

Castilleja victoriae – Victoria’s Owl-clover

English name: Victoria’s Owl-clover

Other English names: N/A

Scientific name: *Castilleja victoriae* Fairbarns and Egger

Other scientific names: N/A

Family: *Orobanchaceae* (Broomrape Family)

Risk status

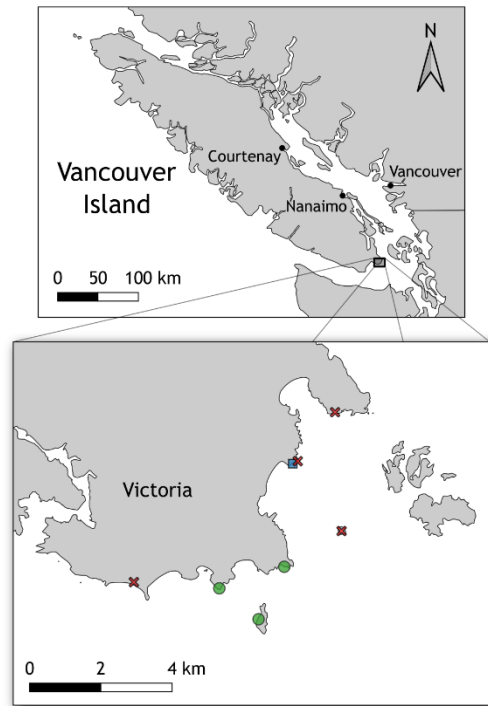
BC: critically imperilled (S1); red-listed

Canada: Endangered

Global: critically imperilled (G4)

Elsewhere: Washington critically imperilled (S1)

Range/Known distribution: Victoria’s Owl-clover is endemic to the Victoria area and the San Juan Islands in Washington State. Only three of the Canadian locations have naturally-occurring populations although a fourth population has been re-established at Uplands Park/Cattle Point.



Distribution of *Castilleja victoriae*
● Confirmed Sites
■ Experimental Sites
× Extirpated Sites

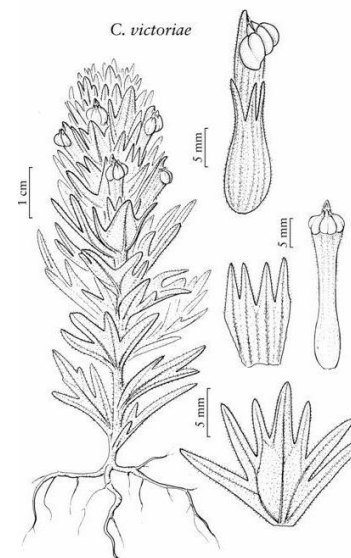
Field description: Victoria’s Owl-clover is a taprooted annual, 0.2–2.0 dm tall. Most plants are unbranched or obscurely branched but larger plants often bear ascending branches below. The herbage is pubescent throughout with a mix of short gland-tipped hairs and longer soft hairs. The surface of leaves and bracts is often slightly sticky. There are no basal leaves. The stem leaves are alternate and generally reddish-purple but the upper leaves and all of the floral bracts may be green at the stem and purplish at the tip, or occasionally green throughout. The leaves are generally 10–20 mm long. The lower leaves are narrowly lance-shaped and entire- to narrowly egg-shaped and slightly lobed, often withering by the time the plant is in flower. The leaves are progressively wider and more deeply 3 to 5-lobed towards the top of the stem, eventually grading into the floral bracts. These lobes are 8–12 mm long and 1–2 mm wide at mid-length and much narrower than the mid-blade.

The flowers are borne in prominently bracted spikes. The calyx is approximately 10 mm long, deeply two-cleft into 5–6 mm long primary lobes and again divided into two acute secondary lobes 3–4 mm in length. The calyx bears a mix of gland-tipped and glandless hairs similar to those of the foliage. The calyx lobes are purple-tipped or greenish throughout. The corolla is two-lipped, club-shaped and approximately 10–18 mm long. The lower lip is three-lobed, somewhat expanded, approximately 4 mm long and hairy. The lower lip is lemon-yellow with inconspicuous whitish teeth 0.5–0.8 mm long. The upper lip bears a long, straight beak that surpasses the lower lip by 0.4–0.8 mm. The beak is white (sometimes with purple markings) and hairy. Its lobes are united to the tip and enclose the anthers. There are four stamens with 4.5–6.0 mm long filaments attached near the summit of the corolla tube. The fruits are brown, 2-celled capsules that split at the tip when the seeds are ripe. Each capsule bears 30–70 small brown seeds with a sculptured seed coat.

Identification tips: The only other owl-clovers and paintbrushes with yellow flowers in Garry Oak and associated ecosystems are perennials. Victoria’s Owl-clover resembles Paintbrush Owl-clover (*Castilleja ambigua*), with which it was confused, but Paintbrush Owl-clover is a species of salt marshes, and its Canadian populations all occur on the west coast of Vancouver Island. Victoria’s Owl-clover can be distinguished from Paintbrush Owl-clover by its compact, generally unbranched form, its largely uniform “root-beer” brown herbage, the absence of a pale marginal band on its floral bracts and its distinctively bicoloured, unspotted corolla.



Castilleja victoriae



Life history: Victoria's Owl-clover is an annual plant. Its seeds germinate in April and May, and it flowers in May or June. It is an outbreeder, pollinated by bumblebees and other insects. The seed capsules mature in June. As the summer drought develops the vernal seeps and pools where it occurs dry out and by late June most plants have died, and the seed pods have split open. The seeds gradually shake out of the dehisced pods, and by late summer the pods are usually empty. Victoria's Owl-clover is an outbreeder, pollinated by bumblebees and perhaps other insects.

Victoria's Owl-clover is a hemiparasite (root parasite): it forms rudimentary root systems which attach to the roots of other species and form attachments to the host plant's xylem system, extracting water and mineral nutrients. The green leaves of Victoria's Owl-clover photosynthesize, providing it with all the metabolites it needs to grow and mature.

Habitat: Victoria's Owl-clover is restricted to vernal pools and seeps within 50 m of the ocean. These habitats remain saturated for much of the late autumn, winter and spring and dry out in late spring or early summer. Only a few such seeps and pools remain moist enough late into spring to support Victoria's Owl-clover. By mid-summer the soil in these habitats is so dry that no woody species can survive, hence the vegetation is dominated by scattered, drought-tolerant native perennials such as Thrift (*Armeria maritima*), Gumweed (*Grindelia*), Self-heal (*Prunella vulgaris* ssp. *lanceolata*), California Oatgrass (*Danthonia californica*), Tufted Hairgrass (*Deschampsia caespitosa*), Beach Red Fescue (*Festuca rubra* ssp. *pruinosa*), and Baltic Rush (*Juncus balticus*); and native annuals such as Spanish-clover (*Acmispon americanum*), Small-flowered Birds-foot trefoil (*Acmispon parviflora*), Slender Plantain (*Plantago elongata*), Blinks (*Montia fontana*) and Yellow Monkeyflower (*Erythranthe guttata*). A number of other rare species often occur in the same seeps and pools favoured by Victoria's Owl-clover, including Macoun's Meadowfoam (*Limnanthes macounii*), Seaside Bird's-foot Lotus (*Hosackia gracilis*), Rosy Owl-clover (*Orthocarpus bracteosus*), and Tall Woollyheads (*Psilocarphus elatior*).

Why the species is at risk: In the past, the greatest threat to known populations of Victoria's Owl-clover was habitat loss to residential and recreational development. Over 95% of Garry Oak ecosystems have been lost since European settlement began in the 19th century. Given the preference Victoria's Owl-clover shows for shoreline areas, habitat loss for the species was probably even greater. Because it is a small, innocuous plant almost all of these populations likely disappeared without notice. The remaining populations are currently threatened by trampling (by people, pets, and geese), and competition with invasive species for soil, nutrients, and germination sites.

Several invasive species have become common in habitat occupied by Victoria's Owl-clover, including Hairy Cat's-ear* (*Hypochaeris radicata*), Smooth Cat's-ear* (*H. glabra*), Common Pearlwort* (*Sagina apetala*), Early Hairgrass* (*Aira praecox*), and Smooth Brome* (*Bromus hordeaceus*).

Recreational activities that lead to trampling, changes in hydrology, and erosion also threaten Victoria's Owl-clover.

The greatest threat facing Victoria’s Owl-clover is climate change. The seeps and moist depressions where it occurs will dry out more quickly as summer droughts arrive earlier and last longer. While other areas - currently too wet for Victoria’s Owl-clover - may become more suitable, its weak powers of dispersal may prevent it from reaching them in time.

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 should 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 protection of populations from trampling through the use of fences and the control of non-native, non-migratory Canada Geese. Little can be done to control the invasive species which occur in the same vernal pools and seeps where Victoria’s Owl-clover occurs, but invasive woody species such as Scotch Broom* (*Cytisus scoparius*) and English Ivy* (*Hedera helix*) can be removed from the periphery of these habitats to prevent it from being shaded out. Experiments should be conducted to determine how replacement populations can be established to compensate for those lost, particularly to climate change.

References

- Fairbarns, M. 2005. Demographic and Phenological Patterns of *Castilleja ambigua* Paintbrush Owl-Clover). Unpublished report for Parks Canada Agency. 33 pp.
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- COSEWIC. 2010. COSEWIC assessment and status report on the Victoria’s Owl-clover *Castilleja victoriae* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. ix + 20 pp.
- Environment and Climate Change Canada. 2017. Recovery Strategy for the Victoria’s Owl-clover (*Castilleja victoriae*) in Canada. Species at Risk Act Recovery Strategy Series. Environment and Climate Change Canada, Ottawa. 2 parts, 12 pp. + 19 pp.

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

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