

Lomatium grayi

English name Gray's Desert-parsley

Scientific name *Lomatium grayi*

Family Apiaceae (Carrot)

Other English names Mountain Desert-parsley; Gray's Lomatium; Narrow-leaf Lomatium; Gray's Biscuit-root

Other scientific names *Lomatium grayi* var. *grayi*

Risk status

BC: critically imperilled (S1); red-listed; Conservation Framework Highest Priority – 2 (Goal 3, Maintain BC diversity)

Canada: National General Status – at risk (2010); COSEWIC – Threatened (2008)

Global: secure (G5)

Elsewhere: California – critically imperilled (S1); New Mexico – may be critically imperilled (S1?);

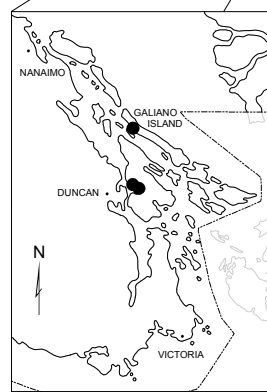
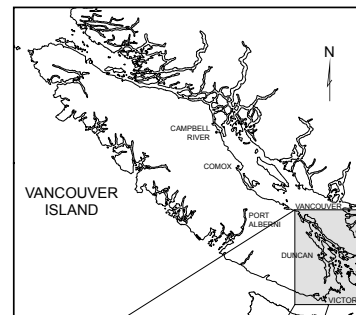
Wyoming – vulnerable (S3);

Colorado, Idaho, Nevada, Oregon, Utah, and Washington – reported (SNR)

Range/Known distribution

Gray's Desert-parsley occurs in western North America, from southwestern British Columbia south to California and east as far as Wyoming, Colorado, and New Mexico. In Canada, its range is highly restricted, with populations known only from Galiano Island and Salt Spring Island. These Canadian populations are the only populations found west of the Cascades. There is no indication that the current distribution of Gray's Desert-parsley differs from its historical one.

Currently, there are three known populations (two on Salt Spring Island and one on Galiano Island) of this species in British Columbia.



Distribution of *Lomatium grayi*

● Recently confirmed sites

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Field description

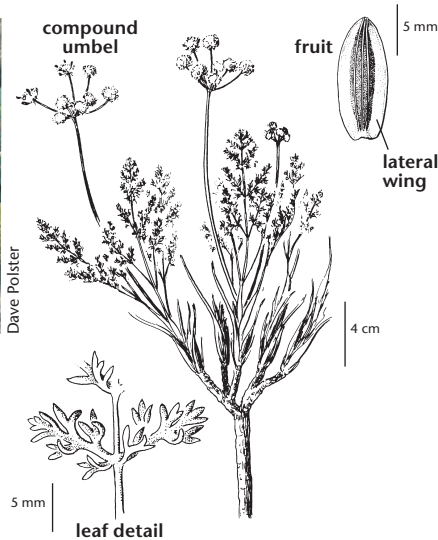
Gray's Desert-parsley is a large herbaceous perennial with a **basal tuft of finely-divided bluish-green leaves, yellow-flowered compound umbels** (flat-topped flower clusters with flower stalks attached at a common point), **and an unpleasant odour when bruised or crushed**. Plants originate from a deep, thick taproot and have a branched stem-base (caudex). Leaves are mostly basal, very finely divided, short rough-hairy, and are crowded together in several planes to form a bushy tuft at the base of the plant. Flowering stems grow taller than the foliage, are glabrous (smooth and hairless), and can reach 40-60 cm in height. Mature plants produce 1-20 inflorescences, which can each contain several hundred yellow flowers. Inflorescences are compound umbels (multiple umbellets arising from a central point) on spokes of varied lengths, 3.5-10 cm long, with **well-developed involucels** (bracts below the umbellets). Fruits are elliptical, flattened, 8-15 mm long, and possess **lateral wings that are up to two-thirds of the width of the fruit's body**.

IDENTIFICATION TIPS

Gray's Desert-parsley is a yellow-flowered, strong-smelling plant with an odour similar to that of celery. The fluffy, bluish-green foliage and bright yellow flowers are fairly distinctive, though Gray's Desert-parsley may be confused with Fern-leaved Desert-parsley (*L. dissectum*), which overlaps the range of Gray's Desert-parsley. However, Fern-leaved Desert-parsley has less crowded or bushy shiny-green foliage, yellow or chocolate-red flowers, narrow-winged fruits, and the involucels are very narrow.



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Life history

The usual life span for Gray's Desert-parsley is five to seven years. Leaves emerge in early spring (as early as January) and growth is usually restricted to that period, when sufficient moisture is available. Flowering occurs between late April and late May and seeds mature between early and mid-July. In British Columbia, the basal foliage generally yellows and dies back by end of July but dried leaves may still be present in the fall. Dead leaf stalks persist to the next season.

Seed germination occurs in the very early spring, with seedlings producing only two to three leaves in the first year. Under cultivation, flowering can occur by the third year after germination, but this likely takes longer in natural habitats; plants tend to remain vegetative while increasing the number of leaves and taproot size for one to several years. Individual plants often do not flower over consecutive years. Flowering plants have either primarily male flowers or a combination of male and hermaphroditic flowers. A higher proportion of male flowers are found on smaller plants.

No information is available about the pollination of Canadian populations although bee pollination is known to occur in Gray's Desert-parsley populations in Utah.

Habitat

Gray's Desert-parsley occurs on southwest-facing rocky cliffs and steep terrain within the Coastal Douglas-fir zone. Plants are found on rock ledges, under rock overhangs, in vertical fissures in rock faces, or on accumulations of loose talus that are surrounded by rock. Some plants are found in cliff areas with spring seepage. Most sites are inaccessible to humans and herbivores. Sites are open or sparsely treed and are generally found within a matrix of Garry Oak and associated ecosystems. Garry Oak (*Quercus garryana*) is the dominant tree species, though Bigleaf Maple (*Acer macrophyllum*), Arbutus (*Arbutus menziesii*), and Douglas-fir (*Pseudotsuga menziesii*) are occasionally present. The shallow soils of these habitats support a number of other native forbs and grasses, but Gray's Desert-parsley does not occur with a characteristic plant community. Native plants commonly associated with Gray's Desert-parsley in British Columbia include Broad-leaved Stonecrop (*Sedum spathulifolium*), Field Chickweed (*Cerastium arvense*), Woolly Sunflower (*Eriophyllum lanatum*), Blue Wildrye (*Elymus glaucus*), Hooker's Onion (*Allium acuminatum*), Great Camas (*Camassia leichtlinii*), and Yarrow (*Achillea millefolium*). Shrub species such as Oceanspray (*Holodiscus discolor*), Common Snowberry (*Symphoricarpos albus*), Tall Oregon-grape (*Mahonia aquifolium*), and Scotch Broom* (*Cytisus scoparius*) occur at some sites. The non-native plants that occur at these sites are primarily grasses, such as Barren Brome* (*Bromus sterilis*) and Hedgehog Dogtail* (*Cynosurus echinatus*). Elevations: 0-175 m.

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Why this species is at risk

With only around 2,000 plants known from three populations, Gray's Desert-parsley is extremely rare in British Columbia, although there is no evidence that its historical range was greater than its current one. The main factor limiting the size of British Columbia populations of Gray's Desert-parsley appears to have been herbivory by mammals. Plants growing in more readily accessible sites are frequently browsed by Black-tailed Deer (*Odocoileus hemionus columbianus*), which have increased in abundance on the Gulf Islands due to loss of their natural predators. Feral goats and sheep have also been present on Galiano Island and Salt Spring Island since pioneer days. The strong smell of the plants could also attract smaller herbivores, such as rabbits and mice, although this has only been observed for plants under cultivation. Although Gray's Desert-parsley can successfully grow under less extreme conditions, herbivory limits establishment and/or reproduction in sites accessible to herbivores and keeps populations from expanding. Dispersal to other suitable habitat is also limited by the large intervening areas of uninhabitable forest and marine waters. Other potential threats include competition from invasive plants such as Scotch Broom* and invasive grasses, disturbance from recreational activities such as hiking and rock climbing, impacts to site hydrology from upslope development, dumping of garbage and garden waste, and horticultural collection.

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.**

Currently, there does not appear to be a decline of Gray's Desert-parsley in British Columbia, and most of its known occurrences in the province are on inaccessible cliffs and/or in protected areas. Regular inventories of known populations should be conducted to monitor their status and identify any impacts. For populations occurring inside protected areas, recreational use of sensitive habitat by hikers and rock climbers should be restricted. Some populations occurring outside existing parks could be protected by adjusting reserve boundaries to include all sites or through stewardship agreements. Private landowners should be made aware of the presence of populations of this species, and how they can be protected. Reducing deer numbers and removing non-native herbivore populations is likely to benefit this species. Alternatively, fencing may also be an option to protect and facilitate the expansion of populations in sites accessible to herbivores. Plants should not be collected for horticultural use.

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References

COSEWIC. 2008. COSEWIC assessment and status report on the Gray's Desert-parsley *Lomatium grayi* in Canada. Committee on the Status of Endangered Wildlife in Canada, Ottawa, Ontario. vi + 27 pp.

Maslovat, C. 2011. Personal communication. Botanist, Salt Spring Island, BC.

Schaefer, C. 2002. Stewardship Account: *Lomatium grayi* (Gray's Desert-parsley). Garry Oak Ecosystems Recovery Team, Victoria, British Columbia.



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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