SAVING SENSITIVE ECOSYSTEMS

WOODLAND ECOSYSTEMS

EAST VANCOUVER ISLAND AND GULF ISLANDS

WHAT ARE WOODLAND ECOSYSTEMS?

GARRY OAK, ARBUTUS/DOUGLAS-FIR, AND TREMBLING ASPEN

Woodland ecosystems are open deciduous and mixed deciduous/coniferous forests. They occur most often on rocky knolls, south-facing slopes and ridges where soils are shallow and extremely dry in summer. These ecosystems are similar to those found in Washington, Oregon and California, and exist here because of the warm, dry climate and fire history of this area.

Three main types of woodland occur on south-east Vancouver Island and the adjacent Gulf Islands.

WOODLAND ECOSYSTEMS ARE FOUND ON SITES WHERE HISTORIC DISTURBANCE OR THE SOIL AND MOISTURE CONDITIONS HAVE PREVENTED THE DEVELOPMENT OF CLOSED CONIFEROUS FORESTS.

Garry oak woodlands are the most biologically rich, supporting the highest diversity of plants in coastal British Columbia including 93 species of organisms considered at risk. In areas of deeper soil, Garry oak woodlands support rich meadow ecosystems with a profusion of wildflowers.

Arbutus/Douglas-fir woodlands are common on dry sites such as south facing slopes with rocky, nutrient-poor soils. Typically, they support only a few understorey species such as dull Oregon grape and hairy honeysuckle.

Stands of pure **trembling aspen** are found on sites with rich, moist soils, and may be associated with wetland and riparian ecosystems. Trembling aspen expands by underground runners – a stand of trembling aspen may in fact be one single organism connected by a network of roots.

RARE SPECIES OF GARRY OAK WOODLANDS

Edith's checkerspot butterfly
Bremner's silverspot butterfly
Western Screech Owl
seaside birdsfoot trefoil
yellow montane violet
apple moss

TYPICAL ANIMALS

alligator lizards
garter snakes
songbirds
bats
butterflies

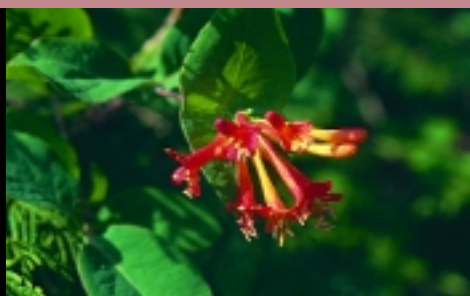
PLANTS OF ARBUTUS/DOUGLAS-FIR WOODLANDS

oceanspray
hairy honeysuckle
false box
purple peavine
electrified cat's tail moss

A VARIETY OF CONSERVATION TOOLS

ARE AVAILABLE TO PROTECT WOODLAND ECOSYSTEMS, SUCH AS OFFICIAL COMMUNITY PLANS, OTHER BYLAWS, CONSERVATION COVENANTS AND STEWARDSHIP AGREEMENTS.

CHECK THE CONSERVATION MANUAL FOR MORE INFORMATION (SEE BACK PAGE).



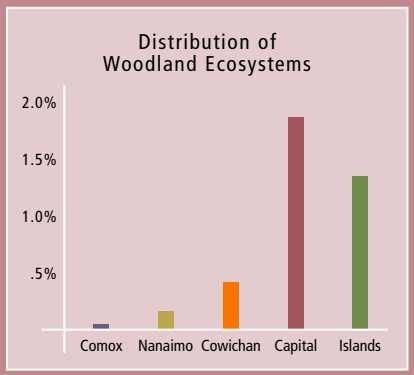
How much woodland is left?

0.6% of the landscape

Woodlands are one of the most threatened of the sensitive ecosystems, covering only 0.6% (2,419 ha) of east Vancouver Island and adjacent Gulf Islands. Most woodlands are found in the Capital region and on the Gulf Islands, as higher summer rainfall further north results in increased competition from Douglas-fir and other conifers. Half of the woodland sites are less than two hectares in size and over 80% are smaller than five hectares.

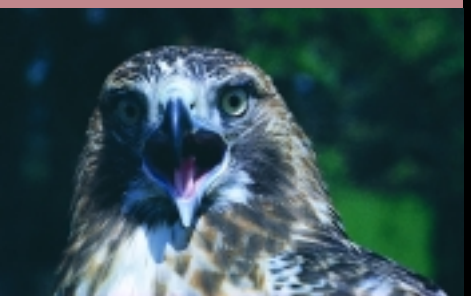
Many woodlands have been lost to urban and rural development. It is estimated that less than 5% of the historic Garry oak woodlands remain and of these, many are seriously degraded by invasive species such as Scotch broom, Kentucky bluegrass, orchard grass, and Daphne-laurel. Arbutus/Douglas-fir woodlands have been less affected by urban development but are vulnerable to forestry activities. Trembling aspen woodlands are extremely rare, with only five pure aspen stands larger than 0.5 ha remaining in this region. It is likely that many such woodlands were long ago cleared for agriculture.

In the past, First Nations probably burned Garry oak woodlands to promote the production of the camas lily, an important food source. Fires thinned out competing species such as young Douglas-fir, recycled nutrients into the soil, and maintained the open woodland canopy. Present-day fire suppression may be adding to the loss of these woodlands, as Douglas-fir is shading the Garry oak and arbutus, and shrubs are crowding out meadow wildflowers.



What can I do?

- Learn about the natural environment and be a good steward of your own land
- Join a stewardship organization, land trust or advocacy group
- Participate in local government decision-making
- Consider conservation covenants and other legal agreements
- Consider the tax advantages of donating land



WHY ARE WOODLANDS IMPORTANT?

HIGH BIODIVERSITY

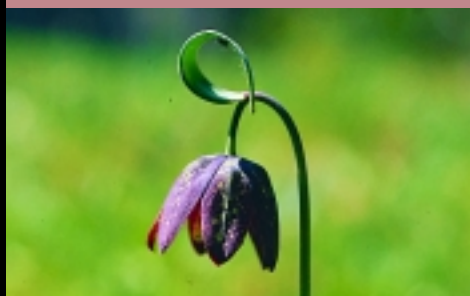
A rich assemblage of plants, insects, reptiles and birds are attracted to the habitat diversity and food sources of woodland ecosystems. Oak and arbutus woodlands feature a variety of habitat niches such as snags, rotten limbs, and downed logs as well as young and mature trees. Even the bark of Garry oak provides habitat for insects, spiders, mosses and lichens. This diversity supports species such as the rare Propertius duskywing butterfly, which depends entirely on Garry oak ecosystems for its larval food.

Woodlands commonly occur with terrestrial herbaceous, coastal bluff and forest ecosystems, adding to the species diversity of the entire area. Because most of the remaining patches of woodland are very small, the wildlife that inhabits these areas may be strongly influenced by and dependent on these neighbouring ecosystems. Hawks, for example, like to perch or nest in tall trees within the forest and then hunt in the more open woodlands.

People enjoy looking at and visiting woodland areas. Some woodlands, especially Garry oak ecosystems that occur on deep soils, display a stunning profusion of spring and summer flowers. Woodlands in public parks and accessible open spaces provide numerous opportunities for low-impact recreation, although caution must be used when visiting these areas to avoid damaging the ecosystem.

ALL SENSITIVE ECOSYSTEMS ARE IMPORTANT BECAUSE OF THEIR CONTRIBUTIONS TO:

- Biodiversity
- Clean air, clean water, nutrient recycling, pollination
- Recreation and scenic values
- Education and research
- Ecotourism and other economic benefits



How can we protect woodland ecosystems?

Avoid direct and indirect impacts

Create a vegetated buffer around the woodland ecosystem to isolate it from outside disturbance. The open nature of woodlands and their frequent proximity to developed areas makes them particularly vulnerable to the intrusion of non-native species and other impacts caused by increased access and fragmentation.

Restrict access. Any form of human access can severely affect the understorey vegetation, soil, tree health, or stand age structure in these sensitive ecosystems. If trail or road construction is being considered, see *Develop Carefully* below.

Prevent livestock grazing. Even light grazing by livestock damages vegetation, compacts soil, increases the introduction of non-native species and results in the trampling of young tree seedlings.

Control invasive species. European slugs browse on new seedlings with devastating results for some native plants. Many introduced grasses, herbs and shrubs compete very effectively with native species in these open woodlands. Active control methods such as hand clearing, pruning, and mowing are appropriate if timed to minimize impacts to native vegetation and animals.

Prevent disturbance of nesting or denning sites. The nesting and breeding season for most coastal wildlife occurs in spring, but can extend into early August for some birds. Check with staff from the BC Ministry of Environment, Lands and Parks or the Canadian Wildlife Service for more information.

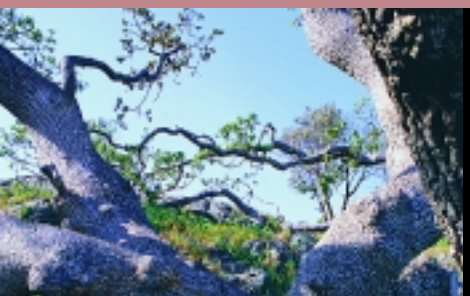
Maintain hydrologic regime. Surface or groundwater that supplies nearby woodland ecosystems is easily altered by the construction of roads, trails, houses and other off-site activities. Any changes to drainage patterns can seriously affect woodland diversity.

Consider re-introducing fire. Managed fire can be used to sustain woodland plant communities and reduce the numbers of non-native species.

If development is the only option – develop carefully!

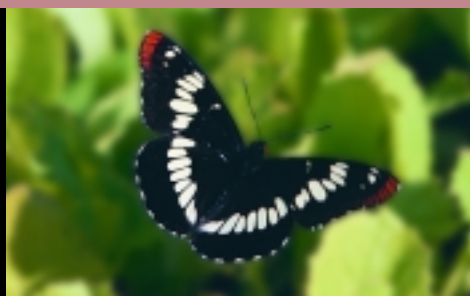
Conduct an ecological inventory before any development takes place, ideally through the seasons over a period of a year. Identify the existing flora and fauna, and in particular, distinguish any threatened or endangered species or plant communities and habitat features needing protection.

Plan and implement all development activities (including trails) in a manner that will not adversely affect or disturb the woodland ecosystem. A qualified professional can interpret the ecological inventory data and work to incorporate designs that are sensitive to the natural ecosystem.



Create and maintain connections

between natural areas to preserve wildlife migration and dispersal





The federal/provincial Sensitive Ecosystems Inventory has identified and mapped seven types of "sensitive" ecosystems on east Vancouver Island and adjacent Gulf Islands: Older Forest, Woodland, Sparsely Vegetated, Terrestrial Herbaceous, Coastal Bluff, Riparian and Wetland. Two other ecosystem types – Older Second Growth Forest and Seasonally Flooded Agricultural Field – were also mapped because they are important to the biodiversity of this area. This brochure is one in a series that describes these ecosystems.

For detailed information on sensitive ecosystems, refer to the Sensitive Ecosystems Inventory manuals, available in libraries, your local government planning department and on the SEI website.

TECHNICAL REPORT: *Sensitive Ecosystems Inventory: East Vancouver Island and Gulf Islands 1993-1997. Volume 1: Methodology, Ecological Descriptions and Results.* P. Ward et al. 1998. Technical Report Series No. 320, Canadian Wildlife Service, Pacific and Yukon Region, British Columbia.

CONSERVATION MANUAL: *Sensitive Ecosystems Inventory: East Vancouver Island and Gulf Islands 1993-1997. Volume 2: Conservation Manual.* M. McPhee et al. 2000. Technical Report Series No. 345, Canadian Wildlife Service, Pacific and Yukon Region, British Columbia. This manual provides recommendations for the management of sensitive ecosystems, and discusses conservation tools available to governments and others.

PHOTO CREDITS: Mark Kaarremaa, Trudy Chatwin, Neil K. Dawe

MORE INFORMATION ON THE SENSITIVE ECOSYSTEMS INVENTORY CAN BE OBTAINED FROM:

SEI WEBSITE:
WWW.ELP.GOV.BC.CA/RIB/CBS/SEI
OR WWW.PYR.EC.GC.CA/WILDLIFE/SEI

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Environment Canada Environnement Canada

British Columbia
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Habitat Conservation Trust Fund

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