LE FLEUVE

NEWSLETTER
ST. LAWRENCE VISION 2000

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Health risks associated with eating St. Lawrence waterfowl

Photo : Léo-Guy de Repentigny

During the 1997-1998 season, about 30,000 people hunted migratory birds, mostly along the banks of the St. Lawrence River. Each hunter spent an average of nine days hunting waterfowl and bagged an average of thirteen birds. Migratory birds are the same as all the other biological resources of the St. Lawrence in that they may be contaminated by the pollutants that affect the quality of the ecosystem. The Public Health Research Unit at the Centre hospitalier universitaire du Québec (CHUQ) has been involved in assessing the health risks associated with eating waterfowl.

In 1995, Health Canada issued a directive to the effect that contaminant concentrations found in waterfowl across the country were below detection limits or very low, and that this contamination did not pose a health risk to waterfowl eaters. "However, no directive specifically pertaining to St. Lawrence waterfowl was ever issued," says Jean-François Duchesne, of the CHUQ Public Health Research Unit. "To find out whether the national assessment applied to the St. Lawrence basin, we conducted a study to evaluate the health risks based on contamination data that was representative of birds taken by hunters along the St. Lawrence."

Contamination of birds along the St. Lawrence

Since 1988, the Canadian Wildlife Service has been compiling contamination data on 22 species of waterfowl, including the Greater Snow Goose, the Canada Goose,

IN TUNE

Health risks associated with eating St. Lawrence waterfowl

The CHUQ Public Health Research Unit launched a survey of waterfowl eating habits in Quebec in January 2000.

Participation of Riverside Communities: Success through Co-operation and Partnership

Communities along the St. Lawrence and their ZIP committees have been so successful in achieving SLV 2000 objectives that, "beyond any doubt, joint management of the St. Lawrence River is possible," says Marc Hudon of Stratégies Saint-Laurent.

ZIP Chronicle

The Lake St. Pierre ZIP committee is involved in a conservation plan to save the green dragon, a herbaceous perennial plant species that is representative of the region's biodiversity.

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a number of dabbling ducks (Black Duck, Mallard, Green-winged Teal, Northern Pintail, Blue-winged Teal, etc.) and diving ducks (Lesser Scaup, Golden-eye, Greater Scaup, Ring-necked Duck, etc.).

Contaminant concentrations found in St. Lawrence wildfowl are generally low and often below detection limits. However, some samples have contained relatively high concentrations of mercury, selenium, lead and PCBs.

Among the diving ducks, for example, Mergansers have the highest mercury contamination levels, particularly around Montreal. Dabbling ducks are generally less contaminated by mercury than diving ducks because diving ducks eat more animals, such as mollusks and fish, which are usually more contaminated than the plant matter that dabbling ducks feed on.

The complicated business of calculating health risks

The health risk associated with eating wildfowl depends on several factors. First, it depends on how contaminated the migratory birds are. It is also a direct result of the level of exposure to contaminants, which depends chiefly on the quantity of bird flesh eaten, although it also depends on exposure to other foods and the air and water in a given region.

CHUQ Public Health Unit researchers used various scenarios to assess the degree of exposure to various contaminants of an average-sized hunter eating St. Lawrence waterfowl. The exposure scenarios were based on monthly consumption of between four and eight 230-g meals of waterfowl, which is a high consumption rate.

Canada Geese
Photo : Léo-Guy de Repentigny

Green-winged Teal
Photo : Pierre Bernier

Northern Pintails
Photo : Canadian Wildlife Service

Greater Snow Geese
Photo : Léo-Guy de Repentigny

"Also, knowing that fish are people's main source of exposure to chemical contaminants in the St. Lawrence, we incorporated into the scenarios exposure values representing four or eight fish meals per month," added Mr. Duchesne. "The exposure levels calculated were then compared with the acceptable daily intakes (ADI) recommended by health authorities."

In the case of mercury, for example, the calculations show that the exposure associated with eating eight or fewer meals of waterfowl each month over an entire lifetime is below the recommended ADI. The only exception is Mergansers because, depending on where they are harvested, a person eating four to eight meals of these birds per month throughout their lifetime might exceed the recommended ADI. However, we can safely assume that the number of people who eat enough Merganser flesh to exceed the ADI is very low, since it is not highly prized by hunters and the species is therefore not sought after.

Reassuring conclusions

"Based on the information available concerning the size of the migratory bird harvest and the extent of waterfowl consumption, we think that the health risks associated with eating St. Lawrence waterfowl are probably negligible for the vast majority of consumers of this type of game," said Mr. Duchesne. "However, although we have a fairly accurate overview of the extent of waterfowl contamination thanks to Canadian Wildlife Service data, we know far less about the waterfowl eating habits of the hunting population."

The CHUQ Public Health Research Unit has launched a survey of eating habits in order to remedy this information gap. In January 2000, one thousand Quebecers who obtained hunting licenses in the fall of 1999 will be

asked to answer questions about their waterfowl eating habits. The results of the survey will make it possible to conduct a study of health risks based on complete, representative data. “We will then be able to determine whether guidelines on the eating of these birds should be issued to protect people from contaminants,” said Mr. Duchesne.

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Participation of Riverside Communities: Success through Co-operation and Partnership

In 1993, when the second phase of the St. Lawrence Vision 2000 Action Plan (SLV 2000) was launched, riverside communities were asked to formally work together with governments to protect and restore the St. Lawrence River. When asked to describe how ZIP committees have contributed to the success of SLV 2000, Marc Hudon, President of Stratégies Saint-Laurent, emphasized the high quality of co-operation, the importance of the partnerships established, and the environmental, social and economic benefits.

Riverside communities have taken part in saving the St. Lawrence mainly through the Priority Invervention Zone Program. Known by their French acronym, ZIPs, these thirteen zones comprise segments all along the river, and also take in the Saguenay River and Chaleur Bay. The aim of the ZIP program is to promote knowledge of the St. Lawrence in order to encourage local initiatives, based on co-operation and partnership, to protect, restore, conserve and develop the river's uses and resources. ZIP committees have also been working with a number of other organizations, in some cases for many years, to improve the health of the St. Lawrence ecosystem.

Stratégies Saint-Laurent, a non-governmental organization that has been active since 1989 in encouraging residents along the St. Lawrence to work together, supports the ZIP committees and co-ordinates the setting up of new committees when local communities clearly demonstrate an ability to work together and the desire to play an active role in saving the St. Lawrence.

Fertile ground for discussion and co-operation

"It might have seemed a risky proposition in the eyes of government decision-makers to rely on the potential of riverside communities to help achieve the objectives of SLV 2000. Taking charge of their environment in this way represented a substantial challenge to these communities," said Mr. Hudon.

But believing in the potential of riverside communities has paid off, as shown by the diversity of stakeholders who now contribute to the work of the ZIP committees. "The ZIP committees are multi-sectoral, co-operative organizations that really represent the region concerned, because they can rely on voluntary participation by municipalities, environmental groups, socio-economic organizations, companies and individuals. These volunteers have a concern not only for solving the problems along their segment of the St. Lawrence, but also for safeguarding the progress on the environment achieved in the last ten years; to this end, they work toward establishing a closer rapport with regional decision-makers and users and better partnerships with governments to harmonize action on behalf of the river."

"More and more, ZIP committees have been effective in promoting discussion and co-operation, able to mobilize stakeholders to successfully carry out increasingly complex projects. ZIP committees should really be used to their full potential for discovering, understanding and developing new methods with respect to the integrated management, protection and effective, responsible use of our 'client', the St. Lawrence," says Mr. Hudon.

A strong, productive partnership

Photo : Upper St. Lawrence ZIP Committee

According to the president of Stratégies Saint-Laurent, the credibility acquired by the ZIP committees is visible in several ways. First, ZIP committees have been succeeding in putting task forces together to solve increasingly complex problems, and in convincing skeptical authorities to participate. "A few years ago, for example, it would have been a lot harder to set up a round table on contaminated sediments in Lake St. Louis and to get the latest data on sediment quality in order to do restoration work. But the Upper St. Lawrence ZIP Committee and its partners have managed to do this."

The ZIP program's success is also made manifest in the extent and quality of the partnerships that the committees have established. "The ZIP committees laid the groundwork by making contacts and cultivating strong ties with a plethora of regional

organizations. Expanded partnerships are now possible. As an example, take the Chaleur Bay ZIP Committee. By sparking the interest of the government of New Brunswick, the committee's work has led to the creation of an interprovincial partnership to protect the marine environment."

Over the years, we see that the ZIP committees have acquired a certain degree of maturity, and have proven that they are able to represent riverside communities. "The ZIP committees have become the primary voice with respect to uses of the St. Lawrence," says Mr. Hudon, citing the example of dredging of shoals in the Seaway. "Everyone wins when discussions result in ways of proceeding that are respectful of all stakeholders' concerns, including riverside residents. This co-operation has formed the basis for continuing discussions with our partners under Phase III of SLV 2000.

Joint management of the St. Lawrence a feasible objective

It would thus appear that attempts to mobilize and encourage the participation of riverside communities have been beneficial, in more ways than one. First, public consultations

Photo : Gaétan Roy

for the purpose of developing Environmental Remedial Action Plans (ERAPs) have provided a significant means of creating awareness among riverside communities. Second, in addition to pursuing priorities identified for their areas, the ZIP committees have successfully completed a number of activities to protect the St. Lawrence and develop its uses. Between 1994 and 1998, ZIP committees were responsible for planting 115,780 trees and shrubs, cleaning up 880 km of shoreline, removing 1,957 tonnes of waste, stabilizing 3 km of riverbank, and restoring spawning grounds, among other things. In economic terms, a study carried out at the close of Phase II showed that for each dollar invested by SLV 2000 partners, $2.85 was invested by other partners.

"Finally, beyond the projects and direct environmental spin-offs, the St. Lawrence also benefits from community involvement because of the ties built between regional stakeholders and governments, as well as those now being forged with our neighbours in Ontario and the Great Lakes states," said Mr. Hudon, recalling that the St. Lawrence - Great Lakes ecosystem is an indivisible unit, especially when viewed in terms of sediment input, the Seaway, fluctuating water levels and transborder pollution of all kinds.

For all of these reasons and many others, the government partners have reaffirmed the importance of community involvement in Phase III of SLV 2000. "In recognizing the essential role that riverside populations play in ensuring the success of efforts to protect and conserve the St. Lawrence, the government partners of SLV 2000 have enabled stakeholders to find new ways of living together along the edges of this ecosystem. The success of the ZIP program, both in terms of environmental spin-offs and the mutual respect that now characterizes relations among stakeholders, shows beyond any doubt that joint management of the St. Lawrence is possible," said Mr. Hudon, adding that ZIP committees will continue to work with other environmental stakeholders to achieve this objective in order to save the St. Lawrence.

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Chronicle
ZIP Committees in the Heat of the Action

The Lake Saint-Pierre ZIP Committee

Saving the green dragon in the Berthier-Sorel region

In 1922, Brother Marie-Victorin discovered the first green dragon population in Quebec, on Nuns' Island near Montreal. In later years, sixteen other populations were surveyed along the shores of several St. Lawrence islands. Many of these populations have since been flooded, destroyed by erosion or displaced by the building of homes and cottages. Surveys in recent years have nonetheless turned up ten fine populations of green dragon in the Berthier-Sorel islands. To counter threats to these populations, the Lake St. Pierre ZIP Committee has launched a green dragon conservation plan.

The green dragon is a herbaceous perennial that grows only in eastern North America. In Canada, it grows in southwestern Ontario and Quebec, which is the northern limit of its range.

Belonging to the same genus as Jack-in-the-pulpit, a species known to walkers who frequent silver maple stands, the green dragon has a unique leaf consisting of several leaflets, which increase in number as the plant matures. Depending on the age of individual plants, height ranges from several centimeters to more than one meter.


Photo : Daniel Gagnon

Green dragon habitat under increasing pressure

In Quebec, the wetlands that make up the habitat of the green dragon have been severely disturbed by the St. Lawrence Seaway, recreation and cottages, and intensive urbanization in the Montreal area. In addition to wiping out some populations, these activities have significantly reduced suitable habitats for the establishment of the species and have cut off residual populations.

In 1998, the green dragon was placed on Quebec's list of threatened species, prohibiting people from harvesting, exploiting, destroying or possessing the plant outside of its natural habitat.

Species the focus of much attention

"In the past ten years, a number of studies on the green dragon have been carried out in Quebec, detailing its range, biology, habitat and even its population dynamics," says Line Couillard, of the Quebec Department of the Environment. Surveys done between 1994 and 1998 enumerated 23 populations on small clay islands and along parts of the St. Lawrence shoreline between Lake St. Louis (near Montreal) and Lake St. Pierre (with the exception of one population on the Richelieu River near the Chambly basin).

In the spring of 1999, a team was set up to develop a conservation plan to save the green dragon throughout its range in Quebec. Jacinthe Bourgeois, the co-ordinator of the Lake St. Pierre ZIP Committee, took part in the team's work. "The green dragon is representative of the biodiversity of our territory. By embarking on a campaign to save the species, the ZIP Committee hopes to help make people living in the Berthier-Sorel region aware of the rich natural heritage of the islands and of the St. Lawrence floodplain."

ZIP Committee helps launch conservation plan

With financial support from the Endangered Species Recovery Fund (jointly subsidized by the World Wildlife Fund and the Canadian Wildlife Service) and Environment Canada and Environment Quebec under the SLV 2000 program, the ZIP Committee embarked on several activities in its conservation plan in the summer of 1999. "We began by contacting the managers of three conservation organizations and asking them to monitor green dragon populations present on their

properties," explains Marie-Claude Provencher, the biologist in charge of the project for the ZIP Committee. These organizations are the Nature Conservancy of Canada, Ducks Unlimited and the Société d'aménagement de la baie Lavallière.

Next, the Committee turned to educating cottagers on the Berthier-Sorel islands by printing an article in a local newspaper and holding meetings to make property owners aware of the existence of the green dragon on their land and the fragility of wetlands. "More than half of the property owners we met gave their support to the green dragon conservation project, and agreed to give these populations a wide berth in their gardening and landscaping plans," continues Ms. Provencher. Their involvement is vital, since landscaping around cottages (tree clearing, gardening, lawnmowing, etc.) threatens the green dragon.

Having successfully carried out these initial activities, the ZIP Committee plans to pursue its efforts on behalf of the green dragon. "While continuing to monitor green dragon populations in the Berthier-Sorel region, we plan to expand our territory to take in the Montreal region. The entire range of the green dragon would then be under the responsibility of a network of partners who are able to monitor the species and take action to prevent activities that wipe out populations," says Ms. Provencher.

The green dragon conservation plan calls for a number of other activities to be implemented over a five-year period from 1999 to 2003.

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Sources:

COMITÉ ZIP DU LAC SAINT-PIERRE ET MINISTÈRE DE L'ENVIRONNEMENT. 1999. Plan de conservation de l'arisème dragon (Arisæma dracontium) au Québec 1999-2003. Gouvernement du Québec, ministère de l'Environnement, Direction du patrimoine écologique et du développement durable, Quebec City, 41 pp.

News *in* BRiEF

The **Réseau québécois des femmes en environnement** invites you to its founding meeting and to a workshop on links between the environment and women's health issues entitled:

"Les liens entre l'environnement et la santé des femmes : les priorités d'action"

Workshop and founding meeting of the Réseau québécois des femmes en environnement

Saturday, February 5, 2000
Télé-Université
4750 Henri Julien Avenue
Montreal, Quebec

With financial support from the Community Animation Program, an initiative of Health Canada, Environment Canada and Environment Quebec

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St. Lawrence Vision 2000 partners will submit an **environmental assessment** on the portion of the St. Lawrence River that lies within the Francheville and Bécancour regional county municipalities to the **Les deux rives ZIP Committee** on **February 29**. The report will be tabled at a press conference to be held in Trois Rivières at the Maison de la région, at 3450 Royale Boulevard. For more information, contact Mario Marchand of the Les deux rives ZIP Committee at: tel.: (819) 694-1748 or e-mail: crc04.ZIP2R@CRD-Mauricie.qc.ca

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