



Protected areas  
in Québec:

A Lifelong Heritage

# Réserve écologique de la Grande-Rivière



CONSERVATION PLAN

Québec 

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## **Bibliographic Reference:**

Government of Québec, Ministère du Développement durable, de l'Environnement et des Parcs, Direction du patrimoine écologique et des parcs. réserve écologique de la Grande-Rivière, Conservation Plan. 2009. 19 p.

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## Background

In December 1999, an area of about 184 km<sup>2</sup>, located approximately 12 km north of the town of Grande-Rivière in Gaspésie, was assigned provisional protection status as the " Réserve écologique projetée de la Grande-Rivière." One of the main objectives of this initiative was to ensure the ecological integrity of the river called Grande Rivière, designated as a salmon river and used as a source of drinking water by the town of Grande-Rivière, and to maintain the natural hydrological cycle.

In February 2001, the establishment of the réserve écologique de la Grande-Rivière (173 km<sup>2</sup>) under the *Act respecting ecological reserves* excluded the southwest portion of the project, including certain private properties and various sections of road, which nevertheless retained the status of proposed ecological reserve.

The upcoming expansion of the ecological reserve in 2012, through the addition of almost all the territory that has kept the status of a proposed ecological reserve, will consolidate the boundaries of the réserve écologique de la Grande-Rivière. This expansion, covering an area of about 11 km<sup>2</sup>, will reinforce the protection of Grande Rivière's riparian ecosystems and its ecological integrity and will increase the ecological reserve's area to 184 km<sup>2</sup>.

In conformity with section 88 of the *Natural Heritage Conservation Act*, the conservation plan of the réserve écologique projetée de la Grande-Rivière was submitted to the government and approved on December 17, 2003, by the adoption of Order in Council 1364-2003. This conservation plan includes data from the original conservation plan and covers the entire territory of the réserve écologique de la Grande-Rivière.

## 1. Official name

Official name: Réserve écologique Grande-Rivière. This name refers to the Grande Rivière, whose eastern watershed is partially protected by the ecological reserve.

## 2. Plan and description

### 2.1. Geographic location, boundaries, and dimensions

The location of the réserve écologique de la Grande-Rivière is shown in Figure 1, and its boundaries in Figure 9 (large scale).

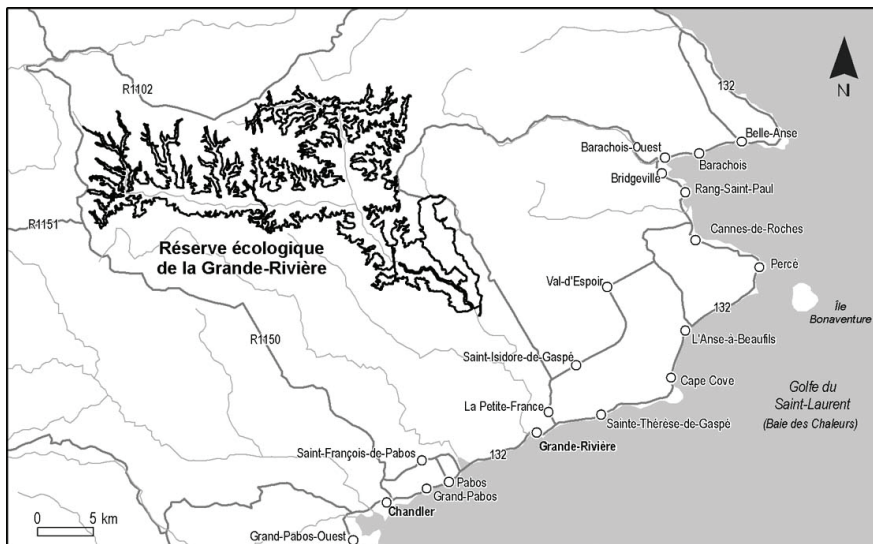


Figure 1. Location of the réserve écologique de la Grande-Rivière

The réserve écologique de la Grande-Rivière is located between 48°29' and 48°42' north latitude and 64°33' and 64°51' west longitude. It straddles the townships of Rameau, Fortin, Pellegrin, Joncas, and Power, in the unorganized territory of Mont-Alexandre, in the Rocher-Percé regional municipal county, in the Gaspésie-Iles-de-la-Madeleine administrative region.

A photographic inventory of the réserve écologique de la Grande-Rivière is presented in Appendix 1.

## 2.2. Ecological overview

The réserve écologique de la Grande-Rivière forms part of the Appalachian natural province. It protects ecosystems characteristic of the Gaspé Peninsula natural region.

### 2.2.1. Representative elements

**Climate:** The territory of the ecological reserve is characterized by a subpolar, subhumid continental climate and a medium growing season. It belongs to the bioclimatic field of balsam fir/white birch stands in the continuous boreal forest vegetation subzone.

**Geology and geomorphology:** The bedrock in the ecological reserve is mainly composed of shale, clay, limestone, and slate dating back to the Ordovician (from 500 to 435 million years ago) and to the early Silurian (approximately 440 million years ago). This geological foundation is covered with morainic till deposited by glaciers during the Quaternary era. It mainly runs from west to east along a fault that geologists call the Grande Rivière fault.

**Archeology:**

The electronic database of *Inventaire des sites archéologiques du Québec* lists no archeological site in the area of the réserve écologique de la Grande-Rivière.

**Hydrography and topography:** The protected area forms part of the Grande-Rivière drainage basin, which covers an area of nearly 700 km<sup>2</sup>. The Grande Rivière flows almost 70 kilometers before emptying into Chaleur Bay. If we added up all its main branches, such as Grande Rivière Ouest, Grande Rivière Est, and Grande Rivière Nord, not to mention other primary and secondary branches, it would reach a total length of up to 150 kilometers. The Grande Rivière's headwaters are located inland, about 40 kilometers from the sea near Rivière Saint-Jean on an undulating plateau at approximately 400 to 500 meters altitude. The plateau is transected by numerous, sometimes steep-sided, river valleys, creating a mountainous topography varying in altitude by up to 200 to 250 meters. At the fork called *Aux Trois-Fourches* (see Figure 2), the Grande Rivière turns southeast, flowing through a deep, narrow, winding valley. Downstream of the Grande Rivière Est and Grande Rivière Ouest forks, it flows through rolling hills from an altitude of 200 meters down to the river's mouth at sea level in the center of the town that bears its name (see Figure 1).

**Vegetation:** The ecological reserve is largely forested. Balsam fir (*Abies balsamea*), white spruce, (*Picea glauca*), and white birch (*Betula papyrifera*) predominate on mesic sites, and eastern white cedar (*Thuja occidentalis*) on slopes. At lower altitudes, the plateaus are covered by white birch and red maple (*Acer rubrum*) stands; while sugar maple (*Acer saccharum*) and yellow birch (*Betula alleghaniensis*) dominate the sunnier slopes. Generally speaking, these stands are old and have been little or not at all affected by human activity or natural disturbances.

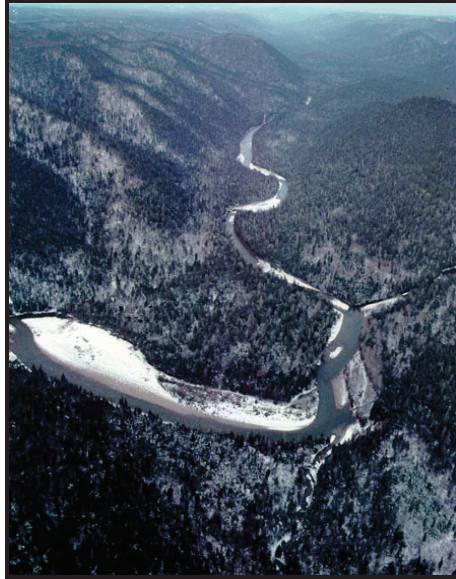


Figure 2. View of Grande Rivière from Trois-Fourches with the fork of Grande Rivière Nord on the right



Figure 3. Grande Rivière Est with its limestone shores

In certain areas of the valley floor, there are eastern white cedar/balsam fir stands on peat, a unique forest ecosystem according to Ministère des Ressources naturelles et de la Faune. Sugar maple/yellow birch stands grow along Grande Rivière Est, the northern limit of their geographic range.

Like most of the rivers that empty into Chaleur Bay, Grande Rivière flows through limestone bedrock, which promotes the growth of cedars along its banks in the upper reaches, as well as very rare plants, and a number of species of calcicole plants that generally grow farther north or in other limestone habitats like Anticosti-Minganie (see Figure 3). The forest bordering the river shows signs in some places of the large fires that have ravaged the area, in 1960 for example.

### **2.2.2. Outstanding elements**

The flora of the ecological reserve is influenced by the boreal climate. Two rare species are found growing along the river on rocks and banks at water's edge: Anticosti aster (*Symphyotrichum anticostense*), a threatened species in Québec and Canada (Figure 4), and the Showy lady's slipper (*Cypripedium reginae*), a species likely to be designated in Québec (Figure 5).

Anticosti aster, endemic to the Gulf of St. Lawrence, colonizes fields covered in grass, low shrubs, and bare rock, on the upper slopes of sandy alluvial flats covered with limestone rocks and periodically submerged during spring floods. In 2001, the Anticosti aster population in this area was estimated at over 68,000 stems and its entire riparian habitat has been protected since February 2001 under the *Act respecting threatened or vulnerable species* (R.S.Q. E-12.01). As for showy lady's slipper, it grows on the humid, limestone upper banks. Twelve colonies, made up of a total of 50 stems, were observed in this area in 2001.

The limestone bedrock favors the presence of calcicole species, including two uncommon ferns, the limestone fern (*Gymnocarpium robertianum*) (Figure 6), which grows along the river at the forest's edge, and alpine woodsia (*Woodsia alpina*), which clings to rocks in the area known as "round rock.". There are also several colonies of northern arnica (*Arnica lonchophylle*, *subsp. Lonchophylla*) and yellow mountain avens (*Dryas drummondii*) (Figure 7). The latter species, 1,500 kilometers from its main geographic range, the Canadian Rockies, is considered to be a relic of the last glaciation.





Figure 4. Anticosti Aster  
(*Symphyotrichum anticostense*)



Figure 5. Showy Lady's Slipper  
(*Cypripedium reginae*)



Figure 6. Limestone Fern (*Gymnocarpium robertianum*)



Figure 7. Yellow Mountain Avens  
(*Dryas drummondii*)

The ecological reserve is also home to the Golden Eagle (*Aquila chrysaetos*), a diurnal bird of prey that is rare in the Gaspésie and vulnerable in Québec. It nests on the rocky cliffs overlooking the Grande Rivière (Figure 8). The last sighting dates back to 2003. The main threats to the golden eagle population are habitat loss, disturbance, and mortality due to human activity.



Figure 8. Golden Eagle  
(*Aquila chrysaetos*)

### **2.3. Main land Occupation and uses**

The réserve écologique de la Grande-Rivière is located in a steep valley. Numerous logging roads cross these mountains and end in the plateaus overlooking this valley. Two gravel roads transect the ecological reserve, one suitable for automobile traffic in the western part and another in the southwest that is only accessible to ATVs. These roads and their right-of-ways give access to the neighboring area and are outside the boundaries of the ecological reserve. Their rights-of-way are five meters wide in the southwest and 35 meters wide in the rest of the reserve. The 40.25 meter wide right-of-way of the 161 kV, 1607 circuit electrical transmission line linking the Micmac substation with Wakeham crossing the eastern section of the réserve écologique de la Grande-Rivière is also outside the reserve. These areas are shown in Figure 9. As well, the existing roads by which Hydro-Québec accesses the power line right-of-way near structure 97 and travels outside the right-of-way corridor between structures 114 and 115 are also excluded from the Grande-Rivière Ecological Reserve.

A controlled harvesting zone (ZEC) for salmon (*Salmo salar*) was established in 1980 on the portion of the Grande Rivière in the public domain. The Grande Rivière ZEC, administered by the not-for-profit organization, Société de gestion de la rivière Grande-Rivière, runs along the river for over twenty kilometers. The ZEC boundaries are based on those of the ecological reserve.

No land entitlement has been granted within the perimeter of the ecological reserve.

### **3. Protection status**

The area is an exceptional ecosystem that should be protected because it is geologically unique, serves as habitat for plant and animal species that are uncommon, threatened, vulnerable, or likely to be designated in Québec, and is relatively undisturbed. The ecological reserve will entirely and permanently preserve a large part of the Grande Rivière watershed. This protection status is governed by the *Natural Heritage Conservation Act*.



## 4. Activities within the reserve

The activities carried out in the réserve écologique de la Grande-Rivière are governed by the provisions of the *Natural Heritage Conservation Act* (R.S.Q., c. C-61.01) and are restricted to scientific research, education, and management and require the written permission from the Minister of Sustainable Development, environment and Parks.

This conservation plan does not prohibit activities other than those prohibited in ecological reserves by this Act. Nor does it authorize any other activities or set additional constraints on activities permitted by this Act.

Since the protection status assigned is comprehensive, no other conservation measure is planned for this protected area. As the conservation objectives are the same as for the entire area, the ecological reserve constitutes a single zone.

### 4.1. Prohibited activities

Under the *Natural Heritage Conservation Act*, the following are the main activities prohibited in an area designated as an ecological reserve:

- Forest management within the meaning of section 3 of the *Forest Act* (R.S.Q., c. F-4.1)
- Mining, and gas and petroleum development
- Mining, gas, or petroleum exploration or development, brine or underground reservoir exploration, prospecting, digging, or drilling
- Development of hydraulic resources and production of energy on a commercial or industrial basis
- Hunting, trapping, fishing, excavation or construction work, agricultural, industrial, or commercial activities, as well as any activity that could modify the state or appearance of ecosystems

Except for inspections or authorized activities under the Act, it is prohibited to be in an ecological reserve. The Minister of Sustainable Development, Environment and Parks can give written authorization, on conditions he or she determines, for any activity related to the purposes of an ecological reserve or its management.

### 4.2. Activities governed by other laws

Activities related to scientific research, education, and management carried out in the réserve écologique de la Grande-Rivière are also governed by other applicable legislative and regulatory provisions, including those that require issuance of a permit or authorization or the payment of fees.

In this ecological reserve, a special legal framework may govern activities having prior authorization from the ministry, particularly in the following spheres:

- Archeological research: measures set out in particular in the *Cultural Property Act* (R.S.Q., c. B-4);
- Environmental protection: measures set out in particular in the *Environment Quality Act* (R.S.Q., c. Q-2) and its regulations;
- Plant species designated as threatened or vulnerable: measures prohibiting notably the removal of these species under *Act respecting threatened or vulnerable species* (R.S.Q., c. E-12.01);
- Development and conservation of wildlife resources: measures set out in the *Act respecting the conservation and development of wildlife* (R.S.Q., c. C-61.1);
- Access and land rights related to the domain of the State: measures set out in *Act respecting the lands in the domain of the State* (R.S.Q., c. T-8.1) and the *Watercourses Act* (R.S.Q., c. R-13);
- Operation of vehicles: measures set out in particular in the *Act respecting the lands in the domain of the State* (R.S.Q., c. T-8.1) and in the regulation respecting motor vehicle traffic in certain fragile environments made under the *Environment Quality Act*.

### **4.3. Supervision of activities**

The Minister of Sustainable Development, Environment and Parks is responsible for the application of the *Natural Heritage Conservation Act* and for the management of the ecological reserves established under this Act. She supervises and monitors the measures set out in the Act with regard to the permitted activities in protected areas. The minister also has the authority over these lands, which form part of the domain of the State.

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APPENDIX 1

PHOTOGRAPHIC INVENTORY





Photo 1. View of Grande Rivière and the fork of Grande Rivière Est



Photo 2. View of Grande Rivière Est



Photo 3. View of Grande Rivière, west of fork of Grande Rivière Est



Photo 4. View of Grande Rivière in the Île des Mélèzes area,  
west of the fork of Grande Rivière Est



Photo 5. View of Grande Rivière Nord



Photo 6. View of Grande Rivière, west of Coulée de la Montagne Blanche





