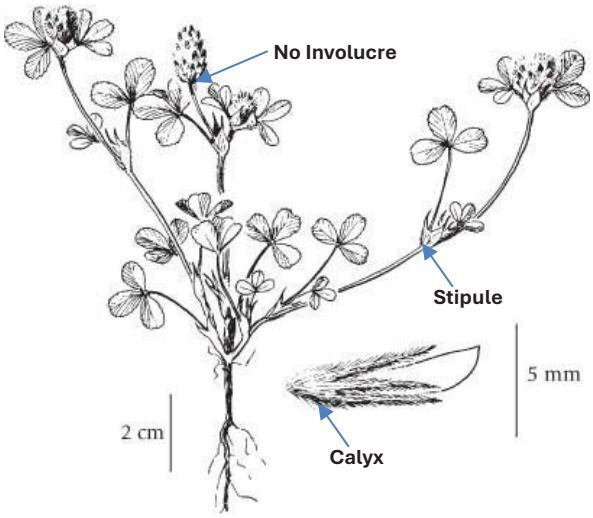


Distribution of *Trifolium dichotomum*
● Confirmed Sites
✖ Extirpated Sites

Field description: Branched Clover is a hairy annual herb that produces one or more trailing to erect stems, 10-30 cm tall. It has alternate, palmately-compound leaves composed of three 1-2 cm long, oblanceolate leaflets that have coarse teeth on their margins. The leaves have 5-10 mm long, toothed, long-pointed stipules. The inflorescence is composed of pairs of dense heads of 10-60 flowers. The heads lack involucres. The densely-hairy calyx is 5-8 mm long and its slender teeth are much longer than the veined calyx tube. The corolla is pea-like and purple (or occasionally white or pink). The pods are shorter than the flowers and contain a single seed.

Identification tips: Within its range in Canada, there are six other annual clovers that lack involucral bracts below their heads. Small Hop-clover* (*Trifolium dubium*), Low Hop-clover* (*T. campestre*) and Yellow Clover* (*T. aureum*) have yellow flowers and their calyces are glabrous, or pubescent only in the teeth. Crimson Clover* (*T. incarnatum*) has large (12-15 mm) crimson flowers. Knotted Clover* (T. *striatum*) has a very-prominently 10-nerved calyx tube, and its calyx teeth are shorter than the lobe. Hare's-foot Clover* (*T. arvense*) has long heads with striking strigose-plumose calyces which are the inspiration for its English name.

Trifolium dichotomum



Life history: Branched Clover is an annual that relies upon seed for reproduction. It flowers in late April and throughout May and fruits in June before dying in the summer drought. Like most clovers, it is probably capable of self-pollination but is generally cross-pollinated by insects – likely bees. And like other clovers its roots support nodules containing nitrogen-fixing *Rhizobium* bacteria.

Habitat: In Canada, Branched Clover generally occurs on steep, eroding slopes composed of loose, shattered mudstone, thin, or flat fragments of sandstone and shale. The vegetation on these slopes is low, and usually open. Native species include False Box (*Paxistima myrsinites*), Western Trumpet-flower (*Lonicera ciliosa*), June Grass (*Koeleria macrantha*), California Oatgrass (*Danthonia californica*), Lemmon's Needlegrass (*Achnatherum lemmonii* var. *lemmonii*), Beach Red Fescue (*Festuca rubra* ssp. *pruinosa*), Large-flowered Blue-eyed Mary (*Collinsia grandiflora*), Small-flowered Blue-eyed Mary (*C. parviflora*), Beach Pea (*Lathyrus japonicus*), Small-headed Clover (*Trifolium microcephalum*), Tomcat Clover (*T. willdenovii*), Grassland Saxifrage (*Micranthes integrifolia*), and Wallace's Selaginella (*Selaginella wallacei*).

Why this species is at risk: In Canada, threats to Branched Clover have not been addressed in detail, but it likely suffers from competition with many invasive species that grow within its populations, including Ripgut Brome* (*Bromus diandra* ssp. *rigidus*), Barren Brome* (*B. sterilis*), Annual Fescue* (*Vulpia* sp.), and Silver Hairgrass* (*Aira caryophyllea*).

Development may have destroyed much of the suitable habitat for Branched Clover, especially since oceanfront is highly desirable for residential sites. Most of the remaining populations occur on private land and may be threatened by road building and construction. Recreational impacts in steep bluff areas may cause trampling, soil disturbance and erosion. Fire suppression may have altered habitat and increased fuel loading, increasing the potential harm caused by future fires. The impact of grazing is unclear: Branched Clover on Saturna Island may benefit from reduced competition since feral goats graze invasive species.

What you can do to help this species: Further surveys would help clarify the distribution and abundance of Branched Clover and assess the level of threats it faces, as well as actions that can be taken to address these threats. 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 in order 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)

Costanzo, B. 2002. Stewardship Account for Branched Indian Clover Trifolium dichotomum. Prepared for the BC Conservation Data Centre and the Garry Oak Ecosystems Recovery Team. Sponsored by the Habitat Stewardship Program, Government of Canada, and National Conservancy of Canada. Victoria BC

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

*Refers to non-native species