

Ranunculus alismifolius

English name Water-plantain Buttercup

Scientific name *Ranunculus alismifolius*

Family Ranunculaceae (Buttercup)

Other English names Plantainleaf Buttercup, Dwarf Buttercup

Other scientific names *Ranunculus alismaefolius* (invalid)

Risk status

BC: critically imperilled (S1); Red-listed; Conservation Framework Highest Priority – 1 (Goal 3, Maintain BC diversity)

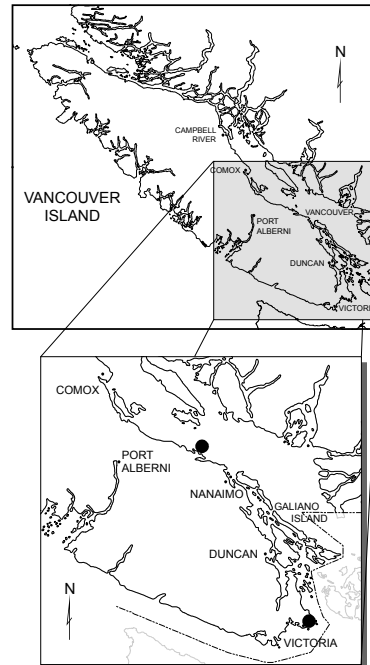
Canada: critically imperilled (N1); COSEWIC – Endangered (2009)

Global: secure (G5)

Elsewhere: California, Colorado, District of Columbia, Idaho, Montana, Nevada, Oregon, Utah, Washington, Wyoming – reported (SNR)

Range/Known distribution

Water-plantain Buttercup occurs throughout much of western North America from British Columbia south to Baja California (Mexico), east to Montana, Wyoming, and Colorado. In Canada, Water-plantain Buttercup is now found at only two coastal locations, in southwest British Columbia. The two extant populations are approximately 120 km apart, one in Uplands Park (Oak Bay) and the other on Ballenas Island (near NanOOSE Bay). No other populations have been reported from Canada although most of the suitable habitat was converted for agricultural or residential use before botanical surveys could be conducted.



Distribution of *Ranunculus alismifolius*
● Recently confirmed sites



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Field description

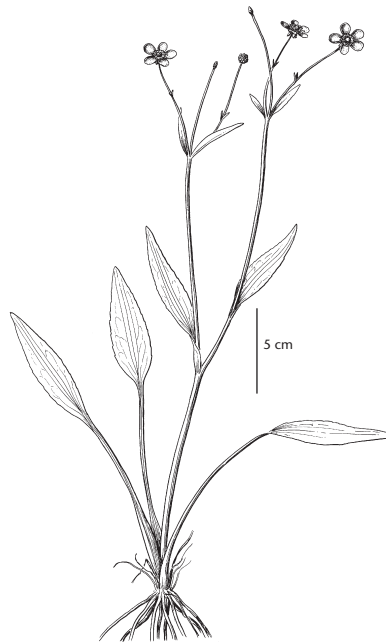
Water-plantain Buttercup is a perennial herb growing up to 60 cm tall. It produces one to several erect stems from a common base, and the stems are **not capable of rooting at the nodes** unlike in some species of buttercups. The upper portions of the stems are usually branched. The leaves are **at least twice as long (to 14 cm) as they are wide**, broadest above the base and narrowed to the tip. The leaf margins are either entire or weakly toothed, but **never deeply lobed**. The lower leaves are borne on long, narrow stalks; leaves on the middle of the stem are borne on shorter stalks; and leaves on the upper part of the stem are without stalks. Flowers have bright yellow petals like those of most buttercups. There are usually 5 petals per flower, each 5-10 mm long, but some flowers may have up to 10 petals. The fruit (achene) is dry and contains a single seed. It is smooth, hairless, and 1.5-2.5 mm long, with a straight terminal beak about 1 mm long.

IDENTIFICATION TIPS

There are numerous species of buttercup in southwestern British Columbia but Lesser Spearwort (*Ranunculus flammula*) is the only other species that might be confused with Water-plantain Buttercup. Lesser Spearwort has arching to trailing stems which root at the nodes, and tends to have smaller, narrower leaves.



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Life history

Water-plantain Buttercup's shoots die back in the summer drought and break dormancy in early March when soil begins to warm up in the vernal pools where they occur. The first floral buds can be detected by late April and flowering peaks in mid-May. Green fruits develop in May and into early June, and ripe, undehisced (unopened) fruit are usually present by mid-June. By mid- to late June the soil has dried out, the shoots have begun to die back, and the seeds are shed.

The achenes are probably dispersed in the same manner as those of other buttercup species, by gravity, wind, and water, in animal dung, and on the fur and feathers of animals. The seeds lack structures to allow them to float in the air so most seeds are only dispersed short distances by gravity and wind. This is particularly true of the BC populations where either the plants are too low to allow wind much time to catch the seeds as they fall or the plants grow in areas sheltered from wind. The coats of the achenes resist wetting, so surface tension may allow fallen achenes to float to new sites but this only occurs over short distances in Canadian populations because they are restricted to small, enclosed basins. Water-plantain Buttercup achenes do not appear to be dispersed over long distances very often. Seed heads are occasionally eaten by deer, and the achenes may survive passage through the gut. The population on Ballenas Island was probably established from seed carried on the feathers or feet of birds.

Water-plantain Buttercup population sizes do not appear to fluctuate dramatically between years.

Habitat

In Canada, Water-plantain Buttercup occurs in low elevation, coastal vernal pools associated with Garry Oak ecosystems. Coastal vernal pools are free of woody vegetation because they are saturated for several months between November and April and experience strong summer moisture deficits. The vernal pools where Water-plantain Buttercup occurs in Canada differ greatly in the composition of associated plant species so it is not possible to generalize about what vegetation types it prefers.

Why this species is at risk

Both Water-plantain Buttercup populations are very small and occupy tiny areas of habitat. As a result, they are prone to being lost as a result of invasive plants or chance events. The amount of potential habitat on southeast Vancouver Island and the adjacent offshore islands has declined greatly over the past century as vernal pools have been destroyed during the development of land for residential and recreational use. The sites supporting the two remaining Canadian populations of Water-plantain Buttercup are unlikely to be developed in the foreseeable future but there is an ongoing decline in the extent of sites suitable for the establishment of new populations. One of the populations of Water-plantain Buttercup occurs in a heavily-used municipal park, primarily in an area of intersecting walking trails where the plants are regularly trampled by walkers and occasionally damaged by dogs. The trails are also regularly mowed by municipal workers to create firebreaks, and mowing sometimes occurs before the plants have

Species at Risk in Garry Oak and Associated Ecosystems in British Columbia





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set seed. Mowing and trampling may provide some offsetting benefit by discouraging the growth of robust competing grasses. The vernal pools where Water-plantain Buttercup occurs have a significant component of invasive grasses and forbs. The most frequent of these are Creeping Buttercup* (*Ranunculus repens*), Common Velvet Grass* (*Holcus lanatus*), Orchard Grass* (*Dactylis glomerata*), and Creeping Bentgrass* (*Agrostis stolonifera*). These vernal pools are small and are influenced by shrub invasion in adjacent meadow habitats, particularly by Cut-leaved Blackberry* (*Rubus laciniatus*) and European Hawthorn* (*Crataegus monogyna*). Vernal pool habitats are also susceptible to activities that would alter the hydrology of occupied sites, such as soil compaction and trail construction. As a vernal pool species, Water-plantain Buttercup is more likely to be affected by climate change than many other plants. Climatic fluctuations that affect annual temperature and rainfall patterns may affect factors such as moisture availability, germination timing, and seedling survival, potentially leading to population declines.

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 Water-plantain Buttercup if they are discovered, and appropriate management practices suggested. Management needs include protecting the natural hydrology of occupied sites, limiting access to sensitive habitat, and removing invasive species. Regular inventories of known populations should be conducted to monitor their status and identify any negative impacts. Efforts should also be undertaken to search for new populations.

References

- B.C. Conservation Data Centre. 2012. BC Species and Ecosystems Explorer. B.C. Ministry of Environment, Victoria, B.C. <http://a100.gov.bc.ca/pub/eswp/>.
- COSEWIC. 2009. COSEWIC assessment and update status report on the Water-plantain Buttercup *Ranunculus alismifolius* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 21 pp. www.sararegistry.gc.ca/status/status_e.cfm.
- NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. www.natureserve.org/explorer.

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.