TREE BOOK

Learning to Recognize Trees of British Columbia

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Learning to Recognize Trees of British Columbia

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Introduction

Many of us who live in British Columbia appreciate its natural beauty — scenic landscapes, beautiful parks, and diverse plants and animals. When we visit different parts of our province, we encounter a diversity of climates and land forms. This diversity results in a tremendous variety of forest and plant communities.

British Columbia has about 40 different species of native trees, but you won't find all of them everywhere you go. Some trees, like lodgepole pine, grow throughout the province, but others only grow in places where they are adapted to the particular climate. For example, western redcedar grows mostly on the coast and in the wetter parts of the Interior, where there is abundant rainfall and temperatures are mild. Englemann spruce grows at higher elevations, where winters are very cold and snowfall can be heavy.

The information in this book will help you to identify the native trees in your neighbourhood and understand why they grow where they do.

We hope that discovering the uniqueness of trees will be the first step to opening the door on the natural world, which also includes other plants, animals, insects and fungi — all part of the ecosystems of British Columbia. We hope the Tree Book will be just the beginning of your explorations.

How to Use the Tree Book

The second edition of the Tree Book has a different look from the first. We have included 40 native trees that grow in British Columbia.

The first few pages of the Tree Book give you some tips on how to identify trees. Once you are familiar with the identifying features, turn to the identification keys and narrow your choices. To help you locate trees in the book, the colour used in the key for grouping trees with similar features is the same as the coloured background in the upper right corner of the second page for each tree description.

For each tree, you will find key identifying features such as bark, fruit or cones, and needles or leaves, along with photographs and descriptions. Be sure to check the distribution map to find out if the tree grows in your area.

There is also information on the kind of environment in which each tree species likes to grow, the other trees and plants that usually grow with it, and some of the animals that consider it part of their habitat.

We have provided some information about present and past uses for each tree. At the end of the book, you will find some naturalists' notes to help you answer questions such as, What is an ecosystem? Why do trees grow where they do? and Do ecosystems always stay the same?

Caution! Many native groups have used and continue to use parts of trees for medicine. We do not recommend consumption without full knowledge of possible side effects.

This symbol indicates caution. 

What are the Parts of a Tree?

Trees have three main parts - the leaves, the trunk and the roots. The upper part of the tree with the branches is called the **crown**.

Needles or **leaves** are the part of the tree that make sugar from air and water. They do this by a chemical process called **photosynthesis** in which energy from the sun, carbon dioxide from the air, and water recombine to form sugars and oxygen.

Stomates are tiny holes that control the amount of air that enters and leaves the tree.

Chlorophyll is a chemical that makes leaves green. It is found inside the plant's cells where **chloroplasts** absorb the sun's energy for photosynthesis.

The **trunk** has several layers.

The **outer bark** protects the tree from fire or insects and insulates it from extreme heat and cold.

The **phloem** is the layer of cells that forms a pipeline to carry sugars from the leaves to the rest of the tree. As these cells die, they become part of the outer bark.

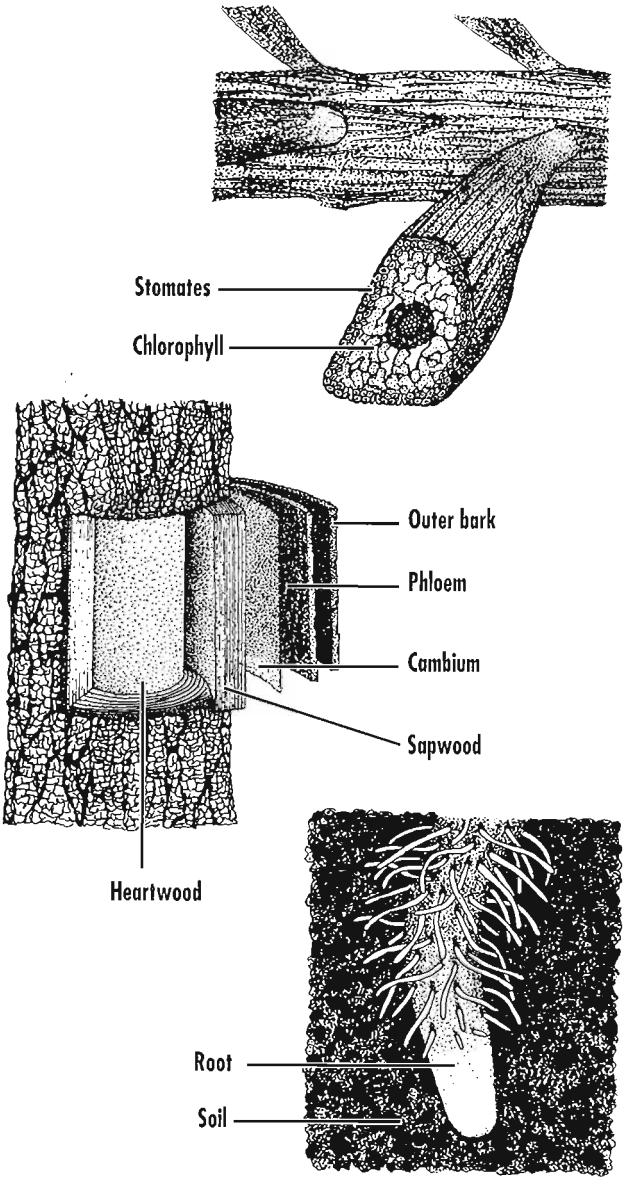
The **cambium** is the growing part of the trunk. Each year the cambium produces new phloem and sapwood. These cells grow more slowly in the winter and this slower growth produces the tree's annual rings. These annual rings can help us find the age of a tree. The oldest part of the tree is always on the inside.

The **sapwood** is the pipeline that carries water and nutrients from the roots up to the leaves. As new layers develop, the inner layers die and become heartwood.

Heartwood is dead wood in the centre of the tree. It gives the tree its strength.

Roots have two jobs - to anchor the tree to the earth and to absorb water and nutrients from the soil.

Trees have fungi that live in and on the root cells and help them absorb water and nutrients. In return, the fungi obtain food from the tree.

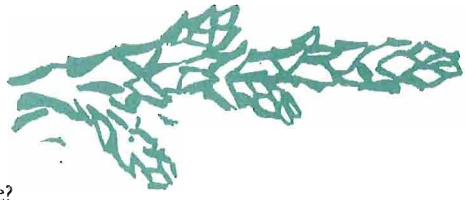

Stomates
Chlorophyll
Outer bark
Phloem
Cambium
Sapwood
Heartwood
Root
Soil

What to Look For

Many trees look the same from a distance. Up close, you will start to recognize differences, especially if you know what to look for.

What is the shape of the leaf?

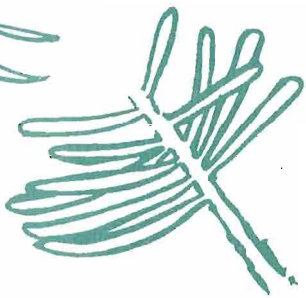
Scaly?



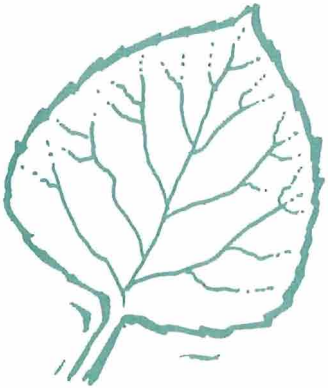
Needle-like?
In bundles? If so, how many in each bundle?



Not in bundles?



Broad leaves?



Leaves opposite each other on the twig?



Leaves alternating?



Leaves without indentations (not lobed)?



Leaves irregularly shaped (lobed)?

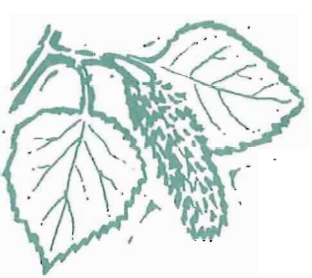


Where are the seeds?

Berry-like fruit?



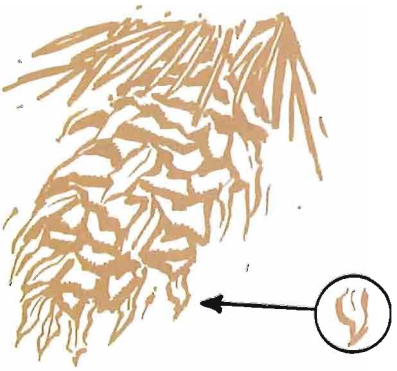
Catkins? (structures with many flowers)



Cones?



Bracts?



Key for Identifying Trees with Needles or Scales

Feature to Look For	Tree Species	Page
Trees with scale-like leaves		
Cones egg-shaped	western redcedar	16
Cones round	yellow-cedar	20
Cones fleshy and berry-like	Rocky Mountain juniper	24
Trees with needles in bundles of 2, 3 or 5		
Needles in bundles of 2	lodgepole pine	28
Needles in bundles of 3	ponderosa or yellow pine	32
Needles in bundles of 5, small cones, grows at high elevations	whitebark pine	36
Needles in bundles of 5, large cones, grows at high elevations	limber pine	40
Needles in bundles of 5, large cones, not at high elevations	western white pine	44
Trees with bundles of many needles		
Bundles of 15 to 30 needles, grows in southern B.C.	western larch	48
Bundles of 15 to 25 needles, grows in northern B.C.	tamarack	52
Bundles of 30 to 40 needles, grows in subalpine areas	alpine larch	56

Feature to Look For	Tree Species	Page
Trees with needles not in bundles		
Needles with four sides and stalks		
Grows at lower elevations, needles sharp and stiff, edge of cone scales round	white spruce	60
Grows at higher elevations, edge of cone scales ragged	Engelmann spruce	64
Grows in coastal areas, needles slightly flattened	Sitka spruce	68
Grows in northern areas, clump of branches on the top of tree	black spruce	72
Needles flat, usually with a notch at the end; cones upright		
Needles on upper side of the twig point sideways	grand fir	76
Needles on upper side of the twig point upwards	amabilis fir	80
All needles appearing to point upwards	subalpine fir	84
Needles flat, with blunt ends		
Needles different lengths, top branch of tree droops	western hemlock	88
Needles same length, curved upwards, grows at higher elevations	mountain hemlock	92
Needles flat with pointed tips		
Cones with a three-forked bract	Douglas-fir	96
Fruit red and berry-like	western yew	100

Key for Identifying Trees with Broad Leaves

Feature to Look For	Tree Species	Page
Leaves in opposite pairs		
Leaves no lobes, veins parallel, showy white flowers	Pacific dogwood	104
Leaves with 5 lobes, very large	bigleaf maple	108
Leaves with 3 to 5 lobes and coarsely toothed edges	Douglas maple	112
Leaves with 7 to 9 lobes, almost circular	vine maple	116
Leaves alternating		
Leaves evergreen, red bark peels in flakes	arbutus	120
Leaves oval, branches have thorns	black hawthorn	124
Leaves oblong, veins parallel	cascara	128
Leaves with rounded lobes, with acorns	Garry oak	132
Trees with fleshy fruit		
Small red apples, egg-shaped leaves	Pacific crab apple	136
Long cluster of dark purple berries	choke cherry	140
Flat-topped cluster of bright red berries	pin cherry	144
Loose cluster of dark red berries	bitter cherry	148

Feature to Look For	Tree Species	Page
Trees with catkins		
Catkins woody		
Leaves with rounded teeth and edges rolled under	red alder	152
Leaf edges are double-toothed, small tree or shrub	mountain alder	156
Catkins fall apart easily		
Leaves triangle-shaped, bark peels readily	paper birch	160
Leaves oval-shaped, bark shiny and dark	water birch	164
Catkins bead-like		
releasing fluffy white seeds	balsam poplar	168
	black cottonwood	168
Catkins small	trembling aspen	172
smooth white bark, leaves "tremble" in the wind		



Western redcedar

Western redcedar

Thuja plicata



A large tree, up to 60 metres tall when mature, with drooping branches; trunk often spreading out widely at the base.

Leaves

Scale-like, opposite pairs, in four rows, folded in one pair but not in the other and overlapping like shingles. Arranged on the twigs in flat, fan-like sprays. Very strong aroma.



Cones

Seed cones are egg-shaped, 1 centimetre long, with several pairs of scales. Pollen cones are small and reddish.

Bark

Grey, stringy, tearing off in long strips on mature trees.

Where to find western redcedar

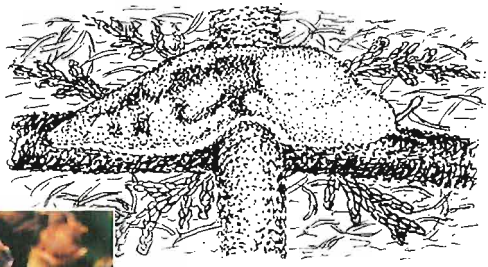
It typically occurs at low to mid elevations along the coast and in the wet belt of the Interior, where the climate is cool, mild, and moist.

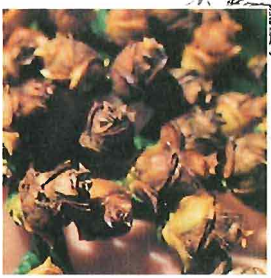


Habitat

Western redcedar grows best in moist to wet soils, with lots of nutrients. It is tolerant of shade and long-lived, sometimes over 1,000 years.

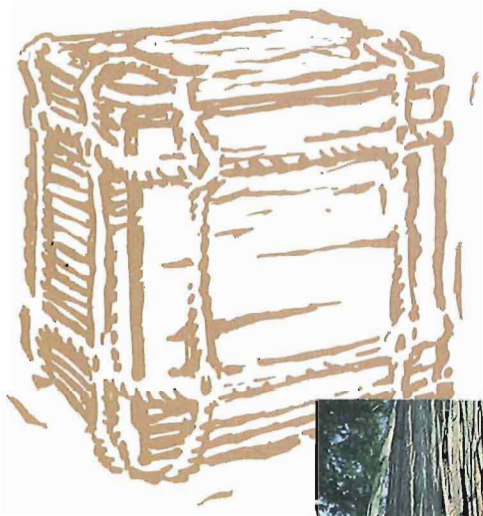
Western redcedar frequently grows with western hemlock and Douglas-fir. On the north coast, it also grows with amabilis fir and spruces. These forests usually have a lush layer of ferns, huckleberries, and Devil's club, with a thick carpet of mosses on the forest floor.





Uses

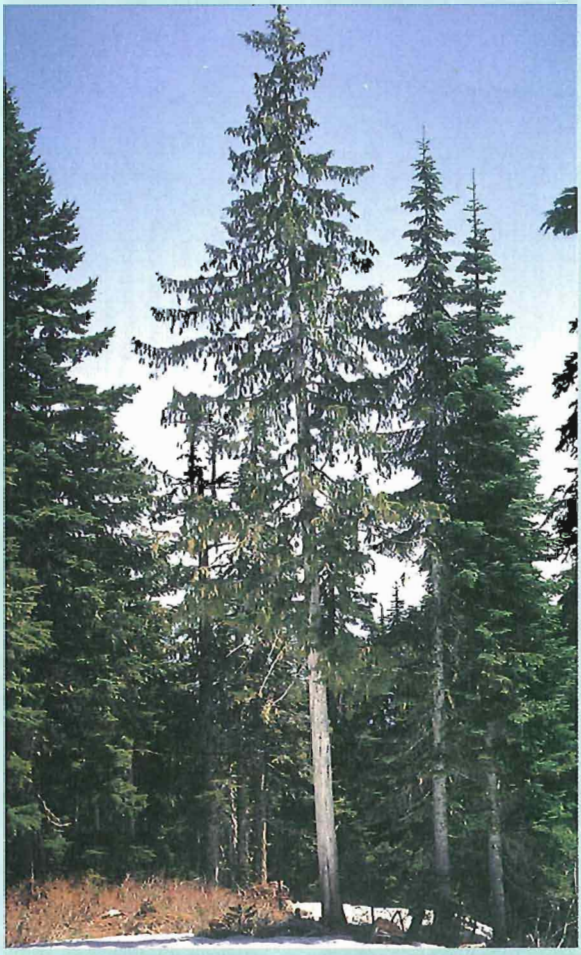
The western redcedar has been called "the cornerstone of Northwest Coast aboriginal culture," and has great spiritual significance. Coastal people used all parts of the tree. They used the wood for dugout canoes, house planks, bentwood boxes, clothing, and many tools such as arrow shafts, masks, and paddles. The inner bark made rope, clothing, and baskets. The long arching branches were twisted into rope and baskets. It was also used for many medicines.



The wood is naturally durable and light in weight. It is used for house siding and interior paneling as well as outdoor furniture, decking and fencing. Because of its resistance to decay and insect damage, the wood of large, fallen trees remains sound for over 100 years. Even after 100 years, the wood can be salvaged and cut into shakes for roofs.

Notes

The western redcedar is British Columbia's official tree. The name *plicata* comes from a Greek word meaning "folded in plaits," in reference to the arrangement of the leaves. It is sometimes called *arbor-vitae*, Latin for "tree of life."



Yellow-cedar

Yellow-cedar

Chamaecyparis nootkatensis



A medium-sized tree, up to 24 metres tall and 90 centimetres in diameter; has a broad, grooved trunk that spreads out widely at the base. The crown is sharply cone-shaped, with branches that spread out and droop, and have small, loosely hanging branchlets.



Leaves

Scale-like, dark, bluish-green, and slender with sharp points. Unlike western redcedar, the leaves of the yellow-cedar are all alike, so that the leaf-covered twigs appear four-sided rather than flat.

Cones

Cones are round, 6 to 12 millimetres in diameter, berry-like in the first year and becoming woody as they mature. Mature cones have 4 to 6 thick umbrella-shaped scales.

Bark

On young trees, the bark is thin, greyish-brown and scaly; on mature trees, it has narrow intersecting ridges. The inside of the bark smells like potato skins.

Where to find yellow-cedar

Common west of the Coast Mountains, it rarely occurs in southeastern British Columbia.



Habitat

Yellow-cedar grows well on deep, slightly acidic, moist soils, usually as single trees, or in small clumps. It is common in old-growth stands at low elevations especially in the mid or north coastal regions, with western redcedar and western hemlock and other plants such as salal and deer fern. It is most commom at high elevations, growing with mountain hemlock and amabilis fir.

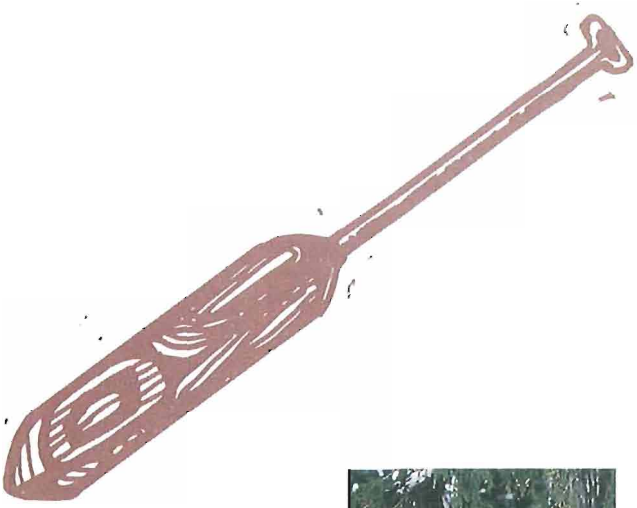


Young bark

Uses

Aboriginal people along the coast used yellow-cedar extensively. They used the wood for paddles, masks, dishes, and bows and wove the bark to make clothing and blankets.

The wood is very valuable commercially because of its straight grain, yellow colour, and resistance to decay. It is used extensively for boat building.





Notes

Chamaecyparis is derived from the Greek word for the ground cypress, an Old World shrub; *nootkatensis* refers to Nootka Sound on the west side of Vancouver Island where it was first identified by botanists.

Yellow-cedar often has a candelabra-like appearance, because the top leader dies, as do the side branches that take over. The reason for this is not really understood, but it may be a lack of nutrients caused by growing in wet, acidic soils or perhaps drought stress caused by a shortage of oxygen to the roots, which makes it difficult for the tree to take up water.



Rocky Mountain juniper

Rocky Mountain juniper

Juniperus scopulorum



A shrubby tree with a wide, irregularly rounded crown and knotty, twisted trunk reaching 13 metres in height.

Leaves

Scale-like, in pairs, barely overlapping but covering the twig in four rows. On young, faster growing branches the leaves may be longer and more needle-like, scattered in twos or threes; pale yellowish-green, turning to greyish-green on older twigs.



Cones

Seed cones are rounded, small, and fleshy, located at the ends of the branches; bright to dark blue with a greyish tinge.

Bark

Divided into narrow, flat ridges that are broken into thin, shredded, stringy strips; reddish- or greyish-brown.

Where to find Rocky Mountain juniper

It occurs most commonly on dry rocky or sandy soils, especially in moist rocky canyon bottoms, along lake and stream shores, and on dry, rocky, south-facing ridges. It generally occurs throughout southern British Columbia, although it has been seen growing as far north as Telegraph Creek.



Habitat

Rocky Mountain juniper often occurs in pure open groups of trees, but it can occur mixed with ponderosa pine on south- and west-facing slopes, or with Douglas-fir on north- and east-facing slopes.





Uses

Aboriginal people used the wood of Rocky Mountain juniper for making bows, clubs, and spoons. Because it is durable and has an attractive colour, it is now used for carving.

Many First Nations peoples boiled Rocky Mountain juniper boughs and used them as a disinfectant and air freshener. They also used the boughs in sweat houses and for smoking hides. They ate fresh Rocky Mountain juniper berries in small quantities or made them into a tea for many stomach ailments.



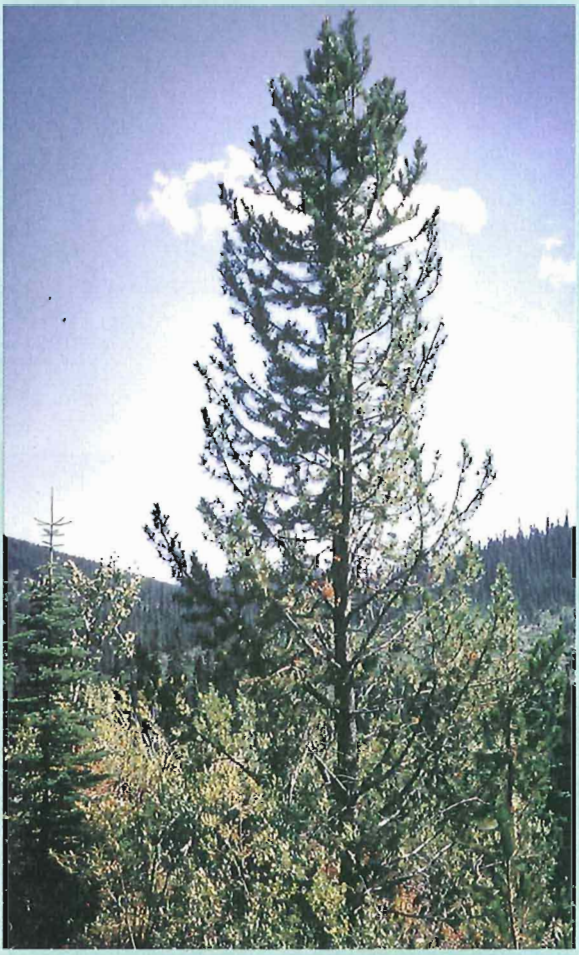


Berries from certain species of juniper are used to flavour gin. Gin was first made in Holland in the 17th century as an invigorating and medicinal alcohol.

Notes

Young branches of Rocky Mountain juniper can sometimes be confused with common juniper (*Juniperus communis*), which only has needle-like leaves and always grows as a shrub.

The cones ripen in their second season, so two generations of cones may occur on the same tree. The fleshy covering of the cones is dissolved to allow the seeds to germinate. This is usually accomplished as the cones pass through the digestive tracts of birds or other animals.



Lodgepole pine

Lodgepole pine

Pinus contorta var. *latifolia*



A tall, slender, straight tree which grows throughout most of the Interior.

Leaves

Needles occur in bunches of two and are often twisted in a spiral with sharp points; usually dark green.



Cones

Seed cones vary in shape from short and cylindrical to egg-shaped; 2 to 4 centimetres long without stalks. The seed scales have sharp prickles at their tips.

Bark

The bark is thin, orangey-brown to grey, and finely scaled.

Where to find lodgepole pine

It grows throughout the Interior, from mid elevation to subalpine sites.



Habitat

Lodgepole pine is a highly adaptable tree that can grow in all sorts of environments, from water-logged bogs to dry sandy soils.

Lodgepole pine is one of the first trees to invade after a wildfire. Its cones are protected by a seal of pitch that requires fire or heat to release the seeds. This allows seeds to stay on the tree or on the ground for many years until disturbance provides suitable growing conditions.

Lodgepole pine can occur as the only tree in dense, very slow-growing groups of trees (so-called "dog-hair" stands).





Uses

Many First Nations peoples in British Columbia used the wood from lodgepole pine for a variety of purposes, including poles for lodges, homes or buildings. In the spring, they stripped off long ribbons or "noodles" of the sweet succulent inner bark (cambium layer). It was eaten fresh in the spring, sometimes with sugar, or stored.

The pitch was used as a base for many medicines. It was boiled, mixed with animal fat, and used as a poultice for rheumatic pain and all kinds of aches and soreness in muscles and joints. Pitch was also chewed to relieve sore throats.





Lodgepole pine is excellent for lumber, plywood, and paneling. It is used to make doors, windows and furniture, as well as railway ties, mine props and fence posts.

Notes

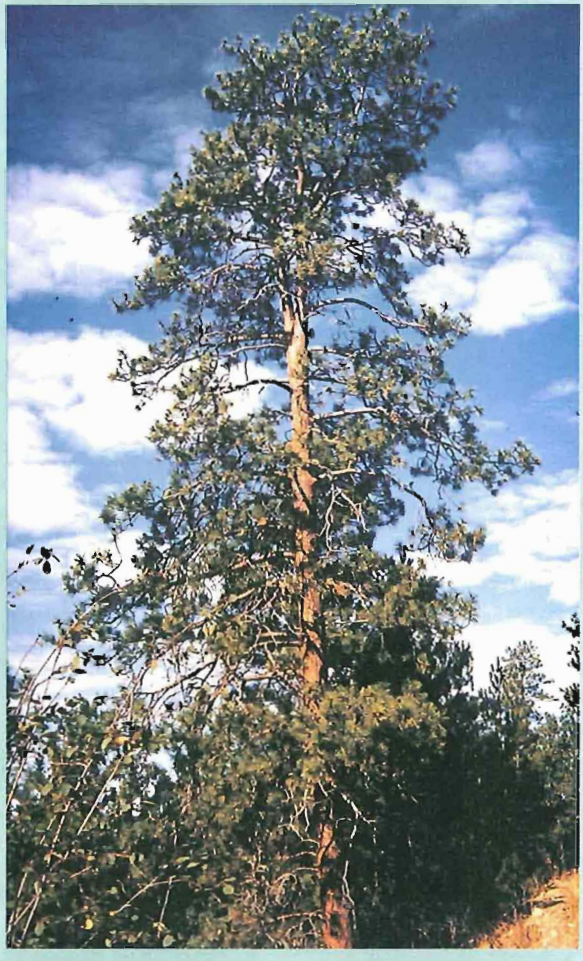
Another variety of *Pinus contorta* (var. *contorta*), called shore pine, grows in a narrow band along the coast. It commonly grows as a short, scrubby, crooked tree. This two-needled pine has thick, deeply grooved, dark reddish-brown bark.

Shore pine



In the extreme northeastern part of the province, another two-needled pine grows: jack pine (*Pinus banksiana*). Its cone scales have no prickles at the tip.

Older lodgepole pine trees are susceptible to mountain pine beetle. The beetle tunnels under the bark and lays its eggs. As the tree dies the colour of the needles changes from green to rusty-brown. Lodgepole pine is also susceptible to mistletoe, rusts, and root rot. It provides food for many small mammals (e.g., snowshoe hare, vole, and squirrels) which feed on the inner bark.



Ponderosa or yellow pine

Ponderosa or yellow pine

Pinus ponderosa



A large-crowned tree with a straight trunk, usually about 25 to 30 metres tall, but sometimes reaching a height of 50 metres and a diameter of 2 metres.



Leaves

Needles occur in bunches of three (occasionally both twos and threes), 12 to 28 centimetres long, slender, with sharp points and sharply toothed edges.

Cones

Seed cones are narrowly oval when closed, 7 to 14 centimetres long, with no stalk. The scales get thicker towards the tip and have a sharp, rigid prickle. Seeds have a 2.5 centimetre wing.

Bark

Blackish, rough, and scaly on young trees; on mature trees the bark is very thick (up to 10 centimetres), bright orangey-brown, and deeply grooved into flat, flaky plates.

Where to find ponderosa pine

It is the characteristic tree of the southern Interior.



Habitat

Ponderosa pine occurs on a variety of soils, from extremely dry to well-drained, relatively deep, moist soils. It grows in pure, open, park-like groups at lower elevations. At higher elevations it grows with Interior Douglas-fir.

Ponderosa pine has a long, deep root that enables it to access the deeper, moister soil. The long root also makes it quite wind-firm. These trees can live as long as 400 to 500 years.

Fires are common in ponderosa pine forests and the thick bark protects the trees from the frequent ground fires that lightly burn fallen needles and dead grass. It is common to see fire scars on older trees.



Uses

Aboriginal people in the Interior of British Columbia had many uses for ponderosa pine. They ate the seeds and inner bark of both the ponderosa and the whitebark pine.

Some Interior groups used the wood for making dugout canoes. They used the pitch for waterproofing moccasins and other items. They also mixed it with bear grease and used it as an ointment for sores and inflamed eyes.

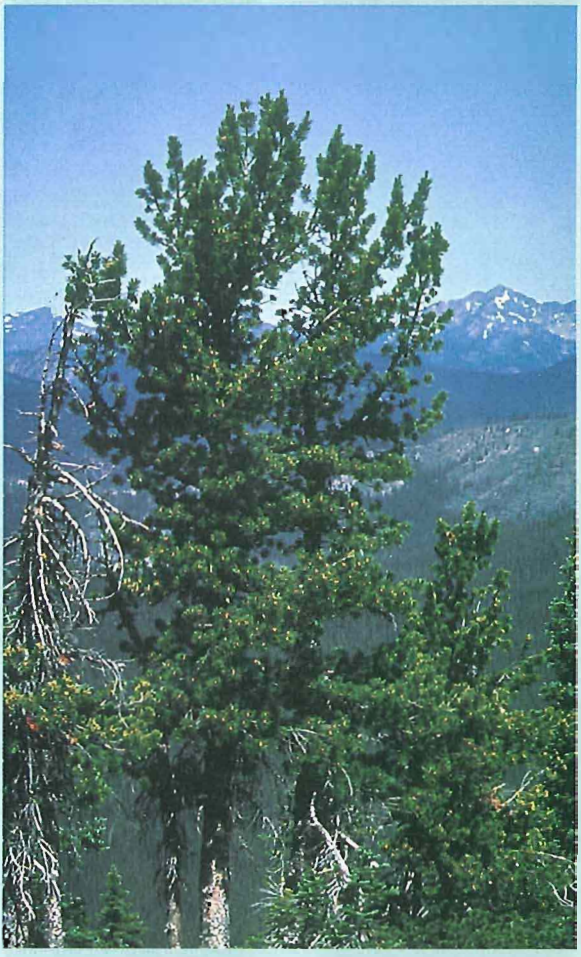
The wood is used mainly for doors, windows, and furniture, as well as paneling and shelving.



Notes

For many, the name *ponderosa* conjures up romantic images of the wide-open spaces of the untamed West. However, David Douglas named the tree because of its ponderous size. The other common name, yellow pine, refers to the clear, even-grained wood that is found in very old, large trees.

On a hot day, the bark of the ponderosa pine smells like vanilla and when you break a young twig it smells somewhat like oranges.



Whitebark pine

Whitebark pine

Pinus albicaulis



A subalpine tree that varies in shape from a small tree with a rapidly spreading trunk and broad crown to a shrub with a wide-spreading crown and twisted, gnarled branches when exposed to strong winds. It is similar in appearance to limber pine, but its cones are quite different.



Leaves

Needles occur in bunches of five, ranging from 3 to 9 centimetres long; they are stiff, slightly curved, usually bluish-green, and tend to be clumped towards the ends of branches.

Cones

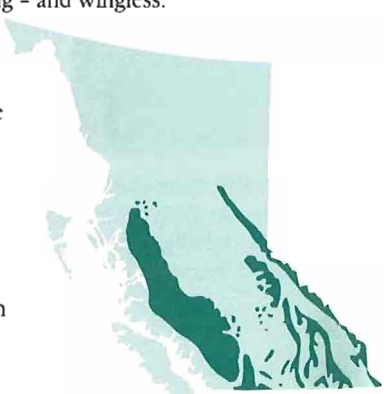
Seed cones are egg-shaped to almost round, 3 to 8 centimetres long, and grow at right angles to the branch; the scales grow in roughly 5 spiral rows. The cones are permanently closed and the seeds are released when the cones decay on the ground. Seeds are large - about a centimetre long - and wingless.

Bark

Thin, smooth, and chalky-white on young stems; as the tree gets older, the bark becomes thicker and forms narrow, brown, scaly plates.

Where to find whitebark pine

It occurs at high elevations in southern British Columbia.



Habitat

Whitebark pine prefers to grow on dry to moderately moist sites in subalpine areas.

The whitebark pine has a special relationship with the Clark's nutcracker. The bird uses its slender, long, curved beak to break open the cones and remove the seeds. The nutcracker then buries the seeds for winter meals. If the nutcracker forgets where it buries the seeds they are in an ideal environment for germination and sprouting. Grizzly bear are known to feed on whitebark pine seed caches.





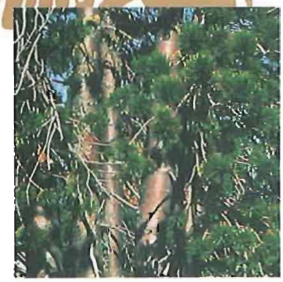
Uses

The Thompson people ate the seeds of the whitebark pine (pinenuts) both raw and roasted. They collected the cones in the fall and dried them to open the scales. They extracted the seeds and ate them fresh or sometimes preserved them for winter by cooking and crushing them and then mixing them with dried berries.



Notes

The scientific name *albicaulis* literally means the "pine with white stems" in reference to the white bark that is especially noticeable on younger trees.





Limber pine

Limber pine

Pinus flexilis



A small, scrubby, twisted tree with short limbs, usually 5 to 10 metres high; the lower branches on older trees become very long and drooping but with upturned tips. It looks similar to whitebark pine, but limber pine has larger cones.



Leaves

Needles occur in bunches of five, 3 to 9 centimetres long; bluish-green and clustered at the ends of twigs.

Cones

Seed cones are large and cylindrical, 8 to 20 centimetres long; they are yellowish-brown, and the scales are thickened and sticky towards the tip. The seeds are nut-like and almost wingless.

Bark

On young trees, the bark is silvery-grey; as the tree matures, the bark becomes thicker, very rough, and nearly black, with wide scaly plates.

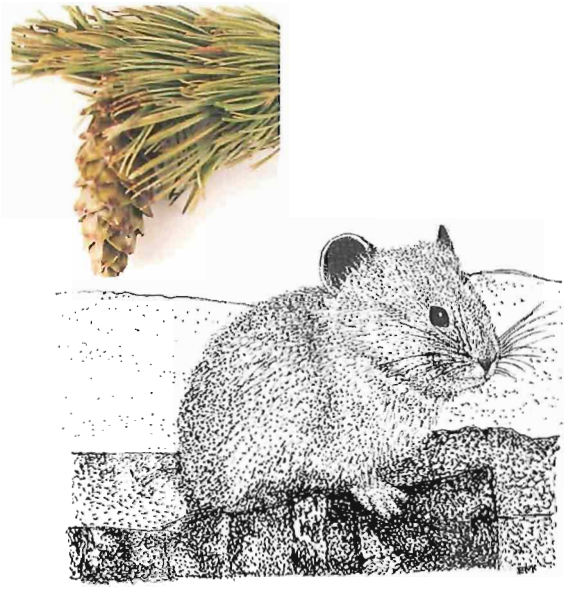
Where to find limber pine

It occurs only at higher elevations on the western foothills of the Rocky Mountains, in the extreme southeast of British Columbia.



Habitat

Limber pine occurs on dry to moderately moist sites in subalpine environments. It occurs as a single tree or in widely spaced groups of trees on rocky terrain, where its roots penetrate the spaces between rocks.





Notes

Both the common name and *flexilis* refer to the flexible nature of the wood of this tree. Having flexible wood is an excellent adaptation for a tree that must deal with heavy snowpack and ice.



Western white pine

Western white pine

Pinus monticola



A large tree, up to 60 metres high. It usually grows in closed groups of trees and has a short, open crown.

Leaves

Needles occur in bunches of five, about 5 to 10 centimetres long. Slender, straight, and soft to touch, they are bluish-green in colour with a whitish tinge, and the edges are very finely toothed.



Cones

Seed cones are cylindrical when closed, about 10 to 25 centimetres long, and they occur on a 2 centimetre stalk; the scales are often bent backwards when dry. The seeds have wings about 3 centimetres long.

Bark

When the trees are young, the bark is thin, smooth, and greyish-green. It turns darker as it gets older and forms deep, vertical grooves, with small rectangular scaly plates.



Where to find western white pine

It is commonly found in the drier parts of Vancouver Island, the adjacent mainland coast and in the wetter parts of the southern Interior, particularly at low elevations.

Habitat

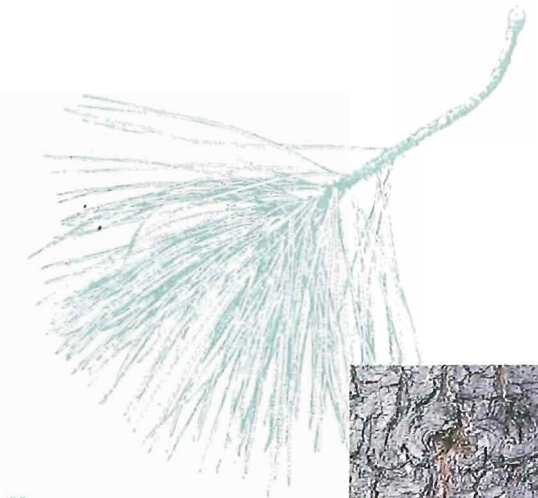
Western white pine thrives in a variety of environments, ranging from peat bogs to dry, sandy, or rocky soil. It does best on sites that are rich in nutrients and well drained, in moist valleys and on gentle northern slopes.



Uses

The Thompson people made a medicine from the boughs of western white pine.

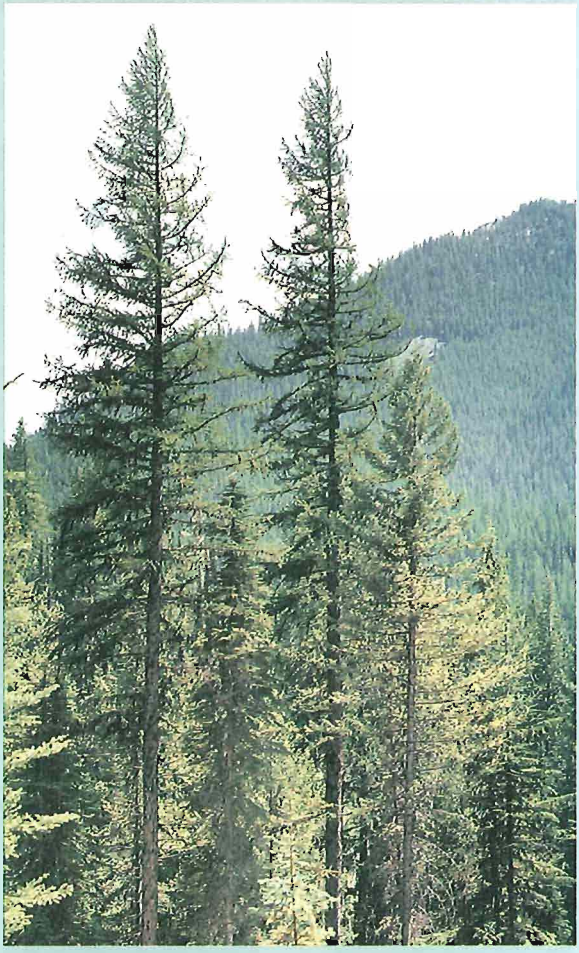
The wood is ideal for carving because of its fine grain and uniform texture. It is also prized for special construction purposes, pattern making and furniture.



Notes

Western white pine is susceptible to white pine blister rust, which causes portions of the tree to turn an orangey-brown colour and die. The rust is difficult to control and prevents the tree from being of commercial importance.

The botanist David Douglas first identified western white pine on the slopes of Mount St. Helens. It gets its common name from the light colour of the wood. The Latin name *monticola* means "inhabiting mountains."



Western larch

Western larch

Larix occidentalis



Like all larches, it loses its needles in the autumn. This large, handsome tree can grow to 80 metres tall and 850 years of age.

Leaves

New needles are soft green, turning golden yellow in the fall, and broadly triangular in cross section. They are long, clustered in bunches of 15 to 30 on stubby, woody projections which remain on the twig after the needles fall.



Cones

Seed cones are elongated and red to reddish-brown. The scales have white hairs on the lower surface and prominent, long slender bracts. Pollen cones are yellow.

Bark

Mature trees develop thick, grooved plate-like bark with cinnamon-coloured scales (similar to ponderosa pine bark).

Where to find western larch

It grows in valleys and on the lower slopes of mountains in the southern Interior.



Habitat

Western larch usually grows in mixed forests but can occasionally be found in pure groups of trees after a severe wildfire. It demands full sunlight and grows well on fire-blackened soil. Fire releases nutrients which it uses to grow faster than its companion species.

Low temperatures limit the distribution of western larch. It is quite sensitive to frost damage because it continues to grow from bud-burst in spring through to September; most evergreen conifers stop growing in mid-July.



Uses

Aboriginal people seldom used western larch wood; however, they mixed the dried pitch with grease and used it as a cosmetic. Dried powdered pitch was also an ingredient of a red paint applied to wood or buckskin.

The wood of western larch is one of the strongest in Canada. It is often used in heavy construction and for railway ties and pilings.





Notes

The thick bark of mature western larch and its habit of shedding lower branches make this species resistant to fire.



Tamarack

Tamarack

Larix laricina



A small, slender tree which rarely grows more than 15 metres tall. It has delicate, deciduous foliage.

Leaves

Needles are three-sided and blue-green, turning bright yellow in autumn. They grow in clusters of 15 to 25 on short woody projections which remain on the twig after the needles fall.



Cones

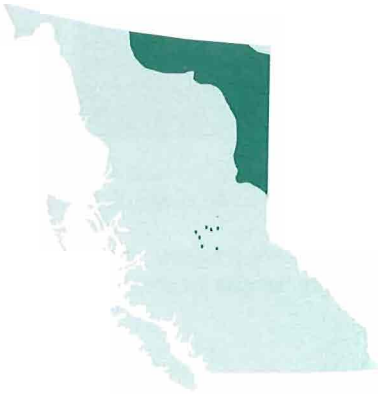
The small, round seed cones are red at flowering and turn brown with age. Pollen cones are yellow.

Bark

Red-brown, thin, and scaly.

Where to find tamarack

It is a northern species which grows mainly east of the Rockies and in a few isolated groups of trees in the Nechako Valley.



Habitat

Tamarack is usually found with black spruce on poorly drained soils - bogs and swamps - and on cool, moist, north-facing slopes.



Uses

Some native groups chewed tamarack resin to relieve indigestion.

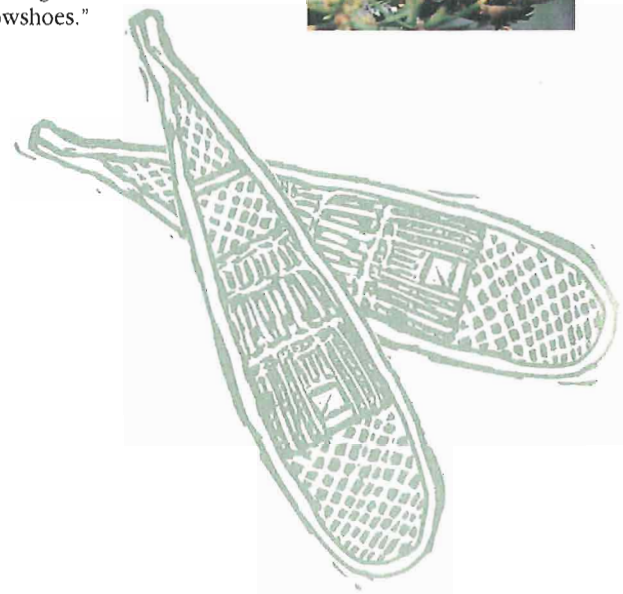
In the days of wooden sailing ships, tamarack roots were used to join the ribs to the deck timbers.

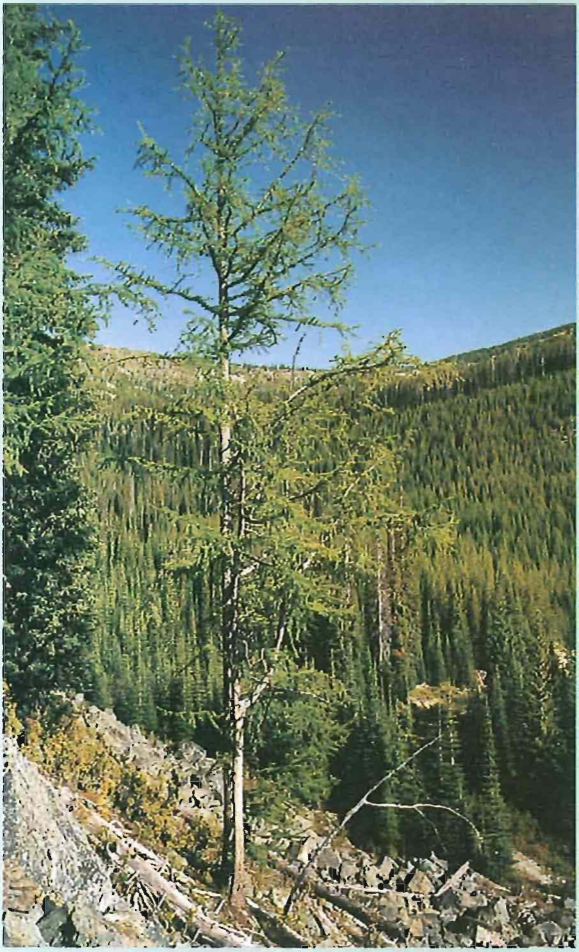
Tamarack produces a heavy, durable wood used mainly for pulp but also for posts, poles, and fuel.



Notes

Laricina is Latin for larch-like. Tamarack comes from an Algonquin word, *akemantak*, meaning "wood used for snowshoes."





Alpine larch

Alpine larch

Larix lyallii



A small, often dwarfed or contorted tree that grows to 15 metres tall.

Leaves

Needles are soft bluish-green and turn golden in the fall. They are four-sided and grow in clusters of 30 to 40 on short, woody projections which remain on the twigs after the needles fall. The alpine larch has woolly hair on its buds and twigs.



Cones

The small, egg-shaped seed cones are reddish-yellow to purple when young. Between each scale of the cone there are prominent bracts. Pollen cones are yellow.

Bark

The bark is thin, deeply grooved, and flakes into reddish- to purplish-brown scales.

Where to find alpine larch

It is found in the subalpine area of the Rocky Mountains, the Purcell and southern Selkirk ranges, as well as in Manning Park and adjacent areas in the Cascade ranges.



Habitat

Alpine larch grows in very cold, snowy areas, often on rocky, gravelly soils. It grows with whitebark pine and subalpine fir. Alpine larch can also form pure groups of trees which provide a spectacular show of autumn colours.





Uses

A soup can be made from the young twigs for a survival food.



Notes

Alpine larch (*Larix lyallii*) was named for David Lyall, a Scottish surgeon and naturalist, who accompanied several early expeditions and surveys. The alpine larch's spring and autumn colours are eye-catching.





White spruce

White spruce

Picea glauca



A large tree with a narrow crown, it can grow to 40 metres tall and 1 metre in diameter when mature.

Leaves

Needles are four-sided, sharp, and stiff, and are arranged spirally on the twigs; whitish-green and foul smelling when young, they become pleasant smelling with age.



Cones

Seed cones are light brown to purplish and hang from the upper branches. The seed scales have a smooth, rounded outer edge. Pollen cones are pale red.

Bark

The bark is loose, scaly, and greyish-brown.

Where to find white spruce

White spruce and its hybrids are found throughout the Interior from valley floor to mid elevations. In the central Interior, white spruce interbreeds with Engelmann spruce and is referred to as interior spruce. The pure species is generally found only north of Dawson Creek.



Habitat

White spruce grows in a wide range of environments. It frequently grows with lodgepole pine, subalpine fir, aspen, birch, and willow. Oak fern, horsetail, and gooseberry often grow under white spruce. Lynx, snowshoe hares, wolves, and moose live in these northern forests.



Young bark

Uses

Aboriginal people living in the Interior used most parts of the white spruce tree. They made spruce saplings into snowshoe frames and sometimes into bows. They heated the gum to make a glue to fasten skins onto bows and arrowheads onto shafts. They used the decayed wood for tanning hides. Spruce bark was also used to make cooking pots and trays for gathering berries.

White spruce is a very important commercial tree species, yielding excellent lumber and pulp.





Hybrid Cones

Notes

White spruce is often shallow-rooted and susceptible to being blown over, especially on thin or wet soils. Large areas of blown down spruce are prime breeding sites for the spruce beetle, which can then spread to mature trees and kill thousands of hectares of old-growth spruce.





Engelmann spruce

Engelmann spruce

Picea engelmannii



A straight tree with a spire-like crown that can reach 50 metres tall and 1 metre in diameter when mature. Branches near the ground tend to droop.

Leaves

Needles are four-sided and sharp but not particularly stiff. They are deep bluish-green with two white bands on both the upper and lower surfaces. The needles are arranged in all directions on the twigs.



Cones

Seed cones are yellow to purplish-brown and hang from the upper branches. Their papery seed scales are tapered at both ends and have a ragged outer edge. Pollen cones are most commonly yellow to purplish-brown.

Bark

The bark is loose, scaly, and reddish-brown to grey.

Where to find Engelmann spruce

It occurs at high elevations throughout the Interior and along the east slope of the Coast Range. It has been successfully introduced into high-elevation plantations on the west side of the Coast Range and on Vancouver Island.



Habitat

Engelmann spruce commonly occurs with subalpine fir in areas with long, cold winters and short, cool summers. It grows best on deep, rich soils with adequate moisture.

In drier areas, Engelmann spruce grows with lodgepole pine. The forest floor is often carpeted with grouseberry and mountain arnica. On wetter sites, huckleberries, white-flowered rhododendron, and Sitka valerian commonly occur.

Mule deer are plentiful and birds such as grouse, woodpeckers, nuthatches, and thrushes breed in these subalpine forests.



Uses

Aboriginal people living in the Interior used peeled, split, and soaked spruce root to sew the seams of bark baskets. The Interior Salish and Athapaskan peoples used the split roots to make tightly woven coiled baskets.

Sheets of spruce bark were made into cooking baskets and canoes. The bark was used by the Thompson people for roofing and by the Lillooet people for baby carriers.

Engelmann spruce lumber is used for construction when great strength is not required. Rotary cut spruce veneer is used in manufacturing plywood. Specialty items such as violins, pianos, and aircraft parts are produced from Engelmann spruce.



Notes

Engelmann spruce interbreeds with white spruce in areas where their ranges overlap.

It was named for George Engelmann (1809-1884), a German physician and botanist.





Sitka spruce

Sitka spruce

Picea sitchensis



A large tree that commonly grows up to 70 metres tall and 2 metres across when mature. The largest known Sitka spruce is 93 metres tall and 5 metres across.

Leaves

Needles are light green to bluish-green, stiff, and sharp. They are four-sided but slightly flattened with two white bands running along the upper surface and two narrower bands along the lower surface. The needles are arranged spirally along the twig and are attached by small pegs which remain on the twig after the needles fall.



Cones

Seed cones are reddish- to yellowish-brown and hang from the crown. Their seed scales are thin, wavy, and irregularly toothed. Pollen cones are red.

Bark

The bark is very thin, brown or purplish grey, and breaks up into small scales.

Where to find Sitka spruce

It grows along the coast in a narrow band from sea level to about 700 metres. It is most common along the coastal fog-belt and river and stream flood plains.



Habitat

In coastal forests, Sitka spruce grows with western hemlock, western redcedar, and yellow-cedar. The forest floor is often thick with mosses, and horsetails, blueberries and deer fern flourish.

Black-tail deer abound, especially in the Queen Charlotte Islands, where they were introduced without their natural predator, the gray wolf. The productive floodplains along coastal valleys support grizzly and black bears as well as many smaller mammals.



Young bark

Uses

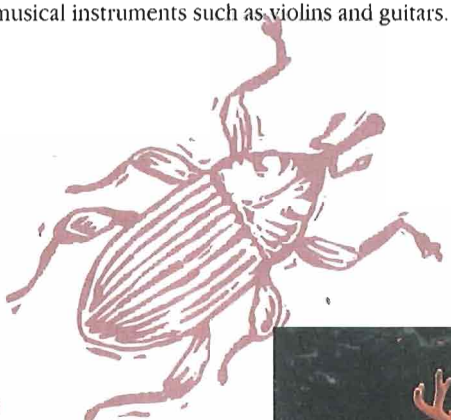
Aboriginal people living on the coast used Sitka spruce extensively. From the roots, they fashioned beautiful water-tight hats and baskets. Roots also provided materials for ropes, fishing lines, and twine to sew boxes and baskets.

Some coastal peoples ate the inner bark or the young shoots raw as a source of vitamin C. Fresh inner bark also acts as a laxative.



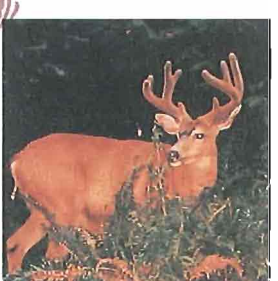
The native people used softened pitch to caulk and waterproof boats, harpoons and fishing gear. The pitch also provided an effective medicine for burns, boils, and other skin irritants.

Sitka spruce is valued for its wood, which is light, soft, and relatively strong and flexible. It is used for general construction, ship building and plywood. The wood has excellent acoustic properties and is used to make sounding boards in pianos and other musical instruments such as violins and guitars.

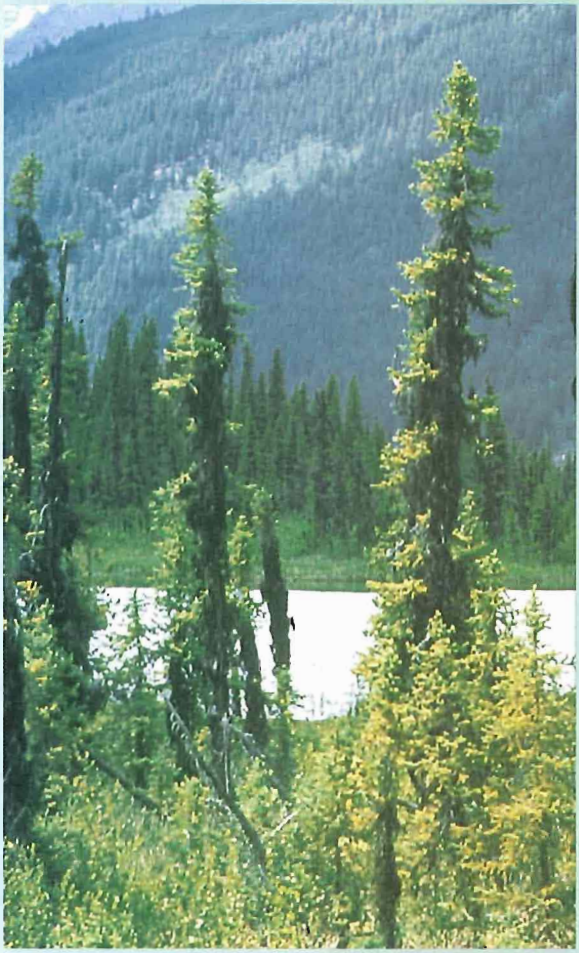


Notes

The Sitka spruce is frequently host to the spruce weevil. The weevil lays its eggs in the bud at the top of the tree. If it is warm enough, the eggs hatch and the new growth wilts and eventually dies. Cool ocean breezes and summer fog deter the weevil and allow Sitka spruce to grow freely.



Sitka spruce has been introduced into Britain and northern Europe, where it is now widely grown.



Black spruce

Black spruce

Picea mariana



A small, slow-growing tree, up to 20 metres tall and 25 centimetres in diameter. It often has a characteristic cluster of branches at the top forming a club or crow's nest.

Leaves

Needles are blue-green, short, stiff, and four-sided. The needles are arranged in all directions along the twig or mostly pointing upwards.



Cones

Seed cones are small and purplish. The old cones hang on the tree for several years. Pollen cones are dark red.

Bark

The bark is thin, scaly and dark greenish-brown.

Where to find black spruce

It grows throughout the northern part of the province.



Habitat

Black spruce tolerates poor growing conditions. It often occurs in pure groups of trees or with lodgepole pine and white spruce. It is frequently found in cold, poorly drained areas, such as swamps and bogs, along with sphagnum mosses and horsetails. Lingonberry and Labrador tea are also plentiful.

Black spruce forests are rich in wildlife. Moose, muskrat, and mink are numerous and many birds eat the abundant insects in these wet, boggy areas.



Uses

The Carrier people used black spruce wood to make fish traps. Other aboriginal people made snowshoe frames and drying racks. They also used powdered resin on wounds to speed healing.

The long fibres in black spruce make this a preferred pulp species for paper products.



Notes

The name *mariana* means "of Maryland." Phillip Miller, who named the species, felt that Maryland epitomized North America - but the species does not actually grow there!



Grand fir

Grand fir

Abies grandis



A tall, stately tree that can grow up to 80 metres when mature.

Leaves

Needles are flat with rounded and notched ends. They are dark green and grooved on top with two white bands underneath. Needles are arranged to form flat sprays that show both the upper and lower surfaces of the twig.



Cones

Seed cones are barrel-shaped and yellowish-green, growing upright on the branches, high in the crown. The cones shed the scales with the seeds during autumn.

Bark

The bark is smooth and greyish-brown with white spots and blisters filled with gummy resin when young. The bark becomes furrowed and scaly with age.

Where to find grand fir

It is found from sea level to mid elevations along the southern coast and around the Kootenay and Columbia rivers in the southern Interior.



Habitat

Grand fir prefers drier climates than the other true firs in British Columbia. In the Interior, it commonly grows in mixed coniferous forests with Douglas-fir, western hemlock, and western white pine, and with queen's cup, falsebox, and prince's pine on the ground below.

On the coast, western redcedar and flowering dogwood may also be present, with salal, Oregon-grape, western trillium and vanilla-leaf beneath.

These forests are often home to bears and cougars; owls and woodpeckers; and toads, frogs and salamanders.

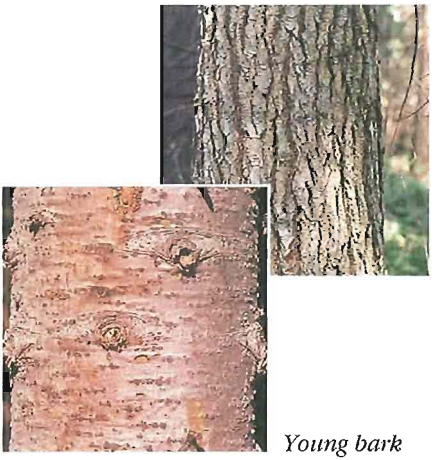
Grand fir, like other true firs, has a thin bark which makes it susceptible to fire. It has increased in abundance since forest fire fighting activities began.



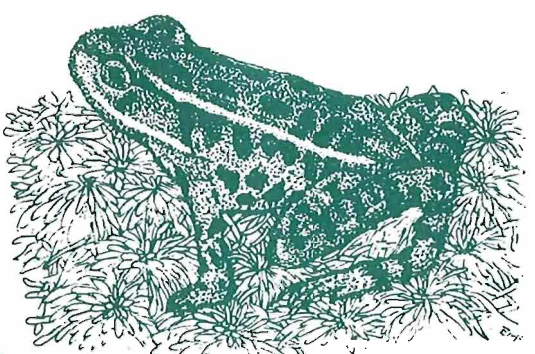
Uses

The Okanagan people built canoes from grand fir bark and rubbed its pitch on paddles to give them a good finish. They also applied pitch to the back of bows to provide a secure grip.

Kwakwaka'wakw shamans wove branches into headdresses and costumes; they also used branches for scrubbing before rites and rituals. The Hesquiat made branches into incense and decorative clothing for wolf dancers. They also rubbed the pitch mixed with oil on their scalps as a perfume and to prevent baldness.



Young bark



Notes

The name *Abies* is derived from the Latin *abeo* meaning "to rise" and refers to the great height attained by some species. Fir is derived from the Old English *furh* or *fyrh* or the Danish *fyrr*, meaning "fire", from its use as firewood.

Many of the true firs are incorrectly called balsam. The true balsam fir (*Abies balsamea*) is found east of the Rocky Mountains.



Amabilis fir

Amabilis fir

Abies amabilis



A tall, straight tree with a dense cone-shaped crown. It can reach 50 metres when mature.

Leaves

Needles have blunt ends and are usually notched at the tip. They are dark green with a groove on the upper surface and have two silvery bands on the lower surface.



The needles are arranged in flattened, spray-like branches. The long needles spread horizontally from the bottom and sides of the twig while the shorter ones on the top point forward.

Cones

Seed cones are deep purple and are held upright on branches at the top of the tree. The cones fall apart while still on the tree, leaving a central spike that is visible into winter. Pollen cones are reddish.

Bark

The bark is smooth and pale grey with blisters of pitch. It becomes scaly with age.

Where to find amabilis fir

It is usually found in coastal forests above 300 metres elevation. In the north, it may grow at sea level.



Habitat

Amabilis fir thrives in a maritime climate, where it is common in moist forests on deep, well-drained soils. It is usually found in mixtures with western and mountain hemlock, yellow-cedar, and western redcedar. It is very tolerant of shade, and small trees often grow abundantly with black huckleberry and mountain-heathers.

Amabilis fir tolerates summer drought but depends on adequate moisture during the early growing season. Seedlings develop long roots that penetrate compact soil but the root system will grow horizontally on poorly drained soils.



Young bark



Uses

Boughs from both amabilis fir and grand fir provided floor coverings and bedding for aboriginal people.

Several coastal peoples used the firs medicinally. They boiled the bark with stinging nettle for a tonic and for bathing and treated colds with a tea made from the needles.

The Nisga'a occasionally used it for house planks. Many native groups used it for firewood.



Because of its light weight and colour, its clean appearance and its lack of unpleasant odour, the wood is used for doors and windows, as well as furniture parts, mouldings and food containers.



Notes

Amabilis fir is also called Pacific silver fir because of the silvery underside of the needle. The botanical name *amabilis* means "lovely," an apt description for this species.

The cones of the amabilis fir are the largest and heaviest of the native firs.



Subalpine fir

Subalpine fir

Abies lasiocarpa



A medium-sized tree usually 20 to 35 metres tall; occasionally grows to 50 metres. Subalpine fir has a distinctive long, narrow crown of short stiff branches.

Leaves

Needles have blunt ends and are often notched at the tip. They are blue-green with a single white band on the top and two beneath. Needles all tend to turn upwards, but often a few stick out from the underside of the branch.



Cones

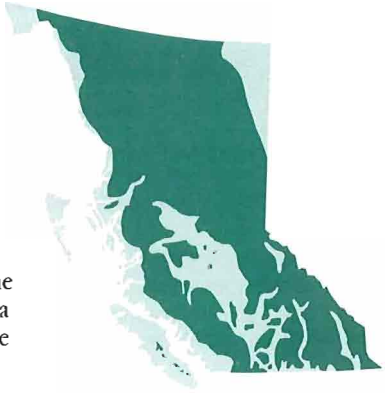
Seed cones are deep purple and grow upright at the top of the crown. Like the cones of the other firs, they disintegrate on the tree, leaving a central spike. Pollen cones are bluish.

Bark

Smooth and grey, with resin blisters when young; bark becomes broken into large scales with age.

Where to find subalpine fir

It grows well at high elevations, from 600 to 2,250 metres throughout most of the Interior. It also grows near sea level on the north coast. None of the true firs grow in the Queen Charlotte Islands.



Habitat

Subalpine fir is common in many Interior forests and is a major component of the Interior high elevation forests from the Yukon to Arizona. Cool summers, cold winters and a deep snowpack are important in determining where subalpine fir will grow well.

In the mountains and plateaus of the Interior, subalpine fir is commonly found with spruce. Caribou eat the lichens that are found on the lower branches of these trees.



Uses

The pitch and bark of subalpine fir was a very important medicine in the Interior. The Secwepemc called the tree the medicine plant. They chewed the pitch to clean their teeth. People also chewed the pitch of all true firs for enjoyment.

Interior groups made large temporary baskets from sheets of bark that they stitched together with spruce roots. They used the baskets for cooking or soaking hides. They also collected boughs to use for bedding and as flooring in sweat lodges.



Young bark

The Carrier people used the wood to make roofing shingles and burned the rotten wood to make a substance for tanning hides.

Subalpine fir is currently harvested for lumber, plywood veneers, boxes, and pulp.



Notes

Subalpine fir does not live long because of its susceptibility to wood-rotting fungi, especially Indian paint fungus and bleeding conk fungus. Between 120 and 140 years of age, many trees become infected and die.



Western hemlock

Western hemlock

Tsuga heterophylla



A large tree, it usually grows 30 to 50 metres tall. It has a rather narrow crown and conspicuously drooping new growth at the top of the tree. It has mostly down-sweeping branches and delicate feathery foliage.

Leaves

Needles are nearly flat, glossy, and soft; yellow to dark green on the upper surface and whitish underneath. The needles are unequal in length and produce feathery, flat sprays.



Cones

The small, numerous seed cones are greenish to reddish-purple and turn brown with age.

Bark

Dark brown to reddish-brown, becoming thick and strongly grooved with age.

Where to find western hemlock

It grows along both the east and west sides of the Coast Ranges, from sea level to mid elevations, as well as in the Interior wet belt west of the Rocky Mountains.



Habitat

Western hemlock usually grows with many different tree species. Occasionally, it develops in pure groups of trees after a wind has blown many trees over. Its shallow rooting system makes it susceptible to being blown over by wind as well as being damaged by fire.

Western hemlock tolerates shade and grows abundantly underneath mature trees, where it provides an important source of food for deer and elk.





Uses

Coastal people carved hemlock wood, which is fairly easily worked, into spoons, combs, roasting spits, and other implements. The Haida carved the wood from bent trunks into giant feast dishes. Sometimes hemlock roots were spliced onto bull kelp fishing lines to strengthen them.

Hemlock bark is rich in a substance useful for tanning hides. The Saanich people made a red dye which not only coloured wool but also added colour to cheeks and removed facial hair.



The Nisga'a and Gitksan peoples scraped off the inner bark in spring and baked it into cakes. A favorite way to prepare the dried cambium in winter was to whip it with snow and eulachon grease.

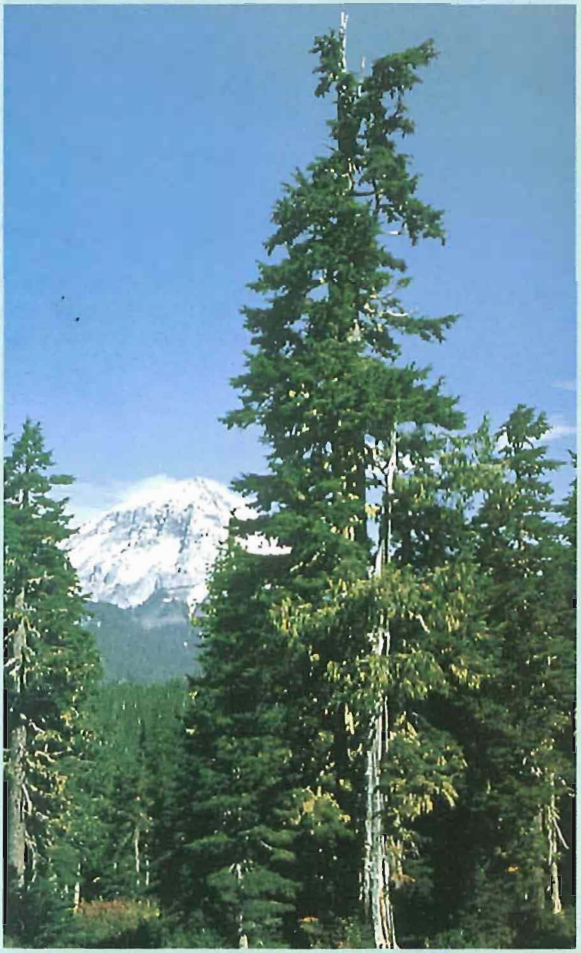
The wood has an even grain and resists scraping, which makes it easy to machine. It is widely used for doors, windows, parts of staircases, ladders and other architectural millwork items.



Notes

Hemlock was named after a European weed which has a similar smell. Western hemlock is not related to poison-hemlock, the weed which killed Socrates.

Tsuga is from the Japanese Tsu-ga, the elements for "tree" and "mother," and *heterophylla* is Greek for "different leaves."



Mountain hemlock

Mountain hemlock

Tsuga mertensiana



A subalpine tree with only a slightly drooping leader or top; rarely grows more than 30 metres tall and is often stunted at high elevations.

Leaves

Needles are uniform in size, glossy, and yellow-green to deep bluish-green. They cover the branches densely on all sides or may be mostly upturned.



Cones

Seed cones are light to deep purple (sometimes green), narrow at each end and longer than those of western hemlock. Pollen cones are bluish.

Bark

Dark reddish-brown, cracked and grooved into narrow ridges.

Where to find mountain hemlock

It grows at mid elevations to timberline in the coastal mountains and at low elevations further north. In the Interior, it grows in the Cariboo, Selkirk and Monashee mountains.



Habitat

Mountain hemlock grows with amabilis fir and yellow-cedar on the coast and Engelmann spruce and subalpine fir in the Interior. It is found in areas that have a deep, insulating snowpack that accumulates early in the fall; it probably cannot grow where the soil freezes. It also grows in bogs along the mid to north coast.





Uses

Commercial uses include small dimension lumber and pulp.



Notes

Mertensiana is named for Franz Karl Mertens, a German botanist.



Lewis' monkey-flower



Douglas-fir

Douglas-fir

Pseudotsuga menziesii



A large tree, reaching heights of 85 metres on the coast and 42 metres in the Interior. Older trees have a long, branch-free trunk and a short cylindrical crown with a flattened top. There are two varieties of Douglas-fir - coastal and Interior.



Leaves

Needles are flat with a pointed tip. The upper surface is bright yellowish-green with a single groove down the centre; the lower surface is paler. The needles appear to stand out around the twig.

Cones

Cones are 5 to 11 centimetres long, turning from green to grey as they mature. Between each scale, long three-pronged bracts are easily seen. Seeds are winged at the tip.

Bark

Smooth, grey-brown, with gummy resin-filled blisters when young, the bark becomes very thick with age and deeply grooved, with dark reddish-brown ridges.

Where to find Douglas-fir

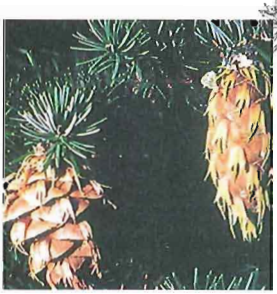
The coastal variety of Douglas-fir occurs along the southern mainland coast and across Vancouver Island, except for the very northern tip. The Interior variety occurs throughout southern British Columbia and north to Takla Lake.

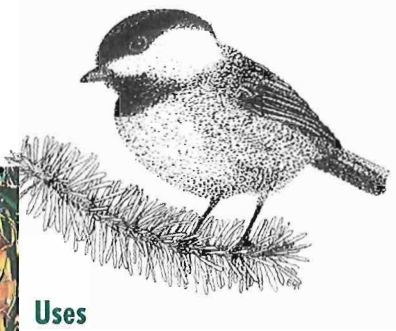


Habitat

The two varieties of Douglas-fir occur in quite different ecosystems. The Interior variety grows in a variety of habitats including open forests with pinegrass and mosses beneath. On the coast, the forests are much more productive. Douglas-fir can grow with western redcedar, hemlock, and grand fir, with a lush layer of salal, huckleberries, Oregon-grape, and sword fern beneath.

Many animals eat Douglas-fir seeds, including squirrels, chipmunks, mice, shrews, winter wrens, and crossbills. Bears often scrape off the bark on young trees and eat the sap layer beneath.





Uses

Aboriginal people in the south part of the province had many uses for Douglas-fir. They used the wood and the boughs as fuel for pit cooking. They also used it for fishing hooks and for handles. Douglas-fir boughs were frequently used for covering the floors of lodges and sweat lodges.

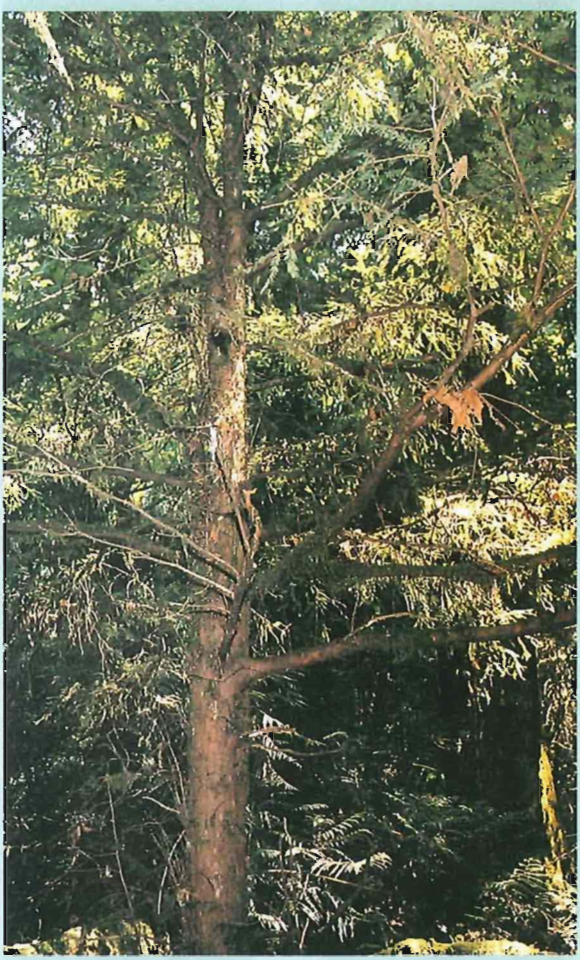
Douglas-fir wood has been highly valued since the first Europeans exported lumber in the 18th century. This dense wood is exceptionally hard, stiff and durable. Its strength and availability in large dimensions make it outstanding for heavy-duty construction such as wharves, trestles, bridge parts and commercial buildings.



Notes

Because the Douglas-fir is not a true fir, the common name is hyphenated. It was named after David Douglas, the Scottish botanist who introduced many of British Columbia's native conifers to Europe.





Western yew

Western yew

Taxus brevifolia



A low spreading shrub to a small tree, 5 to 15 metres tall; young trees are often square in profile, becoming more cone-shaped with age. The trunk is twisted and becomes very wide near the base, with horizontally spreading branches.

Leaves

Needles are flat, about 2 centimetres long, with a distinctive pointed tip; dark yellowish-green, arranged spirally on twigs but twisted so that they appear to grow in two rows.



Cones and Fruit

Seed and pollen cones usually appear on separate trees. The fruit consists of a coral-red fleshy cup that is open at one end and contains a single seed.

Bark

Thin, dark reddish or purplish scales shed off the trunk and expose a rose-coloured underbark.

Where to find western yew

It occurs scattered throughout the wetter forests of the coast and the Interior wet belt, primarily at low to mid elevations.



Habitat

Western yew occurs on a wide variety of sites, from dry and rocky to moist depressions and ravines; it generally occurs on sites that have abundant soil nutrients. It often occurs together with Douglas-fir, western redcedar, and western hemlock, as well as plants such as salal, Oregon-grape, or skunk cabbage.

Where it does occur, it is important food for black-tailed deer, elk, moose, and caribou. Several birds - including blackbirds, waxwings and nuthatches - and various small rodents eat the fruit. In so doing, they scatter the seed away from the tree.





Uses

Although the fruit of western yew is considered toxic, some coastal native groups occasionally ate it in small amounts.



The native people used the strong, stiff wood for making items such as bows, tools, paddles, and prying sticks. It is still used for making bows and paddles.

Interior peoples sometimes used the branches to make snowshoe frames.

The bark of western yew contains a compound called taxol, which shows promise in treating some forms of cancer. ⊘

Notes

Taxus is a Latin word for "bow." Some historians believe that Robin Hood's bow was made from English yew.





Pacific dogwood

Pacific dogwood

Cornus nuttallii



A small tree or shrub, up to 15 metres tall, with branches arranged in a circular pattern around the tree.

Leaves

Opposite, oval leaves have pointed tips and a slightly toothed edge. Pacific dogwood leaves are dark green and turn orange in fall.



Flowers

The showy, white flowers are actually four to six modified leaves that surround a cluster of 30 to 40 small, green flowers. Dogwoods usually flower in spring and again in fall.

Fruit

The dark red berries are edible but bitter.

Bark

Smooth and grey.

Where to find Pacific dogwood

It grows on the southern coast and on Vancouver Island south of Port Hardy.



Habitat

Pacific dogwood grows best on deep, coarse, well-drained soils, often underneath Douglas-fir, grand fir, and western hemlock.

The fruit is part of the diet of pigeons, quail, grosbeaks, hermit thrushes, and waxwings. Bears and beavers enjoy the fruit and foliage, and deer eat the twigs.



Uses

Some aboriginal people used the wood, which is fine-grained, hard and heavy, for bows and arrows. More recently, the Cowichan people on Vancouver Island made knitting needles from it.

The Straits Salish made a tanning agent from the bark. The Thompson people made dyes - deep brown from the bark, black when mixed with grand fir, and red from the roots.

The wood has been used for piano keys. Pacific dogwood varieties are attractive ornamentals in coastal gardens.





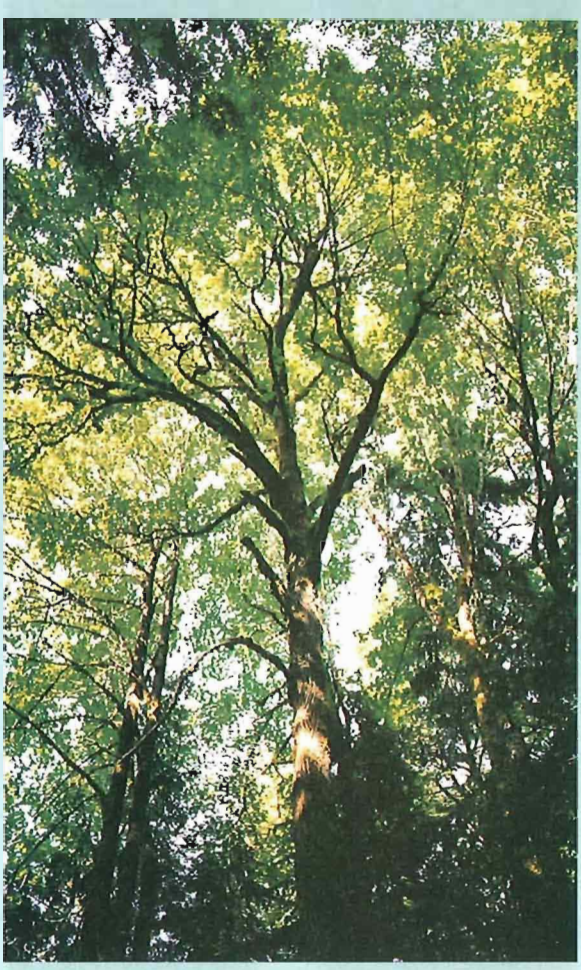
Notes

Pacific dogwood is susceptible to a fungus, the dogwood leaf blotch, which disfigures leaves and causes shoots to die back. Clearing away fallen leaves and spraying with lime sulphur in the winter reduces the chance of infection.

The name dogwood most probably comes from the Sanskrit word *dag*, meaning skewers.

The botanical name *nuttallii* is for Thomas Nuttall (1798-1859), a British-born botanist and ornithologist. *Cornus* means horn and may refer to the hard wood.

Legislation protects the Pacific dogwood from being dug up or cut down. The Pacific dogwood blossom is the floral emblem of British Columbia.



Bigleaf maple

Bigleaf maple

Acer macrophyllum



The largest maple in Canada, reaching heights of 36 metres. When it grows in the forest, it develops a narrow crown that is supported by a stem free of branches for half its length. Those growing in the open have a broad crown which is supported by a few large, spreading limbs.



Leaves

Leaves are deeply five-lobed and are the largest of any maple in Canada, measuring 15 to 30 centimetres across. They have only a few bluntish, wavy teeth; are shiny, dark green on top and paler underneath; and turn yellow in the fall. The leaf stalk sometimes oozes a milky substance when it is broken. Twigs and leaves emerge as pairs.

Flowers

Small greenish-yellow flowers, about 3 millimetres across, appear early in spring, hanging in clusters at the ends of twigs.

Fruit

The fruit consists of two winged seeds joined at the base. Seeds are hairy, 3 to 6 centimetres long.

Bark

Greyish-brown, shallowly grooved when older.

Where to find bigleaf maple

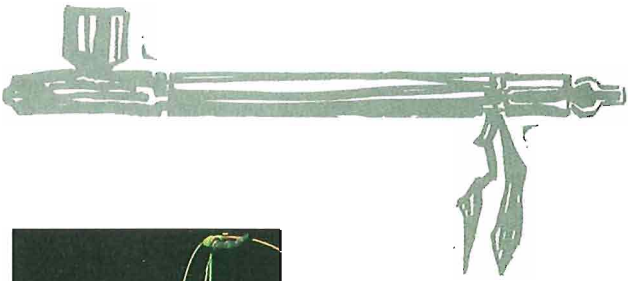
It is restricted to the southwest corner of British Columbia at low to mid elevations.



Habitat

Bigleaf maple generally grows on coarse, gravelly, moist soils, such as those found near river, lake, or stream edges, but it can occur on other moist soils such as seepage areas. It commonly occurs in mixed groups of trees with red alder, black cottonwood, Douglas-fir, western redcedar, and western hemlock.

Squirrels, grosbeaks, and mice eat the seeds of bigleaf maples, and deer and elk eat the twigs.





Uses

Coastal peoples used bigleaf maple wood to make dishes, pipes and hooks for clothing. Many groups who made paddles out of the wood called it the paddle tree. They used the inner bark to make baskets, rope and whisks for whipping soopolalie berries.

In the Interior, aboriginal people ate the young shoots raw in the spring. They also made a type of maple syrup, but because the sap has a low sugar content, it takes a large quantity of sap to make a small amount of syrup.



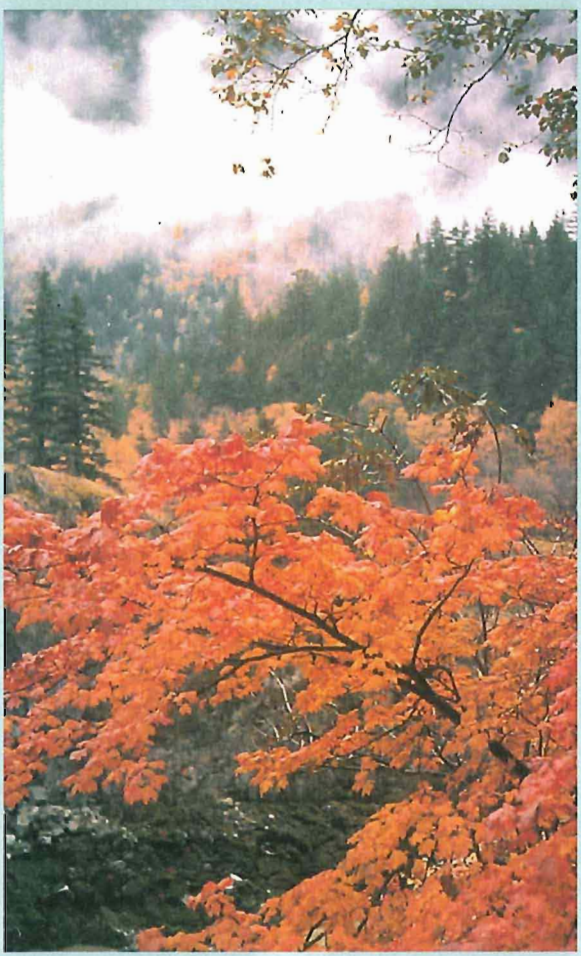
Because of its close grain and moderate hardness, maple wood is used commercially for furniture, interior finishing, and musical instruments.



Notes

Maple flowers are quite sweet and edible and can be used in salads.

Bigleaf maple trees are often draped in mosses, because the bark is rich in calcium and moisture, adding to the attractive wet rainforest plant community.



Douglas maple

Douglas maple

Acer glabrum



A shrub to small tree, 1 to 7 metres in height; the trunk may be divided into a few slender limbs; these are further divided into many small branches to form an irregular and even-topped crown.

Leaves

Leaves are 7 to 10 centimetres wide, divided into 3 to 5 lobes, and have a typical maple-leaf shape. They are coarsely toothed, dark green on top and greyish-green underneath, turning bright red-orange in autumn.



Fruit

The fruit consists of a cluster of winged seeds, joined in pairs at a sharp angle in a V-shape. The seed wings are about 2.5 centimetres long, and the seeds are strongly wrinkled and indented.

Bark

Generally thin, smooth, and dark reddish-brown; roughened on larger branches and old trunks.

Where to find Douglas maple

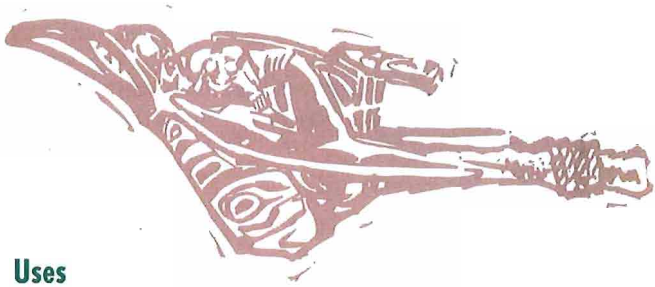
It is widespread at low to mid elevations throughout most of British Columbia, except in the Queen Charlotte Islands and northern British Columbia.



Habitat

Douglas maple occurs on well-drained wet sites and sometimes in avalanche areas. It inhabits clearings and open forests.





Uses

Aboriginal people in the Interior had many uses for Douglas maple. The wood is tough and pliable, and they used it for such items as snowshoe frames, saddle frames, spoons, dipnet or fishing hoops, bows, rattles, masks, and headdresses. They soaked the green wood and heated it, then molded it into the desired shape.

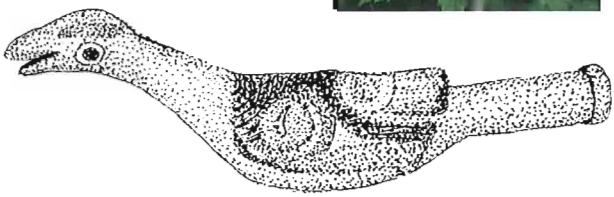
The Thompson people used the stringy inner bark to make twine, the Shuswap people used it for rope, and the Nisga'a for mats.

Douglas maple is suitable as an ornamental and is particularly attractive in the autumn.



Notes

Glabrum means "smooth," perhaps referring to the leaves or fruit, which have no hairs.

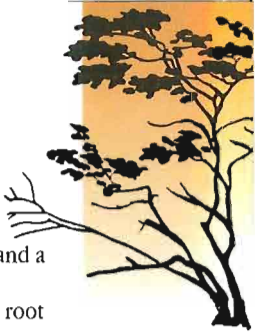




Vine maple

Vine maple

Acer circinatum



A deciduous shrub or small tree, sometimes reaching a height of 20 metres; it has a short, crooked trunk, with twisted, spreading limbs and a low, irregularly shaped crown. The trunk sometimes grows almost horizontally and may root if it touches the ground. Vine maple can become a sprawling shrub that grows into dense thickets.



Leaves

Leaves are almost circular, 6 to 11 centimetres in diameter, with 7 to 9 lobes; the lobes are triangular, with sharp single or double teeth; bright yellowish-green on top, pale green and downy underneath, turning red or yellow in autumn.

Fruit

The fruit consists of winged seeds, 2 to 4 centimetres long, joined in pairs and borne in a cluster; the wings of the seeds are spread widely.

Bark

Thin and greenish, becoming reddish-brown; smooth, or sometimes with shallow cracks.

Where to find vine maple

It is mostly restricted to southwestern British Columbia, particularly at low to mid elevations. It occurs in a few places on southern Vancouver Island and in Wells Gray Provincial Park.



Habitat

Vine maple occurs most frequently on moist soils, rich in nitrogen, particularly along the banks of streams and wet sites. It can live in the shade but also occurs in openings in the forest. Vine maple and alder are often the first trees to establish after landslides. Vine maple commonly occurs with bigleaf maple, Douglas-fir, western hemlock, grand fir, and Pacific dogwood, and sword fern underneath.



Uses

The Coast Salish people used vine maple occasionally for bows and frames for fishing nets. The lower Thompson people used the wood for making snowshoes and cradle frames.

On the coast, the aboriginal people boiled the bark of the roots to make a tea for colds. They burned the wood to charcoal, mixed it with water, and drank it to combat dysentery and polio. They always collected the bark and wood early in the morning from the sunrise side of the tree.



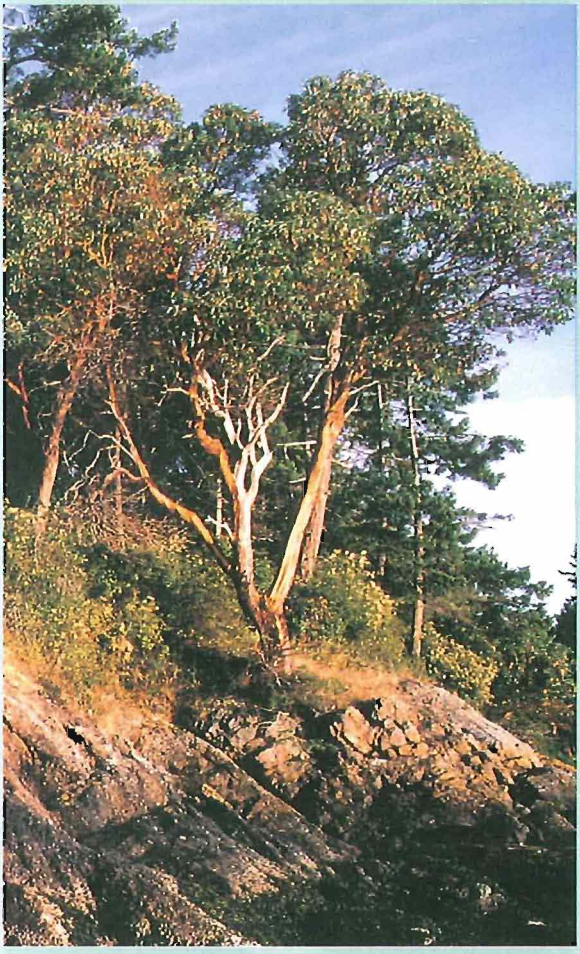
On the coast, vine maple is a beautiful garden shrub that looks similar to Japanese maple.



Notes

The common name probably comes from the gnarled and crooked appearance of the tree.





Arbutus

Arbutus

Arbutus menziesii



A broadleaf evergreen tree, up to 30 metres tall, usually with a crooked or leaning trunk that divides into several twisting upright branches and an irregularly rounded crown.

Leaves

Dark and glossy but pale underneath, 7 to 12 centimetres long, thick, with a leathery texture.



Flowers

Dense clusters of urn-shaped white, waxy flowers drooping at the ends of twigs in April or May.

Fruit

The fruit is berry-like, 7 millimetres across, and bright reddish-orange, with a peel-like surface texture.

Bark

The bark is thin, smooth, and reddish-brown, peeling in thin flakes or strips to expose younger, smooth, greenish to cinnamon-red bark underneath.

Where to find arbutus

Arbutus is restricted to a narrow band along the south coast and generally occurs within 8 kilometres of the ocean. It is often found on exposed rocky bluffs overlooking the ocean.



Habitat

Arbutus is found on sites that lack moisture, such as those with rocky or rapidly drained soils. Because it does not like shade, it generally occurs in clearings or on open rocky bluffs with other species such as Garry oak or Douglas-fir, oceanspray, Oregon-grape, baldhip rose, and several herbs and grasses.

The flowers have a strong honey smell and are very attractive to bees.. Fruit-eating birds such as waxwings and robins frequently eat the berries.





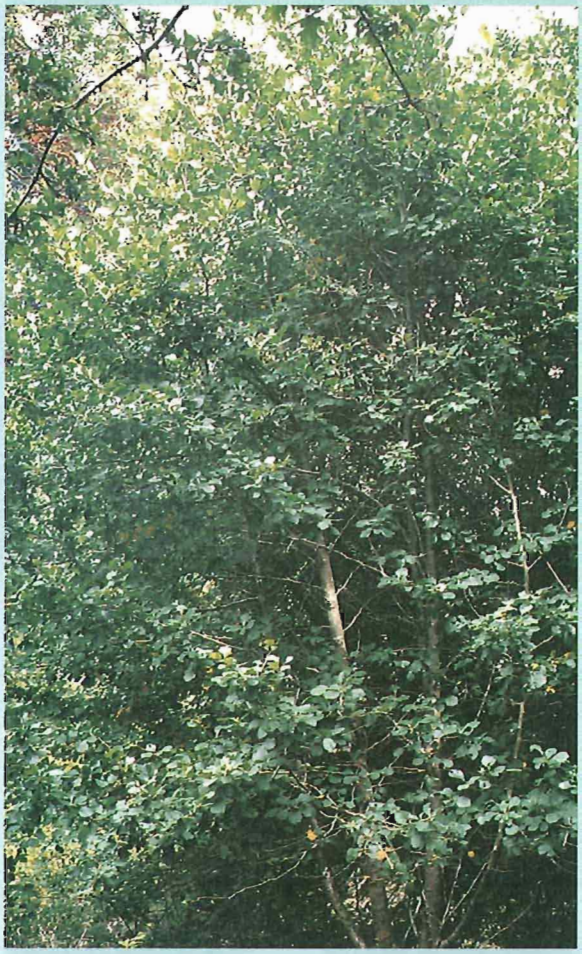
Uses

Arbutus bark is very rich in a substance used for tanning hides. The wood is heavy and hard, tends to be brittle, and cracks when drying. It is used only for woodworking in British Columbia.



Notes

Arbutus is the only native broadleaf evergreen tree in Canada. Another common name is madrone, a Spanish word for the strawberry tree, of which arbutus is a close relative. The Scottish botanist Archibald Menzies first collected specimens in 1792 and described it as the oriental strawberry tree.



Black hawthorn

Black hawthorn

Crataegus douglasii



A large shrub to small tree that grows up to 8 metres tall, armed with stout, straight thorns 1 to 2 centimetres long and bearing showy, white flowers during May and June.

Leaves

Oval leaves are 3 to 6 centimetres long, with 5 to 9 small lobes at the top.



Flowers

White, saucer-shaped flowers in flat-topped clusters.

Fruit

Clusters of small, blackish "apples" (haws) that wither quickly when ripe.

Where to find black hawthorn

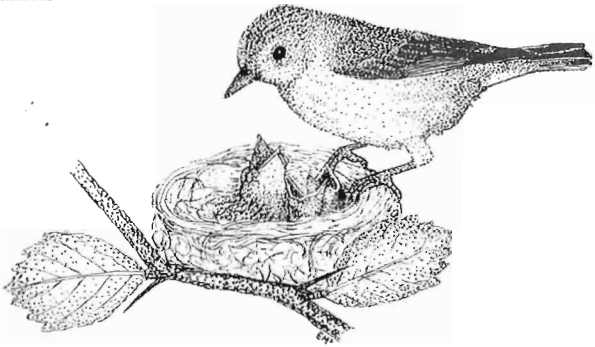
It is found from sea level to mid elevations south of Fort St. John, along water courses and meadowland thickets.

The Columbian or red hawthorn (*Crataegus columbiana*) is a smaller tree or shrub with long slender thorns and red fruit. It also grows along water courses and on dry hillsides in the southern Interior. The English hawthorn (*Crataegus oxycantha*), an ornamental garden tree, is naturalized on the southern coast.
Its leaves are deeply lobed, and the fruit is red.



Habitat

Black hawthorns like lots of sunlight to grow to tree size. The apple-like fruit provides food for birds in the winter. Impenetrable hawthorn thickets are good nesting and denning or resting and sleeping sites for small birds and mammals.





Uses

The Thompson and Okanagan peoples used the thorns to pierce ears and to probe boils and skin ulcers. The Lillooet and Gitksan people made fish hooks from them.

The strong, hard wood made durable digging sticks and handles for implements.

The Cowichan people burned the leaves, inner bark, and new shoots and mixed the ashes with grease for a black face paint used in winter dances.



Notes

The name *Crataegus* is from the Greek word *kratos*, meaning "strength," because of the great strength of the wood. The common name, hawthorn, comes from its early use as a hedge. The Anglo-Saxon *haguthorn* is "a fence with thorns."





Cascara

Cascara

Rhamnus purshiana



A small tree or shrub with greyish-black bark that grows to 10 metres tall.

Leaves

Alternate, oblong leaves have fine teeth along their edges and prominent veins running parallel to the sides. It is the only deciduous tree in the province whose buds are not covered by bud scales in the winter.



Flowers

Nondescript, greenish flowers, clustered near ends of branches.

Fruit

Purplish-black berries.

Bark

Thin, dark greyish-brown; smooth when young, becomes scaly with age. A cut in the bark reveals a bright yellow inner bark that turns dark brown on exposure to air and light.

Where to find cascara

It is found on the southern part of the coast and Vancouver Island and in scattered locations in the Columbia Valley in the Interior.



Habitat

Cascara grows under conifers on rich, well-drained soils with plentiful summer moisture. Streamsides and wet areas are favourite locations.

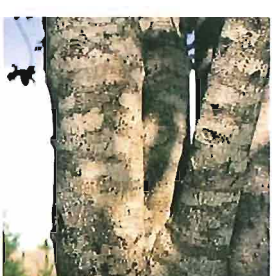


Uses

The Nuu-chah-nulth people used the wood to make chisel handles, and the Skagit people produced a green dye from the bark. Coastal people also knew it as a tonic and as a laxative. ⊘

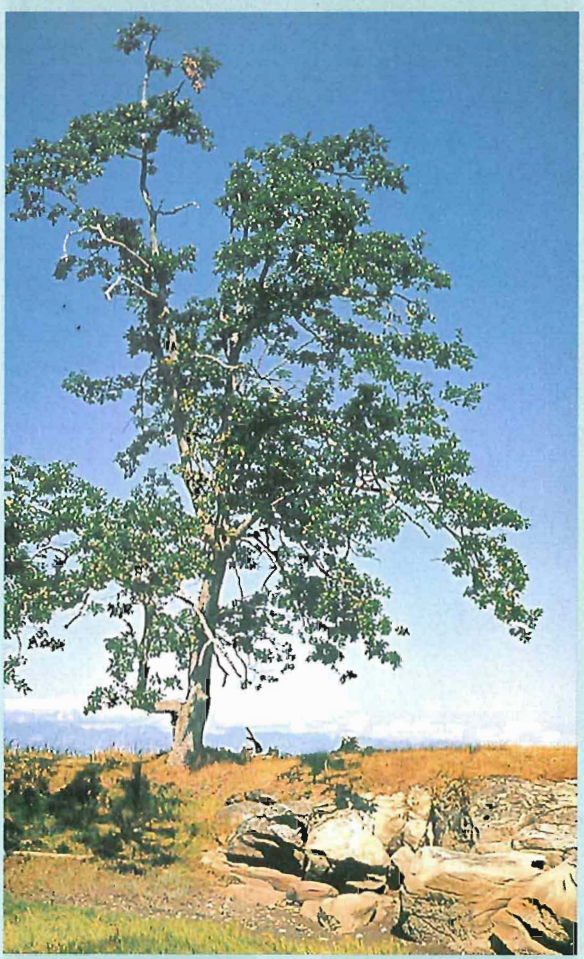
Cascara was harvested throughout its range for use as a laxative. Bitter cascara extract has been used in liquors and a debittered extract as a flavouring for drinks and ice cream. Honey from cascara flowers is also reported to have a mild laxative effect. ⊘

Originally, people collected only the fresh bark, but soon the wood was discovered to contain 50 percent of the active compound. Legislation regulated cutting to prevent over-harvesting. The legislation was rescinded after a synthetic source was developed.



Notes

Spanish priests in California named the tree *Cascara sagrada*, meaning "sacred bark." This name has two possible origins. The first is from the medicinal properties of the bark and the second from its resemblance to wood used for the ark of the covenant. *Rhamnus* is the ancient Greek name for the genus.



Garry oak

Garry oak

Quercus garryana



An attractive tree with thick, grooved, scaly, greyish-black bark and a round spreading crown; grows up to 20 metres tall.

Leaves

Deeply lobed leaves are bright green and glossy above and paler with red to yellow hairs underneath. The leaves turn brown in the fall. Leaves often have bumps caused by gall wasps.



Fruit

Acorns are small in size with a shallow scaly cup on one end.

Bark

Greyish-black bark with thick grooves and scales.

Where to find Garry oak

It grows in southeastern Vancouver Island and the Gulf Islands, with some isolated groups of trees in the lower Fraser Valley.

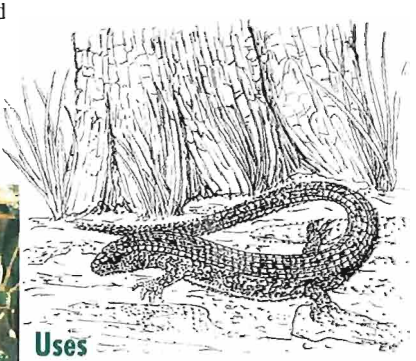


Habitat

Garry oak forms open parkland and meadows that are scattered with Douglas-fir and a lush spring display of herbs – camas, Easter lilies, western buttercups, and shootingstars. These meadows are threatened by urban development.

A diverse bird community makes its home in Garry oak meadows, as well as numerous mammals and insects. Garter snakes and alligator lizards can be seen basking on sun-warmed rocks.

Before the last ice age, Garry oaks were part of an extensive hardwood forest in British Columbia. Their range was wider during a warm, dry period after glaciation, but it has diminished in the current wet and cool climate.





Uses

Garry oak wood was used by coastal peoples for combs and digging sticks as well as for fuel. They also ate the acorns either roasted or steamed. They managed the Garry oak ecosystem by underburning in order to cultivate a supply of camas bulbs. Camas was an important food source for many Coastal groups.

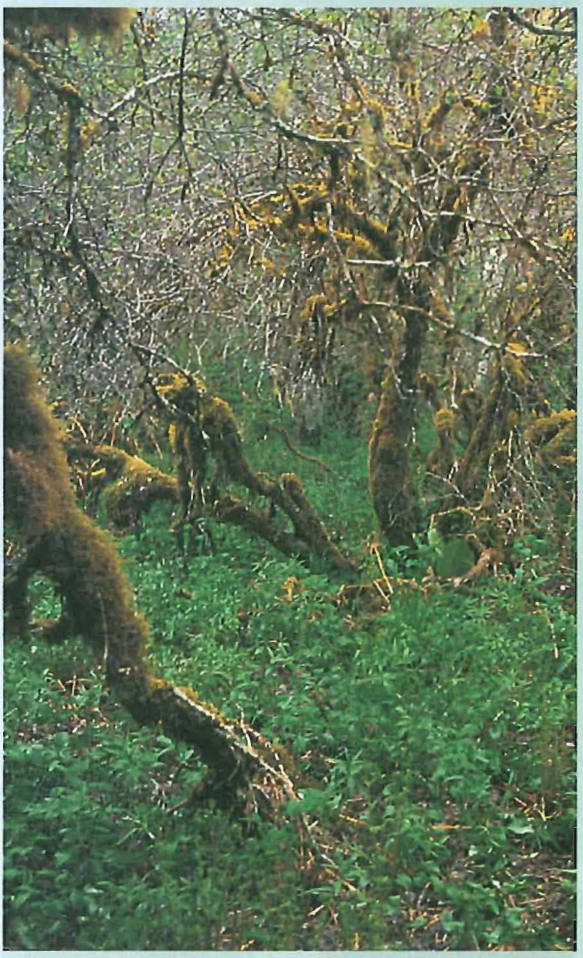




Notes

Oaks were considered sacred to the god of thunder and carrying an acorn preserved a youthful appearance.

Garry oak was named by botanist and explorer David Douglas for Nicholas Garry of the Hudson's Bay Company, who helped him during his travels. In Oregon, where it is quite common, this species is called Oregon white oak. *Quercus* is the Latin name for "oak."



Pacific crab apple

Pacific crab apple

Malus fusca



A small tree or multi-stemmed shrub that grows to 12 metres tall, armed with sharp thorn-like shoots and bearing showy white flowers from mid April to early June.

Leaves

Alternate, deep-green, egg-shaped leaves grow up to 10 centimetres long. The edges are toothed along the irregular lobes.



Flowers

White to pink, fragrant apple blossoms in a flat-topped cluster.

Fruit

The yellow to purplish-red apples, 2 centimetres across, are tart but edible. After a frost, they turn brown and soft.

Where to find Pacific crab apple

It is found on lakesides and streambanks along the coast, from sea level to mid elevations. Pacific crab apple grows on Vancouver Island but not on the Queen Charlotte Islands.



Habitat

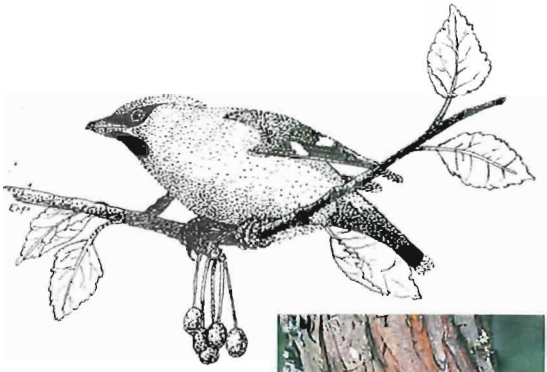
Pacific crab apple grows in moist, open woodlands. It presents a delightful spring sight when in bloom along the edges of river mouths and streambanks.



Uses

The apples were an important fruit for all coastal people, who harvested them in the late summer and early fall and either ate them fresh or stored them under water. Because of their acidity, the apples did not require further preservation.

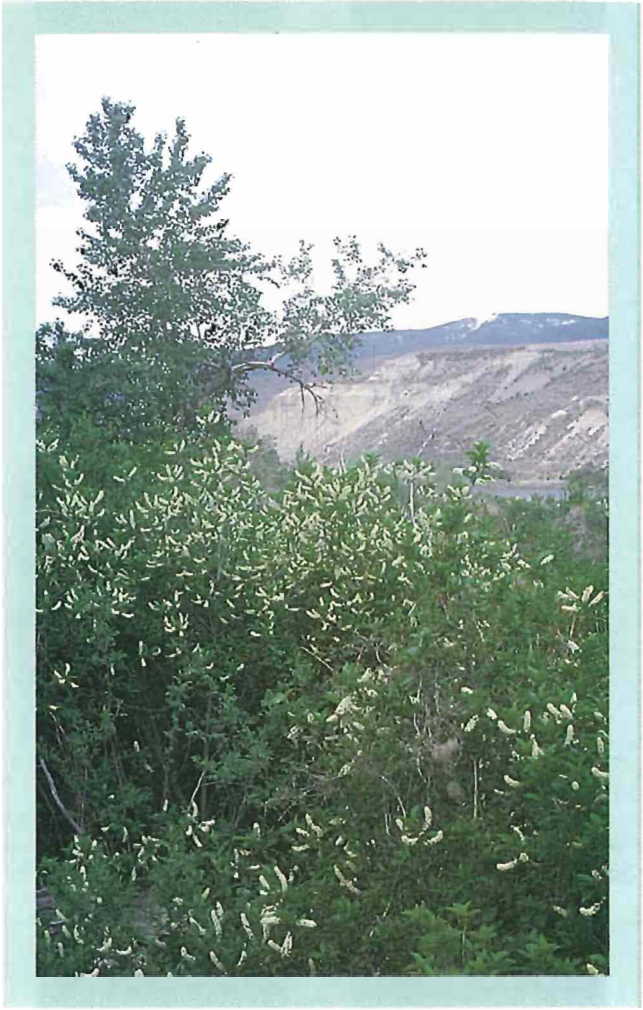
The deeply coloured wood is hard and somewhat flexible. Coastal people used it to make tool handles, bows, wedges, and digging sticks.



Notes

This is the only native apple tree in the province, but it may be mistaken for cultivated pear and apple trees that have overgrown or been abandoned.

Malus is often used for apples and *Pyrus* for pears. Some taxonomists group the two genera into *Pyrus*.



Choke cherry

Choke cherry

Prunus virginiana



Commonly a shrub, and occasionally a small tree, 1 to 4 metres tall; sometimes with a twisted or crooked trunk and a narrow, irregular crown.

Leaves

Broadly oval-shaped leaves, sometimes broadest above the middle, tapering at both ends, 8 to 10 centimetres long; thin, with fine, sharply toothed edges; dull green on top, greenish underneath.



Flowers

Many small, white flowers in a cluster at the end of the twig, which resembles a bottle brush.

Fruit

Shiny, round, crimson to black cherries, 15 millimetres in diameter; bitter but edible.

Bark

Smooth, dark reddish-brown to greyish-brown.

Where to find choke cherry

It is common throughout southern British Columbia, especially east of the Coast and Cascade mountains, at low to mid elevations. It is also found in the Peace and Stikine river valleys.



Habitat

Choke cherry commonly occurs on the edge of woodlands and thickets, often on dry, exposed sites, along streams and in clearings.



Uses

Aboriginal people in the southern and northern Interior ate the choke cherry fruit. They collected the cherries in the fall and dried them, often with the stones left in. They used the choke cherry wood for handles, and shredded the bark and used it for decorating basket rims. They made a tonic from the bark for regaining strength after childbirth.

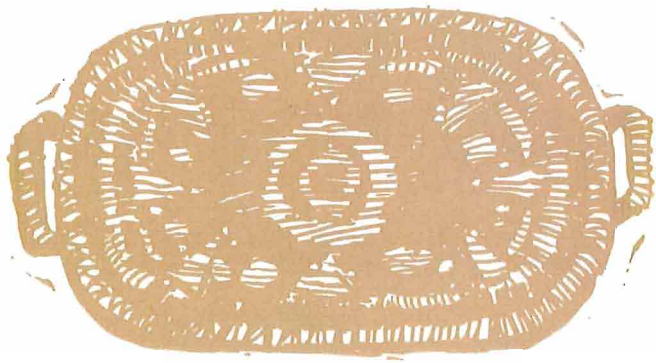
Many people use choke cherries for wine, juice, syrup, and jelly.

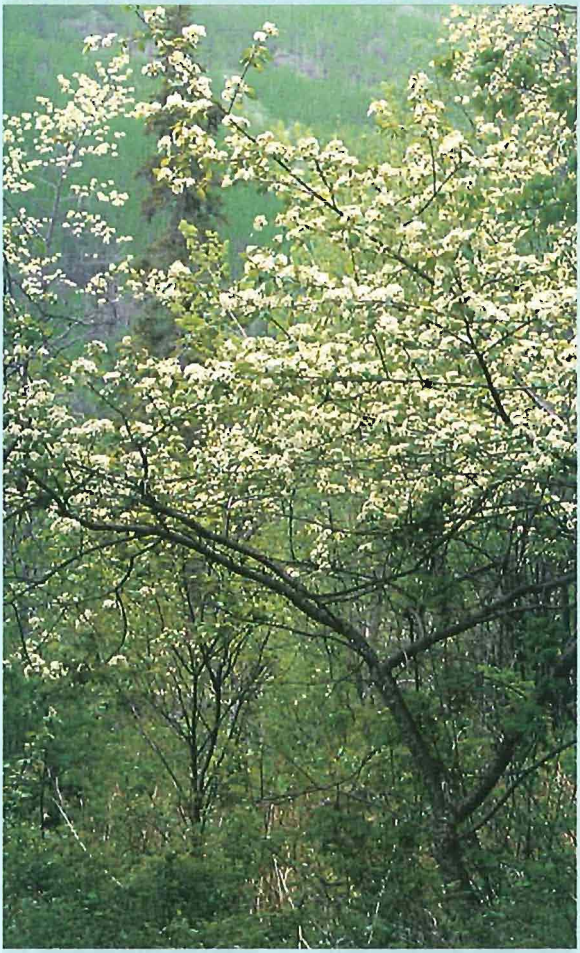


Notes

The Gitksan name for choke cherry means "it makes your mouth and throat so that nothing will slip on it."

Virginiana, like *pensylvanica* (see pin cherry), refers to the distribution of these plants. They were first collected and described in the east by early North American botanists.





Pin cherry

Pin cherry

Prunus pensylvanica



A shrub to small tree, usually 1 to 5 metres tall, but can reach 12 metres in height. The trunk is straight, with a narrow, rounded crown; when it grows in the open, it has a short trunk with a flat-topped crown; the crown is much reduced when it grows in the shade of a forest.



Leaves

Oval- to narrow-shaped, gradually tapering to a sharp tip, 8 to 10 centimetres long; thin, with round-toothed edges, shiny yellowish-green on both surfaces; two small glands on the leaf stalk at the base of the leaf.

Flowers

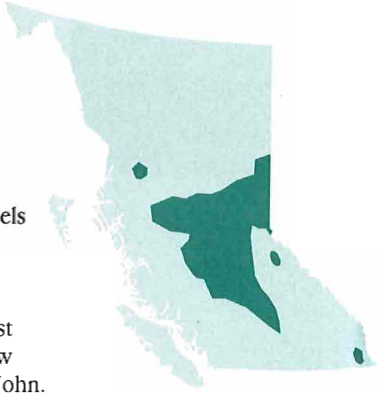
Small and white in flat-topped clusters of 5 to 7.

Fruit

Small, round, bright red cherries, with a sour-tasting flesh, 5 millimetres in diameter.

Bark

Dark reddish-brown, with large, widely-spaced, orange horizontal slits (lenticels); peels in horizontal strips.



Where to find pin cherry

It is common east of the Coast and Cascade mountains at low elevations, south of Fort St. John.

Habitat

Pin cherry occurs in dry to moist open forests and clearings; it commonly occurs after fire or other disturbances.

Because the berries are a favourite of many birds, it is often difficult to find ripe fruit on the trees.





Uses

Pin cherries were eaten by several First Nations peoples, depending on their local abundance, but the cherries did not dry well. They also used the bark for decorating baskets.

Pin cherries make good jelly.



Notes

Pin cherry probably interbreeds with bitter cherry in areas in central British Columbia where their ranges overlap.

Pin cherry stones and leaves contain toxic cyanide, but the flesh is not harmful.



Bitter cherry

Bitter cherry

Prunus emarginata



A shrub or small tree, up to 9 metres tall; straight, slender trunk, extending up to the narrow crown.

Leaves

Small, oval-shaped leaves, tapered towards the tip; 2 to 8 centimetres long, yellowish-green, thin, with uneven-sized teeth on the edges.



Flowers

Small, white flowers in loose clusters of 5 to 12.

Fruit

Dark red, with a juicy but bitter flesh, 5 to 12 millimetres across.

Bark

Greyish or reddish, peeling horizontally like paper birch; large, widely spaced, orange horizontal slits (called lenticels); bitter tasting.

Where to find bitter cherry

It occurs throughout southern British Columbia, except for the dry Interior portions.



Habitat

Bitter cherry is common in moist deciduous forests and open woods, along streams and on recently disturbed areas. It prefers moist, nutrient-rich sites.



Uses

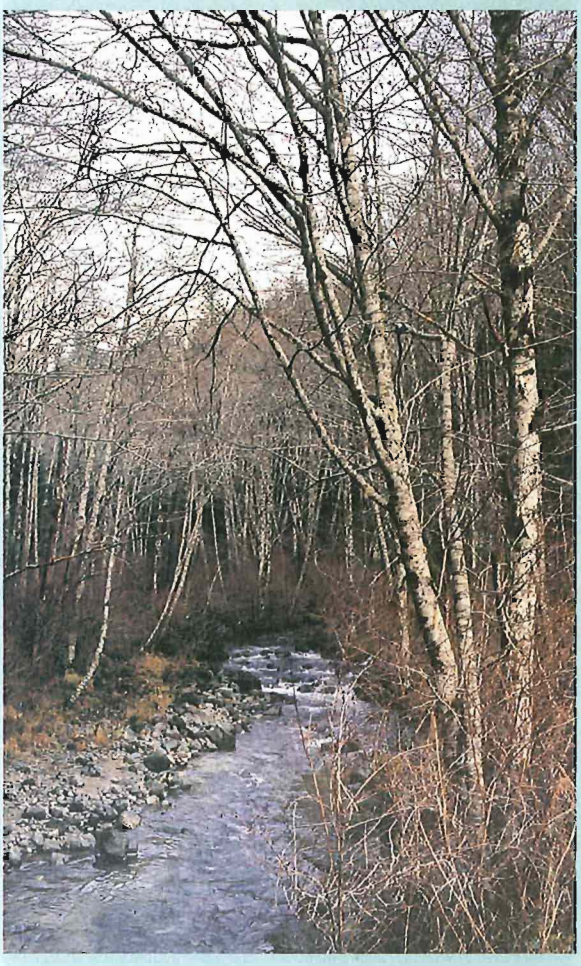
Aboriginal people ate the fruit of the bitter cherry only occasionally because of its unpleasant taste. Because the bark is tough and waterproof, they peeled it off in long horizontal or spiral strips and used it for basket-making. They also softened it by pounding to make twine for baskets and mats and for tying together joints in house-building.





Notes

Prunus is Latin for plum.



Red alder

Red alder

Alnus rubra



A medium-sized broad-leaf tree, up to 24 metres tall. Trees growing in the forest develop a slightly tapered trunk extending up to a narrow, rounded crown. Trees in the open have crowns that start near the ground giving it a broad cone shape.



Leaves

Bright green above and greyish underneath. They are oval-shaped, with pointed tips, and coarsely toothed edges that tend to curl under. The hair-covered veins form a ladder-like pattern. Leaves stay green until they drop off.

Flowers

The flowers occur as either male or female clusters. Male flowers are in long, drooping, reddish catkins, and female flowers are in short, woody, brown cones.

Fruit

The female cones are oval-shaped, 2 centimetres long. The seed is a narrow winged nutlet.

Bark

Thin, greenish on young trees, turning grey to whitish with age. The inner bark and fresh wounds tend to turn deep reddish-orange when exposed to air.

Where to find red alder

It occurs along the entire coast of British Columbia.



Habitat

Red alder does not tolerate shade and occupies a site quickly after disturbance. It grows rapidly, often shading out conifers such as Douglas-fir. It tends to occur on sites rich in nutrients, including floodplains and streambanks.

Red alder occurs with all of the low elevation coastal tree species, including black cottonwood, grand fir, Douglas-fir, and the cedars. It tends to be associated with a dense layer of shrubs and herbs, including salmonberry, red elderberry, and several ferns.



Uses

Aboriginal people used the bark for dyeing basket material, wood, wool, feathers, human hair, and skin. Depending on the technique used, the colours ranged from black to brown to orangey-red. Some coastal groups used the tree's inner cambium layer for food. The wood is low in pitch, which makes it a good wood for smoking meat. The wood was also used for carving items such as bowls.

Red alder is used for furniture, flooring, and firewood.

Male catkins



Female catkins

Notes

Red alder is short-lived, with an average life span of 40 to 60 years.

It is a nitrogen-fixer, meaning that it puts nitrogen back into the soil, unlike most plants. Small bumps, called nodules, on the roots house an organism that can convert the nitrogen in the soil into a form that plants can absorb. When the nitrogen-rich leaves fall, they provide a nutritious compost on the forest floor.





Mountain alder

Mountain alder

Alnus tenuifolia



A coarse shrub or small deciduous tree, 2 to 10 metres tall; often occurs in clumps.

Leaves

Leaves are thin, oval-shaped, and rounded to somewhat heart-shaped towards the base. The tips are rounded to blunt shaped and the margins are shallowly lobed and double toothed. The upper surfaces are green, the lower surfaces hairy and pale.



Flowers

Male flowers are long, drooping catkins, 3 to 4 centimetres in length. Female flowers are in short, woody, brown cones. They are produced on the previous season's twigs before the leaves appear.

Fruit

Seed cones have very short stalks. The seeds are nutlets with a very narrow wing.

Bark

Yellowish-brown with distinct oval-shaped ruptures or tears on the bark (lenticels).

Where to find mountain alder

It is common throughout British Columbia east of the Coast and Cascade mountains, at mid to subalpine elevations.



Habitat

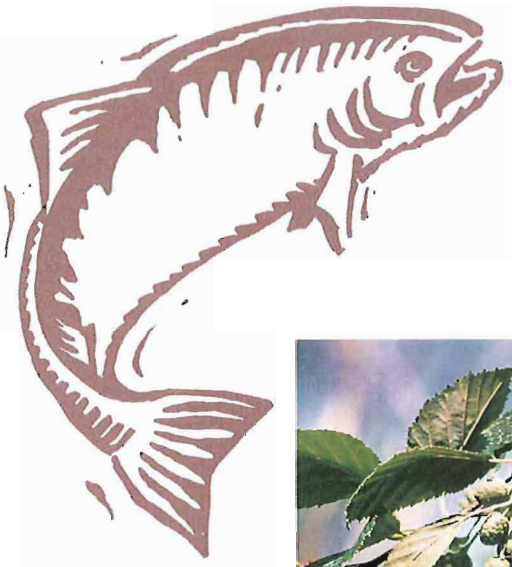
Mountain alder occurs in moist, nutrient-rich forests along streamsides and bogs. It often occurs as dense clumps with willows, twinberry, red elderberry, and horsetails.

Deer and hares sometimes eat parts of the stem.



Uses

Because of its hardness, some Interior aboriginal people used mountain alder wood for making bows and snowshoes. Because it doesn't flavour the food, they also used it for smoking and drying salmon and meat. Like red alder, it was a source of dye and a substance for tanning hides. The Carrier made fish nets out of mountain alder and dyed them black by boiling them in their own juice. Fish cannot see the black nets.





Paper birch

Paper birch

Betula papyrifera



A small to medium-sized tree, often with many stems, up to 30 metres tall. In forests, it has a slender trunk that often curves before extending to the narrow, oval-shaped crown. In the open, the crown is pyramid-shaped.



Leaves

Triangle- or egg-shaped, about 8 centimetres long, and doubly toothed; dull green on top, paler with a soft down underneath.

Flowers

The flowers are either male or female and are in narrow catkins. Female catkins are 2 to 4 centimetres long, standing erect at the tip of the branch. Male catkins are longer and hang below the branch. The flowers appear before or at the same time as the leaves.

Fruit

The nutlets have wings broader than the seed. Each tree produces thousands of seeds.

Bark

Thin, white to reddish-brown, with dark horizontal slits (lenticels). It peels in papery strips, exposing reddish-orange inner bark which will gradually turn black with age.



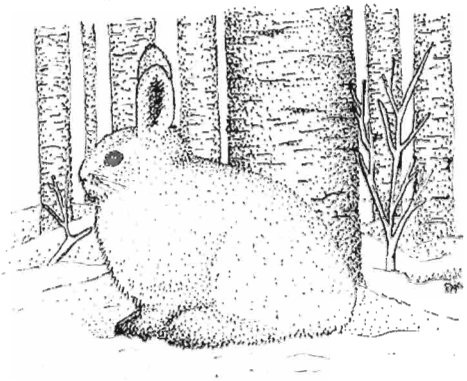
Where to find paper birch

It is found throughout British Columbia but only in a few scattered places on the outer coast.

Habitat

Paper birch grows on a variety of soils, and is abundant on rolling upland terrain and floodplain sites, but it also grows on open slopes, avalanche tracks, swamp margins and in bogs. It doesn't grow well in shade, and consequently it often occurs in younger forests following a disturbance.

Paper birch can be an important winter food for many forest animals including deer and moose. It is also a favourite food of snowshoe hare, porcupine, and beaver. Many birds will nest in paper birch, including woodpeckers, sapsuckers, and vireos.



Uses

Many First Nations people in British Columbia used birch bark as material for baskets, cradles, and canoes. They also used it for wrapping and storing food and for roofing pit houses. They used the wood for many small items, including bows and spoons. They drank the sap as a medicine for colds.



Birch sap can be used to make syrup, but it requires 80 to 100 litres of sap to make one litre of syrup! Undiluted, birch sap can be used to make vinegar or birch beer.

Birch is harvested in eastern Canada for pulp, sawlogs, and veneer logs; the wood is used for products such as paneling, tongue depressors, and cheese boxes. In British Columbia, paper birch is harvested for firewood.

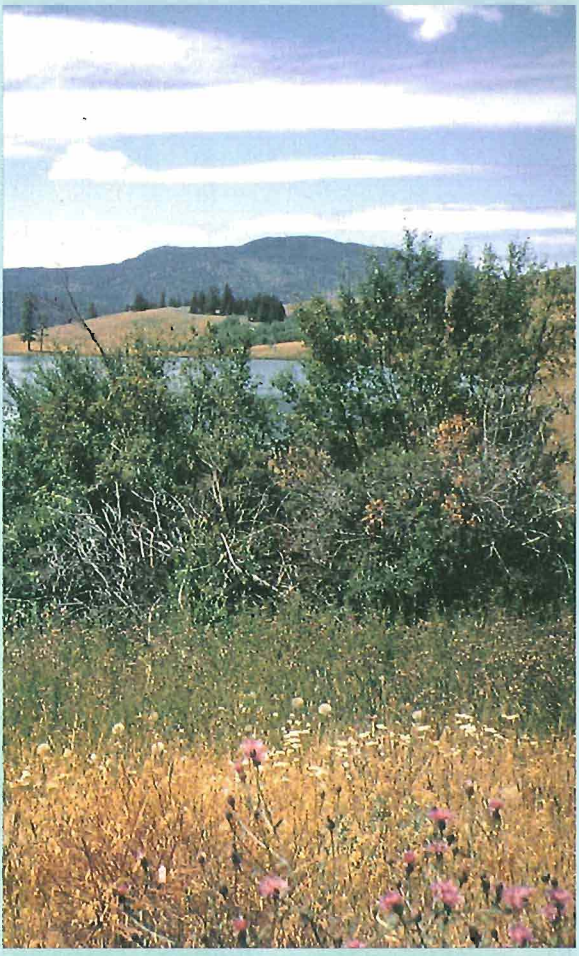
Young bark



Notes

Papyrifera means "paper-bearing," referring to the bark.

Alaska paper birch (*Betula neoalaskana*) occurs in northeastern British Columbia; its twigs are densely covered with bumpy resin glands.



Water birch

Water birch

Betula occidentalis



Varies from a small coarse shrub to a small tree up to 10 metres high; most commonly shrubby, with several spreading trunks.

Leaves

Oval-shaped, broadest below the middle, slightly tapered towards a blunt or sharp tip; 2 to 5 centimetres long. The edges are thin, doubly-toothed. The leaf surfaces are shiny, yellowish-green above and paler, dotted with fine glands underneath.



Fruit

Tiny, hairy nutlets with wings broader than the seed. Thousands of seeds are produced from each tree.

Bark

Thin, shiny, dark reddish-brown to black, with marked horizontal slits (lenticels); does not peel like other birches.

Where to find water birch

It occurs frequently in southern British Columbia, east of the Coast and Cascade mountains; rarely found in the north or in mountainous areas.



Habitat

Water birch occurs on the wet to moist, nutrient-rich soils of streambanks, forests, and marshes. It is important in wetland ecosystems and those near water, where it provides important habitat for many birds and other animals.

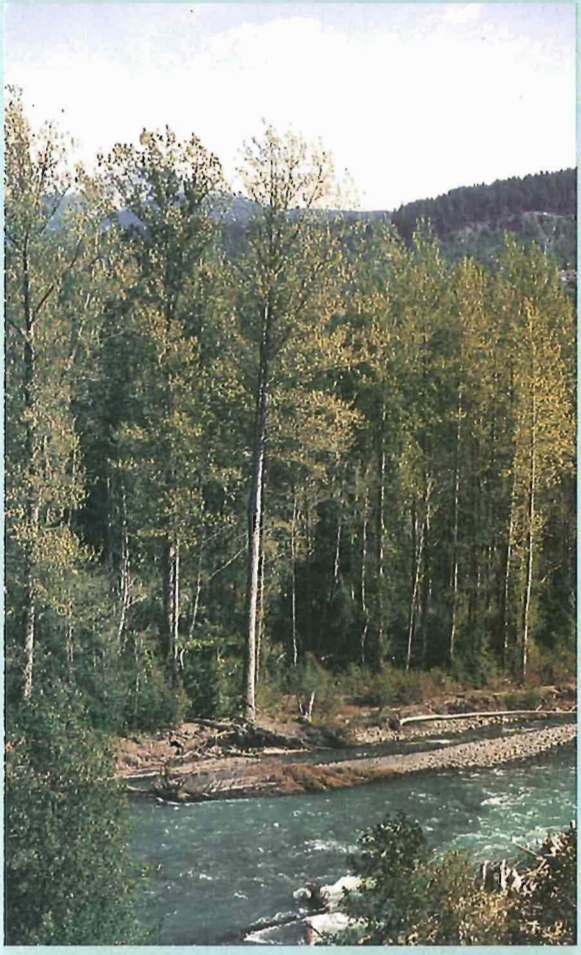






Notes

The scientific name *Betula* is the ancient Latin name for the genus.



Black cottonwood

Black cottonwood

Populus balsamifera ssp. *trichocarpa*

Balsam poplar

Populus balsamifera ssp. *balsamifera*



These hardy, straight-trunked trees have large, sticky, fragrant buds. On the coast, black cottonwoods can reach 50 metres tall, but balsam poplars usually reach only 25 metres.



Leaves

Shiny, dark green leaves are 6 to 12 centimetres long, pale underneath and often marked with brown. They vary from oval to wedge-shaped and have a sharply pointed tip.

Flowers

Male and female catkins are on separate trees. Male catkins are small, 2 to 3 centimetres long and female catkins are larger, 8 to 20 centimetres long.

Fruit

The hairy capsules open to release seeds which are covered with white, fluffy hairs.

Bark

The bark is smooth, yellowish-grey on younger trees, but grows thick and deeply grooved with age.



Where to find black cottonwood and balsam poplar

Black cottonwood grows west of the Rocky Mountains and balsam poplar grows in the north, from the upper Stikine to east of the Rockies. Balsam poplar and black cottonwood hybridize where their ranges overlap. Poplars are rare on the Queen Charlotte Islands and northern outer coast of Vancouver Island.

Habitat

Poplars require ample moisture and plenty of nutrients to grow well. They favour floodplains and moist upland sites with lots of light. They do not grow well in the shade of other species.



Uses

First Nations people on the coast and, more commonly, in the Interior made dugout canoes from black cottonwood. Also, the Okanagan people made cottonwood into sideboards for riding and cradles to flatten their children's heads.

Cottonwood burns well and was used to make friction fire sets. Ashes were used to make a cleanser for hair and buckskin clothing. The Thompson people produced soap from the inner bark. The Hudson's Bay Company reportedly continued using their method, combining the inner bark with tallow.



Young bark



First Nations people used the resin from buds to treat sore throats, coughs, lung pain and rheumatism. An ointment, called balm of Gilead, was made from the winter buds of balsam poplar to relieve congestion.

The buds contain a waxy resin with anti-infectant properties still used in many modern natural health ointments. Bees collect it and use it to seal off intruders, such as mice, which might decay and infect the hive.

The short, fine fibres are used in tissues and other paper products.



Notes

It is named cottonwood for the white hairs on mature seed which float through the air like wisps of cotton or snow.



Trembling aspen

Trembling aspen

Populus tremuloides



A slender, graceful tree with smooth, greenish-white bark; grows up to 25 metres tall; distinctive leaves that quiver in the slightest breeze.

Leaves

Smooth, round to triangular-shaped leaves with a flattened stalk that is longer than the leaf. They are dark green above, paler underneath and turn golden yellow or red in the fall.



Flowers

The flowers are borne in male and female catkins on separate trees. Male catkins are small, 2 to 3 centimetres long, and the female catkins are larger, 4 to 10 centimetres long.

Fruit

Tiny capsules covered with cottony down.

Bark

Smooth, green and doesn't peel.

Where to find trembling aspen

It is found throughout the province east of the Coast Ranges, with a few scattered trees around the Strait of Georgia. Aspen is very common in the northeastern part of the province.



Habitat

Trembling aspen grows best on moist, well-drained soils, especially soils rich in calcium, such as those derived from limestone.

It is known for its ability to sprout from root suckers and form clones of many individual stems. Aspen clones can often be distinguished in spring or fall when groups of stems leaf out or change colour all at once. These clones can get quite large and can be very long-lived. Some are estimated to be over 5,000 years old.

Individual aspen stems are relatively short-lived and often succumb to disease at 50 years or so. These rotten stems provide excellent homes for cavity-nesting birds. Moose, elk, and deer also eat young aspen suckers.



Uses

Aspen wood is soft and brittle and not very durable. The Shuswap people used young aspen to make tent poles, but these apparently rotted after a couple of years. Rotten wood had its uses though. The Carrier people lined babies' cradles with it because it was soft and absorbent.

Aspen branches boiled in water made a cleanser for guns, traps, and buckskins. Hunters would also wash themselves in this solution to remove human odour.



The Okanagan people predicted storms when aspen leaves quivered in no perceptible wind.

After decades of being treated as a weed, the forest industry now values aspen for pulp and waferboard. It is also exported as chopsticks.



Notes

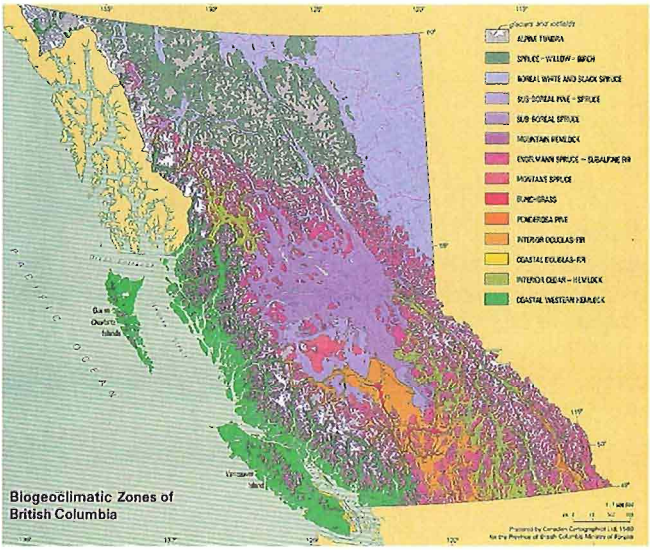
Other names include quaking aspen or quivering aspen. In several native languages, the name translates as "woman's tongue" or "noisy leaf."

Classifying the Natural World

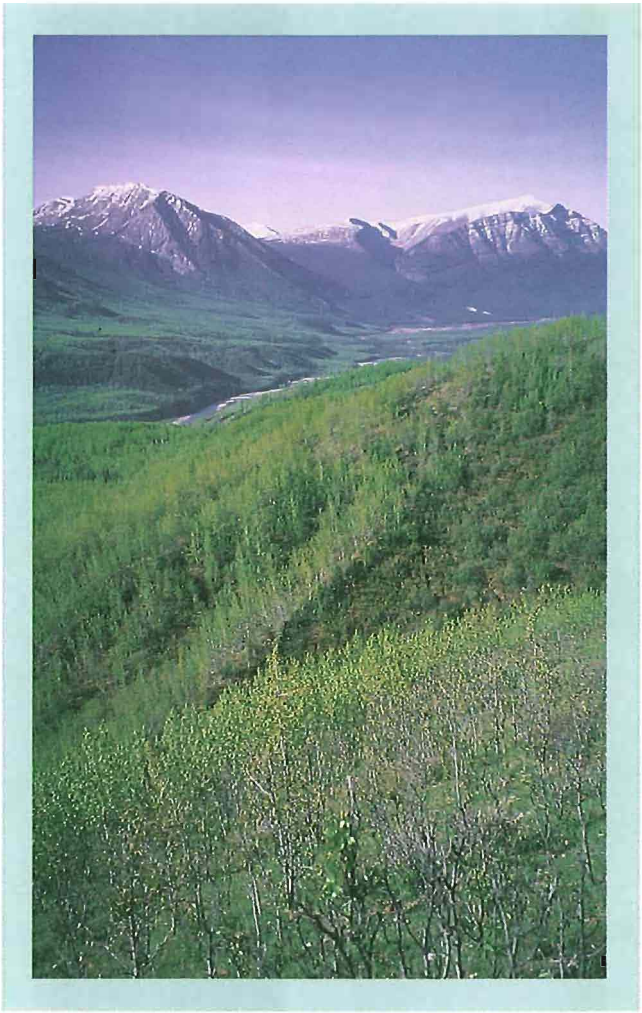
There are many different kinds of forests across British Columbia. Each forest has its own unique combination of plants, soil and climate. Large geographical areas with similar plants, soil and climate are called biogeoclimatic zones. British Columbia is divided into 14 of these biogeoclimatic zones.

These biogeoclimatic zones are further divided into many different types of ecosystems that have similar soils, landscape features and plants. In order to understand the variety of ecosystems that occur in the province, researchers have spent many years studying the soils and plants of each ecosystem.

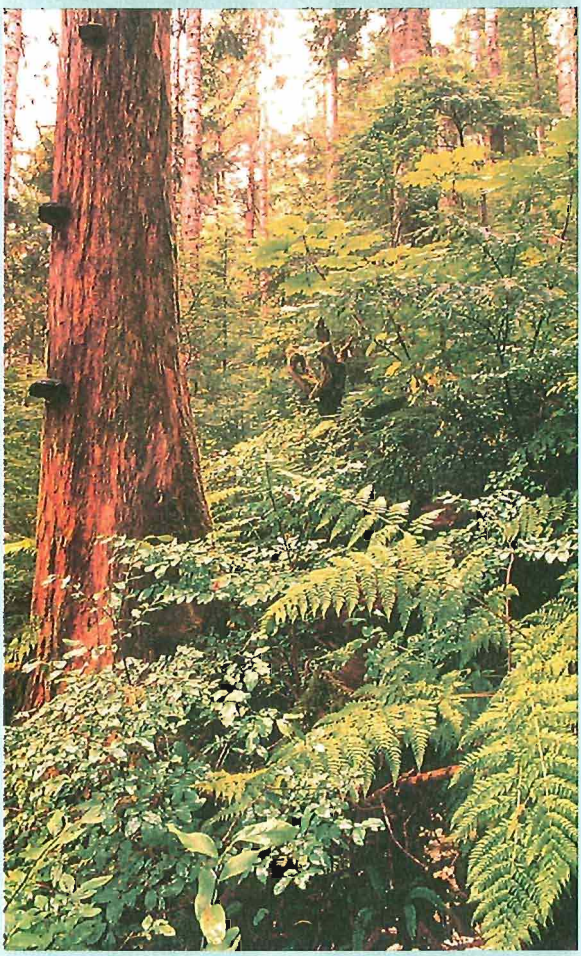
By describing and naming ecosystems, we provide a framework for managing our resources ecologically. Classifying ecosystems has many uses in forestry. It can help foresters recommend site preparation methods that minimize damage to the soil and select trees that are ecologically suited to the site where they will be planted. It can also be useful for wildlife habitat management and conservation planning.



Biogeoclimatic Zones of British Columbia



In the northern boreal forests of British Columbia, fire has played an important role in shaping the landscape patterns.



An ecosystem may be as small as a rotten log, or as large as the planet, but we define an ecosystem as an area with uniform soil, vegetation and organisms.

What is an Ecosystem?

Ecosystems are collections of living organisms and their physical environment (soil particles, air, water). Some of the relationships are understood. Plants harness energy from the sun and provide food and shelter for animals. In turn, many plants need the help of animals to reproduce. Animals eat seeds and spread them, undigested, to other places. They also spread seeds by picking them up on their feathers and fur.

However, there are many relationships that are hidden from our sight and we are only now beginning to understand. There are millions of bacteria, tiny plants and animals in the soil. We have not yet even described most of these, let alone understand their roles in creating the fertile soil on which the forests depend.

All the parts work together to provide healthy, functioning ecosystems.

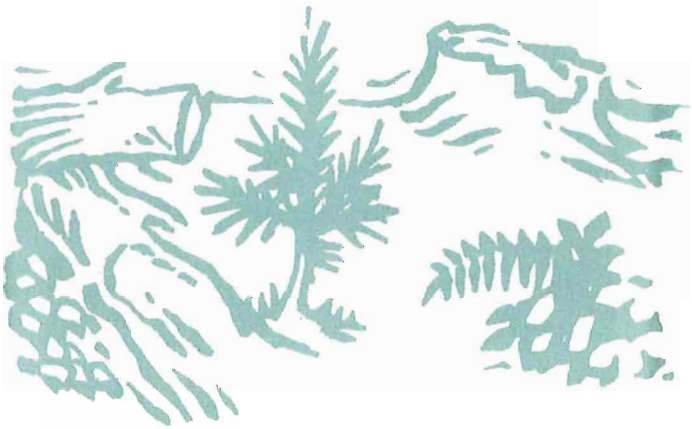


Trees can be Choosy

Trees need certain amounts of moisture, nutrients and sunlight. Some trees can grow just about anywhere. Lodgepole pine isn't particularly picky about where it lives; it occurs on the mild, rainy coast, as well as in the hot, dry Interior. It can grow where the soil is very dry and poor in nutrients or where the soil is very rich and moist. The one thing lodgepole pine cannot do without is sunlight.

Other trees are more demanding and will grow only in certain parts of the province. Some trees are very particular about the amount of nutrients and moisture they receive. For example, arbutus occurs only in southern coastal areas within a few kilometres of the ocean, where the climate is mild in the winter and the summers are warm. It likes to grow in dry areas, such as on rocky outcrops. Arbutus also prefers to grow where there is plenty of sunlight.

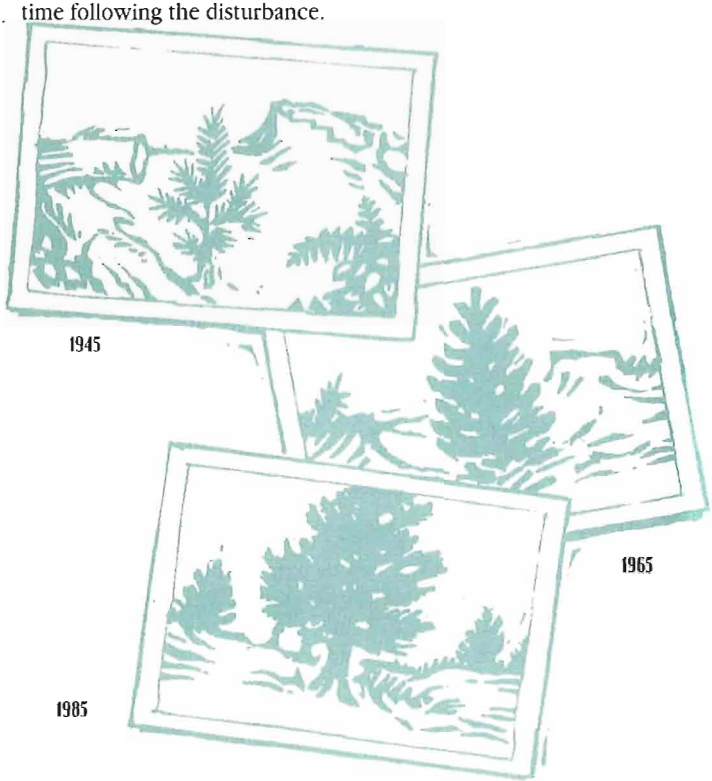
Because trees, other plants, and animals vary in their ability to tolerate environmental conditions, we see a variety of ecosystems throughout the province, from lush coastal rain forests to dry, open grasslands and subalpine areas.



Time Changes Everything

Ecosystems are constantly changing. Many kinds of disturbances can lead to change. Nature causes some disturbances, like wildfires, insect outbreaks and landslides. People cause others, by logging or farming.

Some disturbances, like wildfire, can turn a forest of trees into snags and blackened earth. Others, like the wind blowing over a few trees, simply create small openings in the forest. But after any kind of disturbance, things change. Some plants and fungi survive the disturbance while others move in from the surrounding forests. The plant communities will change over time following the disturbance.



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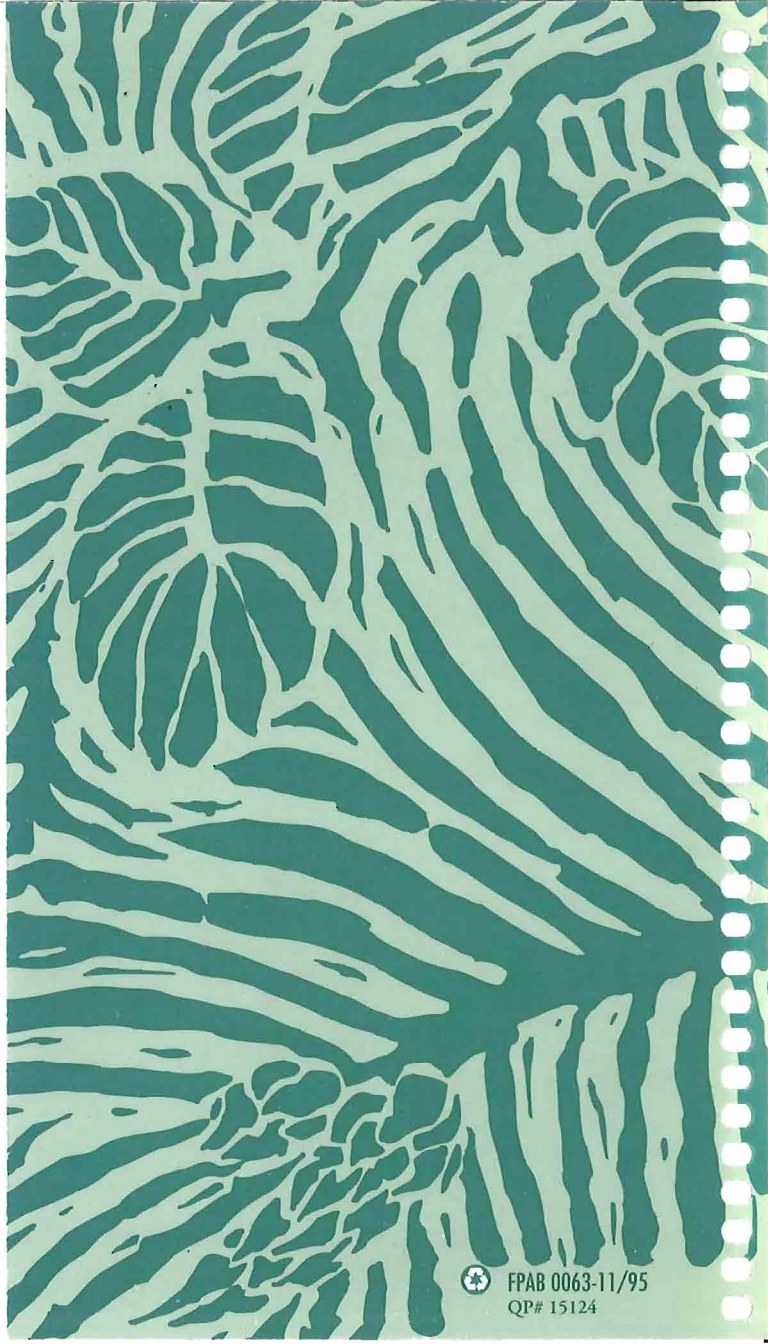
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