

Sanicula bipinnatifida

English name Purple Sanicle

Scientific name *Sanicula bipinnatifida*

Family Apiaceae (Carrot)

Other scientific names none

Risk status

BC: imperilled (S2); red-listed; Conservation Framework Highest Priority – 2 (Goal 3, Maintain BC diversity)

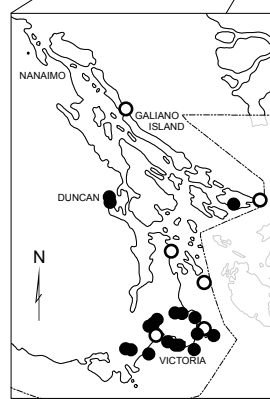
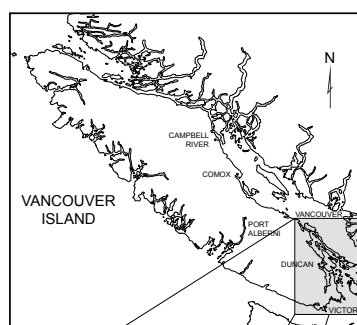
Canada: National General Status – at risk (2010); COSEWIC – Threatened (2001)

Global: secure (G5)

Elsewhere: California, Oregon and Washington – reported (SNR)

Range/Known distribution

Populations of Purple Sanicle have a narrow range in Canada, occurring only on southeastern Vancouver Island and the Gulf Islands. Globally, the species range extends along the west coast of North America from northern Baja California through Oregon, and then sporadically in Washington and British Columbia. There are 18 existing populations and 6 extirpated or unconfirmed sites, ranging from Duncan south to Victoria, with populations on Galiano Island and Saturna Island. The Canadian populations and those in nearby Washington State are disjunct by about 100 km from the main population. Population sizes range from a single plant to over eleven hundred individuals.



Distribution of *Sanicula bipinnatifida*

- Recently confirmed sites
- Extirpated or historical sites

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Field description

This distinctly **purple-flowered** short-lived perennial herb grows 10-60cm tall from a vertical taproot. The **erect stem** is stout and branched with leaves at the base and on the lower stem. Leaves are 4-13 cm long, toothed, and range from simple to pinnately divided (leaves arranged on either side of the main leaf axis, like a feather) once or twice with the leaflets opposite each other. The **leaf axis is toothed, or toothed and winged** (thinly projecting on both sides). The inflorescence is comprised of several to many compact, globe-shaped umbels (several clusters of flowers arising from the same point) of small, 5-petalled flowers of a **deep purple to wine colour**. The floral bracts (small modified leaves below the flowers) are inconspicuous. Fruits are dry, egg-shaped, 3-6 mm long, and covered with stout, hooked prickles. When the seeds mature, the fruits split open to disperse them.

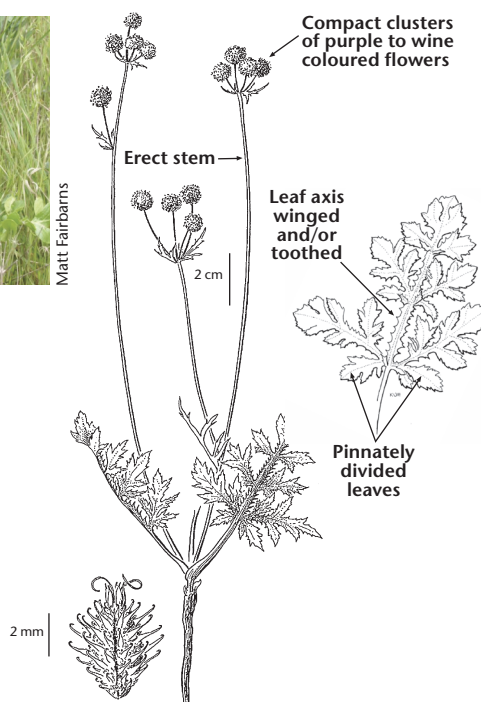
IDENTIFICATION TIPS

In flower, there is no mistaking the deep wine-coloured umbels of Purple Sanicle, however there are a number of other sanicle species that grow in



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our area, and in similar habitats, that may be confused with Purple Sanicle when there are no flowers. Bear's-foot Sanicle (*S. arctopoides*) is prostrate (growing along the ground), has distinct involucels, and yellow flowers. Pacific Sanicle (*S. crassicaulis*) has yellow flowers, and is taller (to 120 cm). Most guides distinguish these two species based on leaf shape but this distinction is unreliable in BC because there is a locally-common variety, *S. crassicaulis* var. *tripartita*, that can have purple or brown flowers and whose leaves are unlike normal Pacific Sanicle. This variety appears to be a hybrid between Purple Sanicle and Pacific Sanicle. A better distinguishing characteristic is that Pacific Sanicle (including var. *tripartita*) has leaves of a duller green than Purple Sanicle (which has glossy leaves); also, the flowers are more sparsely arranged, and tend to be brown, rather than purple. Very small *Sanicula* plants produce 1-3 unlobed, often toothed leaves that are hard to identify to species.

Life history

Purple Sanicle is a short-lived perennial that grows for several years, forming increasingly larger rosettes. Seeds germinate in early spring, beginning in February and extending into early April, with seed leaves developing fully in 7 to 10 days. In the first year, seedlings form a loose rosette (set of small basal leaves), and growth stops with the beginning of the dry season, as early as late May. Plants die back with the onset of summer dry period. Established plants then resprout in late winter, generally beginning in January or early February. Young plants grow a little bit larger each year, and likely flower beginning in their second year. Flowering buds may appear as early as mid-March and flowers develop rapidly; peak flowering generally occurs in late April and May, although flowering can continue until the end of June. Flowers are likely pollinated by generalist insects. Only the largest plants will produce fruit; seeds ripen in late summer and are dispersed from late summer through the fall by animals when the hooked prickles on the fruit catch in their fur. The flowering stalks of Purple Sanicle persist even after the leaves die back, with most of their fruits remaining attached for a considerable period afterwards. There is a high mortality of first-year seedlings during the summer dry period, and although larger plants usually survive the summer drought and produce abundant seeds, these seeds may fail to mature.

Habitat

Purple Sanicle grows in low-elevation, shade-free maritime and upland meadows with shallow, well-drained soils, in open Garry Oak woodlands, and along eroding, sandy banks on seashore cliffs. These sites are typically too exposed and shallow-soiled for trees to establish, and salt-spray and wind limit shrub growth. Purple Sanicle is relatively shade-intolerant and





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grows in very dry to moderately dry soils; these rapidly-drained soils, combined with summer drought, probably play a major role in limiting competition from less drought-tolerant species. Purple Sanicle grows with other native Garry Oak maritime meadow species including: Spring Gold (*Lomatium utriculatum*), Common Camas (*Camassia quamash*), Puget Sound Gumweed (*Grindelia stricta*), and Pacific Sanicle (*Sanicula crassicaulis*). Associated non-native species include Scotch Broom* (*Cytisus scoparius*), Sweet Vernal-grass* (*Anthoxanthum odoratum*), brome species* (*Bromus* spp.), Hedgehog Dogtail* (*Cynosurus echinatus*), Orchard-grass* (*Dactylis glomerata*), and Ribwort* (*Plantago lanceolata*), and at some sites, invasive grasses dominate the herb layer. Elevations: 0.5 to 320 m.

Why this species is at risk

This species is mainly limited by human disturbance and loss of habitat. Human-induced threats include habitat alteration and development; these threats are of particular concern on private lands, where most extant populations are found. Competition from invasive and competitive plants is an important threat at all sites. Site alterations and competition from aggressive introduced species such as Scotch Broom*, Gorse* (*Ulex europaeus*), Orchard-grass*, Ribwort*, and Barren Brome* (*Bromus sterilis*), and competitive forbs, may change soil moisture and chemistry as well as shading the site and competing for nutrients.

Purple Sanicle populations are threatened by varying degrees of impacts from recreation and land management activities, including mowing and pesticide application. Trampling (by dogs and people), soil compaction and/or accelerated bank erosion, trail and bench construction, and other recreational activities may impact populations in high traffic areas. At least one population is heavily impacted by irresponsible and off-trail mountain bike use.

Deer, rabbits, and (where present) goats graze on Purple Sanicle, and herbivory may have a major impact in some populations.

What you can do to help this species

Management practices should be tailored to the needs of the site and specific measures should be related to local factors. **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 of appropriate management practices. Management needs include reducing human disturbance, removing invasive species, and limiting access to sensitive habitat. Regular inventories of known populations should be conducted to monitor their

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status and identify any negative impacts from land development, recreational pressure, and invasion by shrubs and non-native grasses. Effective long-term control and reduction in competition from invasive or aggressively spreading vascular plants must form part of strategies to protect and recover populations.

References:

Fairbarns, M. 2011. Botanist, Aruncus Consulting. Personal communication.

Fairbarns, M. 2005. Demographic and Phenological Patterns of *Sanicula bipinnatifida* (Purple Sanicle). Prepared for: Interdepartmental Recovery Fund, Environment Canada. 17 pp.

Penny, J. L. and G.W. Douglas. 2001. Status of Purple Sanicle, *Sanicula bipinnatifida* (Apiaceae) in Canada. Can. Field-Nat. 115(3): 460-465.

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.

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