

The proposed Bonaventure river estuary aquatic reserve

**PROTECTION AND MANAGEMENT FRAMEWORK
FOR THE PUBLIC CONSULTATION**

July 2006



Protection and Management Framework for the Bonaventure River Estuary Aquatic Reserve

Public Consultation Document

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PRODUCTION:

Design and production:	Rodolph Balej
Special collaboration:	Francis Boudreau
Supervision:	Patrick Beauchesne Léopold Gaudreau Joanne Laberge
Scientific support:	Jean-Pierre Ducruc Frédéric Poisson
Revision:	Olivier Bérard Marc-André Bouchard
Maps:	Yves Lachance
Translation:	Allyson Gilpin
Photo credits:	The photographs illustrating this document were taken by Francis Boudreau.

NOTE TO READERS:

In February 2005, the Ministère du Développement durable, de l'Environnement et des Parcs (MDDEP) replaced the Ministère de l'Environnement (MENV) du Québec. For simplicity, only the current name will be used in this document.

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Why protect the Bonaventure river estuary?

- ✓ The site is one of ten estuarine barachois in Québec.
- ✓ There is no ecosystem of this type at the moment in Québec's network of protected areas.
- ✓ The flora of the estuary islands are of exceptional interest due to the presence of several species that are designated or likely to be designated threatened or vulnerable, some which have limited distribution in Québec, Canada or globally.
- ✓ The Bonaventure river estuary has a wide diversity of natural habitats.
- ✓ The Bonaventure river estuary is an important migratory stopover for water and shore birds, some of which are rare in Gaspésie, Québec and Canada.
- ✓ This coastal wetland is one of the top priorities of Gaspésie natural heritage conservation in the opinion of several local and regional stakeholders (Table de concertation du littoral de Bonaventure, Comité ZIP (Zone d'intervention prioritaire) Baie des Chaleurs).
- ✓ It is a very important site for the local population, particularly for hiking, bird watching, water recreation and fishing.

What will creation of the aquatic reserve mean?

- ✓ The Bonaventure river estuary – privately owned until 2001 and then becoming the property of the ministère du Développement durable, de l'Environnement et des Parcs as a donation of ecologically sensitive land – will definitively become public land protected with the conservation status of “aquatic reserve”.
- ✓ The aquatic reserve will confirm the conservation vocation of the estuary islands, which already enjoy legal protection as a flora habitat of threatened or vulnerable vegetation species.
- ✓ Most activities compatible with a protected area and currently practiced in the proposed aquatic reserve may continue to be practiced, including:
 - Nature observation;
 - Water recreation: canoe, kayak, motorcraft use;
 - Fishing;
 - Foot traffic except in the area designated as a flora habitat of threatened or vulnerable species.
- ✓ A certain number of activities for which the status of aquatic reserve could pose a problem could be restricted according to terms and conditions defined further to consultation with local representatives:
 - Hunting;
 - Beach fires;
 - Fireworks.
- ✓ Certain activities that may have an impact on biodiversity or alter the natural character of the site will be prohibited:
 - Motor vehicle traffic except for management or emergency purposes;
 - Stocking or introducing non-native species into the territory.

BACKGROUND

At the Rio de Janeiro Earth Summit held in 1992, the Canadian government signed the Convention on Biodiversity. In November 1992, the Québec government subscribed to the Convention's objectives and decided to implement them in its territory. In this way, the two governments made a commitment to conservation, notably by establishing a network of protected areas in their territory and developing guidelines for selecting and creating protected areas for which special measures are required to protect the biodiversity.

In view of reaching this objective, the Québec government adopted a biodiversity strategy and action plan in 1996 and 2004. It is also within the perspective of the Convention's implementation that in 1999 it drew up a profile of Québec's network of protected areas. This profile showed Québec significantly lagging behind in biodiversity conservation. In fact, in 1999, protected areas totalled less than 3% of Québec's territory. Most of them had been recently created, of small size, established on public land and concentrated in the St. Lawrence Valley. The profile also revealed the absence of a strategy for establishing the network.

This finding led the Québec government to adopt several key directions in June 2000, namely:

- Set aside 8% of the land in Québec by 2005¹ for the creation of protected areas;
- Implement a network of protected areas that are representative of Québec's biodiversity;
- Take the socioeconomic concerns of local populations into account.

A "**protected area**" means a geographically defined area that is designated or regulated and managed to reach specific conservation objectives*.

* Simplified version of the official definition given in the Natural Heritage Conservation Act (R.S.Q., c. C-61.01).

In 2002, the National Assembly adopted the Natural Heritage Conservation Act. This law marking a turning point in the history of conservation in Québec by creating new statuses for protected areas (biodiversity reserves, aquatic reserves and man-made landscapes) which enabled a different approach to be taken to protect the biodiversity of vast territories based on their ecological and social

¹ In *Shine among the best*, released in March 2004, the government committed to increasing protected areas from 5% to 8% by the end of its mandate.

specificities, while allowing sustainable use of some of their constituent elements.

An “**aquatic reserve**” is an area, consisting mainly of fresh water, established to protect the biodiversity of an aquatic ecosystem and riparian environments*.

A “**biodiversity reserve**” is an area, consisting mainly of terrestrial ecosystems, established to protect biodiversity that is representative of the various natural regions of Québec*.

* Simplified version of the official definition given in the Natural Heritage Conservation Act (R.S.Q., c. C-61.01).

Since adoption of this law, the Québec government has set aside 46 territories to establish aquatic and biodiversity reserves. One of these is the Bonaventure river estuary, which was given reserve status on June 20, 2005. This decision, effective September 7, 2005, served to prohibit industrial activities (forestry, energy and mining) likely to alter the natural character of the territory.

In parallel to the creation of the proposed Bonaventure river estuary aquatic reserve, the Ministère du Développement durable, de l’Environnement et des Parcs organized several information sessions and held workshops with local organizations to explain the reasons for

designating the protected area and receive local concerns regarding the territory’s conservation and development. At these meetings, the major conservation, management and development issues were raised and discussed with local representatives concerned with the future of the Bonaventure river estuary.

A certain number of steps remain before the territory in question is given permanent protection status and assigned a definitive conservation plan. Under the Natural Heritage Conservation Act (R.S.Q., c. C-61.01, s. 39), the Ministère du Développement durable, de l’Environnement et des Parcs (MDDEP) must hold a public consultation, following the procedure set up for this purpose, before attribution of the permanent protection status.

As with the consultations held for aquatic and biodiversity reserves created before the one for the Bonaventure river estuary, public consultations on this protected area project will be conducted by the Bureau d’audiences publiques sur l’environnement (BAPE).

All interested parties will have the opportunity to learn more about the conservation project and express their opinions on the subject. Further to the consultation, adjustments will be made, if necessary, to the conservation plan for the proposed aquatic reserve before the Ministère du Développement durable, de l’Environnement et des Parcs submits a draft

decree to the government for the purpose of conferring permanent protection status to the Bonaventure river estuary aquatic reserve.

Drawn up by the Ministère du Développement durable, de l'Environnement et des Parcs, this document sets forth its vision for the conservation and development of the territory of this proposed aquatic reserve.

The proposed protection and management framework also reflects the concerns of all government partners involved in the implementation of the Québec Strategy for Protected Areas.

~ CHAPTER 1 ~

TERRITORY OF THE PROPOSED AQUATIC RESERVE



Francis Boudreau

1. PROJECT JUSTIFICATION

Background on the decision

The land making up the proposed Bonaventure river estuary aquatic reserve was owned by Emballages Smurfit-Stone (Canada) inc., and then donated by the company on November 8, 2001, to the Ministère du Développement durable, de l'Environnement et des Parcs through Québec's ecological gift program.

The objective of the donation was to provide added protection for certain threatened or vulnerable flora species present on the islands of the Bonaventure river estuary.

An "**ecological gift**" is a donation of private land or an interest in land that is ecologically sensitive. In Québec, the procedure is governed by *The Tax Act*.

The ecological gift enables donors to enjoy tax benefits based on the property's fair market value.

The recipient organization, on the other hand, is responsible for maintaining the biodiversity and natural state of the donated property in perpetuity.

Under decree 636-2005 of June 23, 2005, published in the *Gazette officielle du Québec* on July 20, 2005, the government authorized the setting aside of this property, for the purpose of creating an aquatic reserve, approved the plan and the conservation plan.

Legal protection took effect upon publication in the *Gazette officielle du Québec* on September 7, 2005, of the notice provided for under section 29 of the Natural Heritage Conservation Act.

Ecological reference framework

The proposed Bonaventure river estuary aquatic reserve is located in the Appalachians natural province, which covers the administrative regions of Estrie, Bas-Saint-Laurent and Gaspésie—Îles-de-la-Madeleine.

There are 385 protected areas within the Appalachians natural province, covering approximately 3.9% of the area.

Goals for the creation of the protected area

The proposed Bonaventure river estuary aquatic reserve was created for the purpose of reaching the following objectives:

- ✓ Conserve an exceptional estuary in the Appalachians natural province;
- ✓ Strengthen protection of the habitats of threatened or vulnerable flora species, or species likely to be designated as such;
- ✓ Maintain the biodiversity of aquatic ecosystems and riparian ecotones;
- ✓ Develop natural and cultural heritage;

- ✓ Involve local communities in the site's protection;
- ✓ Acquire additional knowledge on cultural and natural heritage, if applicable.

It is worth noting that the network of protected areas does not include this type of ecosystem at the moment. Also, despite its small size, the proposed Bonaventure river estuary aquatic reserve contributes significantly to the network.

In short, the network of protected areas of which the Bonaventure river estuary aquatic reserve is a part will help protect several elements of Québec's natural heritage from anthropic disturbances resulting from the commercial exploitation of resources.

Justification of boundaries

The boundaries of the Bonaventure river estuary aquatic reserve correspond to the property donated by Emballages Smurfit-Stone (Canada) Inc. to the Ministère du Développement durable, de l'Environnement et des Parcs as an ecological gift. As a result, the boundaries of the conservation property cannot be modified other than for major reasons and provided that there is no impact on the territory's biodiversity.

Document objectives

This document presents the territory of the Bonaventure river estuary aquatic reserve, its ecological and social objectives and the management terms and conditions planned by the Ministère du

Développement durable, de l'Environnement et des Parcs.

It does not attempt to resolve all the situations that may arise as a result of the creation and management of an aquatic reserve in an inhabited environment. It is nonetheless deemed worthwhile to outline them in this document in order to receive the opinions of parties interested in the conservation of the territory in question and openly debate the protection and management measures that should be applied to this type of protected area.

The ministère du Développement durable, de l'Environnement et des Parcs heartily hopes that from the public consultation on the Bonaventure river estuary will emerge a common vision and partnership that will benefit local and regional communities and Québec society as a whole.



PROPOSED BONAVENTURE RIVER ESTUARY AQUATIC RESERVE

2. AQUATIC RESERVE GEOGRAPHY

Location²

The proposed Bonaventure river estuary aquatic reserve is located in the administrative region of Gaspésie—Îles-de-la-Madeleine between 48°01' and 48°03' north latitude and 65°27' and 65°29' west longitude. It is located on the territory of Ville de Bonaventure in the RCM of the same name.

Dimensions and boundaries

The proposed aquatic reserve covers an area of 2.4 sq. kilometres and lies within the estuary formed at the mouth of the Bonaventure river.

The aquatic reserve includes the bodies of water up to the high water mark, the beds of the Bonaventure river and adjacent shallow water basins, lagoons and delta shoals. It also includes the islands located in the estuary, particularly Île des Prés, Île Arsenault, Île aux Sapins and Île des Chardons.

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 are part of the proposed aquatic reserve. The aquatic reserve extends in two places into Chaleur Bay, bordering the two sand spits.

A number of infrastructures and facilities are excluded from the protection perimeter, including Route 132, the footbridge and three decommissioned

bridges at the location of the former Route 132, the marina and electric power distribution network, which has a nine-metre right-of-way.

All the property immediately adjacent to the proposed aquatic reserve is privately owned. This private property is mostly occupied by residences and businesses.

Access

The Bonaventure river estuary is undoubtedly one of the most accessible in Gaspésie. Route 132 crosses it. South of the Havre, the long sand spit can be accessed from Route de Cap-de-Sable, a residential street located one kilometre south-west of Rue des Vieux-Ponts.

A hiking trail was created on the former Route 6. It links the three islands by bridges at the mouth of the Bonaventure river.

The proposed aquatic reserve may also be accessed by boat from the Bonaventure river or from the shore, or by land from the Pointe de Beaubassin or Banc de l'Est beaches.

The sand spits were heavily travelled by off-road vehicles (ATVs, motorcycles, 4 x 4s), a practice that is now prohibited since the territory was given the status of proposed aquatic reserve. In winter, a snowmobile trail crosses the west basin of the barachois. A tourist information centre was created next to the Acadian museum located north-west of the barachois. The site provides a view onto the Bonaventure estuary marshes.

² A detailed map of the proposed Bonaventure river estuary aquatic reserve may be consulted at the end of the document.

3. ECOLOGICAL AND SOCIAL OVERVIEW³

a. General overview

The proposed aquatic reserve is located in the Appalachian natural province, of which the Bonaventure river is the one of largest watercourses.

For the most part, the natural province corresponds to the Appalachian mountain range, which formed between 290 and 450 million years ago. The bedrock is largely composed of highly creased and deformed sedimentary and volcanic rock.

The dominant feature of the proposed aquatic reserve landscape is a delta, with a typical triangular shape. The maximum altitude of the territory reaches a few metres above sea level.

Oriented towards the south-west, the barachois is influenced by semidiurnal and seasonal tides and is subject to daily variations in current, water level and salinity. Between approximately 80,000 and 1,000,000 cubic metres of seawater pass through the estuary at each tide. The influence of the seawater may extend as far as 350 metres upstream from the Route 132 bridge, especially during the low-flow period. The Bonaventure river estuary is one of Québec's ten estuary barachois.

The barachois is composed of sand, stone, silt and a small amount of clay.

The territory comprises a wide variety of vegetation groups: algae communities (foreshore), saltwater vegetation, shrub swamps, tree swamps, peat bogs, fens, meadows, gravelly limestone flats, channels and pools are examples of the habitats found at the mouth of the Bonaventure river. Their specificity resides in the fact that they are subject to the influence of the tides and are exposed to a certain amount of salt water.

Due to the diversity of habitats, the Bonaventure barachois is ideal for birds, of which there are some 240 species according to the inventories.

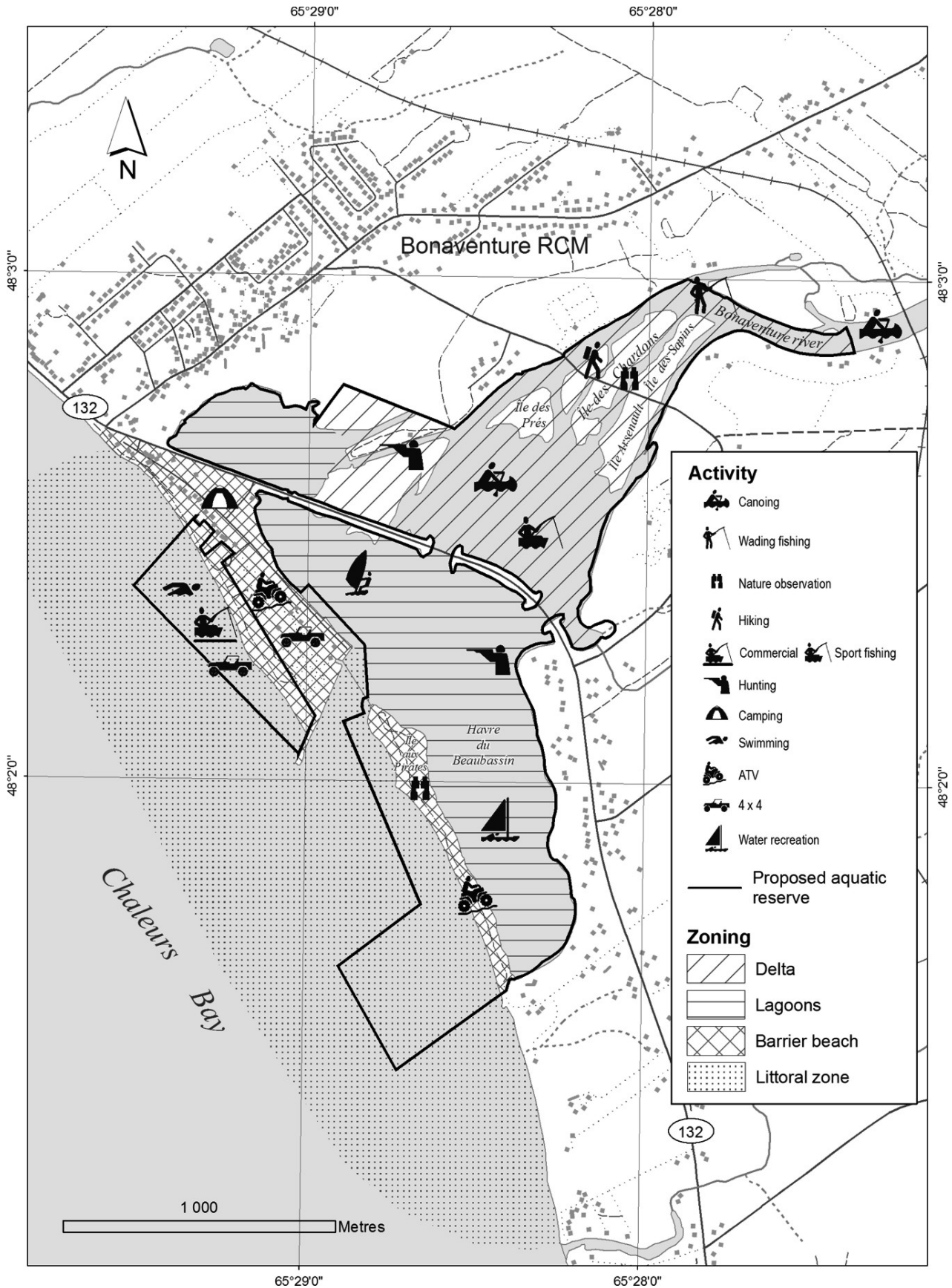
Since the end of the 19th century and particularly since the beginning of the 1960s, the configuration of the barachois was changed by a channel built to float wood to a sawmill (which no longer exists today), Route 132 and Avenue Grand-Pré, a causeway, port installations and a marina.

The construction work resulted in considerable filling and dredging, which greatly disturbed the natural hydrodynamics and sedimentation process of the lagoon. As a result, several channels, shoals and basins are filling or stabilizing due to reduced exchanges with the sea or because they have been cut off. To correct the situation, restoration work was undertaken in the 1990s.

Thus, the causeway linking Route 132 to Pointe de Beaubassin was demolished and a culvert built under the road to improve water circulation in the north-west basin.

³ This section is a summary of key existing studies on the Bonaventure barachois, notably: Jacquaz et al., 1990; Le groupe du golfe, 1995; Fleurbec, 1995; PESCA Environnement, 2000; Tremblay, 2002; Club des ornithologues de Gaspésie, 2004; Table de concertation du littoral de Bonaventure, 2005.

Proposed Bonaventure River Estuary Aquatic Reserve



The barachois of Bonaventure is an estuary complex influenced by tidal fluxes and periods of flooding and low water. As a result, it is a dynamic coastal wetland environment in perpetual change. From a morphological point of view, it has four distinct ecological units: the delta, lagoons, barrier beach and the shore. These ecological entities interact and present specific conservation concerns, given their occupation and anthropic uses.

Historical occupation of the territory

The barachois of the Bonaventure river is of particular archeological interest. Remnants of a French fishing village located to the east of the mouth of the Bonaventure river were identified in 1999 on the outskirts of the aquatic reserve, on lots 508-2 and 508-1, south-east range of Canton Hamilton. The remnants found are from the 1700 to 1750 period. The discovery was made during an archeological inventory conducted on the site of the Québécois microwave tower.

It is possible that French fishermen used Île-aux-Pirates or the bay between Île-aux-Pirates and the current Route 132. It is unlikely, however, that Île-aux-Pirates still has remnants of this occupation given the sedimentary nature of the environment, which has changed considerably over time and whose size and appearance must have been quite different at the time of the French fishermen.

The barachois of Bonaventure is also where the first Acadians escaping deportation in the Maritimes settled, towards the 1760s. Archeological digs revealed that the Acadians also settled on the east bank of the mouth of the Bonaventure river.

According to information collected by the MDDEP, no traditional practices are carried on by the Micmac community of Cessapegiag on the territory of the proposed Bonaventure river estuary aquatic reserve.

Description of ecological units

1 - DELTA

The ecological unit of the delta comprises the segment of the Bonaventure river that is influenced by the tides and all the islands located to the north of Route 132. It corresponds to the mixed alluviation zone and covers an 87-hectare area.

Ecology

The headwaters of the Bonaventure river are located in the Chic-Choc mountains at an altitude of 487 metres. The river has an average slope of 3.3/km and for the most part is enclosed. The river's course covers 125 kilometres, flowing north-south towards the mouth where, veering to the south-west, it empties into Chaleurs Bay.

The river drains 2,391 sq. kilometres, carrying large amounts of sediment into the barachois, particularly during spring flooding. Due to the currents, this ecological unit is characterized by coarse sediment. With an average flow of 46 m³/s, the Bonaventure river is one of the largest rivers in Gaspésie after the Ristigouche and Matapédia rivers.

The islands are composed of marine sediment that is coarser to the north of Route 132 than in the rest of the Barachois. They are separated by secondary channels of the Bonaventure river. Over the decades, erosion and sedimentation caused by recurring floods and ice movement changed the shape of the islands.

Flora

The river channel is colonized by large filament seaweed beds, particularly string lettuce, a species that is highly tolerant to salinity changes.

The island banks to the north-east of the former Route 132 are covered by wooded swamps of black spruce, American elm and balsam poplar; herbaceous meadows and scrublands of diversified flora characterize the freshwater marshes of the islands. Broad-leaf cattail is the most common species in the freshwater marshes, while the wet meadows are home to bluejoint reedgrass, side-flowering skullcap, Canadian burnet and swamp loosestrife. The shrub swamps are mostly composed of speckled alder, Bebb willow, and woolly willow, almost always together with sweet gale and bloodroot. The microreliefs are covered by white spruce and eastern white cedar.

Fauna

The Bonaventure river has two types of Salmonids: Atlantic salmon, whose adult population is estimated at 1,500 individuals, and brook trout. Rainbow smelt also reproduce in the Bonaventure river. Regionally, it is one of the most important spawning grounds for this species. These species use the barachois during their migrations between the ocean where they grow to maturity and the river where they spawn. Other species such as smooth flounder and winter flounder are also present in the river and estuary.

The channel separating the Arsenault and Des Prés islands is used extensively by aquatic avifauna during migration. The most abundant species are the Canada goose, black duck, mallard and green-winged teal.

Exceptional elements

The islands of the barachois constitute a flora sanctuary of exceptional richness and interest. In fact, it is home to four of Québec's threatened or vulnerable plant species.

Macoun's fringed gentian, an annual herbaceous plant, grows along the banks of freshwater and brackish estuaries. In eastern Canada, the species is only found on the banks of the Great Lakes or, in Québec, along the shores of James Bay and Gaspésie. This species was designated as threatened in Québec in February 2001 under the Act respecting threatened or vulnerable species. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) also gave it the status of special concern in 1987.

The Anticosti aster, endemic to the Gulf of St. Lawrence, is very rare globally. In February 2001, this species was designated as threatened in Québec under the Act respecting threatened or vulnerable species. The status of threatened species that was attributed to it in 1990 by the Committee on the Status of Endangered Wildlife in Canada was maintained further to a re-evaluation of the species in May 2000.

Mat mulhy, a plant found on banks and limestone flats, grows sporadically in North America. In Québec, it grows in 15 or so areas in the Lower St. Lawrence, Gaspésie and Anticosti Island. This species is likely to be designated as threatened or vulnerable in Québec under the Act respecting threatened or vulnerable species.

Finally, Gaspé peninsula arrowgrass grows in the intertidal zone of salt marshes. It is a species that is

endemic⁴ to north-eastern North America, with distribution centred around the Gulf of St. Lawrence, particularly the North Shore, Lower St. Lawrence and south shore of Gaspésie. This species is likely to be designated as threatened or vulnerable in Québec under the Act respecting threatened or vulnerable species.

The islands are also home to 27 vascular plants that have limited regional distribution, including the rare yellow water crowfoot and the uncommon marsh variety of New York aster.

Occupation and uses

Facilities and infrastructures

- ✓ Avenue de Grand-Pré, which connects the Arsenault and des Chardons islands (footbridge for pedestrians and decommissioned bridges);
- ✓ Old channel for log driving;
- ✓ Biopark on the north-east bank;
- ✓ Cottages and residences in proximity.

Activities

- ✓ Duck hunting;
- ✓ Sport fishing (salmon fishing is practiced upstream from the proposed aquatic reserve, on the Bonaventure river ZEC);
- ✓ Water recreation (canoe, kayak, motorcraft);
- ✓ Avenue de Grand-Pré is heavily used as a hiking and rest site;
- ✓ Swimming.

⁴ Endemic means a native species of a determined region that is not found elsewhere in its natural state.

Conservation concerns

- ✓ Debris from white fishing (abandoned fishing cabins);
- ✓ Maintaining populations of Atlantic salmon, brook trout and rainbow smelt and their habitats in the Bonaventure river;
- ✓ Continuing to protect the habitats of flora species designated or likely to be designated threatened or vulnerable;
- ✓ Monitoring populations of rare flora species of the islands in the estuary.

2 – LAGOONS

This ecological unit covers 96 hectares and encompasses the four shallow water basins of the barachois, one of which is located upstream from Route 132 and three downstream.

Ecology

The weak currents of the basins and secondary channels cause sedimentation of fine particules the size of fine sand and silt. Also, the weak river flow combined with high tide action cause the salt waters of Chaleurs Bay to enter the sectors upstream from the barachois, which are more greatly influenced by fresh water during flood periods. Over the years, activities and structures have degraded the biological productivity of the lagoons.

Flora

Eelgrass dominates the flora of the basins, often accompanied by green string lettuce, a green stringy algae that is tolerant to salinity changes and

particularly abundant along Île aux Pirates. The flora also includes sea lettuce, ditch grass and horned pondweed. Salt and brackish marshes border the lagoons in places. The most common wetland species are Baltic rush, scaly sedge, red fescue, freshwater cordgrass, New York aster and saltmarsh spikerush.

Fauna

The zooplanktonic species are mainly represented by copepodes and nauplii. Fourteen species of benthic fauna have been observed, the most common of which are the rag worm and swamp hydrobia. The lagoons provide a site for shelter, food, breeding and nursery area for some 15 species of fish, with sticklebacks and Atlantic silversides being the predominant ones. Mummichog, grubby, smooth flounder, winter flounder, eel, Arctic rainbow smelt, herring and Atlantic tomcod have also been inventoried.

Several species of migratory birds, particularly water and shore birds, visit the mudflats at low tide to feed and rest. Several of these species are likely to be designated as threatened in Québec, of special concern in Canada, or are rare in Gaspésie. Threatened species include the yellow rail and red-headed woodpecker, and regional rarities include American coot, little gull, common black-headed gull and great egret.

Occupation and uses

Various construction work carried out since the end of the 19th century caused an accumulation of sediments in the Havre. The lagoons filled in more quickly following the construction of Route 132 in 1971. This sedimentary dynamic affects pleasure boating and port activities, and has increased since regular dredging activities ceased.

Facilities and infrastructures

- ✓ Route 132.

Activities

- ✓ Migratory bird hunting;
- ✓ Sport fishing and white fishing;
- ✓ Snowmobiling in the west basin;
- ✓ Water recreation (kayak, canoe, motorcraft, etc.);
- ✓ Bird watching.

Projects

- ✓ Dredging upstream from Route 132;
- ✓ Controlling sedimentation in the mouth of the Bonaventure river (particularly by installing deflectors).

Conservation concerns

- ✓ Maintain the ecological integrity of the lagoon ecosystems:
 - Impacts on biodiversity caused by future dredging, control of sedimentation in the Bonaventure river estuary and possible expansion of the marina;
 - Release of wastewater;
 - Debris from white fishing (abandoned fishing cabins);
 - Impacts of watercraft: disturbing residents and winged fauna;
- ✓ Maintain the habitats of avifauna and quality of bird watching sites.

3 – **BARRIER BEACH**

To the south-west, the Bonaventure river barachois is separated from Chaleurs Bay by a barrier beach over two kilometres long. This sandbar is divided in the middle by a deep channel which, in ecological terms, is linked to the shore. Defined as such, the ecological unit covers 38 hectares. Although geomorphologically identical, the two sand spits represent two distinct sub-groups with regard to occupation and use.

Ecology

The barrier beach of the Bonaventure river barachois consists of coarse sediment – such as sand, gravel, and cobbles – in varying proportions depending on the area. The beaches adjacent to the barrier beach are composed of a sedimentary ridge in the upper part and a mudflat in the lower part. The barrier beach is the perimeter for an interior basin, the Havre de Beaubassin, where fresh and salt waters mix.

Flora

Barrier beaches, because of their sand-gravel mix and distance above the water table, are colonized by psammophile⁵ and xerophytic⁶ vegetation. Thus, on the eastern sand spit, the most common plants are marram grass, sea lyme grass, beach pea, yellow toadflax, pit-seed goosefoot, sea rocket and seabeach sandwort.

On the other hand, the vegetation covering the sand spit to the west was greatly disturbed and is composed of vegetation species similar to those

⁵ Sandy substrate.

⁶ Said of organisms adapted to withstand drought.

found in anthropic environments. The species most frequently encountered are yellow sweet-clover, quackgrass, common yarrow, scentless chamomile and smooth brome. The diversity of introduced species is also broad, including redstem filaree, oak-leaved goosefoot, common pepper-grass, kochia, grassleaf orache and climbing nightshade.

Smooth cordgrass is concentrated on the upper beach where it covers vast areas. Along with it are Canadian sandspurry, common glasswort, sea plantain and sea blight. The mudflat is dominated by eelgrass and sporadically occupied by groupings of algae.

Fauna

A great number of birds occupy the shores of the sand spit located to the south, particularly water and shore birds.

Occupation and uses

Facilities and infrastructures

There are several infrastructures and facilities near the proposed aquatic reserve:

- ✓ Camping;
- ✓ Fishing pier;
- ✓ Marina;
- ✓ Residences;
- ✓ Businesses;
- ✓ Trailers.

Activities

- ✓ Motor vehicles: VTT and 4 x 4 traffic on the beaches;

- ✓ Swimming everywhere along the seashore;
- ✓ Relaxation and hiking;
- ✓ Beach fires;
- ✓ Birdwatching;
- ✓ Hunting;
- ✓ Fishing.

Conservation concerns

- ✓ Degradation of the vegetation cover on Île aux Pirates due to intense pedestrian and motor vehicle traffic, particularly ATVs, motorcycles and 4 x 4s;
- ✓ Bonfires;
- ✓ Debris;
- ✓ Rising sea level and erosion of the barrier beach.

4 – LITTORAL ZONE

The aquatic reserve has a very small portion of land located below the low tide limit.

Ecology

Typically, the exchange between the barachois and the marine environment occurs through an estuarine channel. The one in the Bonaventure river has an average depth of 2.7 metres at high tide and 2.1 metres at low tide whereas its average width is respectively 182 and 167 metres. This passage conditions the hydrological characteristics and state of the barachois by influencing sedimentation.

Flora

Vegetation under the lowest tide levels is represented mostly by eelgrass. An eelgrass bed extends over nearly 5.5 kilometres from the shore at Pointe de Beaubassin up to the Saint-Siméon swamp. Offshore from Bonaventure, the littoral substrate also supports an underwater meadow of brown algae consisting mainly of blade kelp. The pebble bottom is covered in algae, the main species being rockweed, bladder wrack, irish moss, sea colander, knotted wrack and dulse.

Fauna

Coastal waters are home to a good number of marine invertebrates such as the blue mussel, soft-shelled clam, giant scallop, iceland scallop, green urchin, common periwinkle, common starfish, snow crab and lobster. Seabeds also provide shelter and food to the common crab, sand shrimp and lugworm. Finally, nearly 30 species of fish were inventoried, including the Atlantic Tomcod and American eel, two species deemed a priority by St. Lawrence Vision 2000, a federal-provincial agreement.

The Bonaventure shoreline is an important site for migrating avifauna, particularly water and shore birds. This is why it was designated as a site with a concentration of aquatic birds. Barrow's Goldeneye, a species of duck whose situation is deemed of special concern in Canada, has already been observed on the shores of the Bonaventure. Other species of marine mammals occur, including minke whale, fin whale, harbour seal, grey seal and porpoise.

Occupation and uses

Activities

- ✓ Sport and commercial fishing;

- ✓ Commercial and pleasure boating;
- ✓ Swimming;
- ✓ Hunting.

Projects

- ✓ Kelp harvesting.

Conservation concerns

- ✓ Degradation of vegetation cover;
- ✓ Reduction of kelp beds;
- ✓ ATV traffic on mudflat.

HIGHLIGHTS

The proposed Bonaventure river aquatic reserve is the property of the Ministère du Développement durable, de l'Environnement et des Parcs. The territory is one of the most exceptional natural heritage sites of the coasts of Gaspésie and Québec because:

- ✓ It is one of the ten estuary barachois in Québec;
- ✓ The estuary is a remarkable ecological site, of interest due to:
 - The wide diversity of habitat types: islands, flats, marshes, barrier beaches, mudflats, delta shoals, etc.;
 - The presence of several species of vegetation on the estuary islands associated with limestone cobble, some of which are or likely to be designated as threatened or vulnerable and which have limited distribution in Québec, Canada and globally:
 - Macoun's fringed gentian;
 - Anticosti Aster;
 - Mat muhly;
 - Gaspé peninsula arrowgrass.
 - The site's role as a migratory stopover for waterfowl and shore birds, including rare species regionally, in Québec and in Canada;

- ✓ It's a coastal wetland considered to be a conservation priority in the opinion of several local representatives;
- ✓ This type of estuary is a type of ecosystem that is currently absent from Québec's network of protected areas;
- ✓ It is an important site for the local population, particularly for:
 - Hiking,
 - Bird watching,
 - Water recreation (boat, kayak, etc.),
 - Motorized activities (ATV, 4 x 4, motorcycle, etc.);
 - Duck hunting (less and less so);
- ✓ It is an estuary complex that was greatly disturbed by human activities and infrastructures (road, bridges, booms, marina, etc.);
- ✓ It is a natural site with harbour and recreational installations requiring ongoing maintenance work (dredging, corrections to sedimentation process) and that is likely to be affected by future expansion projects.

~ CHAPTER 2 ~

ECOLOGICAL AND SOCIOECONOMIC ISSUES



1. ECOLOGICAL ISSUES

The primary objective of an aquatic reserve is to preserve its aquatic and terrestrial ecosystems, maintain the biological processes that depend on it and protect its biotic and abiotic components.

Management of the Bonaventure river estuary will aim to satisfy two major ecological issues: protecting the habitats of vegetation species that are or likely to be designated threatened or vulnerable, and maintaining the ecological integrity of the barachois.

ISSUE 1 ~

PROTECTING THE FLORA HABITATS

The Bonaventure river estuary constitutes a flora sanctuary of exceptional richness and interest in comparison to other coastal wetlands of Gaspésie. In fact, the islands of the barachois – namely, Île des Prés, Île Arsenault, Île aux Sapins and Île des Chardons – are home to several flora species that are or likely to be designated threatened or vulnerable.

In fact, this is why it has already been given the status of flora habitat under the Act respecting threatened or vulnerable species, which stipulates “No person may, in the habitat of a threatened or vulnerable plant species, carry on an activity that may alter the existing ecosystem, the present biological diversity or the physical or chemical components peculiar to that habitat.”

Directions

- Confirm the conservation vocation of the islands with the status of flora habitat;
- Strengthen the protection of the islands.

Proposals

- Confirm the conservation vocation of the estuary islands with populations of flora species that are threatened or vulnerable by establishing an “integral protection” type of zoning.
- Develop and implement a program to control activities carried on around the islands in order to restrict those that are likely to indirectly have a negative impact on species that are or likely to be designated as threatened or vulnerable.
- Regularly monitor populations of flora species that are or likely to be designated threatened or vulnerable.
- Establish partnerships with local organizations to make users aware of the botanical interest of the islands and the need to protect them because of their fragile nature and the rarity of their flora.

Implications

The attribution of an “integral protection” type of zoning to the islands of the Bonaventure river estuary will not add new prohibitions or restrictions

to those already provided for under the regulation governing flora habitat in force since September 15, 2005.

The creation of a permanent aquatic reserve will make it easier, however, to manage activities around the perimeter of the flora habitat and, if necessary, to prevent any future impacts they might have on biodiversity. The Bonaventure river estuary aquatic reserve surrounds the flora habitat of the islands and so acts as a buffer.

ISSUE 2 ~ MAINTAINING ECOLOGICAL INTEGRITY

The Bonaventure river estuary is a wetland that has suffered numerous anthropic disturbances in the past. Still today, many activities are practiced on the territory, some of which have a negative impact on the biodiversity of the protected area or contribute to altering its natural character (ATV, 4 x 4, marinecraft). Certain projects, current or to come, could prove incompatible with its status as an aquatic reserve.

Directions

- Prohibit activities that are incompatible with the status of aquatic reserve as defined under the Natural Heritage Conservation Act.
- Apply existing legislation.
- Restrict those activities that could be allowed in the aquatic reserve in order that they are carried out in keeping with the environments'

natural character and their ability to support these activities.

The **support capacity** is the threshold beyond which the functions and balance of an ecosystem are irreparably altered.

Proposals

- The MDDEP proposes to rigorously apply to the aquatic reserve legislation intended to prohibit traffic of off-road vehicles (4 x 4, motorcycle, quad, ATV) in fragile environments, notably in the littoral zone⁷. The regulation stipulates that: "Motor vehicles other than snowmobiles are prohibited on the beaches, offshore bars, in marshes and swamps situated on the littoral of the St. Lawrence River (downstream from Pont Laviolette), its estuary, the Gulf of Saint Lawrence, Baie-des-Chaleurs and the islands found there."

It should be noted that application of this regulation does not prohibit the practice of activities related to lawful hunting, fishing or trapping, nor motor vehicle traffic on trails identified for this purpose and designed in accordance with the law, nor the use of vehicles to enable access to private property. The MDDEP proposes that, in the Bonaventure river estuary aquatic reserve, the use of these

⁷ Regulation respecting motor vehicle traffic in certain fragile environments (c. Q-2, r.2.2) made under the Environment Quality Act (R.S.Q., c. Q-2, s. 31, pars. c et e and s. 124.1).

types of vehicles be restricted to management and research activities or for rescue operations.

- The MDDEP considers that the use of marinecraft, which are under federal jurisdiction, should also be prohibited in the aquatic reserve because they disturb birds that are migrating or nesting in the barachois. This said, the terms of the prohibition will be negotiated with the federal government.
- The MDDEP considers that certain projects – dredging or work to correct the sedimentation process in the Bonaventure river estuary to maintain the fishing pier or expand the marina – are not compatible with the conservation vocation of the aquatic reserve.

Considering that the pier and the marina are two structuring facilities for the community, the MDDEP suggests that the sector of the estuary where these projects are located be excluded from the aquatic reserve. It should be noted that these projects should take into account the existence of the adjacent protected area, under the impact evaluation procedure provided for under the Environment Quality Act, to which they are subjected. At this time, the Ministère will see to it that the projects are not carried out to the detriment of the barachois, regardless of whether there is a protected area.

- Hunting, fishing, motorized and other water recreation (canoe, kayak, sailboat, etc.), hiking, swimming, nature observation, are allowed without authorization from the MDDEP.

- Stocking, the construction of facilities or buildings, the conducting of scientific activities involving the removal of vegetation or animal species must be authorized by the departments responsible, that is, the MDDEP for flora species and the Ministère des Ressources naturelles et de la Faune (MRNF) for fauna species.
- The other activities currently practiced on the territory of the aquatic reserve may continue to be exercised without authorization, unless they are likely to have negative repercussions on the biodiversity.

Implications

The creation of a permanent aquatic reserve will strengthen the application of the regulation governing motor vehicle traffic in fragile environments under which the use of motor vehicles, other than snowmobiles, is prohibited on the beaches, barrier beaches, in the marshes and swamps of Chaleur Bay and on the islands.

The MDDEP's obligation should be noted here, as the owner of property acquired as an ecological gift, to guarantee its ecological integrity and maintain its biodiversity.

Following discussions with local representatives, the MDDEP considers that it would be nonetheless preferable to make adjustments to the boundaries of the aquatic reserve to allow for ongoing maintenance and upkeep of the port and recreational infrastructures, which play a priority role in the local economy. This means that the sector located south of Route 132, involving

dredging and the construction of corrective measures such as deflectors, should be excluded.

2. SOCIOECONOMIC ISSUES

The protected areas are territories preserved for the benefit of current and future generations. The MDDEP wishes the local communities to be the first to benefit and, as a result, that they be involved in their management. In the same perspective, the MDDEP intends to allow recreational activities compatible with the conservation status.

ISSUE 3 ~ INVOLVING LOCAL REPRESENTATIVES

The MDDEP wishes to encourage the participation of local and regional representatives in the conservation and development of the protected areas.

It wishes that all parties concerned with the territory of the Bonaventure river estuary aquatic reserve have the opportunity to express themselves, as provided for under the Natural Heritage Conservation Act, on the management of the aquatic reserve, actively collaborate and participate at some point in the future.

Directions

- Promote a partnership approach.
- Encourage the expression of the various interest groups regarding protection, planning

of activities and management of the aquatic reserve so that the MDDEP may define a framework on which individual projects may be built.

Proposals

- The MDDEP, through its regional branch, and in collaboration with local organizations, will develop an action plan to guide the management of the aquatic reserve for the purpose of protecting and developing the territory and resources, in compliance with the Natural Heritage Conservation Act. The mechanism for the participation and coordination of local representatives will be proposed according to local and regional realities and the community's expectations.
- There is already a consultation structure in Bonaventure, called the Table de concertation du littoral de Bonaventure. This non-profit organization was created in 2000 to foster collaboration between local representatives by encouraging the exchange of information while making sure to include all sectors of activity, values and knowledge of legislative tools concerning the Bonaventure coastal area, all within a process of integrated management.
- Given its mandates and the representativeness of the Table de concertation du littoral de Bonaventure, the MDDEP suggests that it become its preferred partner with respect to the management of the permanent aquatic reserve of the Bonaventure river estuary.

Implications

If the Table de concertation du littoral de Bonaventure becomes the MDDEP's partner in planning the management of the aquatic reserve, it will have to include an action plan in its mandate for the planning of conservation and land management activities.

ISSUE 4 ~

MAINTAINING THE SITE'S RECREATIONAL VOCATION

The territory has a lot of potential for recreational activities due to its natural character, proximity to urban centres, accessibility and richness of its natural heritage.

On the whole, these uses remain compatible with the status of aquatic reserve. However, any effort to maintain, expand or manage them must take into account the tremendous fragility of certain environments and obstacles to the construction of recreational installations.

Certain activities that are currently practiced are likely to have a negative impact on the biodiversity of the aquatic reserve or alter its natural character.

Directions

- Maintain the recreational vocation of the Bonaventure river estuary.

- Ensure that activities practiced in the aquatic reserve, including their development and the construction of new infrastructures, do not have a negative impact on the biodiversity of the aquatic reserve.
- Restrict the activities likely to have an impact on the aquatic reserve or interfere with the tranquility or safety of people on the territory.

Proposals

The MDDEP proposes to:

- Unconditionally authorize all non-motorized recreational activities including fishing, hunting, hiking, nature observation and swimming;

All activities must be practiced in compliance with the laws and regulations in force.

- Develop an action plan for the aquatic reserve with local representatives, particularly the Table de concertation du littoral de Bonaventure, which already brings together most of the representatives concerned with the territory's future, in order to:
 - Implement a program in the future to monitor activities practiced in the aquatic reserve and surroundings in order to evaluate their possible impacts on the biodiversity of the territory;
 - Define the actions to take to resolve certain problems, including:

- Reduce debris from white fishing;
- Ensure the safe practice of certain activities, particularly hunting, beach fires, fireworks;
- Reduce disturbances caused by marinecraft (this issue must be addressed by the federal government, which has jurisdiction in this area.

Implications

In the absence of measures ensuring their safe and environmentally responsible practice, certain practices will have to be prohibited in the aquatic reserve (hunting, beach fires, etc.).

HIGHLIGHTS

In the Bonaventure river estuary aquatic reserve, the MDDEP proposes the following:

- ✓ Increase protection of flora habitats with adequate zoning for the aquatic reserve;
- ✓ Regularly monitor populations of flora species on the islands that are or likely to be threatened or vulnerable;
- ✓ Modify the boundaries of the aquatic reserve to allow for dredging to keep the estuary navigable and to expand the marina;
- ✓ Authorize recreational activities that have no significant impact on the biodiversity of the territory:
 - Nature observation;
 - Water sports: canoe, kayak, use of motorcraft, etc.;
 - Sport fishing;
 - Circulation on foot, except in integral conservation zones corresponding to the flora habitats.
- ✓ Find solutions with local representatives to enable the practice of activities that present a risk or nuisance:
 - Hunting;
 - White fishing (debris);
 - Beach fires;
 - Marinecraft.
- ✓ Prohibit activities that have an impact on the biodiversity or that alter the natural character of the site:
 - Motor vehicle traffic, except for management, research or emergency purposes, under the Regulation respecting motor vehicle traffic in certain fragile environments made under the Environment Quality Act;
 - Stocking non-native species in the territory for development purposes.
- ✓ Eventually implement a program to monitor activities practiced on the territory and surrounding areas to evaluate the eventual impacts on its biodiversity;
- ✓ Develop an action plan for the aquatic reserve with local representatives, notably the Table de concertation du littoral de Bonaventure, which already brings together most of the representatives concerned with the territory's future.

~ CHAPTER 3 ~

MANAGEMENT TERMS AND CONDITIONS



Francis Boudreau

The objective of the biodiversity and aquatic reserves is to protect ecosystems that are representative of Québec's biodiversity. The key issue, as defined in the Natural Heritage Conservation Act, is to maintain the natural dynamic of ecosystems and therefore the biodiversity of these protected ecosystems.

This objective led the MDDEP to develop a protection and management framework specific to the Bonaventure river estuary aquatic reserve in order to optimally respond to the challenges of conserving this territory and its resources.

1. MANAGEMENT PRINCIPLES FOR THE PROPOSED AQUATIC RESERVE

The MDDEP established a number of guiding principles for the management of protected areas, including both aquatic and biodiversity reserves.

Seven principles for the management of aquatic and biodiversity reserves:

- Ecosystemic management;
- Regionalized management;
- Participatory management;
- Coherent management;
- Responsible management;
- Flexible management;
- Minimal management.

Specifically, these principles will be applied to the Bonaventure river estuary aquatic reserve as follows.

Ecosystemic management

In the Bonaventure river estuary aquatic reserve, ecosystemic management will aim to respect the following conservation principles:

- Maintaining the natural dynamic of ecosystems;
- Restoring disturbed ecosystems, as needed and over the long term;
- Allowing activities and land development in keeping with the support capacity of the ecosystems;
- Authorizing sampling for non-commercial purposes, but without supporting the practice;
- Encouraging the acquisition and dissemination of natural heritage knowledge;
- Coordinating the management of land located around the protected area with the aquatic reserve's conservation objectives.

Regionalized management

Operational management of the Bonaventure river estuary aquatic reserve will be the responsibility of the Direction régionale de l'analyse et de l'expertise du Bas-Saint-Laurent et de la Gaspésie—Îles-de-la-Madeleine du MDDEP.

Participatory management

The Direction régionale de l'analyse et de l'expertise du Bas-Saint-Laurent et de la Gaspésie—Îles-de-la-Madeleine du MDDEP will establish the terms and conditions for the participation of local and regional parties concerned with the management of the Bonaventure river estuary aquatic reserve.

Local organizations will be invited to participate in developing an action plan that will establish the priorities for short-, medium- and long-term conservation and development objectives for the Bonaventure river estuary aquatic reserve.

The MDDEP proposes that the terms and conditions of the collaboration be discussed with the Table de concertation du littoral de Bonaventure during the six months following attribution of permanent aquatic reserve status. An action plan could be drawn up the following year and, if necessary, be revised every ten years at the same time as the conservation plan, as provided for by the Natural Heritage Conservation Act.

Coherent management

The Direction régionale de l'analyse et de l'expertise du Bas-Saint-Laurent et de la Gaspésie—Îles-de-la-Madeleine of the MDDEP is responsible for reaching the conservation objectives of the aquatic reserve. The Direction du patrimoine écologique et des parcs of the MDDEP will provide the scientific and technical support it may need in this regard.

The other government departments responsible for different components of the aquatic reserve will also be responsible for respecting and meeting the

conservation objectives. The responsibilities will be explained in the action plan.

Responsible management

The MDDEP is responsible for applying the Natural Heritage Conservation Act, which provides the framework for the proposed Bonaventure river estuary aquatic reserve. Certain activities will also continue to be regulated by other government representatives under the legislation they administer, in collaboration with the MDDEP.

Throughout the decision-making process, the MDDEP will rely on rigorous scientific data. The principle of precaution will also be applied to ensure responsible management.

What is the principle of precaution?

When there are threats of serious or irreversible damage, lack of full scientific certainty must not be used as a reason for postponing the adoption of effective measures to prevent environmental degradation.

Source: Sustainable Development Act, 2006.

Flexible management

A mechanism will be put in place to follow up on the conservation objectives and, if necessary, make

adjustments to the strategies put in place to reach them.

This will be done by means of an assessment of the action plan's implementation and a follow-up on the state of the environment using monitoring indicators.

Minimal management

The aquatic reserve will be managed minimally to guarantee that the conservation plan objectives are met. This management will consist in taking action in the following areas:

- Information and communication;
- Drafting of an action plan;
- Signage;
- Monitoring;
- Regulatory application;
- Regulatory control;
- Monitoring of the natural environment.

2. ACTIVITY SCHEDULE FOR THE PROPOSED AQUATIC RESERVE

Activities practiced within the aquatic reserve are mostly governed by the provisions of the Natural Heritage Conservation Act.

Regulation

Plan provisions for activities in the Bonaventure river estuary aquatic reserve set forth three distinct categories:

1. Prohibited activities.

2. Activities subjected to authorization.
3. Allowed activities.

1. Prohibited activities

Under the Natural Heritage Conservation Act, the following activities are prohibited in the Bonaventure river estuary:

- 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.

The other laws and regulations in force remain applicable on the territory of the aquatic reserve.

In keeping with the objectives pertaining to the protection of biodiversity in the Bonaventure river estuary, the conservation plan for the permanent aquatic reserve will prohibit the following:

- Introduction of non-native species into the territory for whatever purpose;
- The circulation of off-road vehicles (ATV, 4 x 4, etc.), except for management, monitoring and research activities or for security reasons in accordance with the regulation of the Environment Quality Act pertaining to motor vehicle traffic in fragile environments.

2. Activities requiring authorization

In the proposed Bonaventure river estuary aquatic reserve, the following activities are subject to authorization from the MDDEP:

- Stocking;
- Stocking or research involving the removal of animal and vegetation species;
- Creation of new trails;
- Erection of new structures or land development.

The practice of certain activities may also be limited under other laws or regulations applicable in the territory of the aquatic reserve.

3. Permitted activities

All other activities not mentioned previously are allowed in the Bonaventure river estuary aquatic reserve. The following activities are allowed provided they comply with the applicable legislative and regulatory provisions, including those requiring a permit, authorization or payment of certain fees.

Accordingly, the following are authorized:

- Hunting;
- Fishing;
- Water recreation (kayak, canoe, etc.);
- Hiking, cross-country skiing and snowshoeing;
- Nature observation activities;

- Educational activities that do not involve sample taking;
- Fires, provided caution is exercised and compliance is ensured with the regulation adopted by Ville de Bonaventure;
- Maintenance of existing trails.

The protection and management framework for the aquatic reserve does not foresee prohibiting traditional practices carried out in the future by members of the Micmac community of Cesgapegiag. If such is the case, the MDDEP will take steps with the Micmac Band Council to discuss the terms and conditions for the practice of these activities in the protected area and agree on accommodations.

Zoning

The proposed zoning has no regulatory value. However, the MDDEP will use this tool to develop an action plan that will guide the management of the aquatic reserve with regard to conservation and development.

Zoning and the corresponding activity schedule could eventually be modified in keeping with revisions made to the conservation plan provided for under the Natural Heritage Conservation Act (section 50), according to acquired ecological knowledge and the evolution of the environmental objectives for the protected area.

The proposed zoning for the proposed aquatic reserve was established on the basis of conservation objectives determined for the territory.

The boundaries of the proposed Bonaventure river estuary aquatic reserve will be modified to allow future dredging work to be carried out to maintain the access of fishing and pleasure boats to the marina and pier. The western part of the basin located between Route 132 and the barrier beaches will be excluded from the aquatic reserve for this purpose⁸. The southern boundary of the part that will be excluded from the aquatic reserve corresponds to the northern limit of lot 491B appearing on the cadastral map of Ville de Bonaventure and produced by the Ministère des Ressources naturelles et de la Faune⁹. The planned exclusion covers 39.055 hectares.

A plan and technical description of the Bonaventure river estuary aquatic reserve will be done by a surveyor once the territory is given the status of permanent aquatic reserve.

Zoning for the aquatic reserve is composed of two sectors having distinctive activities. Each zone is protected and has an activity schedule that meets the conservation and management objectives of this protected area.

▪ ZONE I

Zone I, of an “integral protection” type, covers 58.126 hectares. It corresponds exactly to the flora habitat designated under the Act respecting threatened or vulnerable species.

The objective of this zoning is to preserve the islands of the Bonaventure river estuary, which constitute essential habitats for the vegetation species that are or likely to be designated as threatened or vulnerable. In this zone, only monitoring, research and educational activities will be allowed provided that they have received prior authorization from the MDDEP.

▪ ZONE II

With the exception of the islands, the territory of the aquatic reserve falls under zone type “preservation and moderate use,” which totals 146.19 hectares.

The objective of this zoning is to allow the practice of recreational activities that are in keeping with the support capacity of the ecosystems, provided they do not have a negative impact on the biodiversity of the territory, particularly on the flora habitat of the islands and species occupying these habitats that are or likely to be designated as threatened or vulnerable.

⁸ See zoning map for aquatic reserve on following page.

⁹ Items 22A 03-200-0101 and 22A 04-200-0102.

CONCLUSION

The Bonaventure river estuary aquatic reserve has several assets.

Above all, protection of this coastal site will benefit local and regional communities, who will enjoy and fully benefit from its attractions. It is in this perspective that the Ministère du Développement durable, de l'Environnement et des Parcs proposes to implement a partnership-based management approach.

In an effort to rely on local organizations, the MDDEP proposes that the Table de concertation du littoral de Bonaventure become its preferred partner in all matters pertaining to the planning of management interventions for the Bonaventure river estuary.

Conservation of this environment, which will be devoted to light recreation, natural heritage discovery activities and scientific research, will contribute significantly to diversifying and consolidating the local tourist offer.

With its natural character, cultural richness and accessibility, the territory offers a very appropriate framework for the development of recreational and tourism activities, including ecotourism, nature observation and hiking, and complementary to the existing products, such as the biopark, the Musée acadien du Québec de

Bonaventure, the Banc-de-pêche-de-Pasbébiac historic site and the Saint-Elzéar cave site.

The management terms planned for the Bonaventure river estuary aquatic reserve will serve to bring together the various interest groups by inviting them to combine their efforts, means and skills to come up with a development project that is in harmony with and respectful of the biodiversity.

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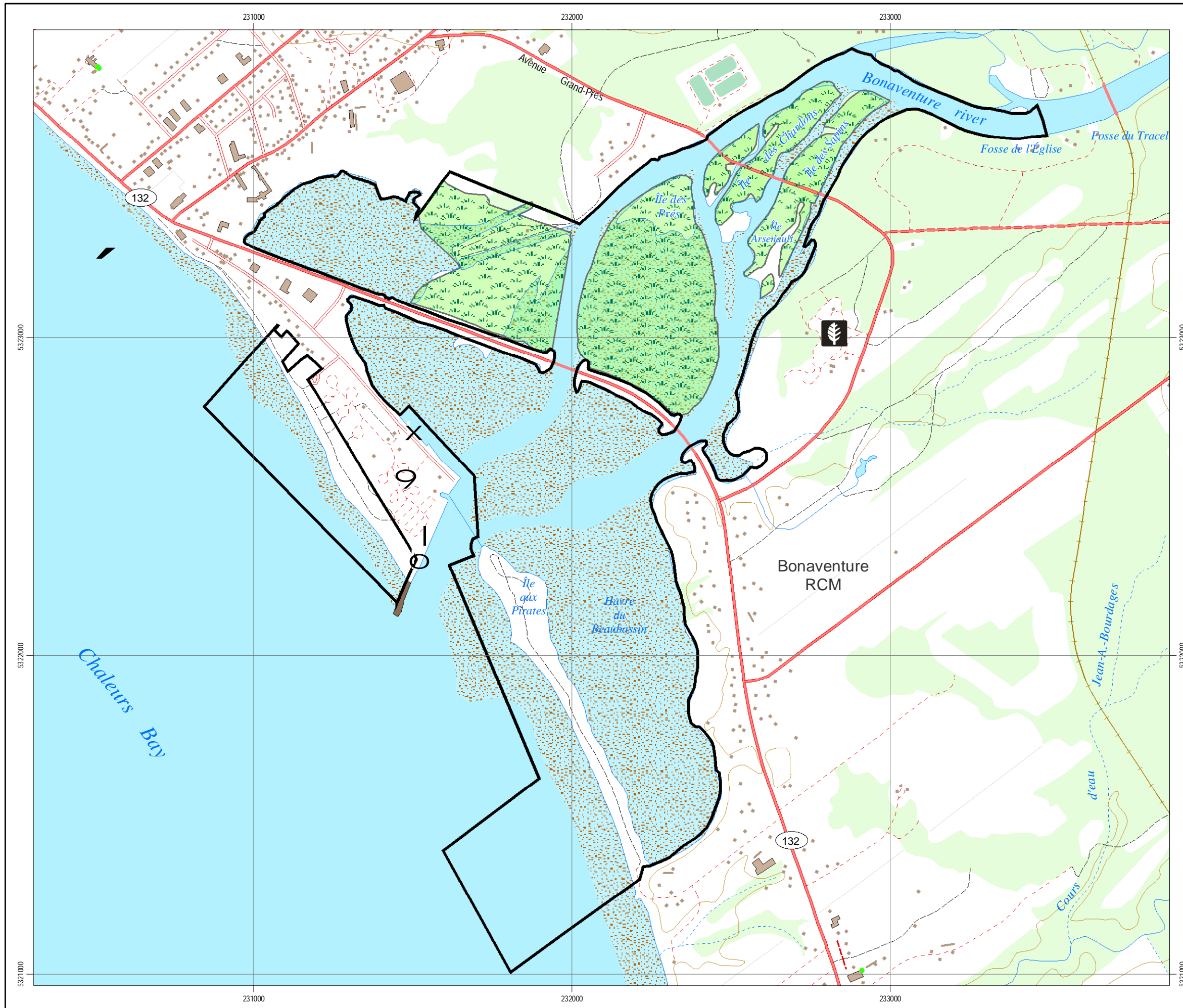
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Proposed Bonaventure river estuary aquatic reserve



Legend

-  Biopark
-  Camping
-  Marina
-  Fishing (pier)
-  Lighthouse
-  Proposed aquatic reserve
-  Flora habitat



Metadata

Geodetic reference system	NAD 83 compatible with global system WG5 84
Mapping projection	Modified Transverse Mercator (MTM), zone 5

Sources

Data	Organizations
Base de données topographiques (BDTO) 1/20,000	Ministère des Ressources naturelles et de la Faune
Protected areas	Ministère du Développement durable, de l'Environnement et des Parcs

Production

Production : Direction du patrimoine écologique et des Parcs
 Service des aires protégées
 Division de la géomatique et de l'infographie
 Note : This document has no legal value

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