

The Petite rivière Touradi Rare Forest

Jack pine-black spruce stands

Exceptional Forest Ecosystem of the Bas-Saint-Laurent Region

WHAT MAKES THIS ECOSYSTEM EXCEPTIONAL?

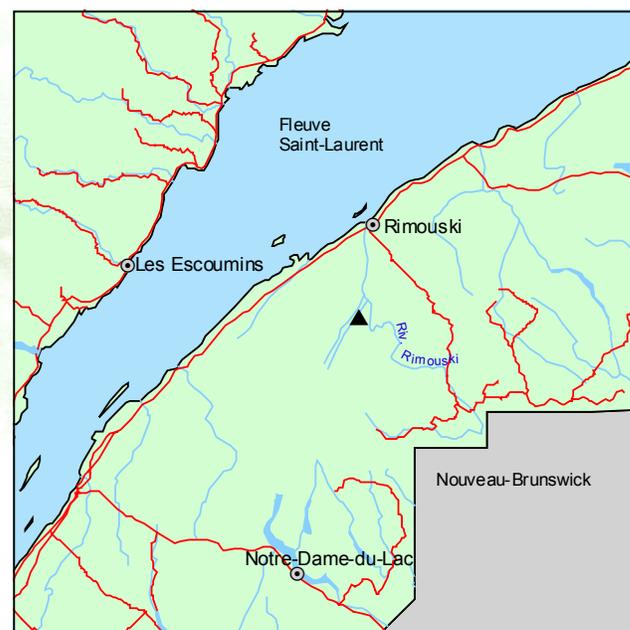
This rare forest is composed of several natural jack pine (*Pinus banksiana*) stands that survived wildfires more than 70 years ago. Jack pine stands are a rarity in the Bas-Saint-Laurent region. While small populations of this species can be found scattered throughout this area which is dominated by balsam fir-yellow birch stands, the presence of vast jack pine forests in the heart of the Bas-Saint-Laurent region is indeed exceptional.

In Québec, jack pine is especially abundant in the boreal forest zone, which extends westward of Lac Saint-Jean. This zone is characterized by a short fire cycle (between 50 and 100 years) and a relatively dry continental climate. These conditions are highly favourable to the growth of jack pine, since its regeneration is assured almost exclusively by crown fire. Jack pine trees bear persistent serotinous cones that open and release their seeds after exposure to high temperatures. This characteristic enables jack pine to become established and form even-aged stands following a fire. However, due to its short lifespan and heavy dependence on fire for regeneration, the species has difficulty surviving fire-free periods of more than 150 to 200 years. This explains the limited abundance of jack pine in eastern and southern regions of the province where the climate is more humid and the fire cycle exceeds 200 years. This type of stand is therefore rare in the Bas-Saint-Laurent region.

BRIEF DESCRIPTION OF THE PETITE RIVIÈRE TOURADI RARE FOREST

The Petite rivière Touradi rare forest covers an area of 86 ha and is located some 25 km south of Rimouski. It is part of the eastern balsam fir-yellow birch bioclimatic subdomain. This mixed forest ecological unit is mainly composed of stands dominated by balsam fir (*Abies balsamea*) or, less frequently, by sugar maple (*Acer saccharum*). The region's topography is moderately hilly. The surface deposits originated primarily from the alteration of bedrock.

The rare forest comprises two jack pine patches located approximately 2 km apart along the Petite rivière Touradi, less than 5 km from the Rimouski River. The jack pine stands are growing on pebbly alteration deposits that extend along low to moderately steep hills with good soil drainage. The establishment of both stands was the result of at least two fires, since one of the stands is around 75 years old and the other roughly 120 years. The stands have two distinct strata. The upper stratum is approximately 20 m tall and consists mainly of jack pine with some trembling aspen (*Populus tremuloides*) and red pine (*Pinus resinosa*). The relatively dense lower stratum is dominated by black spruce (*Picea mariana*). In one of the forests, the lower stratum also contains a significant proportion of red maple (*Acer rubrum*). The height difference between the jack pine and the black spruce is likely due to the different growth rate of the two species. While both species regenerate rapidly after a fire, jack pine requires ample sunlight to survive and grows much faster than black spruce. The latter, on the other hand, is very shade tolerant and has a much longer lifespan. The regeneration stratum



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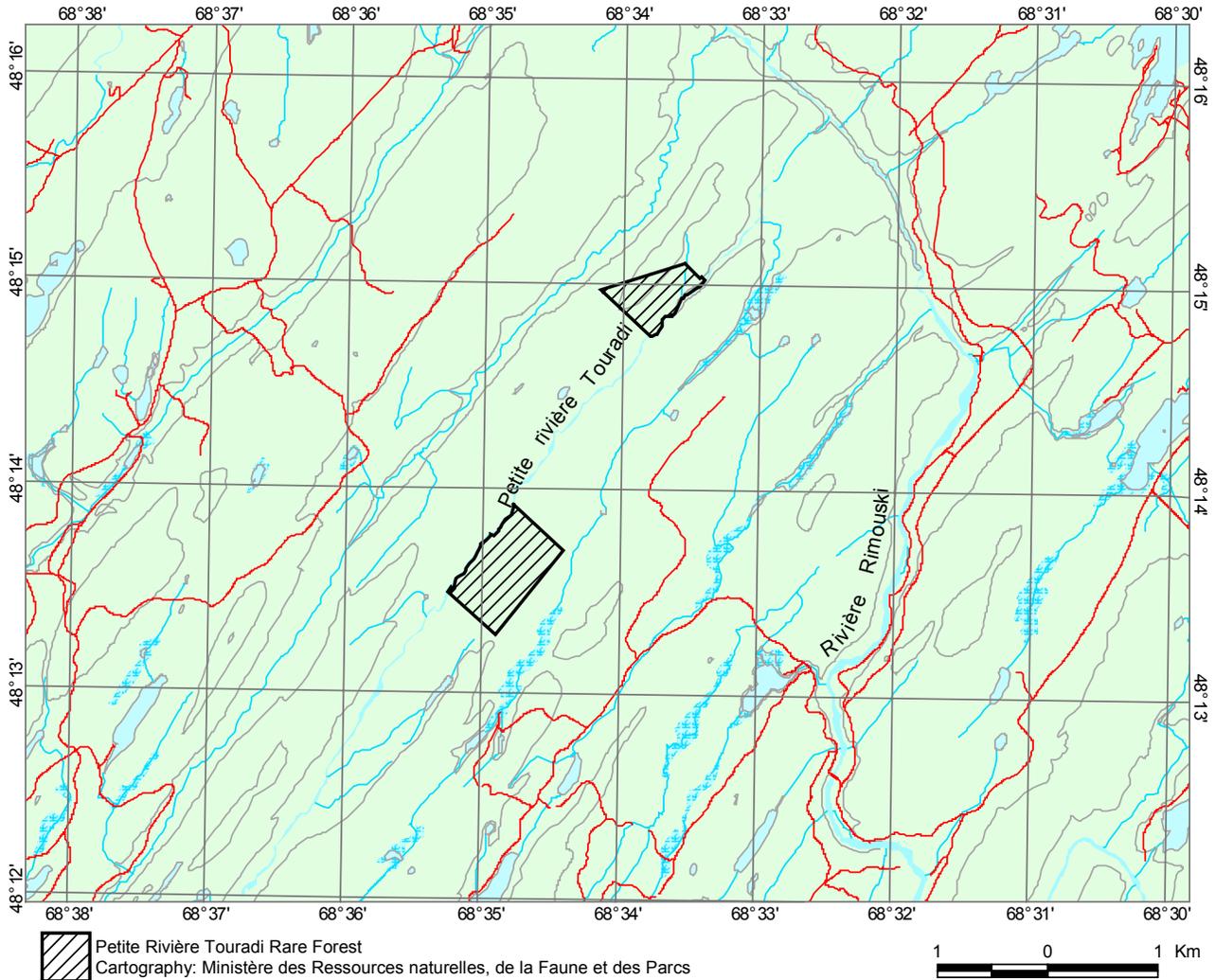
Québec



consists mainly of black spruce, but it also contains a certain proportion of balsam fir, eastern white cedar (*Thuja occidentalis*), paper birch (*Betula papyrifera*) and trembling aspen.

Black spruce could eventually replace jack pine as the dominant species in the event of a prolonged fire-free period. Conversely, a fire within the next 100 years should permit the establishment of new jack pine stands in this forest.

The shrub layer is characterized by blueberries (*Vaccinium angustifolium* and *Vaccinium myrtilloides*). Bunchberry (*Cornus canadensis*), large-leaved aster (*Eurybia macrophylla*), bracken (*Pteridium aquilinum*), yellow clintonia (*Clintonia borealis*) and wild lily-of-the-valley (*Maianthemum canadense*) are typical of the herbaceous layer. Schreber's moss (*Pleurozium schreberi*) blankets some areas of the forest floor.



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