

# The Ecology of the Coastal Douglas-fir Zone

Although it is one of the smallest of British Columbia's 14 ecological zones, the Coastal Douglas-fir Zone is home to some of the province's most interesting and diverse ecosystems. A mild climate has also given this area some of the province's rarest vegetation, which is seriously threatened by growing human settlement.



# Location

The Coastal Douglas-fir Zone covers a small area of British Columbia's south coast, including a band of lower elevation along southeastern Vancouver Island, the Gulf Islands, and a fringe of mainland along Georgia Strait. Victoria, Nanaimo, and Powell River are major urban centres in the area.



# Environment

This small corner of the province enjoys perhaps the finest climate in Canada. Sheltered by the rainshadow of the Vancouver Island and Olympic mountains and warmed by air from the Pacific, the area basks in a Mediterranean-like environment of

warm, sunny summers and mild, wet winters. Unlike more exposed coastal areas such as the west coast of Vancouver Island, this zone experiences long dry summers, which are a major factor in its ecology.

# Ecosystems

Here the majestic Douglas-fir reigns supreme, occurring in a wide range of sites from dry rock outcrops to moist valley bottoms. In upland Douglas-fir forests, salal and Oregon grape are common understorey plants; in rock outcrop areas, arbutus, Garry oak, and occasionally lodgepole pine grow alongside Douglas-fir. Wild rose, snowberry, and ocean spray are well adapted to



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these open, dry ecosystems.

In moister forest areas, Douglas-fir, grand fir, western redcedar, bigleaf maple, and western flowering dogwood flourish together with understorey plants such as sword fern, salmonberry, and trillium. Skunk cabbage and red alder are typical of wet swampy areas, along with Indian plum, salmonberry, and red elderberry.



White Fawn Lily  
*Erythronium oregonum*

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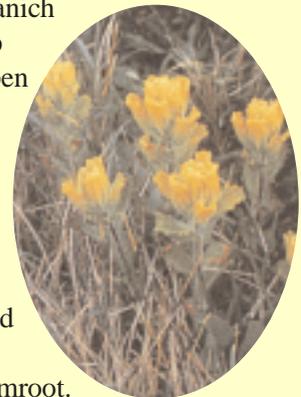
# Saanich

# Ecosystems

The Coastal Douglas-fir Zone is also home to a unique and sensitive group of ecosystems known collectively as saanich, meaning "place of fertile soil" in the language of the local aboriginal people. Most common on southeast Vancouver Island and the Gulf Islands, the saanich complex includes seaside parkland, dry forest, rock outcrop, and wetland habitats and contains many rare plants. Two common trees here, Garry oak and arbutus,

are found nowhere else in Canada.

Garry oak parkland is perhaps the most unusual ecosystem in the saanich group. In dry sites with deep soils, Garry oaks form an open tree cover above a carpet of grasses and colourful spring flowers, including blue camas, shooting star, easter lily, chocolate lily, and satin flower. These habitats may also harbour rare, endangered plants such as golden Indian paintbrush and deltoid balsamroot.



Golden Paintbrush  
*Castilleja levisecta*

Jim Pojar

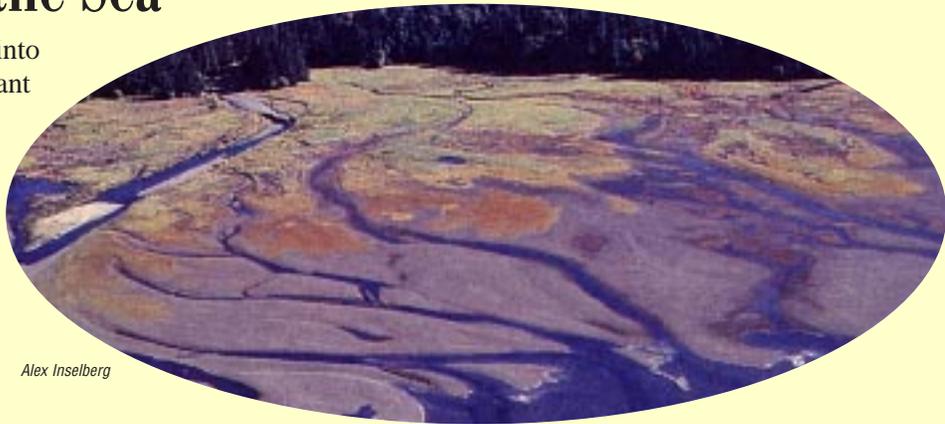
Shooting Star  
*Dodecatheon hendersonii*

Susan Fergusson

Cover photo : Alex Inselberg

# Where Rivers Meet the Sea

Estuaries, where rivers and streams flow into the sea, are highly productive and important ecosystems, providing habitat for a wide variety of life. The nutrient-rich, protected waters of estuaries are an ideal environment for overwintering birds, for example, and serve as excellent nurseries for young fish.



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# Douglas-fir and Fire

Wildfires were once common in the Coastal Douglas-fir Zone and played an important role in shaping its ecosystems. For example, there is evidence that 300 or 400 years ago, large fires burned away much of the forest on Vancouver Island's east coast, from Victoria to Campbell River. Today, forest fires are suppressed and play a lesser role in the area's ecology.

One reason Douglas-fir dominate many of this zone's ecosystems is that they are well adapted to living with



Alison Nicholson

fire. Old Douglas-fir have thick, fire-resistant bark that protects them from all but the hottest flames. Many large old trees show areas of charred bark and fire scars at their base. After a fire, young Douglas-fir seedlings quickly colonize the blackened area. As fires kill off other, less fire-resistant species, they help establish and maintain the Douglas-fir as the dominant tree in the area.

Garry oak parklands are also well adapted to surviving fires.



Garry oak meadow

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# Wildlife

Historically, the Coastal Douglas-fir Zone has teemed with animal life. Black-tailed deer, Roosevelt elk, black bear, cougar, and many other species freely roamed its forests and coasts. Today, humans

are the dominant animal, and their cities, towns, industries, and agricultural operations have transformed this former wilderness.

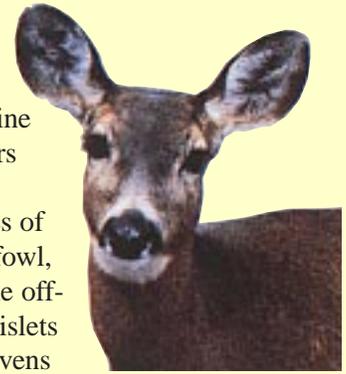


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Animals that conflict with human interests, such as bears, cougars, and elk, are being increasingly displaced by a growing human population.

Despite this expansion, many animal species continue to flourish here. Black-tailed deer and many smaller mammals are common. Some animals, such as raccoons, and barn swallows, have seized the advantages of cohabiting with people by feeding off gardens and garbage, or nesting in buildings. The remaining old forests still provide important habitat for native birds.

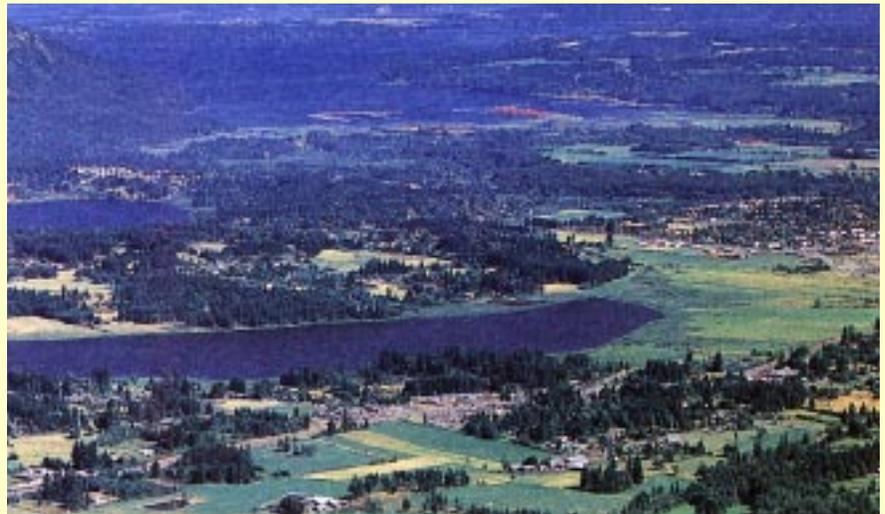
The coastline shelters many species of waterfowl, and the off-shore islets are havens for colony-nesting species such as the glaucous-winged gull and Brandt's cormorant. This zone is home to the greatest diversity of wintering birds found anywhere in Canada.



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# Resources

Much of the Coastal Douglas-fir Zone has been developed as residential or industrial land. The most important industries are agriculture, small-scale forestry, pulp mills, and tourism. Because of the area's long dry summers, soil-water conservation is a significant management concern.



Don Bern

# Logging History

When the first European settlers arrived in the area, old forests of massive Douglas-fir covered much of the land. Recognizing the economic value of these forests, the settlers soon launched a coastal logging industry.

The Douglas-fir was the most highly prized timber tree. In the early logging days it might take two men, using axes and crosscut saws, three or four hours to fell one of these giants. Oxen would then drag the log to a nearby beach, from where it was floated to the nearest



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sawmill. The introduction of steam donkeys, logging railways, chainsaws, and other technologies greatly enhanced production, allowing workers to cut many more trees and log in areas farther and farther

from the water.

Today, very little old forest remains; most of it has been converted to farms, residences, or second-growth forests.

# Exotic Invaders

Travellers to a new land often bring something to remind them of home. When the reminder is a living plant or animal, it can create havoc with the local flora or fauna. Several exotic species introduced into the Coastal Douglas-fir Zone have had this unfortunate effect.

Scotch broom, for example, brought to Sooke in 1849 by a Scot named Captain Walter C. Grant, soon escaped captivity and spread rapidly. Today, the bright yellow flowers of this hardy plant are a familiar sight throughout the zone where it is considered a pest and a threat to native vegetation, including many rare plants from the saanich ecosystems.



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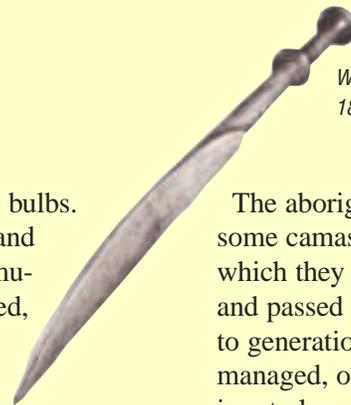
Other well-known plant species introduced into this zone are gorse and purple loosestrife; animal species include starlings, house sparrows, bullfrogs, grey squirrels, and Norway rats.



# Camas

The blue camas grows in Garry oak meadows and grassy bluffs on south-east Vancouver Island and the Gulf Islands. The bulbs are rich in carbohydrates and were a staple food for the area's aboriginal people. Every summer these people would travel to fields where camas grew in abun-

dance and harvest the bulbs. These were steamed and often eaten in a communal feast. When cooked, the bulbs are soft and sweet and were sometimes used to sweeten other foods.



Women's spade  
1893

The aboriginal people divided up some camas-rich areas into plots, which they owned individually and passed down from generation to generation. These beds were managed, often by controlled burning, to keep them free of weeds and brush.

The blue camas should not be confused with the closely related and poisonous death camas.

Although the two species often grow together, fortunately

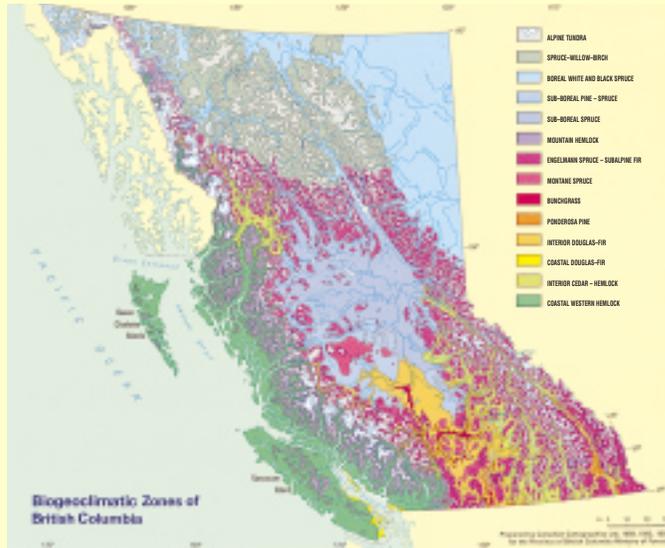
they are easy to distinguish: the edible camas has blue flowers, while the flowers of the poisonous death camas are cream-coloured.



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Salish type basket



The Coastal Douglas-fir Zone is just one of the fourteen biogeoclimatic or ecological zones within British Columbia. These zones are large geographic areas that share a similar climate within the province. Future brochures in this series will explore each zone.



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*Detail on British Columbia's Biogeoclimatic Zones is available in:*

Ecosystems of British Columbia  
Special Report Series #6  
D. Meidinger and J. Pojar  
Ministry of Forests Research Branch,  
Victoria, B.C.

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