LE FLEUVE

NEWSLETTER
ST. LAWRENCE VISION 2000

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IN TUNE

Biodiversity

The Hautes Gorges de la Rivière Malbaie Park and Grands Ormes Ecological Reserve

Two new protected areas in Charlevoix: helping to maintain biodiversity in the region.

The Lac St Pierre Biosphere Reserve

The Lac St Pierre Biosphere Reserve: the invaluable natural heritage site receives new recognition thanks to the mobilization of numerous partners.

Community Involvement

ZIP Chronicle

Alma–Jonquière ZIP (Area of Prime Concern): a project raising shoreline resident awareness of the use of pesticides in the Kénogami reservoir district.

The Hautes Gorges de la Rivière Malbaie Park and Grands Ormes Ecological Reserve

Protected Areas that Maintain Biodiversity

Nature has created magnificent landscapes in the Charlevoix region, where the St Lawrence estuary, forests and mountains come together and many animal and plant species thrive. The Hautes Gorges de la Rivière Malbaie Park and the Grands Ormes Ecological Reserve are two protected areas that are helping to preserve biodiversity in the Charlevoix region. In conjunction with Biodiversity component activities under the St Lawrence Vision 2000 Action Plan (SLV 2000), the Habitats Subcommittee has added these areas to its program for their potential to protect the habitat of characteristic species of the St Lawrence River and its tributaries.

When governments choose to designate a protected area, they acknowledge the value of the natural environment and implement measures to ensure the permanent protection of the area's biological diversity.

Protected areas are special because of their roles and the activities permitted within their limits. For instance, Quebec parks are created to ensure the permanent protection of representative or exceptional features of the province's natural heritage. The public can take part in interpretation or recreational activities in the areas to discover this heritage.

Ecological reserves are created in order to permanently and fully conserve representative areas that are ecologically and genetically diverse examples of the natural heritage. They also protect threatened or vulnerable plant and animal species. Ecological reserves are accessible only for scientific

SUMMARY

Canada

Saint-Laurent Vision 2000

Québec

The Hautes Gorges de la Rivière Malbaie Park
Photo: Société des établissements de plein air du Québec (SÉPAQ)

research, educational and management purposes with the authorization of the Quebec Department of the Environment, which is responsible for their creation and management.

The Hautes Gorges de la Rivière Malbaie Park

The Hautes Gorges de la Rivière Malbaie Park was created by the Quebec government in 2000 and is operated by the Quebec Wildlife and Parks Agency, which is responsible for developing and managing provincial parks for conservation, education and recreational activities.

SLV 2000 partners have acknowledged the contribution of the Hautes Gorges de la Rivière Malbaie Park to the maintenance of biodiversity in and along the St Lawrence River. The park encompasses 13% of the watershed of the Malbaie River, which drains into the St Lawrence estuary at La Malbaie. The 224.7-km^2 (22,470-ha) park is the core area of the Charlevoix World Biosphere Reserve, which was designated by UNESCO in 1988.

The government's main objective in creating the Hautes Gorges de la Rivière Malbaie Park, named after the high gorges of the Malbaie River, was to ensure that one of Quebec's natural monuments and its landscapes would be preserved. The park contains a number of remarkable ecological features, the result of mild weather conditions in the valley, where stands of hardwood trees not usually found in the region thrive. A number of typical alpine environment habitats can also be found within a limited area.

The park's topography shapes the landscape in many areas, including the "hauts monts" and the Malbaie River valley. The "hauts monts" area is home to the highest summits in the park—Mont des Érables, Mont Élie and Mont Jérémie. The wildlife in the area is typical of the boreal forest, such as American marten and moose, while brook trout live in the rivers and streams. The Barrow's Goldeneye, a species of special concern on the List of Species at Risk in Canada, has also been spotted on the area's small, high-altitude lakes during its breeding season.

The Malbaie River flows through the middle of the park in a deep, narrow glacial valley. The valley walls are 800 m high in some areas. Aquatic species, including lamprey and Atlantic salmon, are found in the river. The latter was recently re-introduced after an absence of over 80 years. Osprey and Bald Eagles are also believed to frequent the valley. The Bald Eagle is on the Quebec list of species likely to be designated as threatened or vulnerable.

Logs were floated down the Malbaie River until 1985. In fact, the highest rock wall along the river was nicknamed the "Acropole des draveurs" [the log drivers' Acropolis] by Monseigneur Félix-Antoine Savard, author of a 1937 novel about log drivers entitled *Menaud, maître-draveur*. The 800-m high wall is a fairly rare phenomenon in southern Quebec.

In terms of plants, the holly-fern, a rare species in the region, has been spotted on the slopes of the Malbaie River valley. Softwood species, such as balsam firs and spruces, are abundant, but hardwood species,

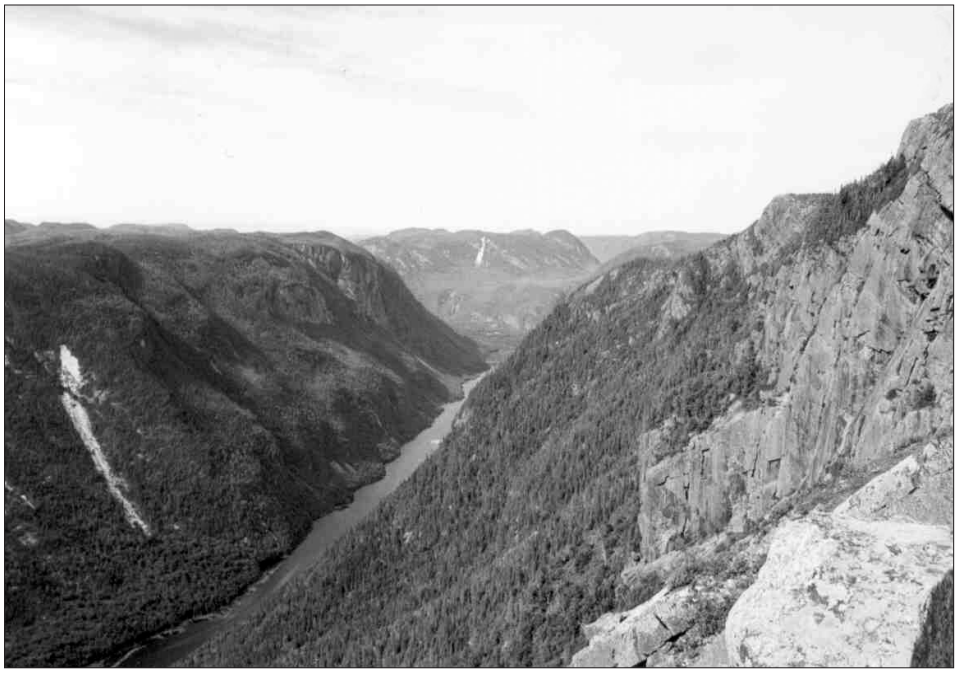
such as sugar maples and American elms, can also be found, which is surprising since they are north of their main range.

The Grands Ormes Ecological Reserve

The unusual existence of a hardwood forest at the foot of the Malbaie River was the reason for creating the Grands Ormes Ecological Reserve in 1994. Now surrounded by the Hautes Gorges de la Rivière Malbaie Park, the ecological reserve continues to be managed under a separate legal framework.

The Grands Ormes Ecological Reserve encompasses the south face and part of the summit of Mont des Érables and its topography is marked by a sudden rise in elevation from 200 to 1,000 m over a distance of 3.5 km. The reserve protects a sample of the complete altitudinal sequence of Charlevoix mountain vegetation. A stand of sugar maples and old American elms measuring an impressive 130 to 140 cm in diameter flourishes in the milder microclimate at the foot of the mountains. Some of the great elms after which the reserve was named are over 400 years old. This type of stand is extremely rare at such an altitude, where softwood trees are more common. However, some of the elms have died in recent years, falling victim to Dutch elm disease or, in some cases, simply old age.

Photo: Ministère de l'Environnement du Québec



The Malbaie River Canyon seen from the Acropolis
Photo: Réal Carpentier, ministère de l'Environnement du Québec

Higher up, yellow birch, white birch-balsam fir and black spruce stands can be observed. Broad swaths of arctic alpine vegetation are found at the top. The strong winds and very thin soil at this altitude give the spruce and fir trees their stunted look.

Harmonious Management

When the Hautes Gorges de la Rivière Malbaie Park was created in 2000, the provincial Department of the Environment and the Quebec Wildlife and Parks Agency worked together to alter the boundary of the Grands Ormes Ecological Reserve in order to simplify management of both areas. The Habitats Subcommittee's activities in this regard led to changes in the area of the ecological reserve, which was increased from 7.5 km^2 (750 ha) to 9.2 km^2 (920 ha).

Today, the landscape of the Grands Ormes Ecological Reserve can be observed from some of the hiking trails in the Hautes Gorges de la Rivières Malbaie Park. In future, park and ecological reserve managers intend to work together to develop educational activities in some areas of the reserve with a view to informing visitors about the value of the reserve and the specific constraints related to its full protection status.

The Hautes Gorges de la Rivière Malbaie Park and the Grands Ormes Ecological Reserve are contributing to the development of the province's

The Grands Ormes Ecological Reserve
Photo: Réal Carpentier, ministère de l'Environnement du Québec

network of protected areas and helping to maintain the biodiversity of Quebecers' collective natural heritage.

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The Lake St Pierre Biosphere Reserve: Experimenting with and Demonstrating the Concept of Sustainable Development

Aerial view of the Lake St Pierre Biosphere Reserve
Photo : Normand Gariépy

The Lake St Pierre region received additional recognition for its natural heritage value in November 2000, when it was designated a Biosphere Reserve by UNESCO. All players in the region worked together on the project, which is expected to contribute to the sustainable development of a stretch of the St Lawrence River known for its exceptional biodiversity. St Lawrence Vision 2000 (SLV 2000) partners had a hand in the project's success by participating in the design of awareness and promotion tools.

The Lake St Pierre region encompasses a stretch of the St Lawrence River between Sorel and Trois Rivières approximately 480 km^2 in area. It contains 100 islands, a number of broad bays and a large stretch of open water. The forest cover is dominated by a stand of silver maples, which are increasingly rare in Quebec.

The Lake St Pierre floodplain is the largest freshwater plain in Quebec. During the spring floods, the St Lawrence overflows its banks, covering 70 km^2 of grassland, scrubland, riparian forest and farmland. Every spring, the floodplain serves as a staging area for more than 800,000 birds, including 350,000 geese and dabbling ducks that stop to rest and feed before heading north. It is the largest waterfowl staging area in eastern Canada.

The 62 km^2 of aquatic beds in the area are used extensively for feeding and breeding by local wildlife, such as amphibians, reptiles and fish.

Twenty-seven threatened and vulnerable plant species grow in and around Lake St Pierre, which is also frequented by two species of fish and twelve species of birds that appear on the Quebec list of endangered species.

More than 85,000 people live in the region and a number of human activities are carried out, generally without interfering with biodiversity (farming, hunting, fishing, wildlife management, resorts, pleasure boating, shipping, business and light industry).

Over a Decade of Mobilization

The plan to achieve biosphere reserve status for Lake St Pierre was initiated in the early 1990s by the *Société d'initiative et de conservation du Bas-Richelieu* [Lower Richelieu initiative and conservation corporation]. An audiovisual presentation was developed and a number of information meetings were held, with financial support from Environment Canada's Canadian Wildlife Service (CWS), in order to convince regional players to come on board. Right from the beginning, the project received support from many political and economic partners in the greater Lake St Pierre region.

Photo: Normand Gariépy

A number of government departments, private companies and co-operative organizations, including the CWS, the Quebec Department of the Environment and Wildlife, the Fondation de la faune du Québec and the Lake St Pierre ZIP (Area of Prime Concern) Committee, were called on to help the *Société d'initiative et de conservation du Bas-Richelieu* get the project specifications ready for submission to UNESCO.

Biosphere reserves are designated by UNESCO under its Man and the Biosphere (MAB) Program. Through this recognition, UNESCO underscores a region's potential for the application of sustainable development principles. Biosphere reserves serve three main purposes:

- they contribute to the conservation of landscapes, ecosystems, species and genetic variation;
- they foster economic and human development that is socio-culturally and ecologically sustainable;
- they provide support for research, monitoring, education and information exchange related to local, national and global conservation and development issues.

As of September 31, 2001, UNESCO had designated 411 biosphere reserves in 94 countries. The Lake St Pierre Biosphere Reserve is thus a member of a prestigious network of internationally recognized protected areas. Within the international network, research is conducted to find the best ways to protect and use resources without destroying them.

The Lake St Pierre region joined the network on November 9, 2000. The official ceremony was held on June 8, 2001 in the presence of a number of officials. It joins two other biosphere reserves in Quebec: the Mount St Hilaire Biosphere Reserve in the Montérégie, which was designated in 1978, and the Charlevoix Biosphere Reserve, which was recognized in 1988.

Components of a Biosphere Reserve

Biosphere reserves are organized into three interrelated zones, known as the core area, the buffer zone and the transition area. The core area consists of one or more protected areas where industrial resource development is prohibited or strictly limited. By studying what is happening, we can see how nature develops when it is subject to the least amount of human intervention possible. A comparison can then be made with what happens in areas where human communities do develop resources. The core area of the Lake St Pierre Biosphere Reserve is 31.35 km^2 and includes two protected areas:

- the Grande Île Wildlife Sanctuary, protected under the Quebec Act Respecting the Conservation and Development of Wildlife. The sanctuary is home to the largest heronry in North America, with 5,000 herons coming to breed every year;
- the National Defence migratory bird sanctuary, protected under the federal Migratory Bird and National Defence acts. During the fall migration, the majority of waterfowl that stop over at Lake St Pierre, roughly 150,000 birds, stay in the sanctuary.

The 124.09 km^2 buffer zone consists of publicly and privately owned island and coastal habitats. The public land belongs to the federal and Quebec governments, while the private land is protected through acquisition for conservation purposes. Resorts, farming, hunting, trapping and bird watching are permitted in the buffer zone.

The 324.56-km^2 transition area runs right around Lake St Pierre. It is privately owned and development is subject to numerous urban planning and zoning by-laws of the towns, municipalities and regional country municipalities in the area. It is used for a wide variety of purposes.

Lake St Pierre
Photo: Normand Gariépy

The Biosphere Reserve: Strengthening Efforts to Protect Biodiversity in Lake St Pierre

According to Normand Gariépy of the Coopérative de solidarité de la réserve de la biosphère du Lac-Saint-Pierre, “The co-operation that helped us obtain biosphere reserve status for the region helped to bring about a different way of thinking in favour of the objectives of sustainable development.”

In future, the international recognition that the region gains will serve as a catalyst, facilitating the implementation of many of the projects planned among the current development instruments currently available. For instance, the environmental remediation action plan (ERAP) developed by the Lake St Pierre ZIP Committee could benefit from the growing momentum in support of conserving and enhancing this stretch of the St Lawrence.

Lake St Pierre is already one of the most studied natural environments in Quebec. Throughout the various phases of SLV 2000, in particular, hundreds of researchers have visited the ecosystem. The results of their research will help to achieve the biosphere reserve’s third objective, which involves the concrete demonstration of conservation and sustainable development. For instance, Lake St Pierre is the only biosphere reserve with an international navigable waterway (the St Lawrence Seaway) running through it. Waterway managers from other countries will be able to form ties with Quebec players involved in implementing a sustainable navigation strategy for the St Lawrence.

A Focus on Ecotourism

The *Coopérative de solidarité de la réserve de la biosphère du Lac-Saint-Pierre* [Lake St Pierre solidarity co-operative] is the non-profit organization in charge of getting the reserve up and running. It has already developed a blueprint for the reserve’s development, which makes the area’s three purposes the starting point of all of its projects.

One of the co-operative’s mandates is to increase economic development in the Lake St Pierre region and it is banking on ecotourism to achieve this goal. The organization sees ecotourism activities as a way to protect, restore and keep the natural ecosystems attractive while stimulating the economy of the local communities taking care of their natural assets.

Fishing on Lake St Pierre
Photo: Normand Gariépy

The co-operative has launched a fundraising campaign, which has already enjoyed a fair amount of success, collecting over $100,000 to date for the next three years. Its financial partners are QIT-Fer et Titane Inc, James Richardson International and the Montreal Port Corporation.

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Source:

GIGNAC, H, L GAGNÉ, and N GARIÉPY. 1999. *Formulaire de proposition — Projet de réserve de biosphère du Lac-Saint-Pierre*, Société d'initiative et de conservation du Bas-Richelieu, 111 pp.■

Chronicle
ZIP Committees in the Heat of the Action

The Alma–Jonquière ZIP Committee

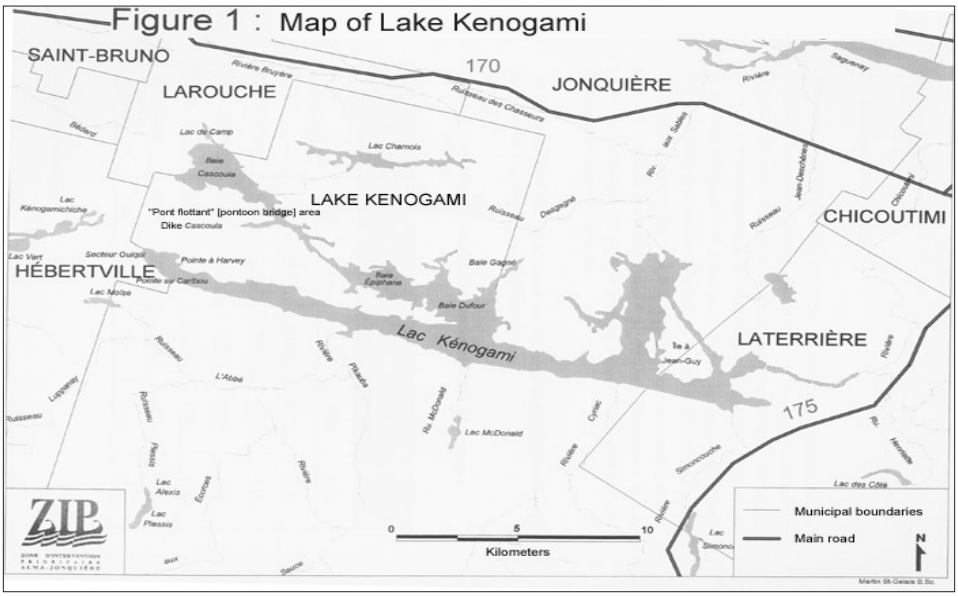

Figure 1 : Map of Lake Kenogami

Working for a Better Environment for Lake Kenogami

By Guylaine St-Pierre and Gaétane Tardif

Lake Kenogami is located in the Saguenay–Lac St Jean region. Its shores are of great concern to the Alma–Jonquière ZIP (Area of Prime Concern) Committee. In the summer of 2001, the ZIP Committee undertook a plan to make lakeside residents aware of the consequences of pesticide use and shoreline revegetation techniques in order to encourage action to improve the environment of Lake Kenogami.

Situated approximately 10 km south of Jonquière, Lake Kenogami is 55.8 km^2 in area and 43 km long. It extends eastward to the Des Roches portage in the municipality of Laterrière and westward to Cascouia Bay in the municipality of Larouche. Its main tributaries are the Simoncouche, St Cyriac, Pikauba and Cascouia rivers and it empties into the Aux Sables and Chicoutimi rivers, which flow into the Saguenay River.

Blamed for the floods that devastated the Saguenay region in July 1996, Lake Kenogami is still a source of controversy among users with regard to its ideal water levels. In addition, there have been a number of violations of the Quebec government's protection policy for lakeshores, riverbanks, littoral zones and floodplains, which was adopted in 1987.

Becoming Better Acquainted with the Lake's Environment

In light of these issues, the Alma–Jonquière ZIP Committee was mandated to conduct a study of the lake in 2001. The project was carried out in co-operation with the Quebec Department of the Environment (MENV) and the municipalities of Larouche and Lac Kénogami. A number of problems observed on the shores of the lake were described and analysed. A management plan was proposed for each problem, including costs and potential environmental impacts.

In the Cascouia Bay and Du Camp Lake areas, the ZIP Committee studied sections of shoreline that had been artificialized and assessed their potential for naturalization. It also looked at cleaning up the bays because trees that had been submerged when the lake was created are slowly rotting, causing problems for lakeside residents. In the Ouiqui and Pont flottant [pontoon bridge] areas, sections of eroded shoreline were categorized according to six slope profiles based on the problems observed, while the Committee studied erosion on the shoreface in the Dufour Bay area and suggested ways to rebuild it.

The aim of the ZIP Committee's management plans is to restore the shoreline's natural character and preserve the quality of Lake Kenogami. It advocates planting native species (eg, red-osier dogwood, broadleaf meadowsweet, cranberry viburnum and American elder) to control erosion and naturalize the shoreline. When required, artificial stabilization techniques are to be carried out using materials suited to the natural environment.

Funding provided by the EcoAction Program will be used to naturalize the shoreline of 60 lakeside properties and make residents aware of the environmental impact of pesticides between now and fall 2002.
Photo: Guylaine St-Pierre

A Pesticide-Free Lawn Can Be Yours!

In the study, the ZIP Committee brought to light the problem of intensive deforestation on Lake Kenogami's shores and the large stretches of lawn that have been planted along the lake. "A number of lakeside residents have duplicated their urban landscaping practices along the shoreline," explained Guylaine St-Pierre, project leader for the Alma–Jonquière ZIP Committee. "Unfortunately, people who want weed-free lawns are using pesticides and other chemicals, often without realizing the hazards associated with their use for human health and the lake's plants and animals," she added.

As a result, the Alma–Jonquière ZIP Committee is striving to promote a reduction in lawn pesticides and the restoration of a strip of vegetation along the shore. It has received funding from the EcoAction Program and co-operation from a number of community partners to achieve these aims.

The project began in spring 2001 and is to be carried out over two years. During phase one, the ZIP Committee met with 30 lakeside property owners; it plans to meet the same number in phase two, which will begin in summer 2002.

The property owners visited were given a Pesticide Free Naturally action kit produced by the Coalition for Alternatives to Pesticides. The kit contains fact sheets on the effects of pesticides on the health of humans and household pets, tips on producing a beautiful, chemical-free lawn, information on plant and animal biodiversity that contribute to a healthy lawn, and much more. Each property owner was then given a management plan with a view to encouraging the creation of a strip of vegetation along the shoreline by planting native species. They also received financial assistance to offset the cost of some of the trees and bushes.

Restoring the Lakeshore's Natural Character

In order to encourage other property owners to get involved in the restoration of the shores of Lake Kenogami, MENV's Saguenay–Lac St Jean regional directorate developed an audiovisual presentation illustrating riprap and soil bioengineering techniques. The work depicted in the video was carried out by the Alma–Jonquière ZIP Committee in fall 2001.

Existing riprap on a section of private land bordering the lake was removed. Unstable and unattractive, it consisted of stones, pieces of concrete and granite of all sizes held together with wire screening and boards. The bank was then resloped and stabilized using appropriate-sized rocks. Finally, in order to make the slope even more stable and gradually cover the riprap, native trees and shrubs bought from a nursery were planted on top of the slope.

Another stabilization technique was also featured in the video. To counter erosion along another stretch of shoreline, a strip of vegetation was created using bundles of brushwood called fascines. The fascines were laid on the bank perpendicular to the slope, to which they were solidly attached with stakes. When covered with soil, the plant segments quickly regenerated and natural vegetation took root. The video shows that it is possible to stabilize shoreline using common riparian plant species, such as cranberry bushes.

"Next spring, we plan to invite all lakeside residents to view the work we've done, in the hopes of

The Alma–Jonquière ZIP Committee, with the financial support of the Quebec Department of the Environment, naturalized the shoreline of a property on Lake Kenogami. This photo shows the area before the work was carried out.
Photo: Guylaine St-Pierre

The audiovisual presentation illustrating the work carried out will encourage lakeside residents to restore their shorelines to preserve the lake's resources.
Photo: Guylaine St-Pierre

encouraging them to carry out their own naturalization projects along the shores of Lake Kenogami," said Ms St-Pierre, adding that the Alma–Jonquière ZIP Committee is now looking at the possibility of taking a similar approach along other bodies of water in the region that are facing similar problems.

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Sources:

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News in BRIEF

Public Consultations by the Sud-de-l'Estuaire ZIP Committee

On November 16 and 17, the Sud-de-l'Estuaire ZIP Committee (ZIP: Area of Prime Concern) held public consultations in Rivière-du-Loup. The consultations were aimed at determining priorities of action that will be used to elaborate an Ecological Rehabilitation Action Plan (ERAP). More than a hundred people were present at this event. The participants were from many sectors of society: environmental, health, socioeconomic, municipal and tourism.

Government representatives from both Canada and Quebec, partners in the St Lawrence Vision 2000 Action Plan presented the biological, physical, chemical and socioeconomical characteristics of the area and provided an overview of the knowledge on human health risks.

Human Health

In November, the Human health Component of SLV 2000 released the results of three new scientific studies:

- *Shelfish-related disease surveillance programme in Eastern Québec, Canada*
- *Health risks related to waterfowl and fish consumption in duck hunters from the St Lawrence River, Québec Canada*,
- *Results of the Survey on St. Lawrence Waterfowl Hunters' Consumption of Migratory Birds and Sport Fish and Health Risk Analysis*

For further information or to order these reports, contact Christiane Gagné, Communication Advisor, Health Canada, at the following number: (514) 283-0949.■

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