

Ranunculus californicus – California Buttercup

English name: California Buttercup

Other English name: N/A

Scientific name: *Ranunculus californicus* Benth.

Other scientific name: N/A

Family: *Ranunculaceae* (Buttercup Family)

Risk status

BC: imperilled (S2); red-listed

Canada: Endangered

Global: secure (G5)

Elsewhere: Washington critically imperilled (S1), Oregon, California not ranked (SNR)

Taxonomic and biogeographic notes: California Buttercup produces hybrids with Western Buttercup (*Ranunculus occidentalis*). The California Buttercup treatment in Flora North America suggests that California Buttercup was introduced to Canada via the marine trade between San Francisco and Victoria. Much of the evidence used to support this hypothesis is weak and fails to recognize that California Buttercup does not occur on Vancouver Island itself, instead being restricted to a small group of islands that have milder winters and drier summers than even Victoria itself.

The author correctly observes that there was extensive collecting in and around Victoria and states that California Buttercup was not reported from the area until 1978. He seems unaware that there was very little collecting in the islands where California Buttercup now occurs until the latter part of the 20th century, and the earliest collection was made during one of the early trips to the Trial Islands, in 1951. Thus, the lack of early reports of California Buttercup is not evidence of a recent introduction.

The author also claims that many other “California species” were introduced to the Victoria area but does not mention which species, or what evidence suggests they were introduced. It seems likely that many of these “California species” are actually among the suite of regionally rare taxa that are restricted to, or at least most abundant on the same sunny, dry islands as California Buttercup. These islands were rarely visited until the late 20th century and thus would be the least likely place for introductions to occur.

Finally, the author states that rates of introgression between California Buttercup and Western Buttercup are so great that the latter is unlikely to persist for long. In fact, California Buttercup is much more common than Western Buttercup on the islands where it occurs and shows little evidence of introgression.

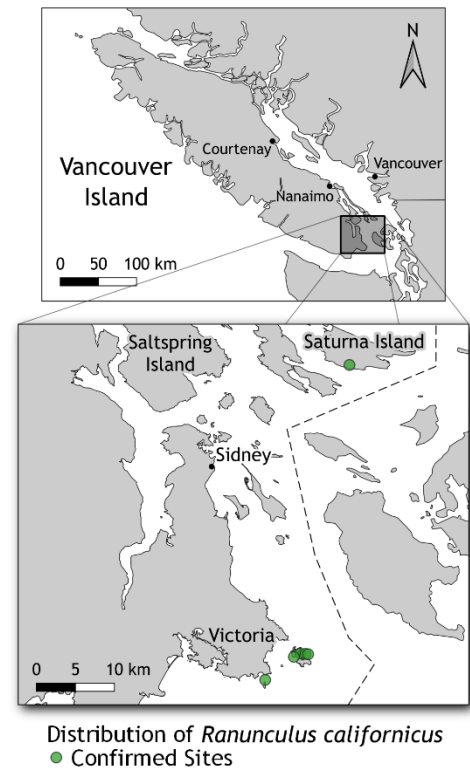
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It seems much more likely that these small islands are a contemporary refugium for species that require mild winters and warm dry summers, conditions that no longer prevail farther south in the Puget Trough or along the outer coast of the Pacific Northwest. These conditions were much more widespread during the early to mid Holocene, when many “California species” may have occurred far north of their current range.

By comparing the mitochondrial DNA of Canadian populations of California Buttercup to those of populations in its main range, it may be possible to estimate the number of generations since the two lineages diverged. Until that has been done, the simplest hypothesis is that California Buttercups in Canada are a relictual, rather than recently introduced.

Range/Known distribution: In Canada, California Buttercup has been reported from six or seven locations in Canada; all but one of them are on islands offshore of Oak Bay, on the outskirts of Victoria. Flowers resembling those of Western Buttercup, but with 6-10 petals, have been reported from many locations in the Victoria area. These plants generally lack the short, stout achene beak characteristic of California Buttercup but some plants along the shores of Oak Bay and Greater Trial Island do seem to be intermediate between the two species both in corolla and achene characters. The nearest American records of California Buttercup are from six locations in the San Juan Islands, near the Canadian populations.

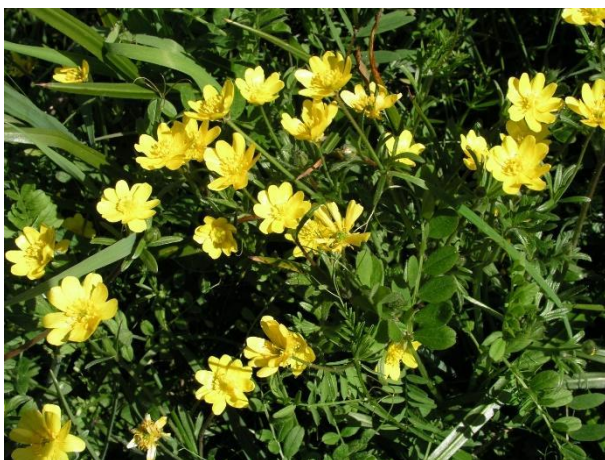
The main range of California Buttercup extends from near Portland Oregon south along the Pacific Coast and the Willamette Valley, to near the California border. It is found across much of north and central California and then south into Baja California.



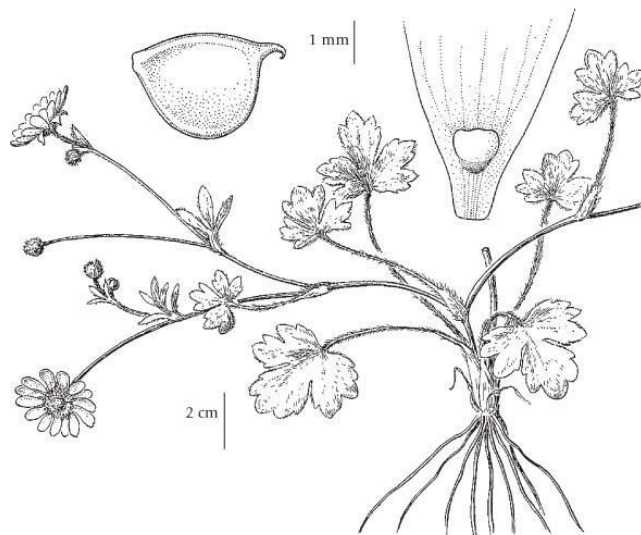
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Field description: California Buttercup is a perennial herbaceous plant with a fibrous root that produces one or more erect or spreading stems, 10-50 cm tall, which do not root nodally. The basal leaves have long petioles and lobed (sometimes twice-lobed) blades. The cauline leaves are progressively shorter, less divided, and have shorter petioles farther up the stem, grading into simple or once-divided bracts in the inflorescence. The foliage is lightly to densely pubescent with appressed or spreading hairs. The inflorescence is an open raceme. The flowers have five spreading to reflexed, hairy sepals and usually have 10-16 bright yellow petals that are 10-15 mm long. There are 40-80 stamens within the petals, and 15-40 achenes in the centre of the flower. The achenes are 2.0-2.5 mm long, with flattened, stout beaks that are 0.5-1.0 mm long and curved at the tip.

Identification tips: within its range in Canada, California Buttercup is instantly identifiable in flower because it has 10 or more petals, the petals are showy and considerably longer than the sepals, it has divided leaves, and it does not root nodally. Western Buttercup has fewer petals (usually 5 but sometimes 6-9), and achenes with longer (0.7-2.0 mm), barely curved beaks.



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Life history: In Canada, California Buttercup seeds germinate in April. The plants probably take 2-3 years to reach flowering size. Established plants may break dormancy with the return of the autumn rains. Hard cold snaps may cause a lot of mortality. Plants flower in April and early May. Bees are the primary pollinators, although thrips and flies pollinate other buttercup species. Most achenes probably fall close to the parent plant, soon after they ripen. A few achenes may be dispersed by animals, either if their achene beaks hook into fur or feathers or if the achene is caught up in mud that attaches to the feet or feathers of migrating birds.

Habitat: In Canada, California Buttercup is restricted to meadows and woodlands on a few small islands near Victoria. Shrubs, including Tall Oregon-grape (*Berberis aquifolium*), Nootka Rose (*Rosa nutkana*) if present, are usually sparse and stunted. The native herbaceous layer is dominated by perennial forbs such as Pacific Sanicle (*Sanicula crassicaulis*), Barestem Desert-parsley (*Lomatium nudicaule*), Common Strawberry (*Fragaria virginiana*), Great Camas (*Camassia leichtlinii*), Yarrow (*Achillea millefolium*), and Field Chickweed (*Cerastium arvense*). Native bunchgrasses such as Tufted Hairgrass (*Deschampsia cespitosa*) and Beach Red Fescue (*Festuca rubra* ssp. *pruinosa*) are often present and occasionally abundant.

Why this species is at risk: The greatest threat comes from invasive species. These include Scotch Broom* (*Cytisus scoparius*), English Ivy* (*Hedera helix*), Himalayan Blackberry* (*Rubus armeniacus*), and Spurge Laurel* (*Daphne laureola*). Invasive grasses including Orchard Grass* (*Dactylis glomerata*), Common Velvet Grass* (*Holcus lanatus*), Barren Brome* (*Bromus sterilis*), Kentucky Bluegrass* (*Poa pratensis*), and Tall Oatgrass* (*Arrhenatherum elatius*) pose a significant threat. Invasive forbs tend to be less of a threat although English Daisy* (*Bellis perennis*), Hairy Cat's-ear* (*Hypochaeris radicata*), Sheep Sorrel* (*Rumex acetosella*), Common Vetch* (*Vicia sativa*), and Ribwort Plantain* (*Plantago lanceolata*) are often present and sometimes abundant.

Some populations are threatened by trampling by people and dogs and most populations are threatened with trampling and feeding by non-native Canada Geese.

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 California Buttercup are at risk of extirpation.

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References

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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