BROADLEAVED TREES
Unsung Component of British Columbia's Forests

THEIR ROLE IN FOREST ECOSYSTEMS

The Centre for Applied Conservation Biology University of British Columbia
Ministry of Forests Environment Canada

FRASER RIVER ACTION PLAN
What are broadleaved trees?

Broadleaved trees are also commonly known as hardwoods. Except for aspen trees, B.C.’s broadleaved trees are deciduous. They shed their leaves each year in response to the cooler, shorter days that signal the onset of winter.

Broadleaved trees and forest ecosystems

Broadleaved trees are a natural component of B.C. landscapes. They help to:
- cycle nutrients and contribute to long-term nutrient cycling
- provide “nurse” sites for plants and fungi
- provide food, cover, and nesting sites for insects and other animals
- provide filter for lumber and paper
- enhance visual resources
- broaden the diversity of structures and organisms in forests.

The successional role of broadleaved trees

Broadleaved trees are some of the first trees to grow on open sites where vegetation has been removed through disturbances such as fire, floods, diseases, or forest harvesting. These rapid colonists are called “pioneers” and typically grow and reproduce quickly. They provide shade and moderate temperatures to the soil as they grow. Broadleaved habitats can support a variety of plant and animal species, including insects and small mammals, acting as “nursery” sites that allow for other plant species to grow in the soil. Broadleaved trees are also the primary producers of the young trees that will eventually replace the older trees that make up the older forest.

Broadleaved species provide cover and nesting sites

Broadleaved trees colonize a large area in that they provide cover and nesting sites for many birds, mammals, amphibians, and insects. They also provide habitat for bats (such as long-eared myotis, silver-haired bat, and hoary bat), which feed on insects that drop from broadleaved trees. They also provide habitat for black cottonwood species (more than 30% of the world’s population of Barrow’s goldeneye nest in black cottonwood). They are used extensively by cavity-nesting species, such as woodpeckers, which excavate their nests in broadleaved trees.

Broadleaved tree cavities and gaps benefit the looks of decaying trees may also provide nesting habitat for bats (such as long-eared myotis, silver-haired bat, and hoary bat), which benefit from the available water, relatively productive soils, and complex vegetation structure. Some broadleaved forest can be structurally complex and typically have thick shrub and herb layers, which encourage shrub- and ground-nesting birds. The structural complexity of some broadleaved forests provides shelter for woodpeckers and other cavity-nesting birds. These thickets provide forage and cover areas for small mammals. The structural complexity of some broadleaved forests provides shelter for woodpeckers and other cavity-nesting birds. These thickets provide forage and cover areas for small mammals.

Habitats near water are usually dominated by broadleaved vegetation well-adapted to moist, open growing conditions. Shrub- and ground-nesting birds are abundant in these habitats because of the available water, relatively productive soils, and complex vegetation structure.
There are six commercially important broadleaved tree species in B.C. Red alder and bigleaf maple are common in coastal regions; trembling aspen and paper birch are more prevalent in the interior. Black cottonwood is found throughout most of the coast and a large portion of the interior; it is replaced by balsam poplar in the northern and eastern-most parts of the province. As well, many other species of less commercial value are found in B.C., including other alders, maples, birches, and poplars.

Broadleaved trees in managed stands

Changing uses for broadleaved trees

Until recently, the abundance and growth of many broadleaved tree species were suppressed in B.C.'s managed forests because these trees lacked economic value. With the advent of new technology, several hardwood species have now become commercially valuable. B.C. harvested about two million cubic metres of broadleaved trees annually. hardwoods are the local species on 31 percent of our productive forest land, and mixed hardwood (aspen and broadleaved) forests cover approximately 30 percent of productive forest land.

Through commercial use is relatively recent, traditional use of broadleaved trees by First Nations continues to be common for food, building materials, and medicines. Broadleaved trees are receiving greater consideration from biologists, forest managers, and the public because of the important contributions they make to maintaining diverse, productive, forest ecosystems. Forests with broadleaved trees are often more resilient to disturbances like fire and insects than those dominated by conifer trees. Their removal decreases vertebrate and invertebrate associated species in the area and also decreases vertebrate-associated species with plants. Broad-leaved species are, however, continuously replenished by nature and remain present in B.C.'s managed conifer forests.

Several broadleaved species are included in new Pulpwood Management Agreements. The harvest for pulpwood could significantly alter broadleaved-dominated forests. Livestock grazing can be managed to allow time for broadleaved shrubs and trees to recover between grazing periods. Recovery allows them to continue to provide forage and cover for both livestock and wildlife. Maintaining broadleaved trees and shrubs also means forage and cover habitat for many wildlife species, and maintains site productivity and specific growing conditions for many plants.

Maintaining broadleaved trees in managed stands

Because forest managers are recognizing the economic value of broadleaved trees and their important role in forest ecosystems, more effort is being directed to maintaining these species where ecologically appropriate. Broadleaved trees are under pressure because of habitat loss, competition from other plants, and livestock grazing. They are replaced by managed conifer forests.

There are several means of maintaining broadleaved trees and shrubs during forestry operations. Broad-leaved species need to establish readily on the site to reduce competition with conifers. Their removal decreases vertebrate-associated species with plants. Broad-leaved species are, however, continuously replenished by nature and remain present in B.C.'s managed conifer forests.

For more information, contact: The Centre for Applied Conservation Biology University of British Columbia 3500 University Blvd., Vancouver, B.C. V6T 1Z4 604-822-4848 Environment Canada Canadian Wildlife Service Pacific Wildlife Research Centre 490 Robertson Road Delta, B.C. V4G 2S2 604-913-4291 Ministry of Forests, Lands and Parks 5421 Robertson Road Delta, B.C. V4M 3E2 604-940-4700

Credits:

Design and production: B.C. Communications
Illustrations: Mark Nyhof
Text: R. and N. Turner, B. Swan, M. Nyhof
Photography: Ministry of Forests, Centre for Conservation Biology, UBC, R. and N. Turner, B. Swan, Mark Nyhof

In many areas where they do not offer significant competition, broadleaved trees are left to grow, and in most areas where they are controlled, sites reconverted to pure coniferous stands. Broadleaved trees may be retained by mechanical means (axes, chainsaws, heavy equipment), or by herbicides.

Broadleaved trees in managed stands

One uncommon tree species, cascara, grows in the shaded floodplains of south coastal B.C. Historically, cascara bark was collected for medicinal purposes, which caused it to decline in the province. Concert is currently protected. Changing uses for broadleaved trees

Until recently, the abundance and growth of many broadleaved tree species were suppressed in B.C.'s managed forests because these trees lacked economic value. With the advent of new technology, several hardwood species have now become commercially valuable. B.C. harvested about two million cubic metres of broadleaved trees annually. Hardwoods are the local species on 31 percent of our productive forest land, and mixed hardwood (aspen and broadleaved) forests cover approximately 30 percent of productive forest land.

Through commercial use is relatively recent, traditional use of broadleaved trees by First Nations continues to be common for food, building materials, and medicines. Broadleaved trees are receiving greater consideration from biologists, forest managers, and the public because of the important contributions they make to maintaining diverse, productive, forest ecosystems. Forests with broadleaved trees are often more resilient to disturbances like fire and insects than those dominated by conifer trees. Their removal decreases vertebrate and invertebrate associated species in the area and also decreases vertebrate-associated species with plants. Broad-leaved species are, however, continuously replenished by nature and remain present in B.C.'s managed conifer forests.

Several broadleaved species are included in new Pulpwood Management Agreements. The harvest for pulpwood could significantly alter broadleaved-dominated forests. Livestock grazing can be managed to allow time for broadleaved shrubs and trees to recover between grazing periods. Recovery allows them to continue to provide forage and cover for both livestock and wildlife. Maintaining broadleaved trees and shrubs also means forage and cover habitat for many wildlife species, and maintains site productivity and specific growing conditions for many plants.

Maintaining broadleaved trees in managed stands

Because forest managers are recognizing the economic value of broadleaved trees and their important role in forest ecosystems, more effort is being directed to maintaining these species where ecologically appropriate. Broadleaved trees are under pressure because of habitat loss, competition from other plants, and livestock grazing. They are replaced by managed conifer forests.

There are several means of maintaining broadleaved trees and shrubs during forestry operations. Broad-leaved species need to establish readily on the site to reduce competition with conifers. Their removal decreases vertebrate-associated species with plants. Broad-leaved species are, however, continuously replenished by nature and remain present in B.C.'s managed conifer forests.

For more information, contact: The Centre for Applied Conservation Biology University of British Columbia 3500 University Blvd., Vancouver, B.C. V6T 1Z4 604-822-4848 Environment Canada Canadian Wildlife Service Pacific Wildlife Research Centre 490 Robertson Road Delta, B.C. V4G 2S2 604-913-4291 Ministry of Forests, Lands and Parks 5421 Robertson Road Delta, B.C. V4M 3E2 604-940-4700

Credits:

Design and production: B.C. Communications
Illustrations: Mark Nyhof
Text: R. and N. Turner, B. Swan, M. Nyhof
Photography: Ministry of Forests, Centre for Conservation Biology, UBC, R. and N. Turner, B. Swan, Mark Nyhof

In many areas where they do not offer significant competition, broadleaved trees are left to grow, and in most areas where they are controlled, sites reconverted to pure coniferous stands. Broadleaved trees may be retained by mechanical means (axes, chainsaws, heavy equipment), or by herbicides.

Broadleaved trees in managed stands

One uncommon tree species, cascara, grows in the shaded floodplains of south coastal B.C. Historically, cascara bark was collected for medicinal purposes, which caused it to decline in the province. Concert is currently protected. Changing uses for broadleaved trees

Until recently, the abundance and growth of many broadleaved tree species were suppressed in B.C.'s managed forests because these trees lacked economic value. With the advent of new technology, several hardwood species have now become commercially valuable. B.C. harvested about two million cubic metres of broadleaved trees annually. Hardwoods are the local species on 31 percent of our productive forest land, and mixed hardwood (aspen and broadleaved) forests cover approximately 30 percent of productive forest land.

Through commercial use is relatively recent, traditional use of broadleaved trees by First Nations continues to be common for food, building materials, and medicines. Broadleaved trees are receiving greater consideration from biologists, forest managers, and the public because of the important contributions they make to maintaining diverse, productive, forest ecosystems. Forests with broadleaved trees are often more resilient to disturbances like fire and insects than those dominated by conifer trees. Their removal decreases vertebrate and invertebrate associated species in the area and also decreases vertebrate-associated species with plants. Broad-leaved species are, however, continuously replenished by nature and remain present in B.C.'s managed conifer forests.

Several broadleaved species are included in new Pulpwood Management Agreements. The harvest for pulpwood could significantly alter broadleaved-dominated forests. Livestock grazing can be managed to allow time for broadleaved shrubs and trees to recover between grazing periods. Recovery allows them to continue to provide forage and cover for both livestock and wildlife. Maintaining broadleaved trees and shrubs also means forage and cover habitat for many wildlife species, and maintains site productivity and specific growing conditions for many plants.

Maintaining broadleaved trees in managed stands

Because forest managers are recognizing the economic value of broadleaved trees and their important role in forest ecosystems, more effort is being directed to maintaining these species where ecologically appropriate. Broadleaved trees are under pressure because of habitat loss, competition from other plants, and livestock grazing. They are replaced by managed conifer forests.

There are several means of maintaining broadleaved trees and shrubs during forestry operations. Broad-leaved species need to establish readily on the site to reduce competition with conifers. Their removal decreases vertebrate and invertebrate associated species in the area and also decreases vertebrate-associated species with plants. Broad-leaved species are, however, continuously replenished by nature and remain present in B.C.'s managed conifer forests.

For more information, contact: The Centre for Applied Conservation Biology University of British Columbia 3500 University Blvd., Vancouver, B.C. V6T 1Z4 604-822-4848 Environment Canada Canadian Wildlife Service Pacific Wildlife Research Centre 490 Robertson Road Delta, B.C. V4G 2S2 604-913-4291 Ministry of Forests, Lands and Parks 5421 Robertson Road Delta, B.C. V4M 3E2 604-940-4700

Credits:

Design and production: B.C. Communications
Illustrations: Mark Nyhof
Text: R. and N. Turner, B. Swan, M. Nyhof
Photography: Ministry of Forests, Centre for Conservation Biology, UBC, R. and N. Turner, B. Swan, Mark Nyhof

In many areas where they do not offer significant competition, broadleaved trees are left to grow, and in most areas where they are controlled, sites reconverted to pure coniferous stands. Broadleaved trees may be retained by mechanical means (axes, chainsaws, heavy equipment), or by herbicides.