Historical Garry Oak Ecosystems of the Nanaimo and Parksville Areas

These maps compare the 1800 and 2003 distribution of Garry oak ecosystems in the Nanaimo and Parksville area. Garry oak ecosystems are a distinctive feature of these landscapes. A table is provided below, that shows the extent of the area originally covered by Garry oak ecosystems, as well as the present extent. Overall, less than 33 percent of the original ecosystems still remains, and this is only in isolated, fragmented communities that mostly have no connection to other Garry oak communities, thereby preventing migration of populations or mixing of genetic material of species from one area to another.

Year	1800	2003	% left
Deep Soil Garry Oak Ecosystems	29	29	100
Shallow Soil Garry Oak Ecosystems	951	298	31
Total	ha	ha	

This map, titled **"Historical Garry Oak Ecosystems of the Nanaimo and Parksville Area"** shows the original historical distribution of Garry oak ecosystems, believed to exist in 1800, plus the remaining Garry oak ecosystems in existence in 2004. The map of historical distribution of Garry oak ecosystems depicts those areas where Garry oak (*Quercus garryana*) was believed to be the dominant cover or co-dominant cover with Douglas-fir (*Pseudotsuga menziesii*) or Arbutus (*Arbutus menziesii*). Other areas may have had and still have Garry oak as a minor component of the ecosystem; however, these areas were not considered for this mapping. Originally, two major types of ecosystems occurred in the Garry oak areas. These include ecosystems on deep soils, known as Parkland Garry oak communities (Pojar, 1980a, 1980b). Common understory plants included snowberry, Indian plum, camas and fawn lily. A mosaic of shrub-dominated communities and forb-dominated communities probably occurred in the landscape dependent on a variety of disturbances such as fire, both natural and through First Nations management practices, and grazing by wildlife. Almost all of this ecosystem type is now gone, as these were the first areas in the region that were cleared for agriculture and urban development. Some large Garry oak trees still remain, however most of these trees have lawns, roads, agricultural fields, golf courses or blacktop beneath them, rather than natural plant communities. The few examples of this ecosystem still remain, such as in the Enos Lake and Brenan Lake areas. The second major Garry oak ecosystem type occurs on shallow soils and is often referred to as scrub oak ecosystems, as the oak trees are often of low stature, compared to those growing on deep soils. More of this ecosystem still remains, as many of these rocky areas were difficult to develop and have been left for example Harewood Plains, or in areas surrounded by houses, that were difficult to build on in early days. The understory of these rock outcrop communities was originally dominated by many spring flowering perennial forbs, grasses and mosses. Much of this has been replaced by weedy species such as Scotch Broom, agronomic grasses and other weeds. Garry oak ecosystems have been described in detail by Roemer (1972) and Erickson (1995). Many species at risk are associated with Garry oak ecosystems including 60 plant taxa, 2 reptile, 9 bird, 3 mammal, 1 earthworm, 9 butterfly and 7 other insect species (Garry Oak Ecosystems Recovery Team, 2000). These species include Bog Bird's-foot trefoil (*Lotus pinnatus*) Deltoid balsamroot (*Balsamorhiza deltoidea*), Prairie lupine (*Lupinus lepidus*), Tall woolly-heads (*Psilocarphus elatior*), Purple sanicle (*Sanicula bipinnatifida*), White-top aster (*Sericocarpus rigidus = Aster curtus*), Yellow montane violet (*Viola praemorsa ssp. praemorsa*), Island marble, undescribed subspecies (*Euchloe ausonides*), Taylor's checkerspot (*Euphydryas editha taylori*), Dun skipper (*Euphyes vestris*), Island blue (*Plebejus saepiolus insulanus*), Sharp-tailed snake (*Contia tenuis*), Lewis' Woodpecker (*Melanerpes lewis*), and Barn owl (*Tyto alba*).

Methods

Historical Garry oak ecosystems were mapped at a 1:20,000 scale. These maps include areas where Garry oak was a dominant or co-dominant component of the ecosystem. Other areas had and presently have Garry oak as a minor component and these areas are not mapped or included in this analysis. The Garry oak historical mapping is based on original land surveys done in the 1850s and 1860s, available at the BC Crown Lands Registry Service. Additional information was collected in field studies in 2003, to confirm the original mapping and determine the present day extent of Garry oak ecosystems. Expert opinion was used to determine areas that had the potential to support Garry oak ecosystems before urban, suburban and agricultural development took place in the area.

Credits

Ecosystem mapping by Kate Miller, Kate Miller Consultants, Duncan, B.C. and Ted Lea, Biodiversity Branch, British Columbia Ministry of Water, Land and Air Protection, Victoria, B.C. Digital Products by Dan Hroth and Duncan Richards of HR GISolutions, Victoria, B.C. Black and White Historical photos are from the British Columbia Archives. Funding was provided by The Nature Conservancy, B.C. Ministry of Water, Land and Air Protection, and the Garry Oak Ecosystem Recovery Team.

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The inset maps of western North America and Vancouver Island are revised from Erickson (1993).

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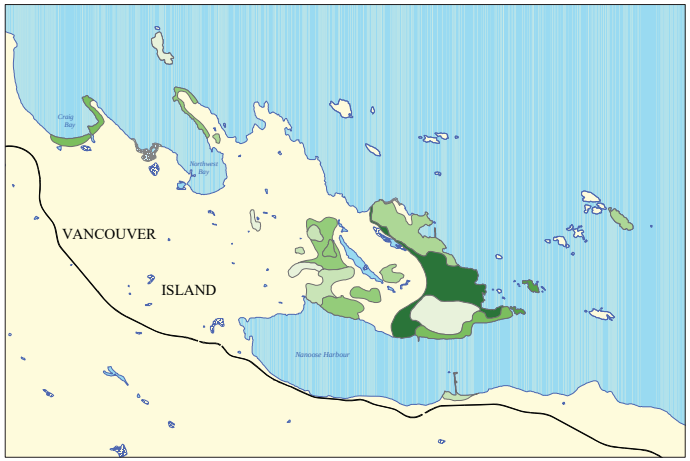

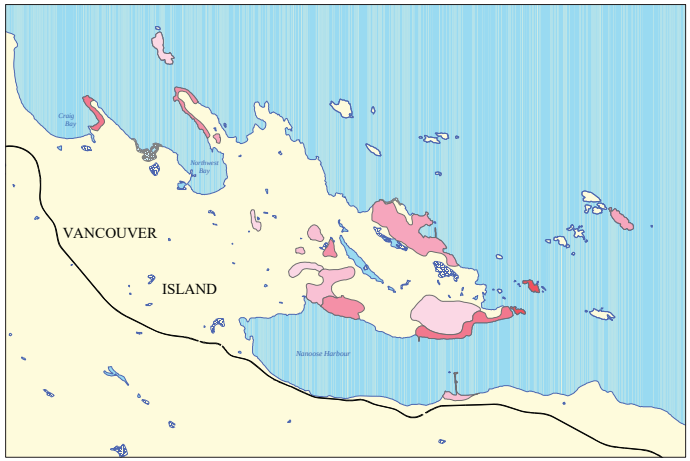

BRITISH COLUMBIA

Garry Oak Ecosystems Recovery Team

HR GISolutions Inc.

NATURE CONSERVANCY CANADA

Projection: BC Albers Nad 1983
Base: 1:20,000 TRIM
Date: May 27, 2004
Scale : 1:40,000

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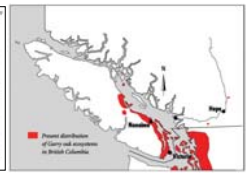
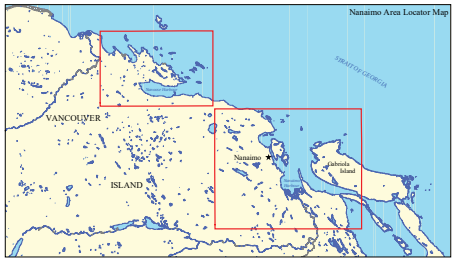
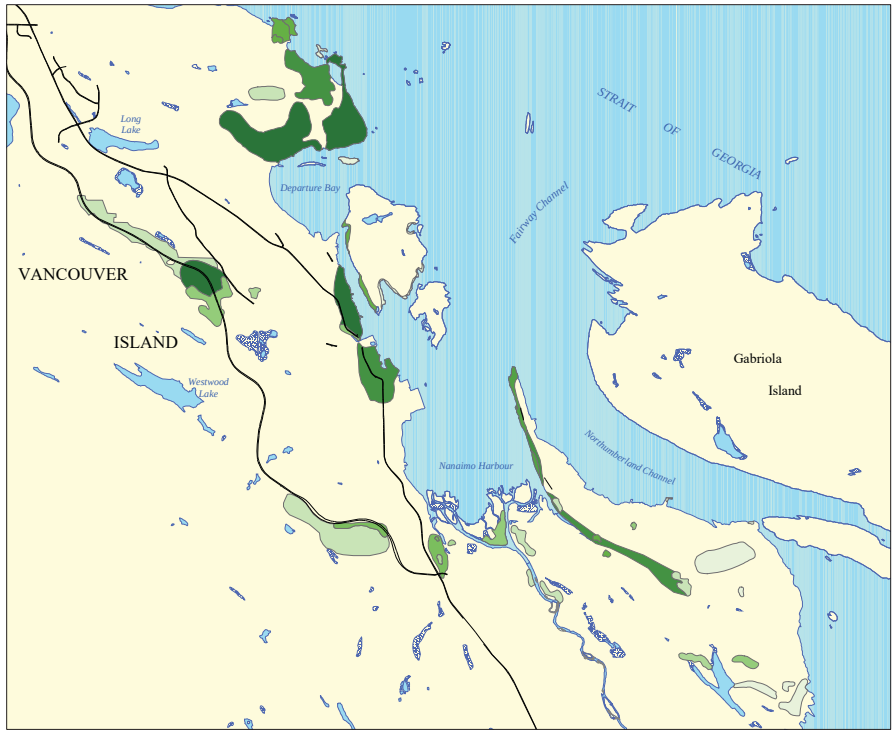
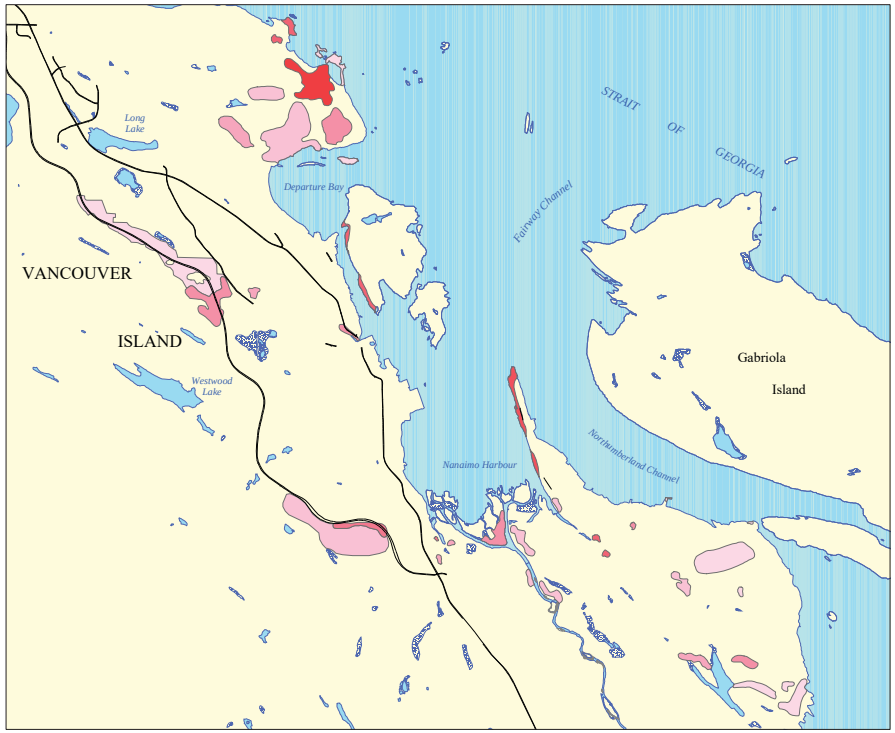
Kilometers

Historical Garry Oak Ecosystems of Nanaimo



Present Day Garry Oak Ecosystems of Nanaimo