

IN TUNE

Priority plant species of the St. Lawrence

Phase III of the Action Plan will contain specific projects targeting the 28 plants identified as priority species under SLV 2000.

Île aux Lièvres pass

The Île aux Lièvres Passage is very heavily used by belugas and seabirds in late spring and early summer and was the subject of a study under the St. Lawrence Beluga Restoration Plan.

ZIP newsletter

The Quebec City and Chaudière-Appalaches ZIP Committee has already launched some of the activities provided for in its first ecological action and rehabilitation plan (French acronym: PARE), tabled in late 1998. Hearings for development of a second PARE are planned for late 1999. This is a committee on the go!

Priority plant species of the St. Lawrence River

The St. Lawrence Vision 2000 Action Plan (Phase III) biodiversity co-ordinating committee has formed a "species" sub-committee, with representation from the Quebec government (Environment; Wildlife and Parks) and the federal government (Environment; Fisheries and Oceans). This working group has drawn up a list of threatened or declining populations in the St. Lawrence corridor. This article reports on what is being done about plant species. It is a sequel to the article entitled "Priority animal species of the St. Lawrence", which appeared in the last newsletter.

The "species" sub-committee has targeted twenty-eight priority plant species for specific projects in Phase III of the St. Lawrence Vision 2000 Action Plan. These species were selected on the basis of criteria similar to those applied for animals. First, they were chosen because the St. Lawrence and its tributaries are home to a significant proportion of the sites where they are known to grow. Secondly, they are acknowledged to be in danger because of their very small populations or because there are serious threats hanging over them.

There are actually about a hundred species that meet the selection criteria, which were established in Phase II.

The species targeted in Phase III are representative of different sections of the St. Lawrence. In some cases, work on these species has already begun; in others, substantial progress can be expected toward the overall objective for Phase III of helping to save thirty-five species.

The first two phases of the Action Plan already contained many initiatives targeting the priority plant species of the St. Lawrence. There were inventories, taxonomic studies, status reports, habitat protection measures and legal designations pertaining to nearly sixty plant species. The thrust of these efforts was spread all along the St. Lawrence corridor, i.e. the river and estuary, as well as the Gulf.

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As explained by Gildo Lavoie, a biologist with the Conservation and Ecological Heritage Branch of the Quebec Department of the Environment, the list of species targeted for Phase III is open-ended. Depending on how operations progress, other species may be added or substituted from the list drawn up in Phase II.

Flora and fauna: different problems

Distinctly different problems are encountered in dealing with plants rather than animals. Because they do not move around, plants are characteristically more dependent on highly localized sites. When a population disappears, it is often hard, if not impossible to recreate the original ecological conditions. As for introduction or reintroduction, these are the options of last resort for conservationists.

In conserving plant species, it is therefore more important to protect existing populations and the habitats that harbour them (in particular by regulation, purchase of sites or negotiation of agreements with landowners) than to create or improve habitat.

List of priority plant species for Phase III of the St. Lawrence Action Plan

	Scientific name	English name
1.	<i>Arisaema dracontium</i>	Green dragon
2.	<i>Asclepias tuberosa</i>	
3.	<i>Aster anticostensis</i>	Anticosti aster
4.	<i>Aster laurentianus</i>	Gulf of St. Lawrence aster
5.	<i>Astragalus australis</i>	
6.	<i>Astragalus robbinsii</i> <i>var. fernaldii</i>	Fernald's milkvetch
7.	<i>Bidens heterodoxa</i>	Connecticut beggarticks
8.	<i>Carex formosa</i>	Handsome sedge
9.	<i>Carex lupuliformis</i>	False hop sedge
10.	<i>Cicuta maculata var. victorinii</i>	Spotted water hemlock
11.	<i>Cirsium scariosum</i>	Thistle
12.	<i>Corema conradii</i>	Broom crowberry
13.	<i>Cypripedium parviflorum var.</i> <i>planipetalum</i>	Yellow lady's slipper var. <i>planipetalum</i>
14.	<i>Cypripedium passerinum</i>	Sparrowegg lady's slipper
15.	<i>Erigeron philadelphicus ssp.</i> <i>provancheri</i>	Philadelphia fleabane
16.	<i>Eriocaulon parkeri</i>	Estuary pipewort
17.	<i>Gaylussacia dumosa var.</i> <i>bigeloviana</i>	Dwarf huckleberry
18.	<i>Gentianella propinqua ssp.</i> <i>propinqua</i>	
19.	<i>Gentianopsis macounii</i>	Macoun's fringed gentian
20.	<i>Gentianopsis victorinii</i>	Fringed gentian
21.	<i>Justicia americana</i>	American waterwillow
22.	<i>Oxytropis borealis var.</i> <i>viscida</i>	Sticky locoweed
23.	<i>Oxytropis deflexa var.</i> <i>foliolosa</i>	
24.	<i>Piperia unalascensis</i>	Alaska rein orchid
25.	<i>Rosa rousseauiorum</i>	
26.	<i>Rosa williamsii</i>	Smooth rose
27.	<i>Saururus cernuus</i>	Lizard's tail
28.	<i>Thelypteris simulata</i>	Marsh shield fern

Action on "hot spots"

According to Mr. Lavoie, the action taken to protect the priority species listed will also help update our knowledge of many unlisted plants and in some cases afford them protection, since plant species under threat are often concentrated within the same sites or habitats.

Concentration of priority plant species is one of the reasons why action taken on their behalf often targets "hot spots", which may consist of geographically localized areas. For example, in the Montreal archipelago the islands in the Lachine Rapids were inventoried in the summer of 1998. A number of threatened or vulnerable plant species were identified there, including lizard's tail, which is listed for Phase III. Biologists even found one species, *Onosmodium molle* var. *hispidissimum*, not seen since the 1970s and thought to have perhaps disappeared from Quebec. The results of this inventory, which will be continued in the summer of 1999, will be applied to the procedure for establishing a wildlife refuge in the area.

Some types of habitat are also recognized as "hot spots" for many priority plant species along the St. Lawrence. Such is the case with the marshlands of the freshwater fluvial estuary, which were inventoried during Phase II to determine the distribution of species and locate areas of great plant biodiversity. St Vallier Point is one of the most important sites for threatened and vulnerable plants because it is home to one of the three surviving Quebec populations of *Philadelphia fleabane*, sub-species *Provancher*, an endemic. The Nature

Conservancy of Canada, in cooperation with the Quebec Department of the Environment, is currently seeking to purchase the site. Other populations of sensitive species sharing the same habitat will benefit from the ensuing protective measures. In the next few years, action will be taken on other species and sites of prime concern in this portion of the St. Lawrence.

Phase III should also lead to further designations of threatened or vulnerable species in Quebec. The designation procedure has already been launched for twelve species.

Lake St. Pierre ZIP Committee: working for the priority plants of the St. Lawrence

The Lake St. Pierre ZIP Committee is prepared to take a real initiative to implement the provisions of the action plan for the green dragon. This species is associated with silver maple stands in the fluvial portion of the St. Lawrence and is legally designated as a threatened species. The largest populations of this biologically fascinating plant are in the Berthier–Sorel islands, some of which do not yet enjoy any protection.



Photo : Francis Boudreau

Legend : Severe erosion of the banks of the St. Lawrence, recreational and residential development and controlled water levels are serious threats to the survival of green dragon.

www.mef.gouv.qc.ca/fr/environn/especes/ariseme.htm

Jointly with the Quebec Department of the Environment and the University of Quebec at Montreal, the Committee recently petitioned the World Wildlife Fund for financial support to cover part of the cost of a large-scale project. A favourable response will allow for completion of the mapping of green dragon populations in the Berthier–Sorel islands and their demographic monitoring. The proposal also contains significant provisions for educating the owners of private lands where the species grows.



Photo : Jacques Labrecque

Legend: false hop sedge has been designated a threatened species in Quebec under the Regulations respecting threatened or vulnerable plant species and their habitats. It is therefore now forbidden to pick it or be in possession of it outside its natural environment, on pain of heavy fines. The three surviving populations amount to fewer than 50 specimens, which is a very small pool. The habitat of two of these is still not officially protected.

www.mef.gouv.qc.ca/fr/environn/especes/carex.htm

Line Couillard, of the Conservation and Ecological Heritage Branch in the Quebec Department of the Environment, is on record as saying that the Department is eager to join ZIP committees in implementing projects to protect the characteristic plant species of their areas. This invitation also extends to the planning of educational campaigns aimed at the general public, using the communications channels developed by the ZIP committees over the years.

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St. Lawrence Vision 2000 to take part in meeting of the Great Lakes Commission

St. Lawrence Vision 2000 (SLV 2000), Phase III, will take part in the twice-yearly meeting of the Great Lakes Commission on May 18, 1999. The Commission is an organization of eight American States whose objectives are centered on the environment and the maritime economy of the Great Lakes. Quebec, Ontario and Canada have an observer status. Taking as their theme Environmental and shipping issues on the Great Lakes and St. Lawrence: a Quebec perspective, SLV 2000 representatives and partners (the shipping industry and the riverside communities of the St. Lawrence) will host a special session to expound the viewpoint of SLV 2000.

There will be three events at Montreal's Château Champlain Hotel on May 18 through 21: the twice-yearly meeting of the Great Lakes Commission, the Symposium on the St. Lawrence Seaway (May 19), and the annual conference of Great Lakes and St. Lawrence mayors (May 20 and 21). Speakers will take the opportunity to publicize the SLV 2000 accord and its newest sphere of operation, shipping.

For more information on these events, visit the Great Lakes Commission's Internet site at: www.glc.org/ , or e-mail Sophie Morin, Transport Quebec at somorin@mtq.gouv.qc.ca

The St. Lawrence, its history, its extraordinary marine habitats, its tidal flats, its littoral, the life which lives in it. Here is what you will see in the mini-series The St. Lawrence presented on Canal D, from Sunday March 7 to Sunday March 28, at 18:00.

Île aux Lièvres pass



Photo : Jean Bédard / Sauvagiles

Study on the relative importance of the Estuary for marine fauna

On the basis of anecdotal evidence, the Ile aux Lièvres pass has been recognized as an area used intensively by beluga whales and seabirds in late spring and early summer. To verify use of the sector by marine wildlife, a study was conducted under the St. Lawrence Beluga Recovery Plan (Bédard et al., 1997; Falardeau et al., 1999).

Research was done on the distribution, abundance and behaviour of belugas, seals and a number of seabird species in the Ile aux Lièvres sector of the Middle Estuary of the St. Lawrence, in May and June 1996 and between May and September 1997. A separate study was also conducted in 1996 on the reproductive cycle of Atlantic herring in the waters around the island by monitoring the spawning grounds used by this species and by collecting herring larvae from the pelagic environment. Observations were made from towers erected on the western point of the island, in an effort to identify the link between

herring abundance cycles and the presence of belugas, other marine mammals and seabirds.

The primary goal of the 1997 research was to document fluctuations in the abundance of marine mammals and seabirds that frequent the Ile aux Lièvres pass not just in late spring but throughout the summer.

This work also provided an opportunity to continue earlier research into the biology of scoters, particularly the Surf Scoter, in the St. Lawrence Estuary and to strengthen the zoning proposal set out in the Master Plan of the

Saguenay–St. Lawrence Marine Park for the designation of the comprehensive preservation zone.

One key finding that emerged from the 1996 study is that the Ile aux Lièvres pass is a site of considerable importance for the beluga, but is used little by seal species. However, the researchers were unable to confirm the presence of a herring spawning ground in the nearshore waters there. Many bird species visit the area (Surf Scoter, Common Eider, Razorbill, Black Guillemot, Double-Crested Cormorant and seagulls), exhibiting highly specific abundance cycles.



Common Eider – Photo : Gilles Martin

"We found some highly significant inverse trends with respect to the influence of the tides on use patterns in the pass," said Jean Bédard of Société Duvetnor, the organization that owns Ile aux Lièvres. Alcids, such as Razorbills and Black Guillemots, frequent the sector during low tide, whereas the beluga's peak abundance periods correspond to high tide."

From the 1997 study findings, it is apparent that the abundance of beluga whales and alcids (Black Guillemots and Razorbills) drops off considerably in the pass sector beginning in early July. The presence of Common Eiders and

scoters also declines appreciably in mid-June, which is when scoters head off for their nesting sites farther north.



Razorbill – Jean Bédard / Sauvagiles

Double-Crested Cormorants show an opposite trend, with their abundance increasing substantially starting in early July. Seagulls gradually become more numerous around mid-June on the western point of Ile aux Lièvres, with a sharp decline in their numbers occurring in mid-July. At summer's end, the number of dabbling ducks increases (particularly Black Ducks) and shorebirds (Black-bellied Plover, Ruddy Turnstone, Dunlin) begin appearing near the island's western point.

The results of these studies may help Société Duvetnor, a conservation and education organization, with its project to build a land-based platform for observing marine fauna.

The overall project was carried out with financial assistance from Canadian Heritage (Saguenay–St. Lawrence Marine Park), Environment Canada (Canadian Wildlife Service, Quebec Region), Fisheries and Oceans Canada (Maurice Lamontagne Institute and

the Fish Habitat Branch), Wildlife Habitat Canada and Société Duvetnor Ltée.

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Quebec City and Chaudière-Appalaches ZIP Committee

Restoring access to the river, a priority

Between 1993 and 1999, the program of Areas of Prime Concern (French acronym: ZIP) led to the establishment of twelve ZIP committees, regional co-ordinating bodies each covering a section of the St. Lawrence. Phase III of the St. Lawrence Vision 2000 Action Plan is now devoted to implementing the ecological rehabilitation action plans (French acronym: PARE) drawn up by each riverside community. In addition, two new ZIP committees are expected to be formed soon.

The purpose of this newsletter is to publicize the achievements of the ZIP committees in protecting and restoring the uses and resources of the St. Lawrence. Here we look at some of the plans of the Quebec City and Chaudière-Appalaches ZIP Committee for restoring access to the river.

The first PARE of the Quebec City and Chaudière-Appalaches ZIP Committee (Quebec City-Lévis sector) was submitted in October 1998 and expressed, as was intended, local views on priorities for action to develop and rehabilitate the St. Lawrence within the target area, which extends from Cap Rouge to Beaupré on the north shore and from St Romuald to Berthier sur Mer on the south shore, including Île d'Orléans. Consultations on drafting a second PARE for the other part of the area are expected to begin between late 1999 and the spring of the following year.

Encouraged by the large number of volunteers who had worked on preparing the PARE for submission, the Committee lost no time implementing some of the proposed activities. Such was the case with a conservation and development project for the north end of Île d'Orléans, intended to promote environmental protection and

observation of migratory birds. There was already a small roadside rest area, and though it was not made for watching wildlife or admiring the view, it is very busy during migration season. Hamida Hassein-Bey, committee co-ordinator, explained that it is an outstanding site, with a magnificent view of the Quebec City skyline, the Beaupré shore and the river flats, which have been conserved here in a nearly pristine state.

The project envisages, firstly, deliberations on what could be done in the area in general terms. The second stage will involve identifying suitable sites for wildlife

observation posts. In March, a multisectoral round table will be convened as a forum for reconciling the project's wildlife and recreational/tourist dimensions and producing a conservation and development plan. The ZIP Committee will direct the work of this group, which a number of bodies have already agreed to join, including the Île d'Orléans MRC, the municipalities of St. Pierre and St. Laurent, the Quebec Wildlife Foundation, hunting, fishing and birdwatching associations, and the Quebec Departments of Transport and Culture and Communications.

In 1997, the Quebec City Urban Community launched the first, or study phase of a development project for a recreation/tourism corridor between Beauport and St Augustin de Desmaures. This project was a concrete response to concerns voiced at hearings held by the Committee in 1995, at which local interests bemoaned the lack



Photo : Kathleen Côté



Photo : Kathleen Côté

of access to the river and the absence of any links among the few existing public access points. The Urban Community took up the challenge, and plans are now being drafted. Ms Hassein-Bey expressed satisfaction with the Urban Community's initiative in developing the riverside corridor, adding that the Committee expects to play a facilitating role in the project, which was one of the priorities to emerge from the consultations held by the Committee.

In the short term, the Committee wants to repeat some popular activities, like the volunteer clean-up of Beauport Bay, which give the public a chance to participate actively in improving the quality of the river and serve at the same time as an excellent vehicle for publicizing the Committee's work.



Photo : Hamida Hassein-Bey

Lastly, the Quebec City and Chaudière-Appalaches ZIP Committee has announced that it is soon to release a needs study for use of and access to the river. This study was conducted in co-operation with Collège de Mérici and was designed to specify what activities would appeal to the public and what facilities they would like to be able to use on the shores of the river. The knowledge obtained will help arrive at informed decisions when the time comes to flesh out the Committee's plans or design amenities. The Port of Quebec, Ultramar, the Regional Development Secretariat and Transport Quebec all helped fund the study.

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