

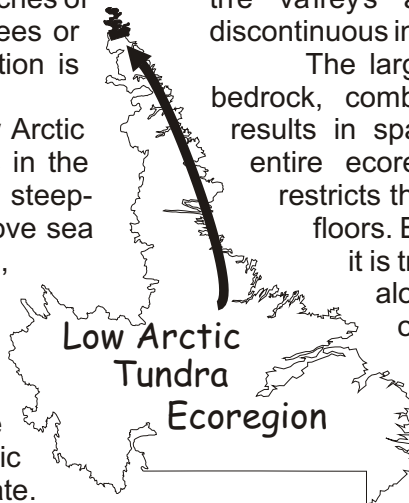


Low Arctic Tundra

The Low Arctic Tundra ecoregion is located at the very northern tip of Labrador. It extends south from Cape Chidley to the Eclipse River, and is bordered by Quebec on the west and the Labrador Sea on the east. This region is characterized by a severe, stark beauty: vast stretches of exposed bedrock, boulders, and bare soil are broken only by patches of moss and lichens. There are no trees or tall shrubs here and other vegetation is extremely limited.

The topography of the Low Arctic Tundra includes flat coastal plains in the north near Ungava Bay, and low steep-sided hills 600 to 1,000 metres above sea level in the south. In hilly areas, exposed bedrock dominates the higher ground, while the steep slopes are often covered with talus and alluvial fans.

The most northern of all the province's ecoregions, the Low Arctic Tundra has the harshest climate. Summers are brief and cool, and winters long and very cold. The average daily temperature for February is in the low -20s; for July it's 6°C to 7°C. Due to its high latitude this ecoregion also experiences the greatest changes in the number of daylight hours. At Cape Chidley on the longest day of the year — in June — there are 19 hours of daylight, with almost no real darkness during the night. On the shortest day of the year — in December — there are only about six hours of daylight.



This is also the driest region in Labrador; the average annual precipitation is only 500 mm, which occurs mainly in the form of snow. Not surprisingly, human habitation in this ecoregion is limited and non-permanent.

In most years, coastal ice continues well into summer (sometimes not breaking up until August), which is longer than anywhere else on the Labrador coast. Permafrost is continuous in the valleys and mountains inland, and discontinuous in coastal areas.

The large amount of exposed soil and bedrock, combined with the harsh climate, results in sparse vegetation throughout the entire ecoregion. Seasonal flooding also restricts the distribution of plants on valley floors. Because this area has no forests, it is true tundra. Some marshes occur along rivers; shrubs, where they do occur, are low-growing. Grassy meadows occur in areas where snow collects. No true peatlands (bogs and fens) occur in this ecoregion.

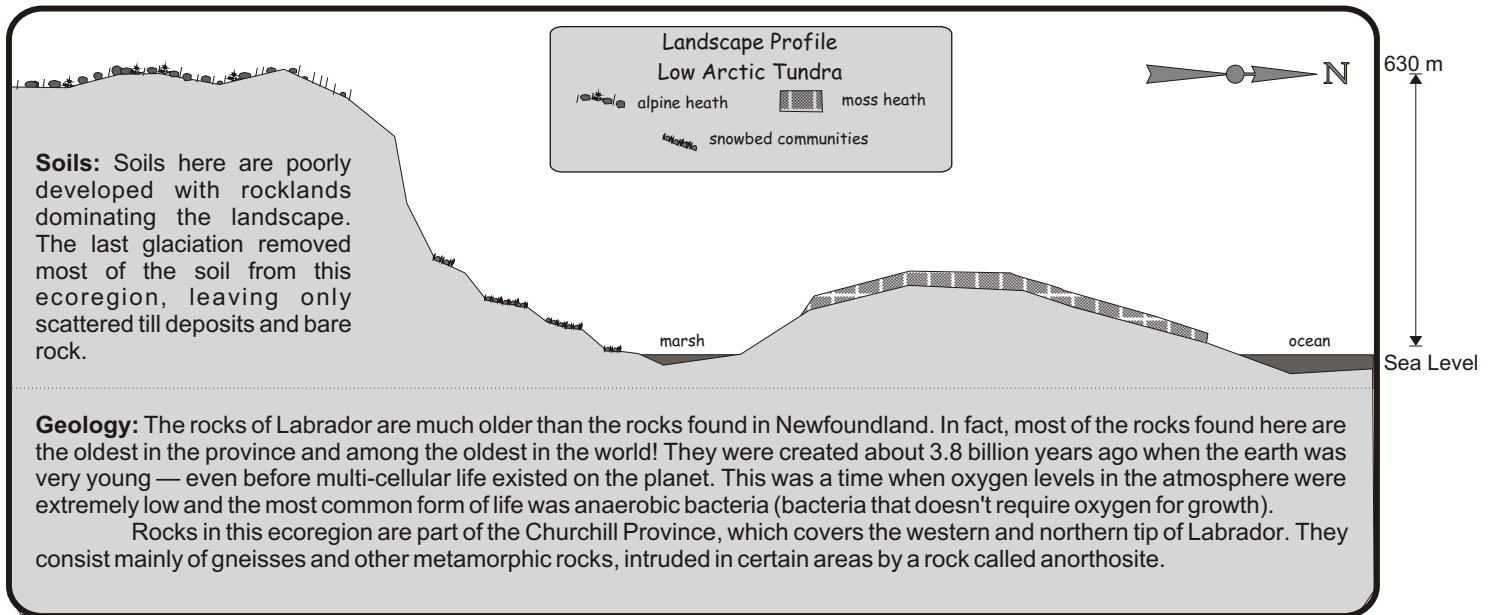
Tundra: Tundra landscape occurs around the Arctic Circle, north of the treeline, and in smaller areas in the southern hemisphere on sub-Antarctic islands. It can also occur above the treeline on high mountains, even in the tropics. These areas usually have a very short growing season, and only cold-tolerant plants — such as mosses, sedges, lichens, and dwarf trees — can survive. Typical tundra animals are musk ox, lemmings, voles, snowshoe hare, and caribou — or reindeer.

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.

Talus: The collection of rock and rubble that forms at the base of a slope as material erodes off the mountainside above. Commonly known as "scree."

Alluvial fan: The fan-like landform created where a stream flows out into a valley, slows its current, and dumps the heaviest sediment it was carrying — primarily coarse gravel. They are common in mountainous areas.

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 Labrador plants that belong to this group — which is also known as the "heath family" — are blueberry, partridgeberry, crowberry, and sheep laurel.



Vegetation Profile

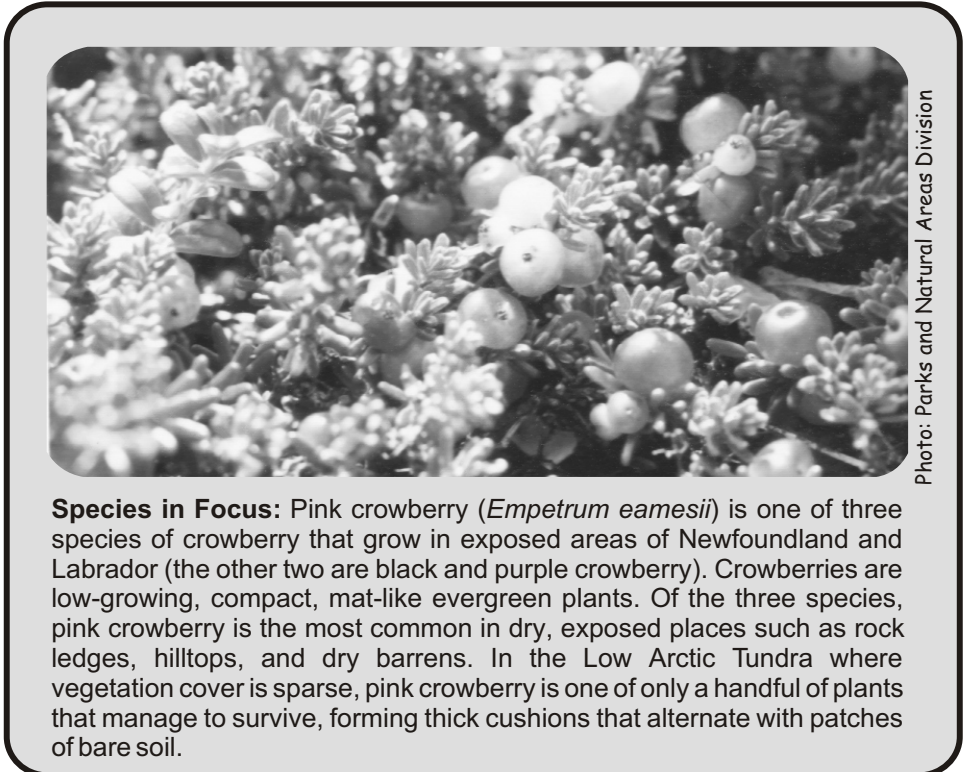
This ecoregion's classification as "tundra" means it is above the treeline. (Although forests often grade unevenly into tundra, "treeline" refers to those regions above which trees do not grow.) Although some scattered thickets of low-growing willow and alder occur here, no coniferous trees are found. In fact, due to the short growing season, cool temperatures, and large expanses of exposed rock, much of this ecoregion is characterized by bare ground where nothing grows. These areas are often broken by patches of lichen and mosses, while sedges, crowberries, and **ericaceous** plants such as alpine bearberry occur sporadically. Not surprisingly, where more extensive vegetation occurs, it is on the warmer south-facing slopes and in protected ravines.

Near the coast, on exposed headlands and ledges, heath moss (*Rhacomitrium lanuginosum*) occurs, although it does not cover extensive areas the way it does in the Eastern Hyperoceanic Barrens ecoregion on the Island. Heath moss is a low, dense, dark grey-green moss that has a

distinctly fuzzy appearance and is soft to the touch. It has a very restricted distribution and can be found in only a few places in North America. In northern Labrador, heath moss grows in association with various lichens, willows, crowberries, and ericaceous plants.

Snowbed communities occur occasionally in the Low Arctic Tundra ecoregion. These are specific plant groupings in

alpine areas where snow continues late into the growing season. This longer-lasting snow cover provides protection for plants, as well as extra moisture as the snow melts. Dwarf willow and mountain heather are examples of plant species found in snowbed communities in northern Labrador. Because they often contain a lot of sedges, snowbed communities are also known as "sedge meadows." 🐾



Wildlife Profile

Some of the largest arctic mammals occur in the Low Arctic Tundra ecoregion, including the polar bear, and in coastal waters, the narwhal and walrus. The walrus is a large sea mammal with two white tusks, which it uses to loosen food from the sea bottom. It is an uncommon marine mammal in this ecoregion, but can be seen occasionally resting on ice pans. The narwhal is the only tusk-bearing whale. This tusk (which is actually a very long tooth and occurs only in the male) projects through the upper lip and twists in a clockwise direction as it grows, forming a spiral. The first narwhal tusks to reach Europe were thought to belong to a horse-like animal, and thus became the basis for the medieval unicorn myth.

On land, sparse vegetation limits wildlife to primarily small mammals such as the arctic fox, arctic hare, red fox, meadow vole, least weasel, deer mouse, and short-tailed weasel. The Ungava lemming also occurs here. This small rodent is restricted to the tundra of the Quebec-Labrador Peninsula and some islands in Hudson Bay.

Birds that breed in the tundra habitat of this ecoregion include peregrine falcon, gyrfalcon, rock ptarmigan, snow bunting, and Lapland longspur. The glaucous gull — which breeds along the entire coast of Labrador, but not on the island of Newfoundland — and the great black-backed gull nest along the coast and on offshore islands, while the red-throated loon, Canada goose, and red-necked phalarope nest in freshwater habitats.

The coastal waters of the Low Arctic Tundra provide important molting areas for ducks



Photo: Parks and Natural Areas Division

Species in Focus: An arctic species, the massive, white to pale yellow polar bear lives year-round along the coast of the Low Arctic Tundra ecoregion. It feeds mostly on seals, though it will also eat fish, invertebrates, some vegetation, and the eggs and young of waterfowl and seabirds. Polar bears are strong swimmers, and can swim for hundreds of kilometers without coming onto land.

such as common eiders and scoters. The males of these species congregate at the mouths of rivers and on the open water of large bays in summer to molt. Because the females incubate the eggs at this time, they begin their molt later than the males — after the chicks have hatched. Throughout incubation, the female

common eider leaves her nest for only ten to fifteen minutes every two to three days, during which time she drinks, but does not eat.

Fish occurring in the rivers and streams of this northern ecoregion include arctic char, three-spine stickleback, and nine-spine stickleback. No amphibians or reptiles occur in this ecoregion.



Photo: Paul Linegar

Sparse vegetation, boulders, and exposed soil characterize this ecoregion, which constitutes the most northern extent of our province.

Climate

This ecoregion is the driest and most arctic in all of Labrador. The growing season is less than 60 days.



Annual rainfall
500 mm



Annual snowfall
< 3.0 cm



Mean daily temperatures
February -20°C to -22°C
July +6°C to +7°C

Protected Areas Profile

There are no protected areas currently located in this ecoregion. However, this region is planned for inclusion in the proposed Torngat Mountains National Park.

Focus on Permafrost

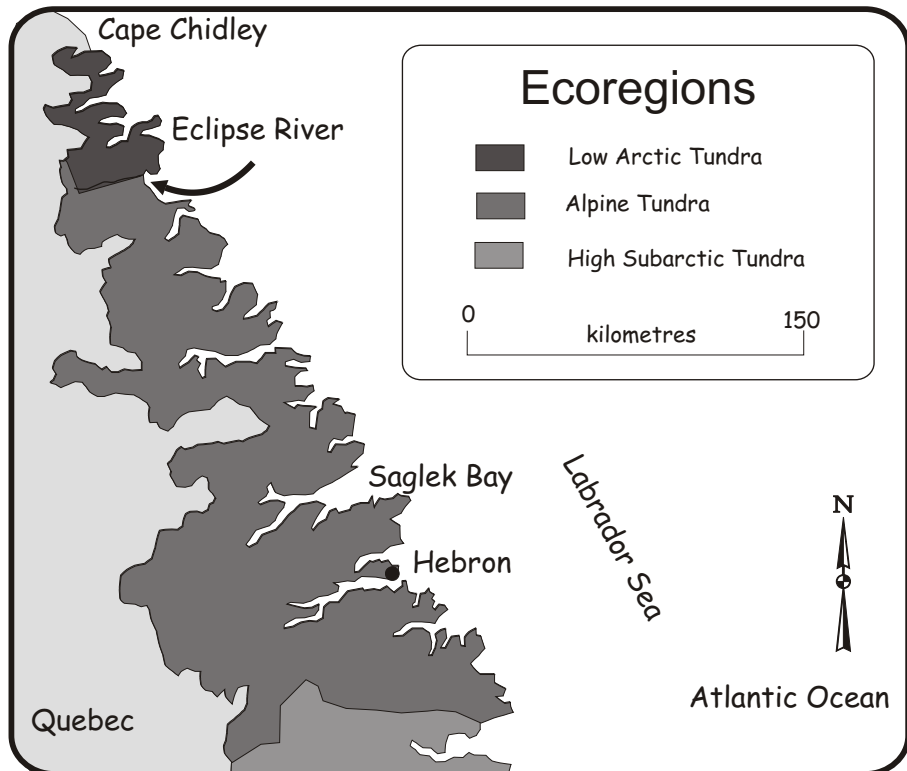
Permafrost is an important component of tundra. In general, permafrost occurs where the ground stays frozen within a few metres of the earth's surface throughout the year. Areas where permafrost is present everywhere are called "continuous permafrost zones"; a "discontinuous permafrost zone" is where the frozen ground occurs only in patches. In total, permafrost underlies 26% of the earth's surface — mostly in the northern hemisphere. In some parts,

permafrost reaches 300 to 450 metres in depth.

The effects of permafrost on plant life are considerable. Species that have deep root systems cannot take hold or survive in areas with permafrost. In fact, the greatest portion of plant roots are restricted to the top 10 cm of soil. On the other hand, because permafrost acts as a barrier to water, it traps the limited precipitation that occurs in arctic regions in the top soil layer, thus providing a moist habitat for plants such as mosses, sedges, and shrubs that would otherwise be

unable to survive.

Permafrost can present a number of engineering problems for construction projects. If houses built over permafrost are not insulated, for example, they can melt the frozen ground beneath them, turning the ground to mud and engulfing the building. Another problem relates to the behavior of streams in winter. As surface water freezes, water beneath the ice has nowhere to go and may burst out here and there, freezing into huge masses of ice and making roads impassable. 🐾



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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