LE FLEUVE

NEWSLETTER
ST. LAWRENCE VISION 2000
VOLUME 6 ■ ISSUE 1 ■ JANUARY 1996

IN TUNE

PREPARING FOR THE FUTURE BY IMPROVING HABITATS

The loss of several thousand hectares of wetlands along the St. Lawrence over the past 40 years has not only limited or reduced the habitats of many species of animals; it has also led to a reduction in the quality of life of all the people who live along the River or who visit the area. In the Restoration Component of SLV 2000, the anticipated results can be divided into three main sectors. First, the largest project undertaken is the decontamination of the Lachine Canal. A unique and complex structure, the Lachine Canal constitutes a key project in several regards. Several technological development projects in dredging and restoration are also under way, particularly in the ports of Montreal, Trois-Rivières and Québec City.

The demonstration projects for the restoration of wildlife habitats constitute a second sector of intervention. Mainly carried out in the deteriorated wetlands along the banks of the River and around its islands, these projects often involve technologies that are new in this country and open highly interesting avenues.

Finally, we are preparing for the future by drawing up development plans for three national wildlife reserves – Cap-Tourmente, îles de l'estuaire and Dundee (Lake Saint-François) – as well as for the federal islands in the Montreal-Sorel reach.

New Management for the SLV 2000 Agreement

Since last October, two new Co-presidents have taken the place of Messrs. Jean-Pierre Gauthier and Denys Jean at the helm of the St. Lawrence Vision 2000 Agreement. The new federal Co-president, Mr. François Guimont, is Director General, Quebec Region, for Environment Canada; his provincial counterpart is Mr. George Arsenault, Assistant Deputy Minister of Wildlife Resources and Parks for Quebec's Ministère de l'Environnement et de la Faune.

"One of the advantages of the SLV 2000 Agreement," states François Guimont, "is to be able to work within a precise framework and toward concrete goals. These goals are my primary concern. My second priority is the way in which to attain them: we have several partners in each component, and our results must be obtained through dialogue, transparency and realism. In my view, these dimensions should be present in all discussions among the parties involved in SLV 2000." ▶

Photo: Louise Leblanc

François Guimont and George Arsenault are the new Co-presidents of the St. Lawrence 2000 Agreement.

SUMMARY

Mr. Guimont's pragmatism is mirrored by George Arsenault. "Having been a member of the Agreement Committee for the past two years, I am obviously not unfamiliar with the departmental, interdepartmental and intergovernmental coordination needed to achieve the objectives of SLV 2000. It should be kept in mind that the agreement does not change the direct responsibilities of the departments concerned with SLV 2000. We do not have a power of management, but rather a mandate for coordination. I believe that my role is to see to it that everyone has a clear understanding of the objectives and that the schedules are adhered to."

Active for nearly 30 years in the sectors of land use and development as well as wildlife development, George Arsenault was trained as a bio-geographer. He has held positions in both the federal and provincial public sectors as well as in the private sector. "My experience in the public and private sectors will certainly be a valuable asset in my new duties, since the partners of SLV 2000 include people from all these sectors."

François Guimont has a background in biology and water sciences and has also worked for both the provincial and federal governments. "I worked for several years with Jean-Pierre Gauthier, the previous federal Co-president for the agreement, in the areas of strategy and policy; I am therefore well-versed in the issues connected with the River. My aim is to develop a better understanding of the different components of SLV 2000, and that is what makes the challenge more novel and attractive."

The two new Co-presidents, whose appointments came only a few days apart, approach their mandate with much enthusiasm and energy. "The restoration and conservation of the St. Lawrence is a cause that channels the energy and will of Quebeckers," adds George Arsenault, "and this is what makes the task so rewarding." This view is shared by François Guimont, who considers the participation of citizens to be a dynamic motive force directed toward the achievement of the goals: "This dimension of SLV 2000 is undoubtedly the most promising in the long term for the health of the St. Lawrence."

Restoration Component

Partnership and Knowledge Transfer

"The orientation underlying the actions of Environment Canada in the Restoration Component of SLV 2000 is one of technological support," according to Michel P. Lamontagne, a director at Environment Canada and one of the officials in charge of this component. In connection with the decontamination of certain sites and the restoration of habitats along the St. Lawrence, SLV 2000 has initiated pilot projects that have great methodological value. We wish to provide practical and effective tools to the managers of restoration projects along the St. Lawrence. These tools could also be exported to other regions of the world faced with comparable environmental problems."

The Restoration Component has the particularity of being entirely under federal responsibility. Its main aims are to restore wildlife habitats and to continue with the decontamination of federal sites, the best known of which are the ports of Montreal and Québec City, as well as the Lachine Canal. However, it is noteworthy that the decontamination of the Lachine Canal itself is under the responsibility of Heritage Canada; Environment Canada is providing technological support of various phases of the project. Development plans for three national wildlife reserves – Cap-Tourmente, îles de l'estuaire and Lake Saint-François – are also part of the program, as is the case of the federal islands in the Montreal-Sorel reach of the River.

Jean Cinq-Mars, a director with Environment Canada, shares management of the Restoration Component with Michel P. Lamontagne, supervising in particular the projects for the decontamination of the ports of Montreal and Québec City, as well as the Department's contribution to the work on the Lachine Canal. His representative, Gaétan Duchesneau, outlines these activities for Le Fleuve: "Our work is directed at perfecting technologies to manage sediments and control the erosion of the riverbanks. Regarding dredging techniques, for example, the requirements of the governments and public interest are such that work in this area must involve decision-making and intervention backed up by much more complex data. The same constraints apply to the technologies for riverbank restoration and treatment of sediments."

The Dredging and Restoration Technologies Program was designed to be of a preventive nature, involving the development of analysis and decision-making tools for the design and implementation of the actual operations. The setting up of a partnership with the private sector is also an important dimension, with a view to creating a truly Canadian expertise at the national and international levels. The perfecting of the Amphibex excavator, which combines the possibilities of traditional excavation with those of dredging, is one of the most promising results of this approach. "The Amphibex project was financed jointly by the firm Normrock, Environment Canada and the Quebec government; it received a loan from the Federal Office of Regional Development," points out René Rochon, coordinator of Environment Canada's Dredging and Restoration Technologies Program. "Already, contracts worth over one million dollars have been conducted by Amphibex: a real success."

In the area of wildlife habitat restoration, a few demonstration projects have been completed, and others are under way. "Over 4,000 hectares of wetlands have been lost over the past 40 years along the St. Lawrence," indicates Michel P. Lamontagne, "and more have deteriorated. It is imperative to prevent any additional loss and to provide those who wish to take action in this field (municipalities, NGOs, developers) with proven means and methods so that they can succeed." In the spring of 1996, a guide to the restoration of the St. Lawrence riverbanks will become available.

Development Plans and Demonstration Projects for the Restoration of Wildlife Habitats

Because of its geographical situation and the diversity of its habitats, the St. Lawrence provides an excellent stop-over for a wide variety of North American migratory birds. As nesting sites and congregation sites, a number of islands and wetlands in the river section lend themselves well to serving the needs of wildfowl. On the other hand, a number of factors have caused the deterioration, erosion and even disappearance of wildlife habitats that had previously been heavily used. The Restoration Component of SLV 2000 is devoted in particular to demonstration projects aimed at perfecting techniques for the redevelopment of these sites. Developers and organizations devoted to conservation will subsequently be able to benefit from this work in conducting operations of varying scale. These projects are being piloted by Environment Canada.

The Plan for the Development and Restoration of the Federal Islands in the Montreal-Sorel Reach

"The main problems that we encounter along the Montreal-Sorel reach are representative of factors that have had considerable impact on the wetlands and islands located along the River," reports Denis Lehoux, a biologist working for Environment Canada. "Erosion and flooding have considerably damaged the shores of the 72 islands located between Montreal and Sorel. The lack of plant cover for nesting and raising young wildfowl has reduced bird populations in certain sectors. Also, for the same reason, the young are more vulnerable to predators (birds of prey and mammals). The absence of trees and shrubs on certain islands does nothing to enhance biodiversity; and farming, although it is practiced on only six of the islands, has negative effects on wildlife in certain areas."

The plan for the development and restoration of the federal islands in the Montreal-Sorel reach, which will be tabled and approved early in 1996 by Environment Canada, gives an update on the different problems, which can vary greatly from one island to another. The islands located near the navigable channel, for example, are subject to heavier erosion. Indeed, it is estimated that the islands have lost 25% of their surface area over the past 35 years. At this rate, certain islands in the îles de Paix archipelago are threatened with disappearance within about twenty years! Flooding, which recurs every two years, has major impact on islands where wildfowl nest; nearly 25% of the islands are then submerged; as many locations thus become less attractive to wildfowl species that nest early in spring, such as the Mallard Duck.

"We have studied a wide range of development measures liable to considerably improve the situation in many areas," adds Denis Lehoux. "The officials at Environment Canada responsible for the different reaches of the River will determine which measures may be implemented according to the priorities and budgets available over the next few years. Currently, plans and specifications for the development of the Varennes and Contrecoeur Islands are ready, but the others are still to be done. The same approach is planned for other locations, such as the national wildlife reserves of îles de l'estuaire, Cap-Tourmente and Dundee, at Lake Saint-François."

Demonstration Projects for Habitat Restoration

Seven demonstration projects bringing together a large number of partners are to be completed between now and 1998. Some have already been completed, and others are under way. They have been chosen so as to reflect the wide range of problems affecting wildlife habitats.

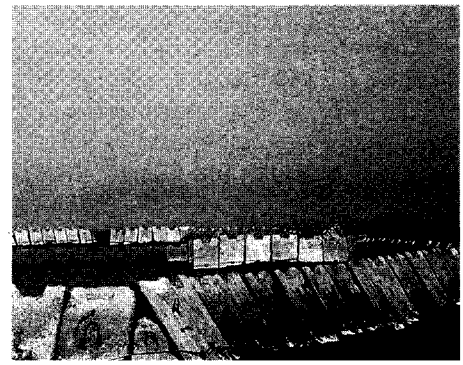

Photo: Environment Canada

Sedimentation beds set up in the marshes of Rivière-du-Loup.

The two largest demonstration projects are the restoration of the intertidal marsh of Rivière-du-Loup and that of Cacouna. The rapid retreat of the marsh in Rivière-du-Loup – up to two metres per year – threatened the adjacent strip of Autoroute Jean-Lesage (Hwy 20), and required immediate action. Les Consultants Argus, project managers, proposed to test the effectiveness of sedimentation beds able to capture sediments in suspension in the River, while slowing down the current. The three beds installed in the fall of 1994 have shown good results. Phase II of the project involves plans to use dredged material from the Rivière-du-Loup Marina, in the spring of 1996, to verify the possibility of filling in the beds with this particular material. This $200,000 project is being conducted by Environment Canada, thanks to contributions from a number of partners: Fisheries and Oceans, Quebec's Ministère des Transports, the Société d'énergie de la Baie-James (SEBJ), the Rivière-du-Loup Marina, Ducks Unlimited, the Société de conservation de L'Isle-Verte and Les Consultants Argus.

The value of conserving and protecting the spartina marsh in Cacouna results from its heavy use by aquatic birds: nearly 10,000 in spring and large numbers each autumn. For several years, the backfilling of certain

portions of the site, the partial drying of the neighbouring residual marsh and pressure from hunting have made the location less attractive, particularly for the American Black Duck, a regular visitor. The agreements negotiated in 1992 with several landowners have led to the acquisition of rights to 178 hectares of foreshores. In addition, the signature of an agreement with Transport Canada in 1995 has provided for the shared management of all territories other than those required for the port, between that department and Environment Canada. The foundations for the integrated management of the site are now in place and have since made it possible to conduct certain projects that will enhance the site: work to increase the plant cover on rocky shore areas, to create a small body of water and to build certain reception facilities for the public is already well under way. The creation of a second body of water and a network of secondary ditches, an opening allowing salt water to flow in from the other side of the road during high tide levels and the management of hunting are planned for 1996. Here again, many partners are contributing to the completion of this project worth over $500,000: Environment Canada has been joined by Transport Canada, Hydro-Québec, the Parish of Saint-Georges-de-Cacouna, Public Works Canada, the Société de conservation de l'Isle-Verte, the Quebec Ministère des Transports, Ducks Unlimited, the Community Interaction Program and Les Consultants Argus.

The other five projects, although more modest in size, are nevertheless of considerable interest.

Photo: Environment Canada

A pond dug in the bog at Isle-Verte. Water flows into this pond after going through an alkaline filter, which considerably reduces the acidity of the site, resulting in an increase in the production of invertebrates in the areas of water. This makes the site more attractive to wildfowl.

The Soucy aboiteau, located at Isle-Verte, was returned to the natural state of a spartina marsh in 1994 by means of water brought in through existing ditches and a pumping station. An artificial agricultural marsh, on land owned by Les Fermes Turmel of Sainte-Marie de Beauce, was developed in December 1995 so as to filter the dairy runoff and manure effluent, and to provide a habitat for wildfowl. The effectiveness of bio-engineering techniques will be tested in the reconditioning of a sandpit in Saint-Joseph-de-Lévis. The possibility of making a bog more attractive to the American Black Duck by altering its acidity and its topography are the subject of an experiment at Isle-Verte. Furthermore, the stabilization of a portion of the shoreline in the wildlife reserve located at the Îles-de-la-Paix in Lake Saint-Louis, near Montreal, by means of bio-engineering techniques, is in the experimental phase.

"These projects generally are not aimed at returning large sites to their original state," explains Denis Lehoux, "but their results enable us to plan intervention scenarios for the future. In particular, we are testing techniques that are perhaps new here, but that have been successfully used elsewhere in Canada or outside the country. They are gentler and correspond better to the expectations of the public and of the actors concerned with the ecosystem of the St. Lawrence. These experimental operations make it possible to develop a technology at a much more modest cost than that of the more traditional methods of intervention."

A New Restoration Guide to be Published in French: Guide d'intervention en restauration naturelle des rives du Saint-Laurent... entre Cornwall et l'île d'Orléans

PUBLICATION PLANNED FOR THE SPRING OF 1996

An inventory of the banks of the St. Lawrence conducted in 1994 by Les Consultants Argus led to the observation that nearly 26% of the natural shoreline of the River is currently eroding, and that 45% of the banks are covered by traditional protective structures. The need to protect and restore these deteriorating natural shoreline areas is the reason for the production of the *Guide d'intervention en restauration naturelle des rives du Saint-Laurent... entre Cornwall et l'île d'Orléans*. Designed from a highly practical viewpoint, this guide is intended as a planning tool for restoration projects and, as indicated by its title, essentially presents "natural" techniques emphasizing the use of plant cover. A cartographic document dividing the St. Lawrence into four sections, from Cornwall to the Île d'Orléans, and indicating the sites requiring restoration work, will be published at the same time. This project is being piloted by Environment Canada in partnership with the Ministère des Transports du Québec, the Société d'énergie de la Baie-James, Ducks Unlimited and Les Consultants Argus.

The Guide is divided into three parts: (1) a presentation of the ecological and economic importance of the shoreline habitats of the St. Lawrence, their current state and the main erosion factors; (2) the four steps in planning and conducting a restoration project: a description of the shore to be restored, choice of techniques, technical and administrative steps, implementation; and (3) a presentation of 12 eco-engineering techniques. "These techniques constitute interesting solutions to replace the traditional shoreline stabilization techniques," explains Lucie Côté, responsible for the coordination and editing of the Guide at Argus. "They offer the advantages of having been tested and adapted to the climatic, hydrodynamic and ecological conditions of the St. Lawrence shorelines within the framework of the St. Lawrence Vision 2000 plan."

Intended above all for municipalities and organizations wishing to implement natural shoreline restoration projects, the Guide has been successfully popularized and will be of interest to all who are concerned about the St. Lawrence River. It will be launched in the spring of 1996 by Environment Canada.

For information, please contact: Canadian Wildlife Service, Environment Canada, 1141, route de l'Église, Ste. Foy (Québec) G1V 4H5.

Decontamination of the Lachine Canal

As the ancestor of the St. Lawrence Seaway, the Lachine Canal has considerable heritage value and recreational potential.

After it was closed in 1970, the Lachine Canal lost its role as a channel of communication, but kept its historical interest and its popular magnetism. Since the Canal served as the cradle of industrial activities in Canada for several decades, a large quantity of contaminated sediments was deposited in it. These sediments do not pose a significant risk to the local population or the users of the site, but may have an impact on plant and animal life, ultimately leading to impact on humans. Without intervention, no improvement in the chemical composition of the contaminated sediments is anticipated.

Activated during the St. Lawrence Action Plan (SLAP) in 1988, the project to decontaminate the Canal has advanced considerably, taking into account its complexity. The project was imperative as a reflection of the will of governments to "clean up their own backyard" and produces undeniable technological and social benefits.

The Current Proposal

In 1989, in view of the scale of operations and the public interest in the case, Parks Canada asked to have its project submitted to a public examination by an environmental assessment committee. The Société du Vieux-Port de Montréal made a similar request a short time later. Because of the provincial government's jurisdiction over part of the Lachine basin located upstream, the Ministers of the Environment for Quebec and Canada came to an agreement to have the project as a whole submitted to a joint public examination to fulfill both the federal requirements and those of Quebec.

After public consultations, in May 1991 the Joint Commission issued its final directive to the project's promoters for the preparation of an impact study. In support of this impact study, several additional studies were conducted, covering, among other things, the nature of the banks of the canal, the anticipated use and an examination of technological procedures other than encapsulation.

The environmental assessment report was presented to the Joint Commission on November 22, 1993. The Commission judged that additional information was necessary, and in April 1994 it issued a statement of the shortcomings of the report. The developers responded to this statement by filing complementary information to the environmental assessment before the Commission, on March 2, 1995.

Through a communiqué on April 5, 1995, the Commission indicated that it considered the impact study as a whole to contain all the information required to hold a public hearing. It informed the Minister of the Ministère de l'Environnement et de la Faune of its decision.

Six decontamination options were considered in the preparation of the impact study. The information in the study indicated that encapsulation in the banks was technically feasible; it constituted the option that would lead to the greatest environmental gain, to the best control in future of the situation in the study area, and at a lower cost in relation to most other options.

According to the option proposed, the encapsulation of the sediments would consist in confining them in leakproof retention tanks built within the banks of the canal itself. The bottom and walls of the tanks would be covered by leakproof synthetic membranes so as to isolate the sediments. The latter would decant into these tanks after having been excavated by means of dredging; the surplus water would flow into the canal after passing through a filtration membrane. Once the sedimentation was completed, the tanks would be covered with a semi-permeable geomembrane allowing the departure of gases produced by the decomposition of the organic material present in the sediments. All of this would be covered with clean materials.

The Next Step: A Public Hearing

According to the agreement between the two Ministers of the Environment, the next step would consist of a public hearing held in accordance with Quebec's procedure for public hearings. The responsibility for initiating this step falls to Quebec's Ministre de l'Environnement et de la Faune, Mr. Jacques Brassard, but as of this writing, he had not yet filed the request.

Once the public hearing is terminated, the report will be issued to Quebec's Ministère de l'Environnement et de la Faune, and to the Ministers of Environment Canada and Canadian Heritage, as well as those of Public Works and Government Services Canada (as Minister responsible for the Port of Montreal), who will make it public within 60 days of its filing. The joint decision on the implementation of the project would then be issued by both governments.

The members of the Joint Environmental Assessment Commission for the project to decontaminate the Lachine Canal

Provincial Co-president

Ms. Claudette Journault, biologist and ecologist, acting President of the BAPE since May 1995

Federal Co-president

Mr. Michel Slivitsky, engineer, former Director of INRS-Eau, member of the Great Lakes Advisory Board and the Great Lakes International Joint Commission

Provincial member

Mr. Jean-Baptiste Serodes, engineer, specializing in sedimentology

Federal member

Mr. Patrice Dionne, engineer, former Director General (Québec) for Parks Canada and former Regional Director General for Environment Canada

Decontamination of the Port Areas of Montreal, Trois-Rivières and Québec City

Since the beginning of the St. Lawrence Action Plan (SLAP) in 1988, the ports of Montreal, Trois-Rivières and Québec City, as well as the Lachine Canal, have been examined and shown to represent highly contaminated sites in certain cases; there is no doubt of the need to restore them.

Several technical studies have therefore been conducted within the SLAP in order to determine the degree and extent of the contamination in these areas, and to examine options for intervention. The Restoration Component of St. Lawrence Vision 2000, in the wake of the SLAP, provides for the continuation of intervention activities, but limited resources have led management to prioritize the measures and to seek new approaches that will involve the financial participation of partners of the port areas in the choice and implementation of solutions.

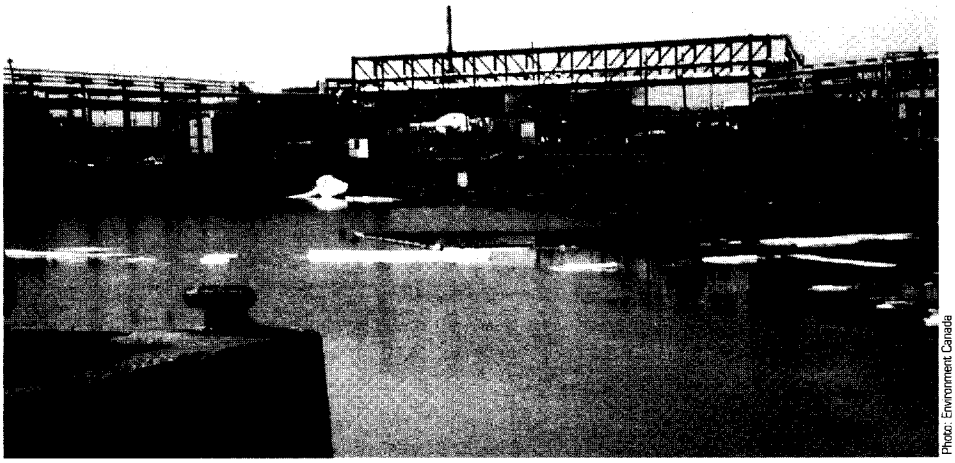

Photo: Environment Canada

Dock 103 in the Port of Montreal, located close to refineries in the eastern part of the city.

The Port of Montreal

Decades of intense port activities in Montreal have left their mark on the bottom of the St. Lawrence: the first site characterizations led to a preliminary estimate, in the sector upstream of the port, of the presence of nearly 700,000 m^3 of contaminated sediments. Before taking any restoration measures, however, intervention targeting the sources will be necessary.

The connection of all sewers in the Montreal sewage collection system, completed in 1994, made it possible to reduce the inflow of contaminants from that source into the port areas of Montreal, a measure that dealt with part of the sources of pollution and brought about a notable improvement in the situation. Furthermore, the hydrodynamic study of the river water in the port area led to the observation that the sediments accumulated in the sector upstream of the port are stable and that the risk of contaminants entering the river is rather low, despite considerable marine traffic. The urgency to act is therefore not demonstrated for this sector, whereas it is more urgent to intervene in two particular sites in the eastern sector of the port, namely those of Dock 103 and Dock 110, located near refineries in the eastern part of the metropolis.

On either side of Dock 103, the decomposition of organic matter results in highly contaminated sludge rising to the surface, particularly during the summer. In addition, the movements of ships with a high draft (over 5 m) agitate the bottom and release a portion of the hydrocarbons and other contaminants, such as metals, that pervade these sediments. In the bay of Dock 110, the inflow of contaminants comes from seepage from the adjacent soil. However, these inflows are kept at the surface by means of a barrier, and are recuperable. In both cases, at the request of the population, the authorities have conducted costly recuperation operations in order to reduce the dispersion of contaminants in the river, although this has not solved the main problem. Furthermore, temporary mitigation measures implemented by the Société du port de Montréal (SPM) and Shell Products Canada Ltd. since 1993 – the limiting of access to Bay 103 North to ships of less than 5 m draft and the installation of a permanent barrier closing Bay 103 North – do not constitute a satisfactory long-term solution, because the sediments are still present and the use of the docks has not been completely recovered. The problem is hence likely to surface again.

With a view to finding a concrete and realistic solution acceptable to all, a voluntary partnership approach has been adopted. The task force currently includes Shell Products Canada Ltd., Métallurgie du cuivre Noranda/Affinerie CCR inc., the Société du port de Montréal and Environment Canada; they may eventually be joined by other partners. The partners have commissioned a study to describe and measure the volume of the contaminated sediments in the sector. The exercise was financed equally by all members of the group. Carried out in 1994 and completed in February 1995, the study concluded that the volume of contaminated sediments was about 40,000 m^3, instead of the 150,000 m^3 anticipated.

"The second step involved selecting the options and developing realistic and socially acceptable intervention scenarios," explains Caroll Bélanger of Environment Canada, Quebec Region. "Steady progress is being made and the final report for this phase will be filed by the consultants retained – the firm ADS – by the end of 1995."

In the sector of Bay 110, where the sediments are mainly contaminated by hydrocarbons, Petro-Canada is continuing its pumping activities in the adjacent soil. SLV 2000 has not initiated any program of intervention there, but intends to handle the file ▶

with the same approach used for the sector of Dock 103, namely voluntary partnership.

The Port of Trois-Rivières

The port of Trois-Rivières presents a less worrisome situation than that of Montreal or Québec City. The hydrodynamics of the sector are such that the sedimentation is not permanent there and no intervention can be considered with regard to the river bottom there. Efforts will be directed toward better control of existing sources. For that purpose, SLV 2000 will meet with the port authorities in order to make them aware of improvements in techniques for the handling of bulk shipments. Particular attention in this regard could, in fact, make it possible to avoid the dumping of contaminants into the river during loading and unloading activities.

The Port of Québec City

Under the SLAP, the detailed description of the most problematic zones in the port of Québec City – the Louise Basin and the estuary of the Saint-Charles River – showed that the sediments at the bottom were highly contaminated by metals and wood fibre materials and that their volume amounted to some four million m^3. While the sediments in Louise Basin are fairly stable, those in the central and downstream sectors of the Saint-Charles River present a higher level of risk because they open onto the St. Lawrence. Although the situation is not urgent, the status quo is not acceptable. In the middle or long term, it will be necessary to restore these sectors.

The approach selected is the same as that adopted for the port of Montreal, namely the principle of voluntary partnership: cost sharing/paying polluter. Although the environmental assessment of the zone of prime concern (ZIP) of the Québec City and Chaudière-Appalaches region has been the subject of a public consultation, public awareness will undoubtedly increase and greater pressure will be brought to make environmental improvements in the port of Québec City. SLV 2000 has already met with the Société du port de Québec to find out how it intends to proceed in this case, which cannot remain inactive indefinitely. The increase in the size of ships will make certain work more urgent so as not to have a negative effect on other uses of the River, and this demands immediate consideration. ◀

Technical workshop on the integrated management of river and lake watersheds

Under the auspices of the Agence de coopération culturelle et technique (ACCT), a technical workshop on the integrated management of river and lake watersheds was held last November 6 to 10 in Cabourg, Normandy, attended by some fifty participants. This workshop, led by the coordinator of the network of managers of river and lake ecosystems, Jean Burton of Environment Canada, provided an opportunity for managers from a number of West African, Southeast Asian and European countries, as well as from Canada, to discuss their experiences and explore pathways for improving the management of watersheds, particularly in the areas of public consultation and project supervision in their respective countries.

Large cities and water: partnerships and strategic international issues

This workshop for reflection and dialogue organized by the International Secretariat for Water and the Conseil des relations internationales de Montréal was held on November 27, 1995, at the Biosphere in Montreal. It was attended by some fifty water specialists, NGOs, persons from the educational and research sectors and the public and parapublic sectors to deal with the search for new solidarities and collaboration projects between cities at the global level. In view of the fact that by the next century 50% of the world's population will live in urban areas and in their peripheries, the participants sought to develop new models for the organization and management of urban development, particularly in the area of water.

This was also an opportunity to present Montreal's expertise and resources in the field of water management in an international forum and to raise the possibility of Montreal's becoming, as of 1996, the seat of the World Water Council, an international organization that is being created.

Information: International Secretariat for Water: (514) 849-4262.

Qualité des eaux de la rivière Saint-Charles 1979 à 1995. Report and popularized brochure. Study conducted by Serge Hébert, biologist, Direction des écosystèmes aquatiques, Ministère de l'Environnement et de la Faune du Québec. (French-language version only.)

Chalutage expérimental dans l'estuaire moyen du fleuve Saint-Laurent de 1990 à 1993, 61 pages. Study conducted by Denis Fournier, Nathalie Gélinas and Fay Cotton, Direction de la faune et des habitats, Service de la faune aquatique, Ministère de l'Environnement et de la Faune du Québec. This study gives the results of the evaluation and description of the population of the Rainbow Smelt and the piscine wildlife in the middle St. Lawrence estuary for the period 1991 to 1993. (French-language version only.)

A copy of the above publications can be obtained by calling 643-3127, and for persons residing outside Québec City, 1-800-561-1616.

La consommation d'eau potable provenant du Saint-Laurent dans la région de Québec: comportements, connaissances et attitudes, 77 pages, and *Synthèse des connaissances sur les risques à la santé reliés aux divers usages du fleuve Saint-Laurent dans le secteur d'étude Québec-Lévis*, 113 pages. Studies carried out by the Centre de santé publique de Québec on behalf of the *Health Component* of St. Lawrence Vision 2000. A copy of these studies may be obtained by calling (418) 666-7000. (French-language versions only.)

Regional Assessment Québec City – Lévis, 65 pages, accompanied by three technical reports: *Synthèse des connaissances sur les aspects physiques et chimiques de l'eau et des sédiments du secteur Québec-Lévis*, 187 pages, *Synthèse des connaissances sur les communautés biologiques du secteur Québec-Lévis*, 194 pages, and *Synthèse et analyse des connaissances sur les aspects socio-économiques du secteur Québec-Lévis*, 202 pages. These documents may be obtained from Environment Canada's St. Lawrence Centre by calling (514) 283-7000. ▶

Industrial establishments in SLV 2000: a new information tool

An initial series of fact sheets on 50 of the 106 industrial establishments covered by SLV 2000 is now available. Entitled *Les établissements industriels – faits saillants*, the 50 sheets produced so far give a profile of each of the enterprises covered since the beginning of the program in 1988 (SLAP).

Behind the production of the fact sheets, there was an important phase of data gathering from the enterprises. The sheets present information on their processes, and describe effluents at the outset of the program, the treatments applied and the prevention and clean-up measures implemented. Through an examination of certain parameters, the percentage reduction in effluent toxicity is measured in comparison to the reference year (1988). The results of pollution reduction monitoring measured with the Chimiotox index and the PEEP is also covered. A section is devoted to technological development in the case of enterprises involved in a project. The environment of the establishment is also presented: what are the uses and resources to be preserved in the sector?

This series is being produced in the context of the activities of the *Protection Component* by the Technology and Intervention team of Environment Canada, in collaboration with the Ministère de l'Environnement et de la Faune du Québec. The result of ongoing collaboration between government and businesses, this working tool brings together data on the reduction of toxic liquid effluents and the virtual elimination of releases of persistent toxic substances.

The series *Les établissements industriels – faits saillants* brings together a mine of useful information for all who are active in the field of industrial clean-up, and will contribute to making known the results of SLV 2000 in the area of environmental protection.

Contact: Isabelle Bouchard
Environment Canada
Technology and Intervention
(514) 283-3404 or the regional offices of MEF

CONTACTS

Partnership and knowledge transfer
Michel P. Lamontagne
Environment Conservation Branch
Environment Canada
Quebec Region
(418) 648-7808

Jean Cinq-Mars
Environmental Protection Branch
Environment Canada
Quebec Region
(514) 283-0178

Decontamination of the port areas of Montreal, Trois-Rivières and Québec City and the Program for the Purification of Contaminated Federal Aquatic Sites
Caroll Bélanger
Environment Canada
Quebec Region
(514) 283-2339

Development plans and demonstration projects on restoration of wildlife habitats
Denis Lehoux
Canadian Wildlife Service
Environment Canada
(418) 648-2544

Decontamination of the Lachine Canal
Denis Veillette
Parks Canada
(418) 649-8250

AGENDA

- **January 30**, 1996
  ZIP Program
  Tabling of the environmental assessment on the study sector of the Saguenay River.

- **February 16** and **17**, 1996
  Public consultation organized by the Saguenay and Alma-Jonquière ZIP Committees, following the filing of the report.

LE FLEUVE

NEWSLETTER
St. Lawrence Vision 2000

Le Fleuve is published by all the St. Lawrence Vision 2000 partners. It is distributed free of charge to individuals, companies and organizations concerned by the protection, conservation and restoration of the St. Lawrence River. To subscribe, you may contact Nancy Lainé at Environment Canada, 1141, route de l'Église, 6th floor, P.O. Box 10,100, Ste. Foy, Quebec G1V 4H5. Tel: (418) 648-3444.

Management and Coordination:

Communications Component

St. Lawrence Vision 2000

Clément Dugas, Co-president of the Communications Harmonization Committee

Environment Canada

Luc Poirier, Director of Communications and Marketing and Co-president of the Communications Harmonization Committee

Ministère de l'Environnement et de la Faune du Québec

Editing and Production:
Communications Science-Impact

ISSN 0847-5334

Legal Deposit:
National Library of Canada
Bibliothèque nationale du Québec
4th Quarter of 1995

Le Fleuve est aussi disponible en français.

Canada Québec