

# LE FLEUVE

## St. Lawrence Action Plan Newsletter

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### Saint-Barthélemy/Saint-Joseph-de-Maskinongé A Unifying Project

**I**s it possible to satisfy naturalists, hunters, fishermen, and farmers when it comes to wildlife management? If the Saint-Barthélemy/Saint-Joseph-de-Maskinongé habitat acquisition and wildlife management project becomes a reality, as seems likely, its promoters may soon be able to prove that with a little effort and a lot of good will, you can "have your cake and eat it too."

Indeed, the Saint-Barthélemy/Saint-Joseph-de-Maskinongé project is a sterling example of this type of undertaking. It meets at least two of the wildlife habitat objectives of the St. Lawrence Action Plan: encouraging partnership between groups with widely varying interests, specifically, hunters, fishermen, farmers and naturalists, and protecting one of the major habitats along the river corridor.

#### A Priority Site

In 1986, Canada and the United States initiated the North American Waterfowl Management Plan, the ultimate goal of which was to bring North American waterfowl populations back up to 1970s levels. This program led to the Eastern Habitat Joint Venture, which counts



*The area targeted by the Saint-Barthélemy/Saint-Joseph-de-Maskinongé habitat acquisition and wildlife management project is considered the second most important spring staging area for St. Lawrence ducks.*

among its participants six Canadian provinces, Environment Canada and a number of other organizations. The Saint-Barthélemy/Saint-Joseph-de-Maskinongé habitat acquisition and wildlife management project was developed as part of the Eastern Habitat Joint Venture. Six partners have become involved in the project: the Ministère du Loisir, de la Chasse, de la Pêche du Québec, the Fondation de la faune du Québec, Ducks

Unlimited Canada, Wildlife Habitat Canada, Environment Canada's Canadian Wildlife Service and the Office de planification et de développement du Québec.

The area concerned is located on the north shore of Lake Saint-Pierre, right in the middle of the Atlantic flyway. It is considered the second most impor-

Photo: Canadian Wildlife Service

tant spring staging area for ducks on the St. Lawrence River and, in 1989, was identified as a priority site by partners in the Eastern Habitat Joint Venture program.

And with good reason! Each spring, depending on how high water levels rise, some 10 000 Canada geese and 10 000 dabbling ducks (80% of them Northern pintails) stop over in this area to rest and feed. The site is little used in fall, however, since it has no permanent marshes. As for aquatic wildlife, yellow perch and northern pike, among others, use the site each spring to reproduce, while 17 additional fish species take advantage of its excellent properties as a spawning, nursery and feeding area.

### Specific Drawbacks

The acquisition and development plan covers a multi-use area. The partially developed site is currently used by 25 000 people each spring for interpretation and observation; sport and commercial fishing activities, waterfowl hunting and muskrat trapping are popular in the area; and farmers use it to grow forage and cereal crops.

Of these 400 coveted hectares of land, 320 belong to some 60 private owners and the other 80 to the Québec government. Farmland accounts for 60% of the land, while 30% is abandoned or lying fallow, and 10% is wooded. Moreover, 97% of the total surface area is subject to biennial spring flooding between early April and mid-May.

Despite its great potential, the land has several drawbacks limiting its use as farmland and for wildlife. Persistent spring flooding and the risk of a second flood after mid-May, the height and duration of the spring run-off and the lack of permanent marshes are only a few of these obstacles.

### Numerous Concerns

Although the works planned as part of the project take many forms, such as the creation of permanent basins for waterfowl reproduction, the development of a system of dikes to optimize water level management in wildlife habitats and farmlands, and the improvement of habitats for fish reproduction, the project as a whole was developed within a context of integrated land use for wildlife and agriculture. The total amount of the Saint-Barthélemy/Saint-Joseph-de-Maskinongé operation is estimated at approximately \$1.4 million.

Phase I of the project, land acquisition, is proceeding full speed ahead. "We've already met with the farmers concerned to explain the nature of the development and anticipated land acquisitions, and the response has been very positive," states Raymond Sarrazin, coordinator of the Eastern Habitat Joint Venture. "Our application is currently in the hands of the Commission de protection du territoire agricole and we expect a reply shortly. If all goes well, we will begin acquiring the land in fall 1992 and 1993." Phase II, actual construction of the facilities, can begin as soon as the acquisition process is complete.



### «PROGRAMME DE SOUTIEN FINANCIER AUX PROJETS À CARACTÈRE FAUNIQUE»

There is a whole range of programs and measures designed to help different groups concerned with environmental protection and enhancement. The Programme de soutien financier aux projets à caractère faunique, initiated in 1991-1992 by the Ministère du Loisir, de la Chasse et de la Pêche du Québec (MLCP), acts as a sort of counterpart to some of these programs. Moreover, an initiative such as this MLCP project contributes to fulfilling the objectives of the St. Lawrence Action Plan. Examples of this are the Plan de protection du site de conservation du faucon pèlerin, developed by the Centre de conservation de la nature du Mont Saint-Hilaire, and the Programme d'interprétation du site du ruisseau Saint-Jean, an initiative of Héritage Saint-Bernard - Châteauguay region.

This new MLCP program, created to support projects developed and implemented by non-profit organizations, is unique in more than one respect, especially as concerns project eligibility. Groups receiving funding can use the money to conduct feasibility studies or development plans, draft briefs, or assume the management of a wildlife habitat—activities which are not normally eligible under other programs.

Another unique feature of the program is that the MLCP requires the organizations involved to contribute at least 25% of the total cost of the project. However, the Ministère assigns a monetary value to volunteers' time and equipment loans, for example, allowing them to be calculated as part of the 25% requirement. The final distinctive feature of the program is project selection. Projects are chosen by a joint committee made up of representatives from the government and local groups. This format allows the selection committee to take a more global, objective view of the projects.

The maximum amount of funding awarded by the MLCP under the program is \$30000 per project per year. In 1991-1992, 216 projects were submitted and 70 were chosen. The total cost of the projects carried out during this period was \$2 million, with \$1.2 million being provided by the organizations receiving the funding and \$800000 by the MLCP.

The deadline for submitting projects for the 1992-1993 budget year is February 1, 1992. Application forms and other information can be obtained at your MLCP regional office.

# Partnership Between the St. Lawrence Centre and Private Enterprise Toward New Environmental Restoration Technologies

To encourage the development of new restoration technologies, the technology development section of Environment Canada's St. Lawrence Centre maintains an ongoing partnership with private enterprise. In addition to financial support, the program offers partners the professional expertise of the St. Lawrence Centre staff. Sediment decontamination projects in the Saint-Zotique canals and bank stabilization projects on the Contrecoeur islands clearly illustrate the effectiveness of this partnership, which is being developed with an eye to better environmental management.

## Sediment Decontamination in Saint-Zotique "Environment - Friendly" Bacteria

**S**aint-Zotique is a small municipality on the shores of Lake Saint-François, which teems with cottagers and boaters each summer. Residents of the western part of the community are particularly fortunate, since their houses are directly linked to the lake by a network of waterways built over the past 30 years. But there is a problem. Because of the antiquated septic facilities, these narrow waterways have become contaminated over the past few years by a layer of organic matter 10-30 cm thick. Every year the municipality is confronted with the accumulation of this algae, which it attempts to clear out of the waterways so that boats can pass, and related problems of filth and odour. This contaminated site has been chosen to test a promising new technique for restoration through biodegradation.

G.D.G. Environnement, in conjunction with the St. Lawrence Centre and the municipality of Saint-Zotique, is carrying out the project. Their goal is to demonstrate the effectiveness of this decontamination technology, called biodigestion, in a natural setting. "By



*Bacteria are injected into the sediment using a system of pipes installed on a boat that moves through the waterways. A method as ecologically sound as biodegradation itself.*

testing this technology before putting it on the market, we will be able to determine whether it can be used in conjunction with current decontamination practices," says René Rochon, head of the restoration technologies section of the St. Lawrence Centre. However, this technology cannot be used in sites polluted by industry, such as the Lachine canal, because of the high levels of heavy metals in these sediments.

### Voracious Bacteria!

Restoration through biodegradation is a very sound ecological practice. A special colony of bacteria, stored in a liquid environment, is injected into the sediment. These voracious bacteria have a particular penchant for organic matter and can decompose these substances. The biological principle is simple: digestion of

Photo: G.D.G. Environnement Inc.

the organic matter releases carbon dioxide and nitrogen, gases which, once they come into contact with water, simply evaporate into thin air. An efficient way of cleanly eliminating harmful substances!

René Rochon explains how the project works. "The bacteria are injected regularly every two weeks over a period of a few months, in fall 1991 and spring 1992, since they are more effective at lower temperatures. Following each series of injections, we will evaluate the aquatic environment to determine if the reduction in organic matter is statistically significant."

In addition to determining the actual effectiveness of biodigestion, this test will help determine the feasibility of spreading the bacteria throughout a damaged aquatic environment. "And to ensure that our results are reliable, monitoring will be conducted by an independent laboratory," stresses René Rochon.

This application of biotechnology to the environment has the double advantage of being economical and ecologically sound. Dredging, on the other hand, in addition to being a costly method of sediment disposal, does not neutralize the polluted materials; it merely moves them to a dumping site, leaving the problem unsolved. That is why hopes are pinned on this new approach to decontamination. We will have to wait until the following spring to see if these bacteria will do the trick.

## Pilot Project to Combat Erosion on the Contrecoeur Islands A Double First for the Environment

**E**nvironment Canada's St. Lawrence Centre, The Canadian Wildlife Service (CWS), the Canadian Coast Guard (CCG) and their partner, Argus groupe conseil, are developing a project to combat erosion of the islands in the Contrecoeur National Wildlife Area. The new technique uses logs buried under the soil to protect against erosion. This is an environmental first in two ways: the protection measure itself and the type of site being protected. This is the first time that erosion has been fought on island shores, the battlefield normally being confined to the banks of the St. Lawrence River. It is a challenge which calls for technological innovation.

Erosion of the Contrecoeur islands, located in the St. Lawrence between Montréal and Lake Saint-Pierre, is a far-reaching problem because it affects an area rich in resources. The Contrecoeur National Wildlife Area, under the jurisdiction of Environment Canada's Canadian Wildlife Service, encompasses a group of islands, shoals, marshes and areas favoured by wildlife for reproduction and feeding. The problem is also serious because of the layout of the islands, explains biologist Jacques Bérubé of the St. Lawrence Centre (SLC). "The sector's structure is characterized by two island chains running parallel to the shore. The first group of islands forms a veritable barrier, thereby reducing the impact of wind and waves on the second, lower string of islands which are located closer

to the shore. Between these island chains, grassy stands have developed."

These barrier islands are in a precarious situation. Indeed, when the Seaway was built and dredged in the 1950s and 1960s, the islands were either remodelled or rebuilt completely using dredged material. "None of the deposited material was stabilized or protected and, as a result, it has been progressively swept away by the waves and wash from ships passing through the seaway, as well as changes in water levels. Based on the annual erosion rate, we can anticipate the complete disappearance of some islands in the medium term," warns Jacques Bérubé. This is especially worrisome, given that the disappearance of these barrier islands will likely result in the destruction of the grassy areas and the progressive erosion of the second island chain.

### Wispy Willow or Sturdy Stone?

The alarm has been sounded and now is the time for well-planned action. The traditional substance used to neutralize the effects of erosion on the banks of the St. Lawrence, rip-rap, does not seem appropriate in this case. It is ill-suited to island shores, explains Jacques Bérubé. "Rip-rap, a layer of stones used to cover embankments, is very effective. But this approach is costly when applied to an island because it requires the use of heavy

equipment, barges and machinery to transport and deposit the stones. The other problem is how an embankment of stones running for kilometres on end would look, especially since the site to be preserved is an ecological reserve and the goal is to maintain its natural charm."

Argus has proposed an alternative which is both esthetically pleasing and economical. The consulting group has done a complete analysis of coastline erosion between Lake Saint-Pierre and Sorel. Based on this report, a whole series of actions was proposed depending on the severity of the erosion. For the Contrecoeur island area, the company suggested to its partners, the SLC, CWS and CCG, that they use a technique adapted to the St. Lawrence River and inspired by work carried out in the Great Lakes: a buried-log technique. Cedar logs interspersed with willow cuttings will be buried on the embankments. The willow branches will quickly take root and grow upward through the network of logs, thus stabilizing the embankments. In a few years, the result will be a lush, green shoreline.

First though, the effectiveness of this technique for the St. Lawrence must be determined. That is why the pilot project, divided into four phases, is being initiated. The first phase was to analyze the environmental impact of the buried-log technique. Then a topometric sampling was taken in order to draft the project plans and specification. Samples were taken from two sites: Chipeau island and Du Pilier island. Based on the estimated cost for each site, a 100-metre-long strip of land on Du Pilier island was selected. Testing is currently under way, and the logs buried there will be monitored throughout the upcoming months.

"Winter will be the ultimate trial for the buried-log technique on St. Lawrence islands. Only next spring will we know if the logs can hold up against the movement of the ice cover. If so, the Canadian Coast Guard, responsible for protecting sites all along the Seaway, will



Photo: Argus, Groupe conseil inc.

*If not protected, the shores of the Contrecoeur islands will fall victim to erosion, a far-reaching problem in an area rich in economical resources.*



Photo: Argus, Groupe conseil inc.

*The ingenious buried-log technique is adapted to St. Lawrence conditions and is inspired by work carried out in the Great Lakes.*



Photo: St. Lawrence Centre

*Once logs are buried on the slope, the willow branches quickly take root through the network of logs and stabilize the banks*

be able to use this new, ecologically sound method of combatting shoreline erosion," concludes Jacques Bérubé.





Photo : Jacques Bérubé

*Now is the time for cooperation and a mutual exchange of expertise to ensure better protection of public health based on the status of the river.*

"Until very recently, the various experts worked along the same lines without really sharing their findings. But, more and more, we are attempting to bring them together," says Bouchard. The third Colloque de formation en santé environnementale, organized jointly by the Ministère de la Santé et des Services sociaux du Québec and the Ministère de l'Environnement du Québec is a fine example of this closer collaboration. "The creation of a climate favourable to such exchanges should lead to better environmental management of the river's waters and, in turn, to improved public health."

## Hot off the presses

### Habitat du poisson

#### GUIDE DE PLANIFICATION ET DE RÉALISATION D'AMÉNAGEMENTS

Last June, the Fondation de la faune du Québec announced the implementation of an important aquatic habitat quality improvement program requiring investments of approximately \$1 250 000 over three years. At that time, the Fondation, in conjunction with the Ministère du Loisir, de la Chasse et de la Pêche du Québec, launched an important component of this program, a guide entitled Habitat du poisson.

The 100-page, fully illustrated guide is designed for fishing associations, municipal corporations, conservation organizations and any other group concerned with sustainable resource use and wishing to participate in the conservation and improvement of fish habitat quality.

This easy-to-use guide deals with concrete subjects and provides numerous examples. The three main sections are: the ecology, steps in development planning, and development techniques.

Habitat du poisson, guide de planification et de réalisation d'aménagements, is available in French only and costs \$10. It can be obtained at your MLCP regional office or at the Fondation de la faune du Québec, 140 Grande-Allée Est, bureau 860, Québec, Québec, G1R 5M8, Tel.: (418) 643-7655.

## CONTACTS

### Saint-Barthélemy/Saint-Joseph-de-Maskinongé A UNIFYING PROJECT

Raymond Sarrazin  
Conservation and Protection  
Environment Canada  
(418) 649-6300  
Raymond Desjardins  
Direction générale des ressources fauniques  
Ministère du Loisir, de la Chasse et de la Pêche  
(418) 644-8120

### The River and Good Health TIME TO WORK TOGETHER

Hélène Bouchard  
St. Lawrence Centre  
(514) 283-9451  
Simon Théberge  
Ministère de l'Environnement du Québec  
(418) 643-9591  
Dr. Albert Daveluy  
Ministère de la Santé et des Services sociaux  
(418) 646-9508

### Sediment Decontamination in Saint-Zotique "ENVIRONMENT-FRIENDLY" BACTERIA

René Rochon  
St. Lawrence Centre  
(514) 283-0676

### Policy on Threatened and Endangered Species PRODUCTIVE CONSULTATIONS

Michel Huot  
Service des habitats  
Ministère du Loisir, de la Chasse et de la Pêche  
(418) 528-0801

## FILE

### Pilot Project to Combat Erosion on the Contrecoeur Islands A DOUBLE FIRST FOR THE ENVIRONMENT

René Rochon  
St. Lawrence Centre  
(514) 283-0676  
André Champoux  
Environment Canada  
(418) 648-4725



## COMING EVENTS

### Le Saint-Laurent, d'hier à demain

Sponsored by the St. Lawrence Action Plan, the annual 1992 meeting of the Association québécoise des techniques de l'eau will focus on the theme "Le Saint-Laurent, d'hier à demain." The meeting will be held at the Montréal Convention Center on April 8, 9 and 10.

#### Information:

Association québécoise des techniques de l'eau

Éric Bouchard, director general

Céline Hardy, members services

(514) 874-3700

## IN BRIEF

### Policy on Threatened or Endangered Species PRODUCTIVE CONSULTATIONS

The Québec draft policy on threatened or vulnerable species has already gone through public and interdepartmental consultations set out under the Act respecting threatened or vulnerable species (see *Le Fleuve*, vol. 2, no. 2, March 1991). This policy statement, which deals mainly with designating species and defining their status, should be adopted before the end of the winter. Two other phases, that is, preparation of the list of threatened or vulnerable species and the development of a species management policy, will follow.

In total, 17 briefs were presented during public consultations, 16 from environmental groups invited to submit and another from a private citizen. All the opinions and recommendations received have helped to substantially change several elements of the policy.

"The policy has benefited greatly from the consultation process," confirms Michel Huot, who is in charge of threatened species at the Service de l'habitat at the Ministère du Loisir, de la Chasse et de la Pêche. "Major changes have been made, specifically in terms of certain definitions and the composition of advisory committees." The organizations that participated in the consultations will be informed of these changes shortly.

In the same vein, the Canadian government recently passed a bill to protect wild species. The Wild Animal and Plant Protection Act, which receives funding under the Green Plan, is designed to protect species against poaching and smuggling. It will also prevent illegal trade in species threatened with extinction.

### ENSURING THE SURVIVAL OF THE BELUGA WHALE

The third annual report on the Interdepartmental Action Plan to Ensure the Survival of the St. Lawrence Beluga Whale was released at the 16th conference of the Association des biologistes du Québec, which was held in November. The report describes the progress made by the two departments involved in the Action Plan: Fisheries and Oceans Canada and Environment Canada.

More than 50 projects were carried out in 1990-1991. Among the most important are the results on genetic traits of the population, the development of software to simulate airborne pollution dispersion patterns and the official signing of the agreement authorizing the creation of the Saguenay Marine Park.

The report is available in both French and English at the Communications Branch, Fisheries and Oceans, Québec Region, 901 Cap-Diamant, P.O. Box 15500, Québec, Québec, G1K 7Y7.

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Tel: (514) 283-0198

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