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NORTHWEST WILDLIFE PRESERVATION SOCIETY

Garry Oak

Quercus garryana



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The Garry oak (also called Oregon white oak) is a deciduous tree belonging to a family of oak trees native to the west coast of North America. There are several varieties that extend from the Gulf Islands, southern Vancouver Island, and the Lower Mainland in the north, to northern California in the south. In its northern habitat, and especially in Canada, it supports a unique ecosystem where it serves as the keystone species, meaning it supports a number of other species that would be unable to thrive without the unique landscape characteristic of the ecosystem. For this reason, the Garry oak grass community is rated as the most endangered in BC; but there are numerous successful revitalization efforts happening to help save and study the threatened ecology.

Characteristics

The Garry oak is a medium sized tree that matures to approximately 20 metres, however, trees as large as 30 metres have been recorded, especially in the Southern end of its range. The bark of mature trees is greyish-black, fire-resistant,



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has deep grooves, a scaly appearance, and is abrasive to the touch. Mosses grow well on the bark, especially in the wet coastal region of the Garry oak range. Garry oaks have sprawling canopies and in many cases can grow as large horizontally as they do vertically. The leaves are a bright glossy green colour that turn brown in the fall, with 3 to 7 rounded lobes per side. It has small acorns that measure roughly 2-3 centimetres, and are nearly completely round with a small cross-hatched cup.

Habitat

In Canada, Garry oaks are restricted to the coastal Douglas-fir biogeoclimatic zone in southwestern British Columbia. The range of the Garry oak extends from the Lower Mainland and coastal areas of southern BC, along the Cascades in Washington and Oregon, to the foothills of northern California. However, the historical range was much larger during the period immediately preceding glaciation. The Garry oak is in retreat and in many areas is surviving in large part due to protection and revitalization efforts.



Garry oaks are very versatile and have been known to grow anywhere between sea level and 1,800 metres spanning its range. It thrives in rocky outcrops and areas susceptible to drought, as it is relatively shade



intolerant. Despite this preference for the dry Mediterranean-like summer climate of the Gulf Islands and Cascades rainshadow, it has also been found in deep grassland soils and riparian areas susceptible to floods. Garry oaks can be found growing in dense groves on mountainsides or as solitary trees in meadows.

Natural history

In Canada, the Garry oak has a storied past that is tied to the local indigenous populations, and features prominently in the cultural history of Vancouver Island. The most important historical feature of the Garry oak is its fire-resistant bark, which was exploited by local indigenous populations, such as the Lekwungen people of southern Vancouver Island, in order to create unique landscapes that maintained high levels of biodiversity in the surrounding flora and fauna. The Indigenous people would manage the land every year by using controlled burns to clear away the underbrush and maintain a meadow surrounding the heat-resistant Garry oaks. This ensured new undergrowth year after year and stopped the encroachment of Douglas fir into Garry oak habitat, sustaining a high level of biodiversity in grass and wildflower species. As a

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result, the ecosystem depends heavily on disturbance to avoid being overtaken by Douglas fir and other neighbouring populations. Within this highly diverse environment, a type of lily with the common name “camas” thrived, this is significant as the bulbs are a cornerstone of the indigenous people’s diets.

Maintaining these grassy meadows with Garry oak groves also attracted a high number of songbirds and grazing deer to the ecosystem, making it one of the most biologically diverse ecosystems in the province. Because Garry oaks were the centre of this ecosystem and without them it could not exist, they are called a keystone species. Due to these high levels of biodiversity found in Garry oak ecosystems they are of significant interest to ecologists and others in the scientific community.

Threats

Unfortunately, the Garry oak ecosystem is in decline and only about 5% of its historical habitat remains. As a result, the Garry oak and over 100 species in its ecosystem are listed as threatened or worse, with many making the provincial red list for endangered species.

Historically, there have been many threats to the Garry oak, including fire suppression leading to encroachment by neighbouring Douglas fir communities, clearing land for pasture, and harvesting of firewood. Additionally, since settlers arrived on the west coast in the late 1700s they have brought numerous invasive species with them which threaten local ecosystems. For Garry oak ecosystems the largest botanical threats are scotch broom, daphne laurel, English ivy, English holly, and snowberry. More recently, the largest threat to this species, like so many others, has been development and urbanization.

As mentioned previously, this loss of habitat for Garry oaks extends to many other flora and fauna species. When Garry oak ecosystems are lost, we are also losing habitat for nesting birds, such as the western bluebird, band-tailed pigeon, and Cooper's hawk. The Garry oak meadows are also rich with animals such as garter snakes and sharp-tailed snakes, and provide a home for many unique butterfly species. Many local indigenous plants also thrive in the ecosystem, including oceanspray, easter lily, western buttercup, chocolate lily, and (arguably the most important) camas. Because of this rich diversity and history, it is imperative that the Garry oak and its associated ecosystem is protected long into the future.

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What we can do to help

While it may seem there is not much that can be done for Garry oaks, there is a significant amount of work being done by several organizations in order to save the species and the diverse ecosystem it supports. As a citizen, you can support these organizations with either monetary donations so they can continue their research on management techniques, preservation, and resident species.



Alternatively, you can volunteer or pay a visit to one of the conservation reserves devoted to Garry oak recovery: the Mt. Tzouhalem reserve in the Cowichan valley, or the Mt. Maxwell reserve on Salt Spring Island. Simply by enjoying and using the space the ecosystem creates responsibly, you can help create demand for the preservation and further study of the ecosystem.

As with any endangered tree species, you can support the adoption of tree preservation legislation in your local communities in order to ensure when an endangered tree is cut several more must be planted in its place to maintain the population. Yet another option is to contact local conservation groups and find out if there are any projects you can help out with, such as cooperative mapping of existing populations, and invasive species removal. Some Canadian organizations doing work in Garry oak ecosystems include:

- Northwest Wildlife Preservation Society (NWPS)
- Habitat Acquisition Trust (HAT)
- Garry Oak Ecosystems Recovery Team (GOERT)
- Nature Conservancy of Canada (NCC)
- other local land trusts (visit the [Land Trust Alliance of BC website](#) to find one near you)

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Quick facts

- The acorns of Garry oaks were not often historically used for food, but in times of famine they were ground to make flour and stored throughout the winter. This was more common in its southern range than in the north.
- Garry oak ecosystems are critical to local indigenous history, cultural knowledge, and sense of place. This is emphasized by some place names around Garry oak ecosystems, such as Camosun (which means “place to gather camas”, another important species in the Garry oak ecosystem)
- The Garry oak is named after a former governor of the Hudson's Bay Company – Nicholas Garry
- The Garry oak is the only native oak species in BC, Washington, and northern Oregon.

Where to view

On Vancouver Island:

- Mount Tzouhalem ecological reserve (Cowichan valley)
- Mount Tolmie (Victoria)
- [Somenos Garry oak protected area](#) (Duncan)
- [Fort Rodd Hill](#) National historic site (Metchosin)

Gulf Islands

- [Mount Maxwell ecological reserve](#) (Salt Spring Island)
- Hornby Island

Lower Mainland

- Sumas mountain & prairie (Abbotsford)
- [Various locations](#)



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