Central Newfoundland Forest
Red Indian Lake subregion

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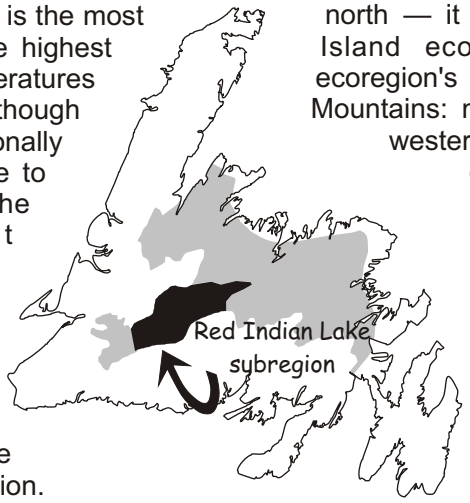
The Central Newfoundland Forest ecoregion covers about 28,000 km² in the central and northeastern third of the island of Newfoundland. The second largest of the Island's nine ecoregions, its forests are the most typically **boreal**, and its climate is the most **continental**. On average, the highest summer and lowest winter temperatures on the Island occur here. And although night frosts can occur occasionally throughout the summer — due to cold northeast winds off the Labrador Current — it experiences the least wind and fog on the Island.



The Red Indian Lake subregion — the second largest of the four in the Central Newfoundland Forest — covers a large area in the southwestern part of the ecoregion. It gets its name from Red Indian Lake, located in the northern portion of the subregion. The land here is characterized by dense forests, bogs, and rolling hills that grow gradually higher as you move south within the subregion — from 150 metres above sea level in the north, to 450 metres above sea level in the south. Overall, the terrain is similar to the North-central subregion, except that there are local areas of deeper, more nutrient-rich soil.

The Red Indian Lake subregion is distinguished from the rest of the Central Newfoundland Forest by having the coolest summers, highest precipitation, and the shortest growing season. Despite the cooler average, however, summertime night frosts are not as common here as in the North-central subregion.

Although this subregion experiences higher precipitation — especially when compared with the larger North-central subregion to the north — it is still generally drier than other Island ecoregions. This is due to the ecoregion's location east of the Long Range Mountains: more rain falls on the mountains' western side because winds off the ocean drop their moisture as they climb and cool over the land.

Because of the relatively dry, warm summers, the Red Indian Lake subregion experiences a high number of forest fires, as does the rest of the Central Newfoundland Forest.

Bogs are common in the Red Indian Lake subregion, but are different from those of the neighbouring Maritime Barrens ecoregion because some of the plants found in those ecoregions, such as dwarf huckleberry and black huckleberry, do not grow here.

Domed bogs are the most common type of bog, and in the Central Newfoundland Forest are better developed than anywhere else on the Island. Domed bogs are striking when viewed from above, when the patterns made by standing water become apparent — circular pools in broken, layered rings surrounding the raised portion of the bog.

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. Subregions occur when distinctive variations within ecoregions are on a smaller scale than between ecoregions. The Central Newfoundland Forest is broken down into four subregions.

Boreal forest: The mainly coniferous forest found in northern latitudes, which extends in a band around the globe, covering large portions of the northern hemisphere.

Continental climate: Climate resulting from a geographic location in the interior of a landmass, which lessens the moderating effects of the ocean. This leads to colder winters and warmer summers than areas that have a similar latitude but are close to a large body of water.

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 of standing water radiate outwards from this bulge.

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.

ECOREGION
Forest
Barren
Tundra
Bog

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LAB
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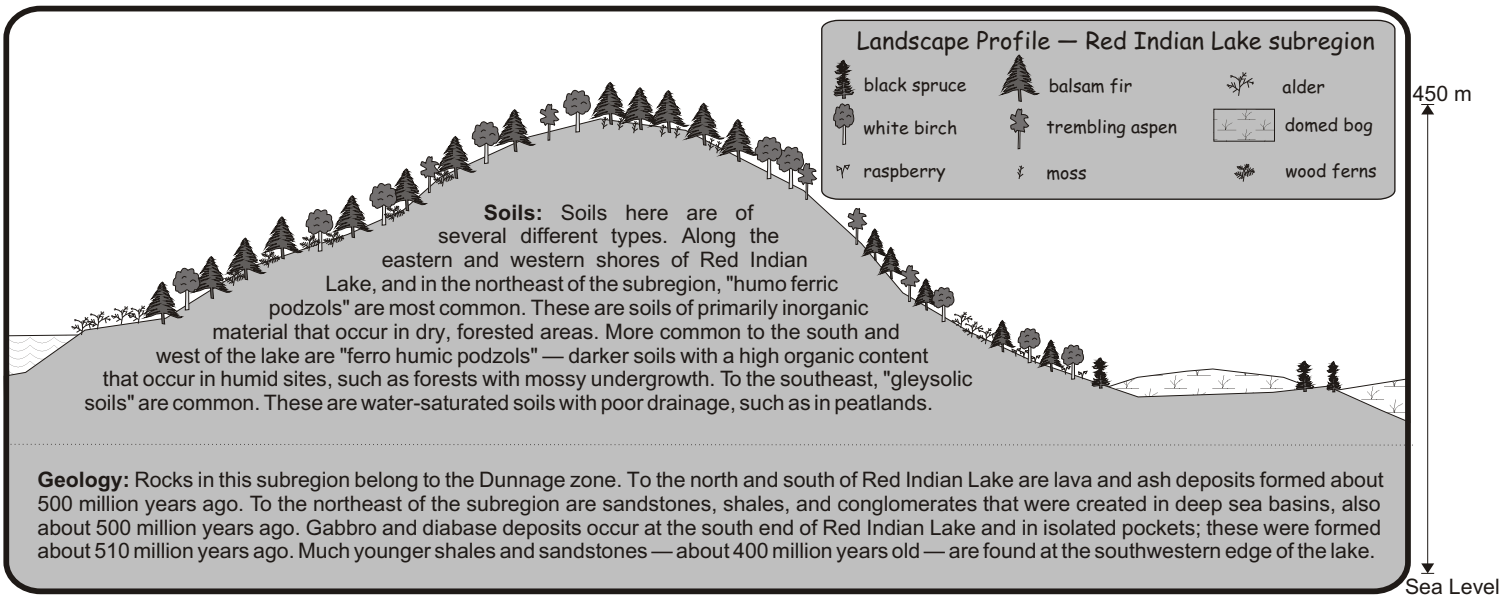


Vegetation Profile

The influence of frequent forest fires and warm summers on plant communities in the Central Newfoundland Forest varies. This influence is most obvious in the north, decreasing southwards. Consequently, although fire and summer heat do affect vegetation in the Red Indian Lake subregion, the effect is not as pronounced as in the North-central subregion.

Balsam fir forests are the most common here, though black spruce will replace balsam fir on well-drained hilly sites after a fire. The soil in such locations contains some of the lowest levels of humus — or organic material — anywhere on the Island. Black spruce grows well in dry, nutrient-poor soils like these. In areas where fires have not recently occurred, balsam fir forests with a dense floor covering of moss abounds.

White birch grows here too, in stands or as part of mixed forests. White birch colonizes areas that have been disturbed — as a result it thrives in this ecoregion because of the high number of forest fires. A closely related species, the yellow birch, is notably absent from all subregions of the Central Newfoundland Forest. This is due to the shorter growing season and occasional summer frosts.

Club moss/alder swamps are found in poorly drained, nutrient-rich locations. This is different from what occurs in a neighbouring ecoregion: in the Western Newfoundland Forest, poorly drained wet locations usually have mountain maple thickets.

Red pine, the rarest conifer on the Island, grows only in the Central Newfoundland Forest. Once widespread across much of the island of Newfoundland, it is now found only in a few small stands in the central area. These stands are at the red pine's northernmost limit, so they are especially sensitive to environmental changes and disturbances, such as cutting or fire.

Trembling aspen, a species found in many other areas of the Island, is most abundant in the Central Newfoundland Forest. In fact, this is the only ecoregion where it forms stands — probably because the warm summer temperatures permit root suckers to develop, allowing the plant to take up nutrients from the soil more easily. This more efficient means of nutrient uptake enables the tree to quickly colonize new areas, including recent burn-overs.


Photo: Glen Ryan

Species in Focus - Trembling aspen (*Populus tremuloides*) gets its name from the almost constant movement of its heart-shaped leaves. This is because the long, slender leafstalks are flattened, causing the leaves to quiver in the slightest breeze. In fall, the leaves turn a brilliant golden-yellow.


Photo: Glen Ryan

Wildlife Profile

As is typical of boreal forests, many animals occupying the Red Indian Lake subregion are adapted to long, cold winters and short, warm summers. Moose, snowshoe hare, muskrat, otter, mink, black bear, beaver, and lynx — species that also live in similar habitat elsewhere on the Island — occur throughout this subregion. Caribou — primarily members of the Gaff Topsails and Buchans herds — can also be found here, while a small population of the endangered Newfoundland pine marten occurs around Red Indian Lake.

This subregion is also home to birds that typically live in forest habitat, including the gray jay, ruffed grouse, spruce grouse, osprey, great horned owl, northern flicker, sharp-shinned hawk, pine siskin, chickadees (boreal and black-capped), fox sparrow, and white-winged crossbill. Common waterfowl are green-winged teal, ring-necked duck, American black duck, and Canada goose.

Many warbler species can be seen throughout this region: Wilson's, black-throated green, black-and-white, and yellow-rumped are just a few of the many that occur here. The secretive thrushes, in particular the Swainson's thrush and hermit thrush, are also at home in the dense forests of this region.

Although they are generally associated with human environments, the common crow, American robin, and herring gull inhabit the forests here. The herring gull is widely distributed in low numbers throughout the entire ecoregion, where single pairs nest on small islands — sometimes on only a small rock — and in adjacent peatlands or gravel areas.

There are no reptiles and few amphibians in this subregion. The green frog, an introduced species, inhabits small quiet ponds and marshes, but it is not widespread and its populations are small.

The region's many lakes and rivers support a variety of fish, however, including Atlantic salmon and brook trout, which are both important species for recreational fisheries. Other fish include arctic char, three-spine and nine-spine sticklebacks, rainbow smelt, and American eel.

Photo: H.F. Burgess

Species in Focus: The beaver, which is the largest rodent in North America, has become a symbol of hard work and engineering know-how. Evidence of its handiwork — beaver ponds, dams, and lodges — can be found throughout the Red Indian Lake subregion. Beaver prefer hardwood for their constructions, and often choose white birch. They will eat the bark of almost any tree or shrub, although favourites are trembling aspen, alder, and birch. The flattened tail of the beaver is used for both communication and swimming. The flattened tail of the beaver is used for both communication and swimming.

Photo: George Draskoy

Red Indian Lake, located in the heart of this subregion, is one of the largest lakes on the island of Newfoundland. It was formed by the gouging of glaciers, a process that created many of the large lakes occurring here.

Climate

This subregion experiences the most continental climate on the island of Newfoundland. The growing season ranges from 140 to 160 days, although night frosts can occur during summer.

Annual rainfall
1200 mm (in NE)
- 1600 mm (in SW)

Annual snowfall
3-3.5 cm

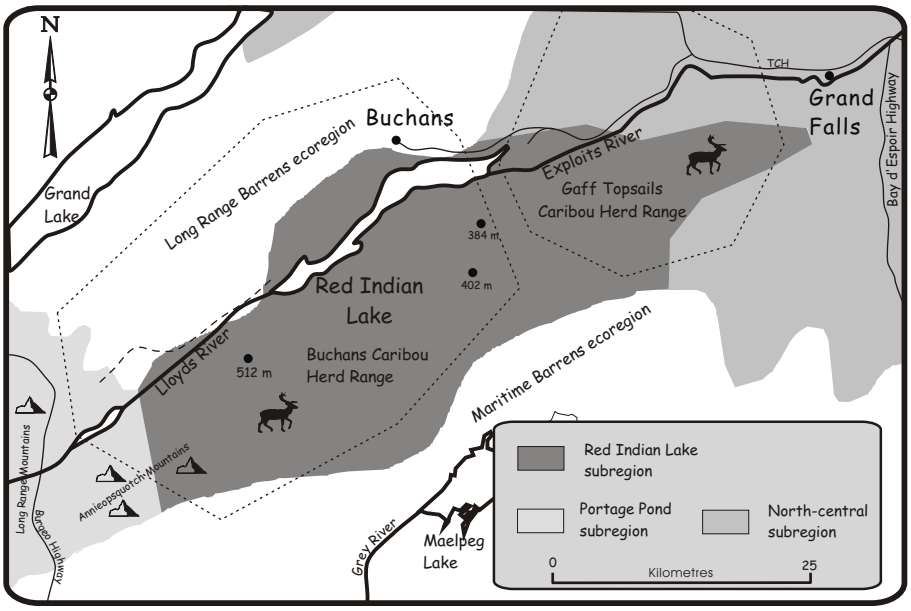
Mean daily temperatures
February -4°C to -8°C
July +15°C to +16°C

Protected Areas Profile

Heavy use by the pulp and paper industry has made it difficult to find a representative portion of this subregion to preserve, but the search continues.

Focus on Fires

The island of Newfoundland has a wealth of freshwater lakes, streams, rivers, and ponds. The land holds an additional supply of freshwater in its bogs, fens, and bedrock. Water is essential for the growth of our forests. Its abundance, or scarcity, has long-reaching effects on the vegetation of Newfoundland. In central Newfoundland, summers are relatively hot and dry. In some locations more water may evaporate from the ground and vegetation than is replenished from rain or reservoirs in the bedrock and surrounding wetlands. This moisture deficiency can leave the forests "tinder dry" and susceptible to fire.



When fires occur, they essentially remove the forest cover from an area, leaving it open and exposed. However, the loss of vegetation cover is brief, as fast - growing plants adapted to full sunlight and exposure colonize these "burn-overs." The first plants are grasses and herbs that can take root quickly. These plants are soon replaced by small woody shrubs such as blueberry. (Burn-overs are well known throughout Newfoundland as favorable places to pick blueberries.) Eventually these shrubs are replaced by deciduous trees such as trembling aspen and white birch, or even by black spruce. In many areas balsam fir will eventually replace these species.

The change in plant growth that occurs after an area has been disturbed is called "succession." Over time, different combinations of plants will recolonize a site in what appear to be "successive" stages. Succession is not always predictable. Forest regeneration in Newfoundland is often very slow. Some forests that have been destroyed may not grow back in our lifetime, or even at all. It is not always possible to recreate the delicate balance between forest, soil, water, and climate once it has been disrupted. This means that in some cases forest fires, or other disturbances, permanently change the environment — for example, the replacement of forests by barrens.

Despite this, natural forest fires play an important role in forest ecology by stimulating new growth in fire-dependant species such as red pine, and by providing space for many colonizing species. Fires also result in the growth of new healthy forests that can better withstand disease and parasites.

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