



# Avalon Forest

In the interior of the Avalon Peninsula on the island of Newfoundland lies the smallest of the province's 19 ecoregions — the Avalon Forest. Low-lying and heavily forested, it covers about 555.5 km<sup>2</sup>. Its landscape has a **ribbed moraine** topography: a series of irregular, steep-sided ridges often separated by ponds and **domed bogs**.

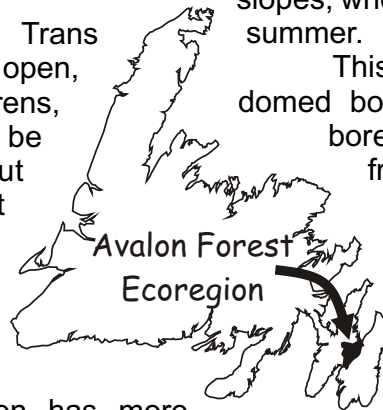
Travelling west on the Trans Canada Highway through the open, mostly treeless Maritime Barrens, the Avalon Forest ecoregion can be immediately recognized about eight km past Butter Pot Provincial Park. Here, you descend suddenly into a forested landscape characterized by high levels of fog, especially in summer.

The Avalon Forest often has more summer fog than the larger, Maritime Barrens surrounding it. This is because fog that funnels into the area from the south frequently collects and lingers over low-lying, sheltered bogs and ponds.

In fact, the Avalon Forest subregion has a unique local climate, which influences the plant growth covering its ridges. This climate is partly created by the summer fog. But with the

occasional northeast winds — which blow cold, clear air into the area — night frosts also occur. These lead to higher temperatures on the tops and north-facing slopes of ridges because air turbulence there prevents the stagnation of cold air that occurs at lower levels and over the more protected south-facing slopes. As a result, north-facing slopes and hilltops have a longer growing season and larger and more vigorous plant growth than lower, south-facing slopes, where night frosts often occur well into summer.

This pattern, along with the presence of domed bogs and yellow birch, makes this boreal ecoregion distinctly different from the barrens that surround it. In fact, its mix of biodiversity is one of the richest of all the world's boreal regions — a variety stimulated by blow-downs — trees that blow over during ageing and provide shelter and food for animals.



**Soil Profile:** Soils in the Avalon Forest ecoregion are primarily "humo ferric podzols." These are brown soils containing mostly inorganic material that occur in relatively dry sites. They are typically found in coniferous and mixed (both deciduous and coniferous) forests.

**Ecoregion:** An area that has distinctive and repeating patterns of vegetation and soil development, which are determined and controlled by regional climate. Ecoregions can be distinguished from each other by their plant communities, landscapes, geology, and other features. These characteristics, in turn, influence the kinds of wildlife that can find suitable habitat within each ecoregion.

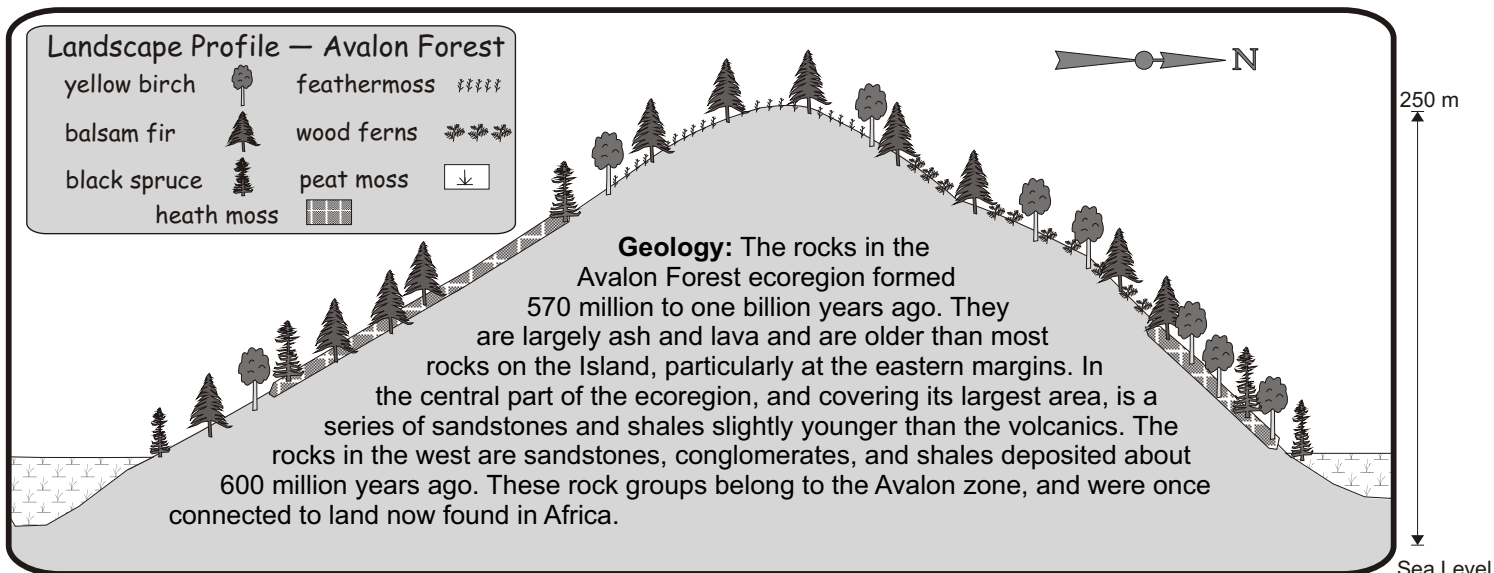
**Ribbed moraines:** Crescent-shaped series of ridges or small hills that formed at the base of advancing

glaciers. The ridges can reach 30 metres in height, and are spaced 200 to 400 metres apart. Small bogs and ponds commonly exist between the ridges.

**Domed bogs:** Bogs with convex surfaces that form mainly in forested valleys and basins. Build-ups of sphagnum mosses that can reach 3 to 10 meters in depth form a bulge or convex shape on the surface of the bog. Typically, circular pools radiate outwards from this bulge.

**Ericaceous:** A scientific term referring to a family of low shrubs that grow in acidic soils and have leathery leaves and bell-shaped flowers. Some of the many provincial plants that belong to this group — which is also known as the "heath family" — are blueberry, partridgeberry, crowberry, and sheep laurel.

**Hummock:** A small mound with a dense cover of vegetation and gravel at its core. In arctic environments, hummocks often contain an ice core.



## Vegetation Profile

**B**ecause of its unique summer climate and sheltered location in the interior of the Avalon peninsula, the Avalon Forest ecoregion has a distinctive pattern of plant growth.

Balsam fir forests, mixed with yellow birch and white birch, flourish on the often warmer summits and north-facing slopes. In only one other provincial ecoregion — the Western Newfoundland Forest, on the western side of the Island — does yellow birch occur regularly.

A luxurious understory of plants (such as wood ferns) is typical beneath the canopy of trees on north-facing slopes, while Schreber's moss (a branching, light green to golden moss that forms extensive mats) occurs more often on the summits. Smaller balsam fir and black spruce forests, with fewer yellow birch and an understory of sponge-like sphagnum moss,

grow on the lower levels of the north-facing slopes.

Typical of south-facing slopes are scrubby balsam fir and black spruce forests, with an understory of sphagnum moss, Canadian yew, and **ericaceous** shrubs.

Because of the high fog frequency in the ecoregion, tree lichens grow abundantly. In


particular, the distinctive "old man's beard" is found here, hanging in stringy clumps from tree branches. Other lichen in the ecoregion include boreal felt lichen, designated special concern, lung lichen, black velvety lichen and various pelt lichen. Between ridges, on the **hummocks** of bogs, heath moss is common. 



Photo: A Glen Ryan

**Species in Focus:** Yellow birch (*Betula lutea*) is a deciduous tree that grows in rich, moist woodlands. It is common in the forested moraines of the Avalon Forest. The bark is yellowish to bronze and peels into narrow, curled strips with age, giving the trunk a ragged look. Like many species, yellow birch can develop "heart-rot," which leaves holes in the trunks that attract nesting birds, squirrels, and bats.



# Wildlife Profile

Birds that eat a largely seed diet, such as the pine grosbeak and white-winged crossbill, are often found in the forests of this ecoregion. As well, insect eaters, such as the northern waterthrush, yellow-bellied flycatcher, and yellow-rumped warbler, are attracted to the area because of the tremendous food resources available.

Examples of birds that reside year-round in this ecoregion are the boreal owl, boreal chickadee, and gray jay. Some waterfowl, such as the green-winged teal, ring-necked duck, and common goldeneye,

## Species in Focus:

The small, white and dark brown boreal owl — which likes northern coniferous and mixed forest habitat — is an occasional breeder in the Avalon Forest ecoregion. Although it is a fairly secretive owl, it can sometimes be seen in human communities in winter.



Photo: Parks and Natural Areas Division

breed along the edges of ponds, although not in large numbers.

Mammals observed in the forests and shrub habitats of this ecoregion include moose, lynx, snowshoe hare, and mink. Red fox can be found in a variety of habitats in the Avalon Forest ecoregion, while beaver, otter, and muskrat occur in aquatic

areas.


Atlantic salmon, brook trout, brown trout, rainbow smelt, American eel, and three-spine and nine-spine sticklebacks inhabit ponds and streams. The green frog, a species introduced to the Island, has been found in quiet ponds and marshes. 



Photo: A Glen Ryan

The trees in the Avalon Forest ecoregion are often covered by as many as 20 different species of lichen. One species, boreal felt lichen (*Erioderma pedicellatum*), is designated as special concern and is particularly sensitive to pollution making it a good indicator species for air quality. Lichen cover the trunk, branches, and even exposed roots of trees.



Photo: A Glen Ryan

The Avalon Forest is characterized by areas of dense forest where many logs and debris from dead trees litter the ground. Old man's beard lichen (*Usnea longissima*) is commonly found hanging from tree branches.

## Climate

This ecoregion experiences cool summers, mild winters, and frequent fog. It has a growing season greater than 160 days.



Annual rainfall  
>1600 mm



Annual snowfall  
2-2.5 cm



Mean daily temperatures  
February -7°C to -4°C  
July +14°C to +16°C

## Protected Areas Profile

Small portions of the Avalon Forest ecoregion are protected within Salmonier Nature Park and the very western edge of the Avalon Wilderness Reserve. Ribbed moraine topography — an essential element of this ecoregion — is present in both these areas. Unfortunately, the moraines here are highly eroded, and the long ridges and forests so characteristic of the central part of the ecoregion are not well developed. As a result, neither Salmonier Nature Park nor the Avalon Wilderness Reserve includes large enough portions of this ecoregion to provide adequate representation, making the highly typical forest near Ripple Pond especially important. The two existing portions of protected areas amount to 2.5% of the subregion.

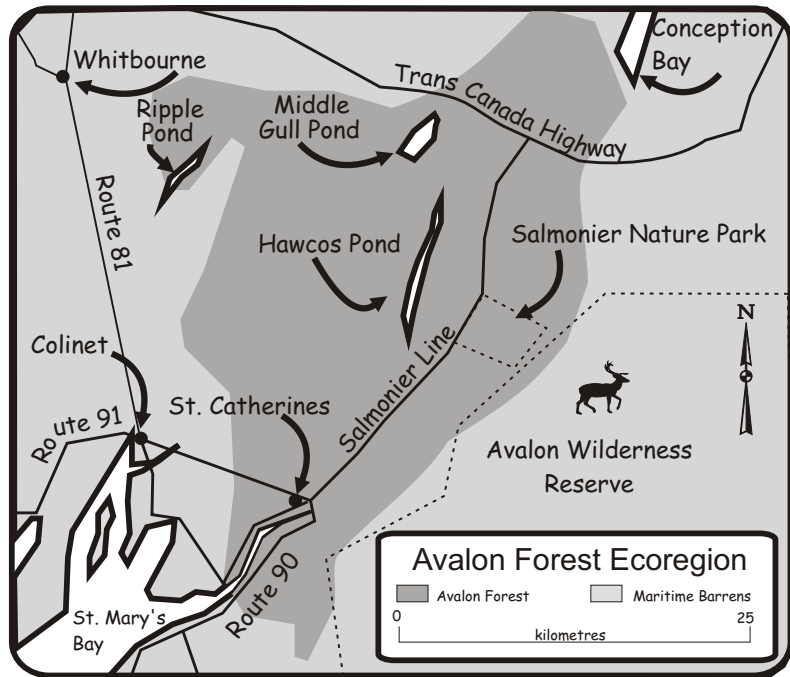
The Avalon Wilderness Reserve protects 1070 km<sup>2</sup> of Avalon Woodland Caribou herd

habitat. This herd is the southerly in Canada and their survival is considered a North American success story. With the creation of the reserve and protection for the herd, caribou numbers rose from a few dozen animals in the 1960's to 6-7000 strong in the 1990's. This success story illustrates the potential for our protected areas to play an important role in maintaining internationally important biodiversity.

Although small (14.6 km<sup>2</sup>), Salmonier Nature Park does protect some characteristic and special features of this ecoregion: balsam fir forests, peatlands, and the headwaters of Salmonier River. More than 80 species of birds, 15 species of mammals, and 170 species of vascular plants also occur here, making it an excellent venue for observing native flora and fauna.

Public education is the main purpose of the park, which offers a three-km nature trail. Here, animals native to the province such as beaver, great horned owl, lynx, and arctic fox can be observed in large, open enclosures designed to resemble each species' natural habitat.

Of special note is the park's captive breeding program for the threatened Newfoundland marten. This small, mink-like mammal once lived in most of the forested areas of the Island. Trapping, snaring, and loss of habitat (chiefly through logging and fire) have meant that now it is found in only a few isolated pockets in Newfoundland, most importantly near Little Grand Lake, Red Indian Lake, Main River and within Terra Nova National Park.



Protected Areas Association of Newfoundland and Labrador (PAA) gratefully acknowledges the following partners for their generous contributions to the Newfoundland and Labrador Ecoregion Brochures project:

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