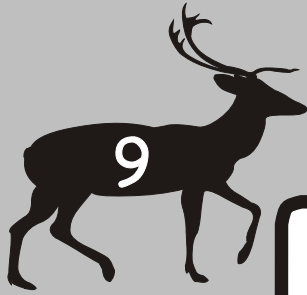


Strait of Belle Isle Barrens



The Strait of Belle Isle Barrens ecoregion covers 1,889.1 km² and occupies the low, treeless, northern tip and west coast of the Great Northern Peninsula on the island of Newfoundland. This part of insular Newfoundland was underwater during the Pleistocene age. Today, almost no part of it rises higher than 60 metres above sea level.

Compared to the Island's other ecoregions, its most striking characteristic is its cold temperatures. In winter, ice floes carried by the Labrador current pack into the Strait of Belle Isle, eliminating any moderating effects the water would have on temperatures. Because this pack ice does not fully break up until June or early July, spring comes late to the Strait of Belle Isle Barrens ecoregion.


Not only does the area experience the shortest growing season of any other ecoregion on the Island, but frost can occur during any month of the year. Fog frequency is also high, particularly in summer.

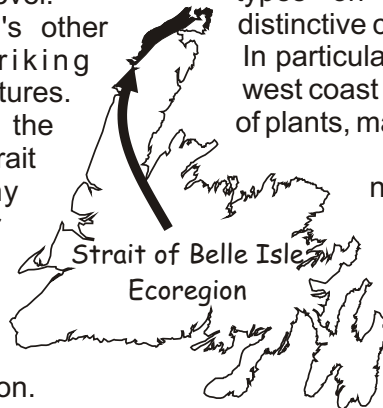
Throughout the Strait of Belle Isle Barrens, soil depths are shallow and there are

large areas of exposed bedrock. On the west side of the peninsula, the terrain is marked by flat, rocky, coastal **barrens** underlain primarily by limestone. An interesting feature of this area is the presence of "stone polygons": a series of ring-like structures made of coarse materials and formed by freeze-thaw cycles. To the east, these barrens give way to rocky hills underlain by sandstone and slate.

This difference in the underlying rock types on an east-west gradient leads to distinctive changes in the associated vegetation. In particular, the calcium-rich barrens along the west coast are host to a varied and unique group of plants, many of which are rare.

Due to its location at the northern tip of the Island, the Strait of Belle Isle ecoregion is also notable for its visits by wildlife from Labrador. The occasional polar bear can appear in spring, for example, arriving on the south-flowing ice in search of prey, primarily seals. Other interesting

visitors are northern bird species, including the pigeon-sized ivory gull, whose dark legs and bill set against an all-white plumage make it a special treat for bird-watchers. Ivory gulls are scavengers and depend on dead seals and other marine mammals for much of their diet. 



Soils: Soils in this ecoregion are generally "organic mesisols" — soils composed mostly of organic matter and usually found in peatlands. In the northeast we find an area of partially exposed bedrock with a thin soil layer (less than 10 cm.)

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.

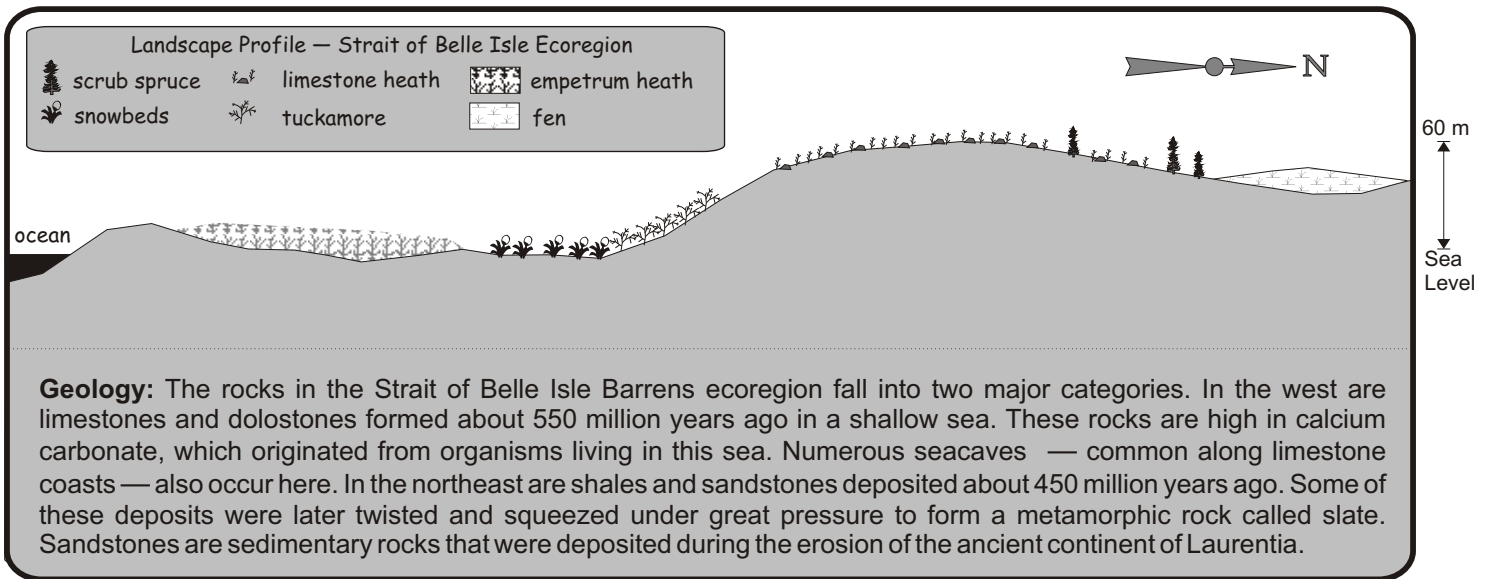
Barrens: Primarily treeless areas containing low-growing plants that are well adapted to exposed conditions and soils low in nutrients. Barrens are also known as "heath" or "heathlands," since much of the plant life found on them belongs to the heath family.

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.

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.

Fens: Like bogs, fens are a type of peatland, though they generally have more grasses and sedges than bogs, and so look more meadow-like. Peatlands are wetlands characterized by poor drainage and a thick layer of peat (soil consisting of the remains of partly decomposed plants). Shrubs and mosses are the common plants in peatlands, particularly sphagnum moss. While bogs receive most of their nutrients from rainfall, water entering fens seeps in from nearby soils, resulting in a more nutrient-rich habitat.

Check your public library for a full set (36) of these booklets: one introductory document and one for each of the 35 ecoregions and subregions in the province. For more information about the series see page 4.



Vegetation Profile

As a result of the cold conditions, vegetation in the Strait of Belle Isle ecoregion is tundra-like and includes many **arctic-alpine** plants such as dwarf willow and velvet-bells. Low, dense masses of **tuckamore** containing white birch, black spruce, and balsam fir occur throughout the area. Although the region is primarily characterized by barrens and scattered tuckamore, small areas of forest do occur, particularly in the Pistolet Bay area.

In comparison to the extensive peatlands found just to the south in the Northern Peninsula Forest ecoregion, peatlands in the Strait of Belle Isle Barrens are small and generally consist of nutrient-rich **fens** alternating with dry barren areas.

Major changes in vegetation occur in the ecoregion on an east-to-west gradient. These changes are largely due to differences in the underlying bedrock, which affects the pH level (or acidity) of the soil. This, in turn, affects the ability of plants to take up nutrients. Some plants are adapted to basic soils, which are low in acidity and have a high pH. Others are better adapted to acidic soils, which have a low pH.

Limestone underlies the flat barrens of the west coast, and it yields calcium-rich, basic soils with a high pH. The soil here is not very thick, however, and extensive areas of exposed rock and gravel are common. Because the soil in this narrow coastal belt differs dramatically from eastern Newfoundland, so too does the plant community that grows here. Many of the plants found on this western stretch of the coastline grow only in calcium-rich soils, and

are considered rare or uncommon, including mountain avens, lapland rosebay, white orchid, and flame lousewort.


To the east, slate and sandstone underlie the more hilly terrain, resulting in acidic soils and a community of plants similar to the exposed coast of southern Labrador. Alpine bearberry, alpine azalea, and pink crowberry are examples of plants that commonly occur in these barrens. 



Photo: A Glen Ryan

Species in Focus: Dwarf hawkbeard (*Crepis nana*) is a rare arctic plant. Its only known location on the Island is in the limestone gravels on Burnt Cape in the Strait of Belle Isle ecoregion. It is a small plant with a rosette of narrow, deep green leaves. In early July it produces a few tiny yellow "daisys" that are essentially stemless and sit in the middle of the leaves.

Wildlife Profile

A notable wildlife phenomenon in the Strait of Belle Isle Barrens is the regular visits by birds more typically found only in arctic areas, such as the gyrfalcon, Lapland longspur, hoary redpoll and the endangered ivory gull. The area also plays host to considerable numbers of migrating shorebirds during late summer, including the white-rumped sandpiper and ruddy turnstone.

Tree sparrow, Savannah sparrow, and white-crowned sparrow occur here as migratory breeders — that is, they breed here but migrate elsewhere for the winter.

Common eiders nest on the coastal islands of Sacred Bay and on islands in freshwater ponds near Pistolet Bay Provincial Park.

This ecoregion is also one of the best areas on the Island to see the ground-nesting short-eared owl. These owls hunt most actively during the evening but can be seen at other times of the day or night.

Polar bears are an occasional visitor during the spring when they are carried south from northern Labrador on pack ice. These mammals make their way back north on their own — they can swim hundreds of kilometres without stopping to go ashore — or, when their visits to the Island take in coastal communities, they are live-trapped and relocated to Labrador.

Other mammals in the ecoregion include red fox, red squirrel, lynx, little brown bat, snowshoe hare, short-tailed weasel, black bear, meadow vole, mink, and masked shrew. Mammals occupying aquatic habitats are beaver, muskrat, and otter. Caribou belonging to the St. Anthony herd can also be found ranging on these barrens.



Photo: Bruce Mactavish

Species in Focus: The American pipit nests on the open barrens in the Strait of Belle Isle Barrens ecoregion. It is a brownish bird with dark streaks on the breast and white outer tail feathers that are visible when in flight. Instead of hopping, it walks along the ground, bobbing its tail almost constantly.

There are no amphibians or reptiles found in the Strait of Belle Isle Barrens. Fish include three-spine and nine-spine sticklebacks, Atlantic salmon, brook trout, rainbow smelt, and the American eel which has been designated as special concern.

Due to its cool, oceanic climate and shallow soil conditions, the Strait of Belle Isle ecoregion is characterized by vast areas of barrens with exposed bedrock and scattered tuckamore.



Photo: Don Hustins

Protected Areas Profile

Five protected areas are found here, protecting 4% of the ecoregion.

Watts Point Ecological Reserve covers 30.9 km² along the northwest coast of the Great Northern Peninsula, facing the Strait of Belle Isle. The calcium-rich barrens within its borders support a wide variety of plants, as well as many rare and uncommon plants that only grow in exposed gravel soils high in pH, such as yellow lady's slipper, purple saxifrage, and mountain avens.

Scientists believe that many of the plants inhabiting these limestone gravel barrens are descendants of western North American plants. During the last glaciation period thousands of years ago, they were separated from their relatives. Their survival here is due in large part to the harsh coastal climate, which maintains the exposed soil conditions they need and protects them from competition from trees and shrubs.

Burnt Cape Ecological Reserve, though small at 3.6 km², is important as the home of 34 species of rare plants associated with limestone barrens, including Burnt Cape cinquefoil (*Potentilla usticapensis*) and Fernald's rockcress (*Braya fernaldii*). Both of these species are known from the northern peninsula and nowhere else

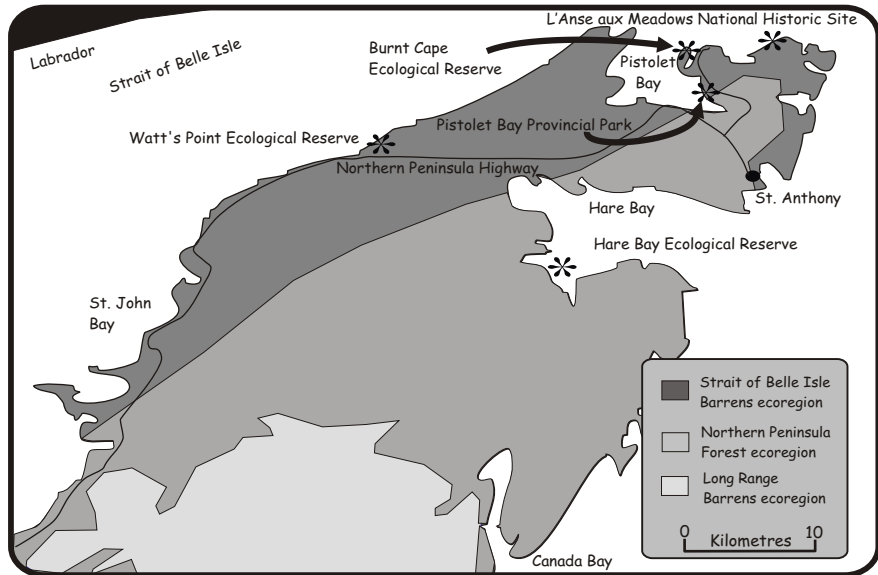
in the world.

L'Anse aux Meadows National Historic Site is a conservation site dedicated to preserving the location of the first known Viking settlement in North America in the year 1000. It is a designated UNESCO World Heritage Site — a world-wide group of outstanding natural and cultural sites.

The coastal land area protected by L'Anse aux Meadows National Historic Site is 30.03 km². The area includes beautiful views of the ocean and coastal barrens typical of the Strait of Belle Isle Barrens ecoregion.

West of the historic site lies Pistolet Bay Provincial Park. Taking in 8.97 km² of the Long Range Mountain lowlands, the park contains a diverse array of plant and animal life.

Sandy Cove Provisional Ecological Reserve is the newest



Climate

The Strait of Belle Isle ecoregion experiences high fog frequency and the lowest summer temperatures on the Island. Pack ice occurs off the coast from December well into June, and frost can occur in any month. Growing season is less than 110 days.

	Annual rainfall	1500 mm
	Annual snowfall	2.5-3 m
	Mean daily temperatures	February -9°C to -16°C July +12°C to +17°C

in addition to this ecoregion. Established in 2007, the limestone barrens in the 0.15 km² reserve support a species of plant found nowhere else in the world. Long's Braya (*Braya longii*) is a small plant that grows only on a 10km stretch near the community of Sandy Cove.



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:

- Department of Environment and Conservation
Parks and Natural Areas Division
- Department of Natural Resources
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