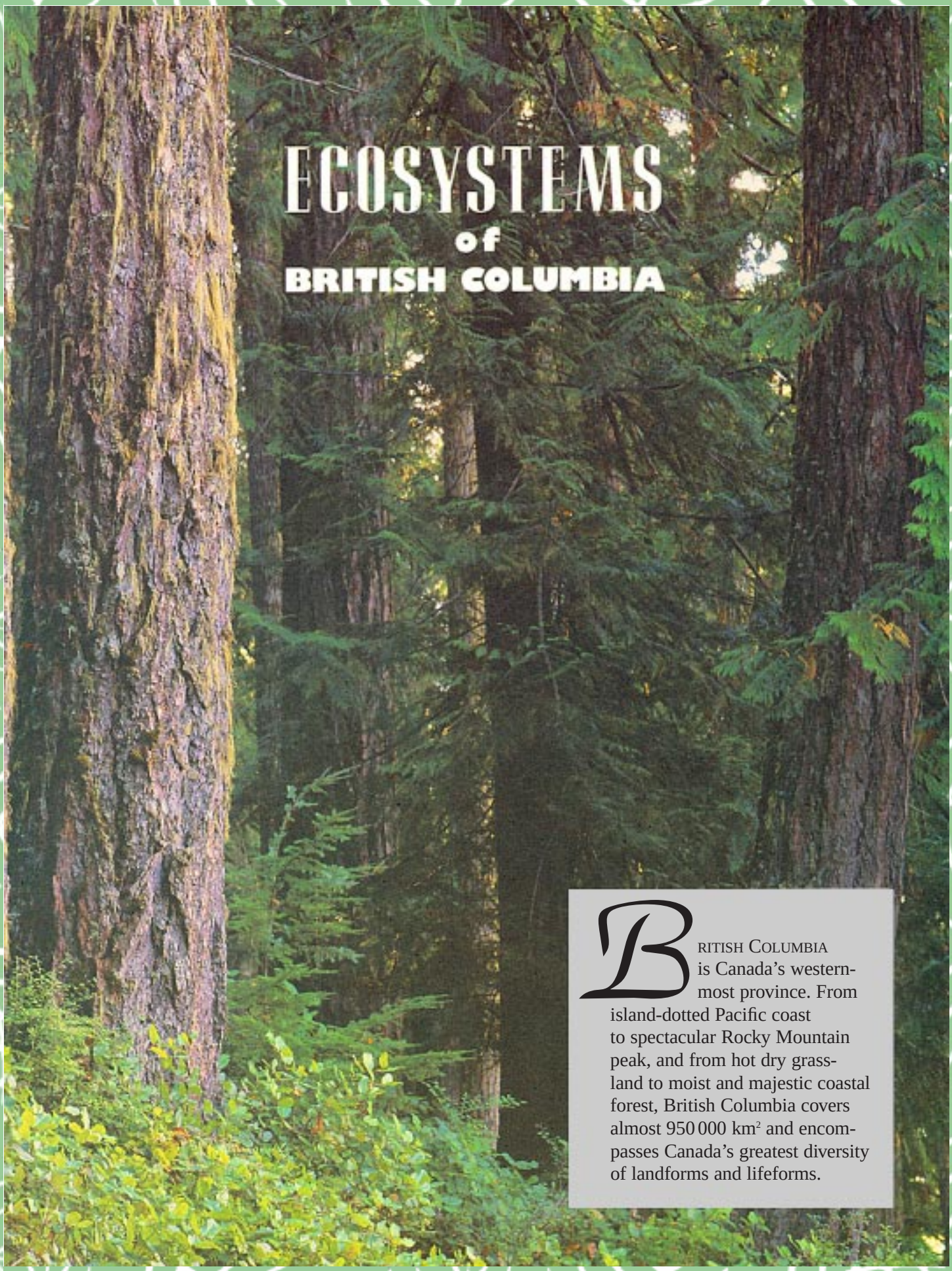


ECOSYSTEMS of BRITISH COLUMBIA

British Columbia is Canada's western-most province. From island-dotted Pacific coast to spectacular Rocky Mountain peak, and from hot dry grassland to moist and majestic coastal forest, British Columbia covers almost 950 000 km^2 and encompasses Canada's greatest diversity of landforms and lifeforms.

Environment

MOUNTAINS AND SEA dominate British Columbia's environment. Rising from the Pacific Ocean, two parallel mountain ranges dissected by steep-walled valleys and fjords run the length of the coast. The coastal environment is characterized by the eastward flow of warm, moist ocean air over these ranges. When this air rises over the mountains it drops much of its moisture in the form of rain or snow, producing Canada's wettest climates and most productive forest lands.

To the east, the coastal mountains give way to broad, rolling interior plateaus and gentler mountains. As it flows through the interior the drier Pacific air comes under the influence of continental air masses, resulting in a more continental climate,

Bill Swan

with greater extremes of temperature and precipitation. The province's driest climates are found in the southern interior, east of the coastal mountains.

In the southeast, the Pacific air drops more if its moisture as it rises over the Columbia and Rocky Mountains, creating an interior wet belt. The northeast corner of the province has flat to gently rolling plains and experiences a cold, northern continental climate.

Old Forests

Although greatly reduced from their original extent, old forests are still common in many parts of the province. Old forests are of special concern not only because of the high quality timber they contain, but also because they provide important habitat for many plant and animal species. For example, 77 animal species are closely associated with or dependent on old forest habitat.

Alex Inselberg

Plants

BRITISH COLUMBIA'S diverse climate and topography support an impressive vegetation. The province is home to approximately 2500 vascular plant species, 1000 bryophyte species, 1000 lichen species, and 10000 fungi species. These species form a variety of plant communities — from massive coastal rain forest to stunted coastal muskeg, from sea level salt marsh to alpine tundra, and from dry interior grassland to black spruce muskeg.

Approximately half of British Columbia is covered by forest. Half of this forest land is considered productive and suitable for timber management. Coniferous or softwood forests are the most abundant forest type. Even though the province contains only 15% of Canada's forest land, it has approximately 50% of the country's softwood volume.

Animals

A WIDE RANGE OF animal species make their home in British Columbia. This includes 448 bird, 143 mammal, 19 reptile, and 20 amphibian species. The province's wildlife is notable for its diversity, its abundance, and for the presence of internationally significant populations of many species.

The abundance and diversity of animals vary from one part of the province to another, depending on such factors as climate, landforms, and vegetation. Coniferous forests make up a large portion of the total wildlife habitat in British Columbia. Plant community succession has a major impact on animal diversity.

Bill Swan

Rocky Mountain Bighorn Sheep

alex Inselberg

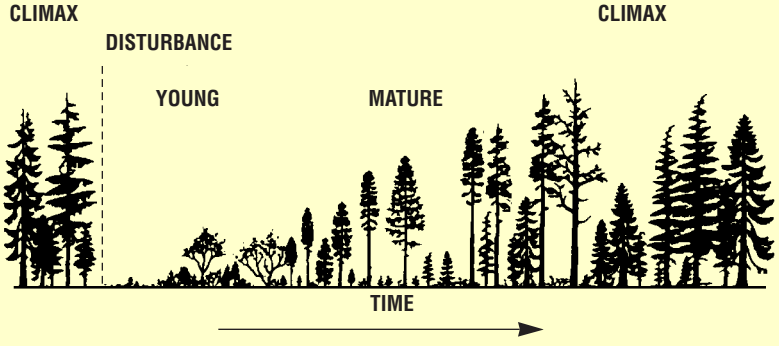
Ecosystems

ECOLOGICAL SYSTEMS (ecosystems) consist of all the living organisms in an area and their physical environment (soil, water, air). On land alone, British Columbia has over 600 types of climax ecosystems.

Succession & Diversity

ECOSYSTEMS ARE constantly changing. One such change occurs through natural succession. Disturbances such as fire, insect attack, wind storms, landslides, or logging can turn a thriving natural community into a blackened or bare patch of earth. Out of disturbance, however, life begins anew. Some plants survive the disturbance and others quickly colonize. Animals follow. Succession involves changes in plants, animals, and other conditions as the new ecosystem develops from youth to old age.

Often, each successional stage is dominated by a different combination of vegetation and wildlife. For example, logging of a mature coastal forest starts a process of succession. Shrubs, herbs, and deciduous trees are first to colonize the logged area. As the community ages, coniferous trees and their associated wildlife may become dominant. If left undisturbed, the community may eventually reach a stable state (or climax ecosystem) where the change in species and other conditions is much slower.



Endangered Ecosystems

MOST OF BRITISH Columbia's endangered species and ecosystems are found on the southwest coast and in the southern interior where human settlements have displaced many of the original ecosystems. Southeastern Vancouver Island and the adjacent Gulf Islands contain some of the most unique, and most threatened, ecosystems in the province. In the dry southern interior, many grassland and forest ecosystems are threatened by overgrazing, agriculture, and other human disturbances.

Threatened Garry oak ecosystem

Adolf Ceska

Resources

BRITISH COLUMBIA'S wealth of natural diversity provides many valuable resources. Given the province's extensive forests, wood products are of major importance. However, forests provide more than timber. Recreation, range, clean water, food, and pharmaceuticals are some of the non-timber products provided by forests.

O Wondrous Yew

Brian Egan

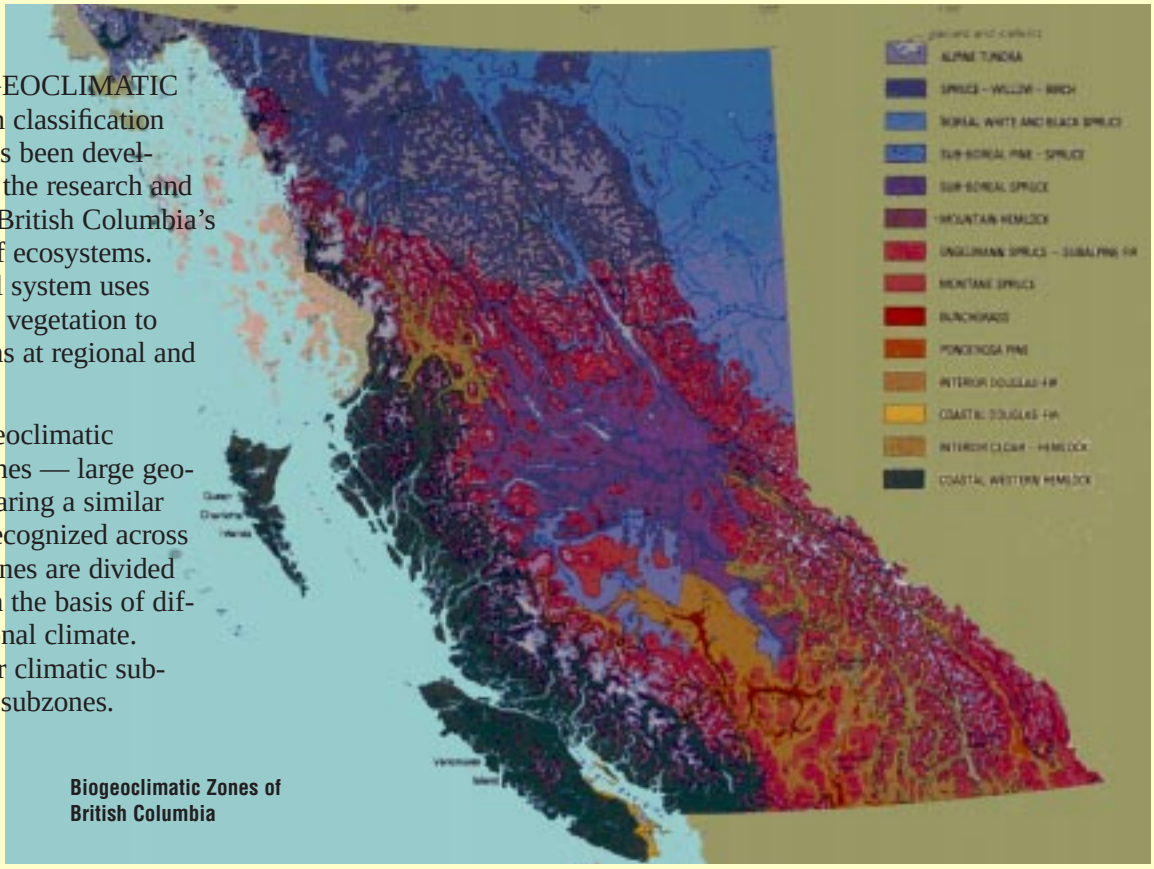
Native peoples of British Columbia have long valued western yew (Taxus brevifolia) *for its fine wood and healing properties. The strong and flexible wood of this small and inconspicuous tree is ideal for carving and making bows, digging sticks, and other tools. Healers treated a variety of ailments with tea made from boiled yew bark. More recently, researchers have found that taxol, a chemical extracted from yew bark, has great potential in treating cancer. Western yew grows in British Columbia's coastal and wet interior forests.*

Chief's Dzunuḵwa mask
Yew, human hair
Carved by Willie Seaweed

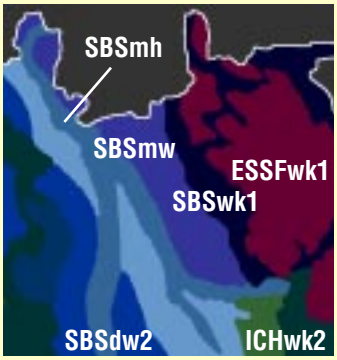
Ecosystem Classification

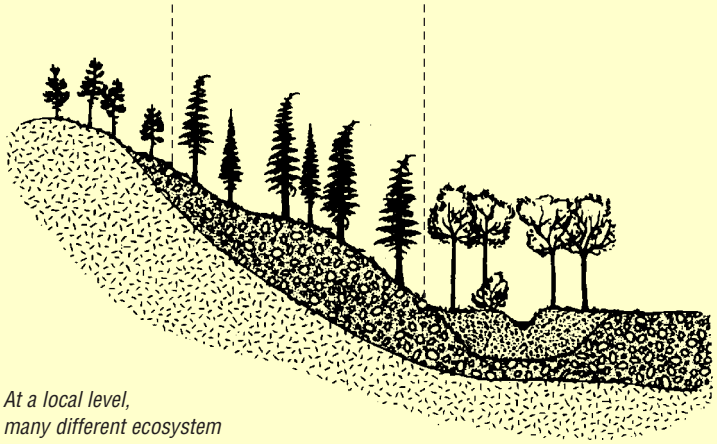
THE BIOGEOCLIMATIC ecosystem classification system has been developed to assist in the research and management of British Columbia's great diversity of ecosystems. This hierarchical system uses climate soil, and vegetation to group ecosystems at regional and local levels.

Fourteen biogeoclimatic or ecological zones — large geographic areas sharing a similar climate — are recognized across the province. Zones are divided into subzones on the basis of differences in regional climate. Variants are finer climatic subdivisions within subzones.



Biogeoclimatic Zones of British Columbia





At a local level, many different ecosystem types occur within subzones due to differences in site conditions such as soil, topography, and vegetation.

Managing Ecosystems

ECOSYSTEM CLASSIFICATION provides the framework for an ecological approach to resource management. For example, in silviculture the classification system is valuable for determining the type of site preparation to be used and the species of tree to be planted on a particular site. It is also useful in wildlife habitat management and in conservation planning.

By providing a common language for describing and naming specific ecosystems, the classification system is also an important tool for research and communication.

BRITISH COLUMBIA'S ongoing challenge is to manage and protect its natural diversity for the benefit of present and future generations. By organizing detailed ecological information into one comprehensive framework, ecosystem classification helps resource managers meet this challenge.

Province of British Columbia
Ministry of Forests

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