

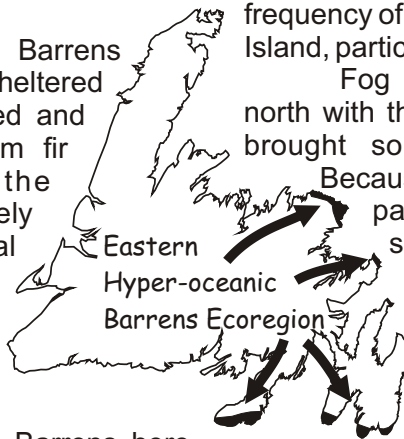


Eastern Hyper-Oceanic Barrens

This small (1,603.4 km²) yet widely fragmented ecoregion is located on the cold, rocky coastlines along

the southern tips of the Burin and Avalon peninsulas, and on the northeastern coastal strips near Bay de Verde, Bonavista, and Cape Freels. The topography is flat to gently rolling, and elevations range from sea level to about 200 metres.

Whereas the Maritime Barrens contains some true forests in sheltered areas, trees here are all stunted and form scattered areas of balsam fir **tuckamore**. The rest of the ecoregion is almost completely devoid of tree cover. Coastal **barrens** vegetation is the typical feature of the landscape and is interesting because of its similarity to the vegetation in coastal areas of northern Scotland and southern Norway. Barrens here are characterized by extensive carpets of heath moss (*Rhacomitrium lanuginosum*), which has a



very restricted distribution. This ecoregion is one of the few places in North America where it occurs. In wet areas where drainage is poor, **blanket** and **plateau bogs** are common.

The climate of the Eastern Hyper-oceanic Barrens ecoregion is strongly influenced by the close proximity of the ocean. Summers are cool, with temperatures similar to those on the coldest mountains of the west coast of the Island. These low temperatures are due to the greater frequency of fog here than in any other part of the Island, particularly during spring and summer.

Fog is created when warm air carried north with the Gulf Stream mixes with cool air brought south with the Labrador current.

Because prevailing winds on the eastern part of the Island are from the southwest during the spring and summer, this heavy fog is regularly carried onto the south coast of the Island. Winters, in comparison, are mild and not unlike those experienced on the coast of New England, with daytime temperatures in January often above freezing.

Soils: Soils in this ecoregion vary greatly. Near Cape Freels and Cape St. Mary's are areas of "organic fibrisols." These are soils that occur in peatlands and are composed mostly of organic matter. On the Burin Peninsula and the northern and southern Avalon you'll find "ferro humic podzols" — dark soils with a high organic content and a high amount of iron and aluminum. On the Bonavista Peninsula "humo ferric podzols" — brown soils containing mostly inorganic material that occur in relatively dry sites — are common.

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.

Tuckamore: Also known as "krummholz," tuckamore are areas where growth-limiting factors (such

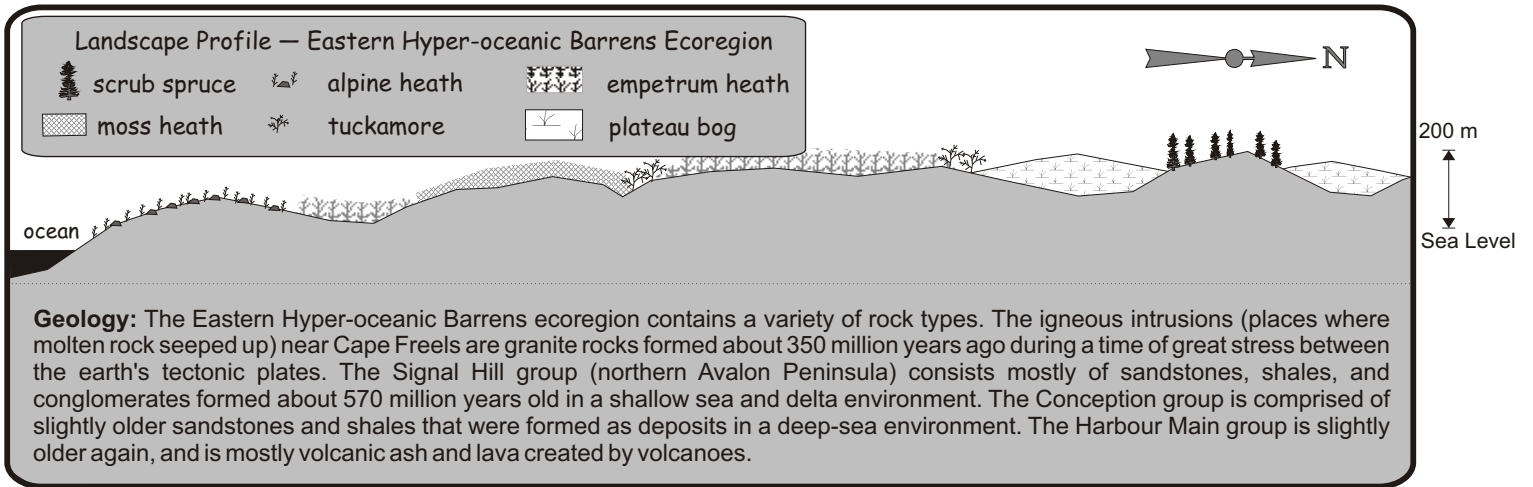
as exposure to harsh weather, or excess soil moisture) have resulted in dense thickets of stunted coniferous trees.

Barrens: Primarily treeless areas containing low-growing plants that are well adapted to exposed conditions and soils low in nutrients. Barrens are also known as "heath" or "heathlands," since much of the plant life found on them belongs to the heath family.

Blanket bogs: Bogs that form extensively over hills and valleys, with peat depths of 1 to 3 metres.

Plateau bogs: A type of bog that forms in coastal areas, where a build-up of sphagnum mosses 2 to 10 metres deep forms a plateau-like raised surface. Often this surface is scattered with large pools.

Arctic-alpine plants: A descriptive term for plants that cannot grow where there are hot summer temperatures. Arctic-alpine plants are generally found farther north than the treeline (by latitude), or above the treeline elevation on mountains.



Vegetation Profile

Unlike the Maritime Barrens ecoregion, where much of the previous forest growth has been eliminated by fire, the Eastern Hyper-oceanic Barrens ecoregion has always been dominated by open barrens and bogs.

On well-drained sites heath moss forms extensive, dense carpets where crowberry, lichens, and some **arctic-alpine plants** (such as alpine azalea) can be found. The comparatively low summer temperatures in the ecoregion result in the presence of these arctic-alpine plants, which otherwise are generally found only in more northern locations, or at higher altitudes.

Tree cover on these barrens is limited to areas of tuckamore composed almost entirely of balsam fir. This is in striking contrast to the tuckamore of the Long Range Barrens ecoregion, which contains stunted, matted black spruce.

Several types of fruit grow on the barrens of this ecoregion and are harvested for domestic use and local and foreign markets. Bakeapple, or cloudberry — a popular berry in this ecoregion and throughout Newfoundland and in Labrador — is found primarily in boggy areas. This small, creeping wildflower bears solitary white

blossoms that become orange-gold berries. Bakeapples are often harvested in early summer when still hard and stored in jars of water to ripen.

Another popular berry is the partridgeberry. This low, creeping evergreen shrub has shiny green to dark red leaves, and white or pink bell-shaped flowers that grow in small clusters at the ends of branches. The berries are dark red or wine-coloured and extremely tart. Large quantities are picked each fall and used to make jams, jellies, and sauces.

The blueberry is a

widespread favourite found throughout the barrens of this ecoregion. Like the partridgeberry, the flowers are bell-shaped, white or pink in colour, and grow in clusters at the tips of branches.

Blueberry patches spread through underground stems and can be extensive. Several varieties occur in this province and hybridize easily. As a result, plants are highly variable, with berries ranging in colour from blue to black. Large quantities of blueberries are harvested each year for export, as well as for local use in jams, jellies, sauces, and baked goods.



Photo: Paul Linegar

Species in Focus: Moss campion (*Silene acaulis*) can be found growing in the coastal barrens of this ecoregion. The leaves are small and dense, forming cushions resembling mounds of moss, hence the name.

Wildlife Profile

Ecologically, the Eastern Hyper-oceanic Barrens ecoregion has immense value for its bird life. Seabird breeding colonies occur on Baccalieu, Wadham, Penguin, Cabot, and Funk islands, and at Cape St. Mary's.

Baccalieu Island is a prime example of this ecoregion. Here alone there are 3.3 million breeding pairs of Leach's storm-petrels (the largest nesting colony of this species in the world), 30,000 pairs of Atlantic puffins, and 13,000 black-legged kittiwakes. Funk Island supports nearly 400,000 pairs of common murres (the largest breeding colony in North America) and 6,000 pairs of northern gannets. There are nearly as many gannets at Cape St. Mary's, as well as 10,000 pairs of both common murres and black-legged kittiwakes. In addition, the largest single wintering flock of harlequin duck known for the province occurs in the waters off Cape St. Mary's. The harlequin duck is a species at risk and designated as special concern.

Other seabirds breed on the many smaller, coastal islands and headlands of this ecoregion, including razorbill, thick-billed murre, black guillemot, herring gull, great black-backed gull, ring-billed gull, common eider, northern fulmar, Manx shearwater, common tern, arctic tern, and caspian tern. The caspian tern is listed as a vulnerable species in Canada.

On the barrens, rough-legged hawk, snowy owl, Savannah sparrow, and American pipit are all characteristic. In forested areas, blackpoll warbler, dark-eyed junco, and northern waterthrush can be found. Willow ptarmigan and yellow and Wilson's warblers are some of the species that inhabit the region's shrub habitat.

Caribou pass the summers




Photo: Parks and Natural Areas Division

Species in Focus: The razorbill, or tinker as it is known locally, is a cousin of the extinct great auk. Large colonies occur along the coast of Labrador, but the razorbill also breeds in low numbers within the Eastern Hyper-oceanic Barrens ecoregion. The bird is the rarest of the alcids and has been exterminated from most of its north-west Atlantic range. Despite conservation efforts, every year some are shot when mistaken for murres, killed by poachers, or contaminated by oil pollution. With changes in provincial hunting regulations the razorbill' numbers are slowly increasing from dangerous lows.

on the southern barrens of this ecoregion. Mammals inhabiting shrub habitat include snowshoe hare, little brown bat, lynx, red squirrel, and moose. In addition, mink, red fox, meadow vole, masked shrew, and short-tailed weasel can occur here in a variety of habitats.

Moose, snowshoe hare, and mink were all introduced to the island of Newfoundland: mink during the 1930s and 40s; moose in

1878 and again in 1904; and snowshoe hare several times between 1864 and 1876.

There are few amphibians and no reptiles found in this ecoregion. The introduced green frog inhabits quiet ponds and marshes, but it is not widespread and populations are small. Fish include Atlantic salmon, brook trout, brown trout, American eel, rainbow smelt, and three-spine and nine-spine sticklebacks. 

Balsam fir tuckamore, which occurs commonly in the Eastern Hyper-oceanic Barrens, is formed by the "pruning effect" of the area's typically high winds and the abrasion caused by ice crystals. In winter, these two forces often kill the tips of any branches that project above protective snow cover.



Photo: B. Pinsent

Protected Areas Profile

Five ecological reserves and four provincial parks together protect 2.6% of the Eastern Hyper-oceanic Barrens ecoregion. Some essential ecoregion features, such as the common coastal barrens vegetation, can be found at Cape St. Mary's and Baccalieu Island ecological reserves, and at Chance Cove Provincial Park. However, the extensive blanket bogs and heath moss that so characterize this ecoregion are not well represented in any of the existing reserves.

There are three ecological reserves with marine components in this ecoregion. Funk Island protects 5.2 km², of which 0.2 km² is terrestrial, Cape St. Mary's encompasses 64 km², though just 10 km² is terrestrial, and Baccalieu Island takes 23 km², of which 5 km² is terrestrial. These reserves have all been set aside for protection because of their spectacular seabird colonies. Funk Island is believed to have been the largest breeding colony in the world of the now-extinct great auk. A member of the same family as the puffin, common murre, and razorbill, the great auk was considerably larger and flightless.

Tens of thousands of nesting auks bred on Funk Island each year. This great density and the birds' inability to fly made them easy prey for early Europeans replenishing food stocks after long voyages from the Old World. Records from the early 1600s describe hundreds of great

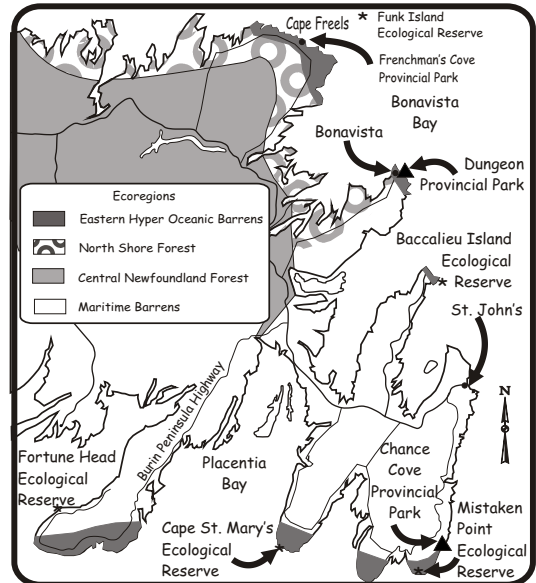
auks being herded off the island, down gangplanks and into boats, where they were killed and salted for later use.


From the 16th through the 18th centuries, the great auk continued to be exploited, as a source of meat and eggs, and for oil, bait, and feathers. Early settlers camped on Funk Island during the summer, and killed and plucked birds for winter use. The remains of the stone corrals the auks were driven into before they were scalded in large cauldrons are still visible.

In the late 1700s, concern about the over-exploitation of the species resulted in a ban on bird and egg collecting during the breeding season. But the action came too late. By the early 1800s the species had become extremely rare, and the last recorded pair was killed in Iceland in 1844.

Mistaken Point Ecological Reserve (2.95 km²) and Mistaken Point Extension Emergency Ecological Reserve (2.7 km²), near the southeast corner of the Avalon Peninsula, protect a different kind of unique resource: the oldest multi-celled fossils in North America. Here, well-preserved fossils of ancient, skeleton-less creatures cover huge rock surfaces that were once the ocean floor. Studying these fossils can help provide a clearer picture of life 565 million years ago, and may also supply answers about early life on earth.

Both Chance Cove Provincial Park (20.7 km²) and Deadman's Bay



Provincial Park (0.7 km²) protect a barachois important for migrating shorebirds. Duneon Provincial Park (0.01 km²) includes a collapsed sea cave and sea stacks, and Windmill Bight Provincial Park Reserve, at 3.2 km², provides protection for a plateau bog. Plateau bogs are distinguished from the more characteristic blanket bog, by the presence of large and scattered pools. 

Climate

The Eastern Hyper-oceanic Barrens ecoregion experiences cool summers with frequent and persistent fog. Winters are the mildest in the province with no permanent snow cover. The growing season is 150 days.



Annual rainfall

1200-1600 mm



Annual snowfall

2-2.5 m



Mean daily temperatures

February -3°C to -5°C

July +12°C to +14°C



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