QUÉBEC STRATEGY FOR PROTECTED AREAS

Protected areas in Québec : A pledge for the future

Proposed Bonaventure river estuary aquatic reserve

(provisional name)

Conservation plan

June 2005

Québec

1. Protection status and toponym

The legal status of the reserve described below is that of proposed aquatic reserve under the *Natural Heritage Conservation Act* (R.S.Q., c. C-61.01).

The proposed reserve is to have the name "Réserve aquatique projetée de l'estuaire de la rivière Bonaventure". The official toponym will be determined at the time of the assignment of permanent protection status to the land.

The proposed aquatic reserve protects the estuary of one of the largest watercourses in the Appalachians natural province. It also ensures the protection of a wide diversity of aquatic ecosystems, riparian ecotones, marine and estuarine environments and land habitats.

Aquatic reserve status will allow the pursuit of the following conservation objectives:

- conservation of an outstanding estuary in the Appalachians natural province;
- preservation of the biodiversity in the aquatic ecosystems and riparian ecotones;
- increased protection of flora habitats;
- acquisition of additional knowledge about the natural heritage.

2. Plan and description

2.1. Location, boundaries and dimensions

The boundaries and location of the proposed Bonaventure river estuary aquatic reserve are shown on the attached plan.

The proposed Bonaventure river estuary aquatic reserve is located between 48°01’ and 48°03’ north latitude and 65°27’ and 65°29’ west longitude. It is situated in Ville de Bonaventure, in Municipalité régionale de comté de Bonaventure, in the Gaspésie—Îles-de-la-Madeleine administrative region.

The proposed aquatic reserve covers an area of 2.4 km^2 and lies within the estuary of the Bonaventure river, formed at the mouth of the river. The proposed aquatic reserve comprises the bodies of water up to the high water mark and the bed of the river, the adjacent shallow basins, lagoons and delta shoals. It includes the islands located in the estuary, of deltaic origin, particularly Île des Prés, Île Arsenault, Île aux Sapins and Île des Chardons. Île des Prés is

fragmented by a number of channels creating a mosaic of islets. Two barrier beaches, or sand spits, oriented north-west – south-east separate the estuary from the marine environment; the sand spit located to the south-east, referred to locally as Île aux Pirates, and the beach adjacent to the sand spit located to the north-west form part of the proposed aquatic reserve. The proposed aquatic reserve extends in two places into Chaleur Bay, bordering the two sand spits.

All the land included in the proposed aquatic reserve was obtained by the Ministère de l'Environnement in November 2001 within the context of a "donation of land with ecological value" from Emballages Smurfit-Stone Canada inc. The Ministère du Développement durable, de l'Environnement et des Parcs has authority in the territory.

Route 132 crossing the southern portion of the proposed aquatic reserve, the foot bridge and the three decommissioned bridges across the proposed aquatic reserve at the location of the former Route 132 as well as the marina and the electric power distribution equipment, having a 9-metre wide right-of-way, are excluded from the protection perimeter.

2.2. Geography

The area is in the Appalachians natural province. The estuary is one of the most studied estuaries in Chaleur Bay for its geomorphology, hydrodynamics and biology. It is considered one of the most outstanding estuaries in Gaspésie although it has been partially deteriorated by a number of human activities. Marshlands and wetlands are also found on the islands. The estuary is recognized as a site of interest for its flora because of the presence of threatened or vulnerable species. A wide variety of avian species are present and the estuary is a major fish habitat. The dominant landscape is a delta oriented to the south-west which is influenced by the tidal movement. The maximum elevation reaches a few metres above sea level.

The hydrodynamics, geomorphologic evolution and the barachois in the Bonaventure river have been greatly disturbed by human activities: log driving until 1967; dredging, the construction of a channel and the installation of a log pond for a sawmill built before 1963 that no longer exists; dredging for the port facility and construction of a marina; the construction of Route 132 that began in 1972.

2.2.1. Representative elements

***Climate*:** The proposed aquatic reserve is characterized by a moderate, subhumid continental climate, with a long growing season. It borders land that forms part of the balsam fir-yellow birch bioclimatic domain.

***Geology and geomorphology*:** The proposed aquatic reserve is part of the Appalachians geologic province and contains Carboniferous rocks (350 to 325 million years) that rest unconformably on older Ordovician to Devonian rocks (500 to 360 million years). The bedrock consists of clastic rocks (conglomerates). The proposed aquatic reserve is bordered by lowlands slightly sloping westwards. The river cuts through marine sediments composed of silt and clay. The islands consist of coarser deltaic deposits.

***Hydrography*:** The Bonaventure river is one of the longest watercourses in the natural province, having its source in the Chic-Chocs mountains. The river and its numerous tributaries drain an area of some 2,391 km^2. The main course of the river flows for 125 km to the south-east and has an average slope of 3.3 m/km. At its mouth, in the proposed aquatic reserve, the river ends its course in a south-west direction. A barachois formed on contact with Chaleur Bay is fed by freshwater at an annual average rate of 46 m^3/s.

Influenced by the semi-daily and seasonal tides, the estuary is subject to variations of currents, water level and salinity. The surface water salinity in the proposed aquatic reserve ranges in the summer from 0.0% upstream to 26.5% downstream.

***Vegetation*:** The vegetation in the Bonaventure estuary is characterized by sea coast cover, stands of aquatic plants present in tidal zones, freshwater, brackish or salt water marshes, wetlands and parcels of forest. Grasslands, shrub communities and tree formations are also found in the estuary.

Plants and vegetation communities typical of the Chaleur Bay sea coast grow on the barrier beaches: beachgrass prairie (*Ammophila breviligulata*), lyme grass (*Elymus arenarius*), etc. The aquatic vegetation consisting of submerged plants covers some 6% of the barachois basins strongly influenced by the tides, between Route 132 and the sea, in a salt or brackish water environment. Eelgrass *(Zostera marina)* dominates the shallow sea water and basins. Green string lettuce *(Enteromorpha* sp.*)*, green stringy algae tolerant to salinity changes, grows in all the basins of the estuary, but it is more abundant in the basin bordering Île aux Pirates; at low tide, the green colour of the algae characterizes the mouth of the river. Sea lettuce *(Ulva* sp.*)*, also an algae, ditch grass *(Ruppia maritima)* and horned pondweed (*Zannichellia palustris*) are the other aquatic plants in the salt and brackish water environments, although they are not abundant.

A dozen species dominate the salt and brackish marshes bordering the lagoons, basins and the southern portion of the islands; the marshes are located mainly north of Route 132. Smooth cordgrass *(Spartina alterniflora)* communities grow in the area of the marshes that is most often flooded. Baltic rush *(Juncus balticus)*, scaly sedge *(Carex paleacea)*, red fescue *(Festuca rubra)*, freshwater cordgrass *(Spartina pectinata)*, New York aster *(Symphiotrichum novi-belgii)* and saltmarsh spikerush *(Eleocharis uniglumis)* dominate in all the salt and brackish marshes. Herbaceous meadows and scrublands of diversified flora characterize the freshwater marshes on the islands. Marshes having a peat facies cover the southern portion of the islands located north of Île des Prés.

The portion of the islands located north-east of the former Route 132 is covered in the wetland segment by wooded swamps of black spruce *(Picea mariana)*, American elm *(Ulmus americana)* and balsam poplar *(Populus balsamifera)*, and in the mesic environment at the centre of the islands, by shrublands of white spruce *(Picea glauca)* and eastern white cedar *(Thuya occidentalis).*

2.2.2. Outstanding elements

The islands in the Bonaventure river estuary, in the proposed aquatic reserve, are home to Macoun's fringed gentian (*Gentianopsis procera* subsp*. macounii* var. *macounii*) and Anticosti aster *(Symphiotrichum anticostense)*, two plants designated as threatened species, and to mat mulhy *(Muhlenbergia richardsonis)* and Gaspé peninsula arrow-grass *(Triglochin gaspense),* two plants likely to be designated as threatened or vulnerable species. The distribution of the four riparian and estuarine species is limited. The fringed gentian, found mainly in western Canada, grows only on the superior hydrolittoral of the Bonaventure and certain James Bay rivers. The global distribution of the aster and arrow-grass is centred around the Gulf of St. Lawrence. Mulhy grass is found sporadically in North America; in Québec, it is found around the Gulf of St. Lawrence. The presence of uncommon habitats in the estuary, in particular gravel and limestone flats, explains the abundance of the rare plants.

The proposed aquatic reserve is, in the spring and in the fall, a major staging area for aquatic birds. It is a resting and feeding site for a number of species of shorebirds and birds that live in the marine and estuarine environment. The bald eagle *(Haliaeetus leucocephalus)*, a species designated as vulnerable, is present in the territory. A few birds likely to be designated as threatened or vulnerable in Québec have reportedly been observed in the proposed aquatic reserve: the harlequin duck *(Historionicus historionicus)*, Barrow's goldeneye *(Bucephala*

islandica) and the red-headed woodpecker *(Melanerpes erythrocephalus)*. Approximately fifteen species of fish are present in the Bonaventure river estuary. Soft-shell clams *(Mya arenaria)* are found along the north-western barrier beach. The zooplanktonic species are mainly represented by copepods and nauplii. Fourteen species of benthic fauna have been observed; the sandworm *(Nereis diversicolor)*, a polychaete, and a small snail *(Hydrobia minuta)*, a gastropod mollusc, dominate.

2.3. Occupation, rights and land uses

The area of the proposed aquatic reserve is a major site for birdwatching and sports fishing grounds for Atlantic salmon *(Salmo salar),* brook trout *(Salvelinus fontinalis)* and rainbow smelt *(Osmerus mordax)*. Fishing takes place from the shore or using motorized craft and, in the winter, in huts set up on the ice. The ZEC de la rivière Bonaventure, offering sport salmon fishing, lies north of the boundary of Canton de Hamilton, outside the proposed aquatic reserve. Canoeing and kayaking is possible on the Bonaventure river, the canoists and kayakists ending their trip in the estuary in the proposed reserve or in the marina area; they rarely set foot on the shores of the proposed aquatic reserve. In the winter, a snowmobile trail crosses the western side of the basin (Lot A – 2). Other activities are occasionally carried on in the territory, in particular migratory bird hunting, swimming and off-highway vehicle outings on Île aux Pirates.

The proposed aquatic reserve is bisected by Route 132. In the northern portion of the area, a foot bridge and three decommissioned bridges span the proposed aquatic reserve at the location of the former Route 132. A marina and fishing harbour border the proposed aquatic reserve at the mouth of the river, and a municipal camping site is present on the sand spit located to the north-west.

All the land immediately adjacent to the proposed aquatic reserve is privately owned. The private land is mainly occupied by residences and businesses.

3. Activities within the reserve

§1. Introduction

The activities carried on within the proposed reserve are governed for the most part by the provisions of the Natural Heritage Conservation Act.

This Division prohibits activities in addition to those prohibited under the Act and provides a framework for the carrying on of certain permitted activities so as to better ensure the protection of the natural environment. Accordingly, certain activities require the prior authorization of the Minister and compliance with the conditions determined by the Minister.

As provided in the Natural Heritage Conservation Act, the main activities prohibited in an area to which status as a proposed biodiversity or aquatic reserve has been assigned are

- mining, and gas or petroleum development;
- forest management within the meaning of section 3 of the Forest Act (R.S.Q., c. F-4.1);
- the development of hydraulic resources and any production of energy on a commercial or industrial basis.

§2. Prohibitions, prior authorizations and conditions on which certain activities may be carried on in the proposed reserve

§2.1. Protection of resources and the natural environment

3.1. No person may introduce non-native species of flora or fauna into the proposed reserve.

3.2. No person may stock a watercourse or body of water

(1) for aquaculture, sports or commercial fishing or any other commercial purpose;

(2) for any other purpose, if the fish stocked are not from a genetic strain originating from the proposed reserve.

3.3. No person may bury, abandon or dispose of waste, snow or other residual materials other than in waste disposal containers, facilities or sites determined by the Minister or elsewhere, with the authorization of the Minister and in compliance with the conditions the Minister determines.

3.4. No person may, unless the person has been authorized by the Minister and carries on the activity in compliance with the conditions the Minister determines,

(1) carry on any activity likely to severely degrade the banks or shores or to otherwise seriously affect the integrity of a watercourse, body of water or other wetland area, in particular by discharging or dumping waste or other pollutant into the watercourse, body of water or wetland area; or

(2) dig, fill, obstruct or divert a watercourse or body of water.

§2.2. Rules of conduct for users

3.5. Every person staying, carrying on an activity or travelling about within the proposed reserve is required to maintain the premises in a satisfactory state and before leaving, return the premises to their natural state to the extent possible.

3.6. No person may make a fire in the proposed reserve, including a campfire and a beach fire.

3.7. In the proposed reserve, no person may

(1) cause any excessive noise; or

(2) behave in a manner that unduly disturbs other persons in the reserve or interferes with their enjoyment of the reserve.

3.8. No person may destroy, remove, move or damage any poster, sign, notice or other type of signage posted by the Minister within the proposed reserve.

3.9. No person may enter, carry on an activity in or operate a vehicle in a given sector of the proposed reserve unless the person has been authorized by the Minister and complies with the conditions determined, if the signage erected by the Minister restricts access, traffic or certain activities in order to protect the public from a danger or to avoid placing the fauna, flora or other components of the natural environment at risk.

§2.3. Activities requiring an authorization

3.10. No person may establish a campsite, a shelter or otherwise stay in the proposed reserve, or occupy a site by installing property, unless the person has been authorized by the Minister and complies with the conditions the Minister determines.

3.11. No person may carry on forest management activities to meet domestic needs or for the purpose of maintaining biodiversity, unless the person has been authorized by the Minister and complies with the conditions the Minister determines.

The conditions of that authorization may pertain, among other things, to species of trees or shrubs, the size of the stems that may be cut, the authorized amounts and where the activities may be carried on.

3.12. No person may, unless the person has been authorized by the Minister and carries on the activity in compliance with the conditions the Minister determines,

(1) carry out soil development work, including any fill, burial, earthwork, removal or displacement of surface materials or vegetation cover, for any purpose including recreational and tourism purposes such as the development of trails;

(2) install or construct a new structure, infrastructure or works;

(3) reconstruct or demolish an existing structure, infrastructure or works;

(4) use a pesticide, although no authorization is required for the use of insect repellent for personal purposes;

(5) carry on an activity that is likely to severely degrade the soil or a geological formation or damage the vegetation cover, such as stripping, the digging of trenches or excavation work;

(6) carry on educational or research-related activities if the activities are likely to significantly damage or disturb the natural environment, in particular by the extent of the moving or removal of natural resources or by the use of explosives; or

(7) remove the following flora or fauna species:

- Anticosti aster (*Symphyotrichum anticostense*);
- Macoun's fringed gentian (*Gentianopsis procera* subsp. *macounii* var. *macounii*);
- mat muhly (*Muhlenbergia richardsonis*);
- Gaspé peninsula arrow-grass (*Triglochin gaspensis*);
- harlequin duck (*Historionicus historionicus*);
- Barrow's goldeneye (*Bucephala islandica*);
- red-headed woodpecker (*Melanerpes erythrocephalus*);

- bald eagle (*Haliaeetus leucocephalus*).

The conditions of the Minister's authorization for the work may pertain to the location of the authorized activity, the methods used, the areas that may be cleared or deforested, the types of material that may be used including the material taken from the site, and the presence of ancillary works or facilities. The conditions may also include a requirement to ensure periodic follow-up or to report to the Minister, in particular as regards the results obtained from the research to which subparagraph 6 of the first paragraph refers.

Subject to the conditions determined in the authorization, work to repair or maintain trails authorized by the Minister or trails existing on the date on which the protection status as a proposed reserve takes effect may be carried on without an authorization under subparagraph 1 of the first paragraph.

§ 2.4. Authorization exemptions

3.13. Despite the preceding provisions, no authorization need be obtained by a person to carry on an activity or for any other form of intervention within the proposed reserve if urgent action is required to prevent harm to the health or safety of persons, or to repair or prevent damage caused by a real or apprehended catastrophe. The person concerned must, however, immediately inform the Minister of the activity or intervention that has taken place.

3.14. Despite the preceding provisions, the following activities and interventions involving the production, transmission and distribution of electricity carried out by Hydro-Québec (Société) or by any other person for Hydro-Québec do not require the prior authorization of the Minister under this plan:

(1) any activity or intervention required within the proposed reserve to complete a project which was previously expressly authorized by the Government and the Minister, or only by the latter, in accordance with the requirements of the Environment Quality Act (R.S.Q., c. Q-2), if the activity or intervention is carried out in compliance with the authorizations issued;

(2) any activity or intervention necessary for the preparation and presentation of a pre-project report for a project requiring an authorization under the Environment Quality Act;

(3) any activity or intervention relating to a project requiring the prior authorization of the Minister under the Environment Quality Act, if the activity or intervention is in

response to a request for a clarification or for additional information made by the Minister to the Société and it is carried out in accordance with the request;

(4) any activity or intervention by the Société, if the conditions for the carrying out of the activity or intervention have been determined in an agreement between the Minister and the Société and the activity or intervention is carried out in compliance with those conditions.

For the purposes of this section, the activities and interventions of the Société include pre-project studies, analysis work or field research, work required to study and monitor the impact of power transmission and distribution line corridors and rights-of-way, geological or geophysical surveys and survey lines, and the opening and maintenance of roads required for the purpose of access, construction or equipment movement necessary for the carrying on of such work.

3.15. Despite the preceding provisions, no authorization need be obtained by Ville de Bonaventure to carry out an activity, work or any other form of intervention requiring the maintenance and cleaning of the beach adjacent to the municipal camping site (Lot A-4).

§2.5. General provisions

3.16. Every person who applies to the Minister for an individual authorization or for an authorization for a group or for a number of persons must provide any information or document requested by the Minister for the examination of the application.

3.17. The Minister's authorization, which is general and can be used by more than one person, may be communicated to the persons concerned by any appropriate means including by a posted notice or appropriate signage at the reception centre or any other location within the proposed reserve that is readily accessible to the public. The Minister is to provide a copy to any person requesting a copy.

§3. Activities governed by other statutes

Certain activities likely to be carried on within the proposed reserve are also governed by other applicable legislative and regulatory provisions, including those that require the issue of a permit or authorization or the payment of fees. The carrying on of certain activities may also be prohibited or limited by other Acts or regulations applicable within the boundaries of the proposed reserve.

A special legal framework may govern permitted and prohibited activities within the proposed reserve in connection with the following matters:

- Environmental protection: measures set out in particular in the Environment Quality Act (R.S.Q., c. Q-2);

- Archaeological research: measures set out in particular in the Cultural Property Act (R.S.Q., c. B-4);

- Development of wildlife resources: measures set out in particular in the Act respecting the conservation and development of wildlife *(*R.S.Q., c. C-61.1), including the provisions pertaining to outfitting operations and beaver reserves and the measures contained in applicable federal legislation, including the fishery regulations;

- Removal of species of fauna or flora that are threatened or vulnerable or are likely to be designated as such: measures prohibiting the removal of the species under the Act respecting threatened or vulnerable species (R.S.Q., c. E-12.01);

- Access and land rights: measures set out in particular in the Act respecting the lands in the domain of the State (R.S.Q., c. T-8.1);

- 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 on motor vehicle traffic in certain fragile environments made under the Environment Quality Act (R.S.Q., c. Q-2).

4. Responsibilities of the Minister of Sustainable Development, Environment and Parks

The Minister of Sustainable Development, Environment and Parks is responsible for the management of the proposed Bonaventure river estuary aquatic reserve and is therefore

responsible for the supervision and monitoring of the activities that may be carried on within the reserve. The Minister in the management of the reserve works collaboratively with other government representatives having specific responsibilities within the boundaries of the reserve or on adjoining land, such as the Minister of Natural Resources and Wildlife. In the exercise of their powers and functions, the Ministers will take into consideration the protection sought for these natural environments and the protection status that has been granted.

Schedule

Map of the proposed Bonaventure river estuary aquatic reserve (provisional name)

