LE FLEUVE

St. Lawrence Action Plan Newsletter
Vol. 3, No. 3, June 1992

Wildlife and Sustainable Development: CAP-TOURMENTE SETS THE EXAMPLE

The very first establishment in the area known as the Cap-Tourmente National Wildlife Reserve was built by Champlain in 1626. Since that time, people have farmed the land and logged it; they've hunted there, watched birds there and enjoyed peaceful walks. Generations have come and gone, buildings have been erected and the landscape has changed time and again.

"And yet, the wildlife is flourishing like never before!" says Yvon Mercier, biologist in charge of habitat management with the Canadian Wildlife Service. "Every day, we prove that wildlife conservation and human activity can be compatible. We want to stand as an example."

Those who have made the reserve what it is today—a vast, protected 2,300-hectare area—didn't invent the expression "sustainable development": they've lived the experience. And given the St. Lawrence Action Plan's objective of preserving wildlife habitats, it was only natural for SLAP to finance the purchase of another 158 hectares along the river, adding to the protected territory.

In 1981, the Cap-Tourmente Reserve was the first North American site to be named a "wetland of international importance" by the Ramsar Convention. Located 50 km east of Quebec City, it is primarily associated with the Great Snow Goose. In fact, the reserve was created in 1969 primarily to ensure the survival of this magnificent species. Twice a year, 300,000 geese stop during their migration between the Atlantic coast and the Far North, attracting some 70,000 visitors to the region, mainly in the fall.

J.M. Coulombe

Great Snow Geese at Cap-Tourmente.

"Wildlife and humans can coexist, so long as the needs of the animals are respected," continues Mr. Mercier. "A perfect example is how we combine observation of the Snow Geese with a controlled hunt. Everything is part of a carefully conceived management plan for the whole reserve."

The goose hunt is a long-standing tradition at Cap-Tourmente. The Canadian Wildlife Service definitely intends to maintain it, but as part of a sound program for managing the bird population and land use. The situation is assessed every year by hunters and scientists and a specifically designated area is set for the hunt, off limits to the public.

"One effect of the controlled hunt is that it disperses the flock," says Mr. Mercier, "allowing for hunting around the periphery of the reserve, which generates significant economic revenues for the area, on both sides of the river. Every season, about 3,000 geese are killed on actual reserve land; the provincial total is about 50,000. The species is not endangered, and the flock is growing at the rate of about 25% to 30% a year."

A number of other species of birds, including ducks, warblers and sparrows use the reserve as a nesting and breeding site, or as a migratory stop; the reserve protects a variety of different habitats. Five species classified as rare or vulnerable can be found at Cap-Tourmente: the Peregrine Falcon, the Eastern Bluebird, the Red-shouldered Hawk, Cooper's Hawk and the Great Grey Owl. Some of the waterfowl habitats are looked after by Ducks Unlimited, one of the reserve's partners in conservation.

Partnership is crucial in large-scale wildlife management. The Canadian Wildlife Service makes some areas of the reserve available to Forestry Canada for its research to improve the health and hardiness of certain tree species. The Cap-Tourmente micro-climate is ideal for experimental forests.

Farmers are also partners. Farming has been allowed on the reserve since 1970 and now cultivated zones can be found alongside uncultivated ones. Every year, four farmers living near the reserve submit a work plan to the Canadian Wildlife Service; 350 hectares are currently being planted by them.

"Farming keeps vegetation low and doesn't touch either the wetlands or the strips of bush along the edges of the fields," explains Mr. Mercier. "It actually improves the wildlife habitat and respects the pastoral character and essential features of the area. We are always improving agricultural techniques to ensure the greatest harmony between farming and wildlife. Biological farming is one interesting option."

The Cap-Tourmente National Wildlife Reserve continues to meet the challenge of sustainable development, which is so much in the news these days. By proving that people, their activities and wildlife can coexist in the best interests of all, the reserve is setting a fine example. ■

Léo-Guy de Repentigny

This photo, taken from the cliff-top observatory at Cap-Tourmente shows the principal habitats of the Reserve: the intertidal marsh, subject to daily tides; the coastal wetlands, subject to the strong equinoctial tides; the coastal plain beyond the tide, where you'll find the forests at the base of Cap-Tourmente, farms, and shelters and other facilities built for wildlife.

LA SOCIÉTÉ DUVETNOR LTÉE

La Société Duvetnor ltée is a non-profit company that was founded in 1979 with two main objectives: to preserve wildlife and their habitats in the St. Lawrence estuary and to educate the public about conservation.

The company earns money from its licensed eider down operation, it runs ecology tours of the islands it owns, it conducts research and carries out wildlife projects and it is subsidized by government. Duvetnor also accepts donations as a company registered under the Canadian *Tax Act*.

Duvetnor owns eight islands in the St. Lawrence River, off the coast from Rivière-du-Loup and Saint-André-de-Kamouraska. All are protected sites that harbour significant colonies of aquatic birds, as well as many vestiges of Quebec's maritime heritage.

In 1992, Duvetnor announced a program of seminars on the condition of the St. Lawrence. This series of two-day sessions is designed to explain the problems related to the use of the river and shoreline area, and help people understand what is at stake. Created specifically for public administrators, educators and industrialists, the program includes meetings with experts, exploration tours of the river on the company's boat, an examination of the major issues affecting marine wildlife, habitats, contaminants and current laws and regulations governing the river.

Duvetnor is the company that created the popular travelling exhibit called "Parlez-moi du fleuve" (Tell Me about the River), which reached more than 45,000 people in 25 museums and educational institutions from Montmagny to Sept-Îles. The exhibit now has a permanent home at the aquarium in Quebec City. Knowing the quality of Duvetnor productions, we can expect the seminar program to be equally successful!

Seminars begin August 24, 1992. For more information, please contact the coordinator:

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ABOUT THE RIVER AND ITS SEDIMENTS...

In this issue of Le Fleuve, we offer you an example of the type of cooperative effort being promoted by the St. Lawrence Action Plan. When it comes to studying the sediments in the St. Lawrence, there's strength in numbers...

Setting New Criteria for St. Lawrence River Sediments

Scientific progress with regard to the environment can only come through cooperative research. That's why, under the St. Lawrence Action Plan (SLAP), Environment Canada's St. Lawrence Centre and the Ministère de l'Environnement du Québec (MENVIQ) have joined forces to review the criteria for qualifying river sediments.

"SLAP personnel realized they needed real criteria to gauge the quality of river sediments, in order to assess the effect of river activities on the environment," says Gilles Brunet, project manager at MENVIQ. "By the mid-80s, it became clear that we could not determine the real environmental impact of different concentrations of contaminants because the criteria we were using were based only on average concentrations observed in the river.

"We began by establishing some basic principles, such as not disposing of dredged contaminated sediments in an area never before contaminated. To improve our analysis of the sediments, as part of the SLAP project, we started looking at criteria being used elsewhere, such as Ontario. Ultimately, the criteria had to be adapted to our own situation, since contaminants and concentrations can differ considerably between the Quebec and Ontario portions of the river."

Raymond Vezeau - St. Lawrence Centre

Sediments are analyzed in the laboratory on board the Capitaine Bernier.

The new criteria use benthic organisms—insects and other invertebrates living on the river bed—to evaluate sediment samples.

Why This Method?

Benthic organisms are at the bottom of the food chain and are highly sensitive to contaminants. Their presence in the river affects other organisms that feed on them.

By examining the populations of benthic organisms in aquatic environments where the level of contamination varies, scientists can obtain valuable information about how those organisms react to different contaminants. This gives them a good idea of how much danger a particular concentration of contaminants actually poses to the environment.

Knowing When to Act

The people in charge of the project have established three levels of sediment quality that determine what kind of action is taken. "The first is 'No Impact,'" explains Lucie Olivier, a scientist at Environment Canada's St. Lawrence Centre. "That's basically zero contamination, the quality of the sediment observed prior to industrialization.

"The second level is 'Minor Impact.' That's where you have a concentration of contaminants affecting 15% of the organisms. At this point, we do biotesting and environmental evaluations to get a more precise idea of the risk involved.

"The third level is 'Harmful Impact.' This means we've observed a 90% drop in the populations of benthic organisms. When the sediment reaches this stage, we consider clean-up and restoration."

At long last, consultants, researchers and others can use the same yardstick. In fact, dredging and sediment decontamination is an area of interest to more than a few people.

The Department of Fisheries and Oceans of Canada (DFO), for example, was involved in the discussions that resulted in defining the new criteria: "Under the *Fisheries Act*, we are responsible for protecting fish habitats; we have a say in such matters as the disposal of toxic substances after dredging," says Jean-Maurice Coutu, a DFO analyst.

"These criteria have been formulated according to the latest scientific information. They can help us carry out our mandate and lend greater credibility to our results."

Methodology Guide for Sediment Characterization

The St. Lawrence Centre, in cooperation with the Ministère de l'Environnement du Québec (MENVIQ), has just finalized a methodology guide for characterizing St. Lawrence river sediments. Created for both public and private laboratories, the guide sets out clear and explicit instructions and procedures, from the taking of samples to the presentation of a final report.

Why Prepare Such a Guide?

"In recent decades, scientific analyses were often questioned because the results did not always correspond to previously compiled data," says Raymond Vezeau, division head at the St. Lawrence Centre. "We attributed the discrepancies to the fact that each laboratory was using a different method, and wanted to develop a tool that would provide a uniform basis for comparing different studies."

The methodology guide covers the analysis of 25 parameters or groups of parameters used in characterizing sediments.

"It sets out the specific procedure to follow in preserving and preparing samples, as well as instructions with regard to quality assurance and control," explains Benoît Parent, chemist in charge of the module at MENVIQ. "There are also 14 chapters containing detailed information on the methodology involved in analyzing chemical elements and compounds, for researchers who want to know the specific protocol used in each type of analysis. The guide also indicates the methodology for presenting data, to help standardize reports."

As Raymond Vezeau notes, "the information in the guide is based on research carried out by reputable organizations: Environment Canada, MENVIQ, the Ontario Ministry of the Environment and the U.S. Environmental Protection Agency. The methodology meets scientific demands for precision and exactitude and accounts for the fact that different laboratories have different equipment." Certain other requirements also had to be met, such as laws regarding dumping of sediments in the sea.

So now, all public and private laboratories assigned to conduct sediment characterization studies can produce results that can be scientifically compared.

Research techniques must keep pace with the sciences that rely on them. The researchers who helped produce the new guide are well aware of this fact, as Raymond Vezeau indicates:

"We hope to get plenty of feedback and suggestions from the institutions that use our guide so that we can make it even better, even put out a revised edition. In fact, we'd like to publish regular updates."

Researchers, the call is out!

30th Annual Conference of the AQTE

PPG CANADA EARNS "GROUPE INDUSTRIE" AWARD

The 30th annual conference of the Association québécoise des techniques de l'eau (AQTE) was held in April of this year at the Montreal Convention Centre. Officially sponsored by the St. Lawrence Action Plan (SLAP), the theme was "The St. Lawrence: Yesterday and Today," and those who attended heard presentations of results and current research being done under the aegis of SLAP.

Carole Pinsonneault - Environment Canada

From left to right: Michel Lalonde, President of the AQTE, 1991-92; Denis Faucher, PPG Canada Inc; and Jean Charest, federal Minister of the Environment.

Among the speakers were Gaétan Duchesneau and Pierre Terrault of the SLAP Joint Action Group, who drew a picture of the situation concerning toxic liquid waste being produced by the 50 priority companies along the river.

One of those 50, PPG Canada of Beauharnois, was presented with the AQTE "Groupe Industrie" award. "The distinction is given to a company that has modified its production and used treatment methods to reduce the toxic waste being dumped into the environment," explains Pierre Lajoie, in charge of the AQTE 1992 awards. "This particular award was presented for the first time in 1969, but it's not an annual prize—the AQTE presents it only when one corporation really stands out from the pack during a given year."

Over the last ten years, PPG Canada, which operates a sodium chlorate plant and a chloralkali plant, has set up a vast water treatment program, investing millions of dollars in a number of specific projects.

"We have committed ourselves completely to environmental issues," says Yves Denicourt, an environmental engineer with PPG Canada. "Rather than trail along behind government regulations, we decided to conduct our own environmental studies and achieve even higher standards than those currently imposed. This way, we're always sure to be operating within the law."

PPG's accomplishments were deemed particularly commendable in all areas: assessment of the current situation, definition of environmental objectives, corrective measures taken and research and development in new technologies.

"PPG's first water treatment program was presented to MENVIQ and approved in 1980," says Louis Carignan, project manager with the SLAP Joint Action Group. At that time, PPG invested $6.5 million to replace its wastewater treatment technology, clean up the internal pipes and storm drainage systems at the chloralkali plant and treat the groundwater at the plant site.

"In 1986, PPG completed the program, and since then, mercury levels in the plant effluent have remained ten times lower than federal and provincial regulations allow."

With regard to waste management, in 1985, PPG was one of the first companies to conduct a complete hydrogeological study of its storage grounds. Results showed only a few problems.

"It's an excellent illustration of our proactive attitude," stresses Mr. Denicourt. "Our inspection revealed that only two of our six burial cells required modifications, and minor ones at that. So PPG went ahead and replaced *all* the old cells, even those that passed government tests, with new double-membrane cells. Our burial site now features the very latest in waste disposal technology, and we've asked the government—on our own initiative—to re-evaluate it."

PPG's efforts continued well beyond 1986. When it came to mercury contamination, for example, PPG took complete charge of things: in March 1990, MENVIQ issued a certificate authorizing PPG to replace the old mercury cathodes at the chloralkali plant with new membrane cells—a $40 million investment.

In addition, after deciding to settle the mercury problem, PPG submitted a proposal for a total restoration plan to MENVIQ in 1988; the plan will involve expenditures of $25 million over six years. PPG can then complete the work to secure its waste storage grounds, finish the closing and dismantling of the old electrolysis room and restore the contaminated soil.

In March 1991, the SLAP Joint Action Group submitted to PPG Canada a corrective program designed to reduce the levels of chlorate, oil, grease, free chlorine and salts in its industrial effluent to a minimum. Ninety percent of the projects under the program have already been completed.

Canada's Minister of the Environment, the Honourable Jean Charest, presented the AQTE award to PPG Canada and applauded the company's performance at the April 9 luncheon, at which he was guest speaker. Such initiatives and results should be enough to convince even diehard sceptics that some industries are truly concerned with protecting the environment. There is no doubt that programs like the PAEs (environment action programs) and, more recently, SLAP, will continue to raise environmental awareness in industry and help transform that awareness into concrete action. ■

AGREEMENT ON SMELTS PROMISES FRUITFUL COLLABORATION

The smelt spawning grounds in the Boyer River used to support commercial and sport fishing and feed a variety of other species, like the beluga and striped bass. But the smelt is in decline: as a result, the beluga is in difficulty and the striped bass has practically disappeared. Monitoring and restoring smelt stocks has thus become an urgent priority.

That is precisely the objective of the agreement signed in April 1990 by the Ministère du Loisir, de la Chasse et de la Pêche du Québec (MLCP) and the Department of Fisheries and Oceans of Canada (DFO).

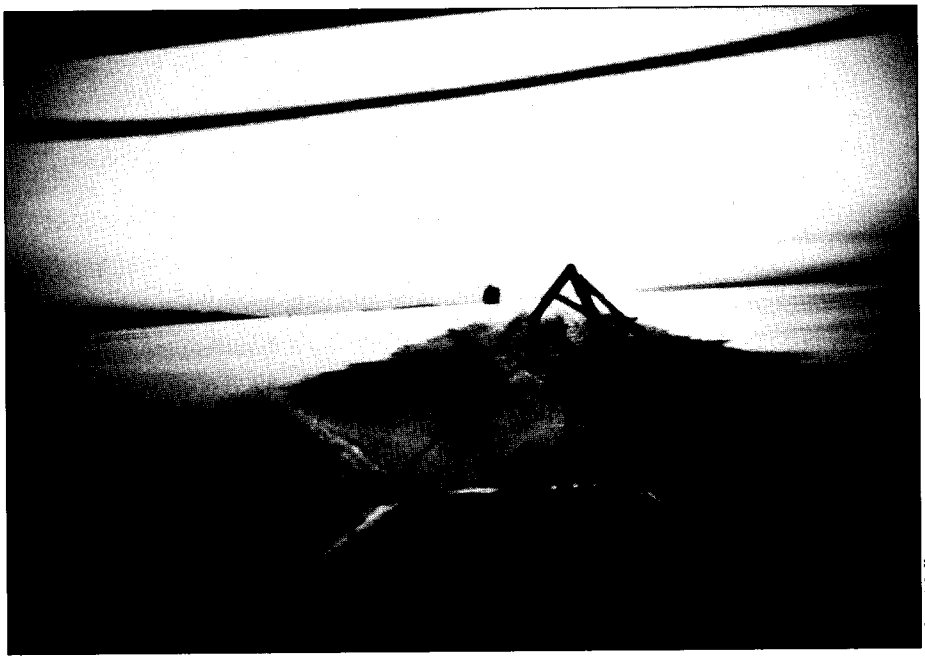
"The agreement is designed to accomplish three things," says Guy Trencia, a biologist with MLCP. "First of all, we want to coordinate our actions. Both departments have relatively limited budgets and it would be inefficient to double up our programs.

"Secondly, we want to work together—not just to avoid overlapping, but to join forces and increase our overall effectiveness. Lastly, the agreement seeks to identify the two departments with certain joint projects. We believe it's important for the public to know that the two government bodies concerned with fisheries in Quebec are working *with*, not against, each other."

Some work has already begun since the agreement was signed, including joint trawling operations undertaken to count the smelt larvae.

More than human and material resources are being shared. The two departments will also be able to pool their financial resources when the budget of one alone cannot cover the costs of a particular program.

For example, the DFO contributed $12,000 towards the purchase of an incubator to be installed in the de l'Église Brook, when the MLCP was not in a position to free up sufficient funds. Everyone involved certainly appreciated the fact that the agreement allowed for such an exchange of resources between two levels of government.



Alain Vallières

Trawling operation carried out in May 1991 under the smelt agreement

READINGS

A COMPILATION OF INFORMATION ON LAKE SAINT-PIERRE

Under the St. Lawrence Action Plan, Environment Canada's St. Lawrence Centre has completed a diagnosis of environmental conditions at the Lake Saint-Pierre priority site.

The resulting document is a compilation of all the technical reports on the physical, chemical, biological and socioeconomic aspects of the site. Produced in cooperation with the Ministère du Loisir, de la Chasse et de la Pêche du Québec and the Ministère de l'Environnement du Québec, it is designed for the various partners along the shores of the priority site.

The report offers an objective summary of the environmental status of the site, including pollution problems and other factors that could compromise the area's biological integrity. It also examines such solutions as the experiments in integrated management currently being conducted.

Readers have an opportunity to grasp the enormity of the challenge facing local and regional authorities, particularly with regard to how the land is used.

The Lake Saint-Pierre priority zone is characterized by intensive human activity and the presence of a great variety of biological resources, which makes the area ideal for planning sustainable regional development. Achieving this goal would require maintaining a balance between preserving high-potential habitats and ensuring the continuity of farming, recreation and resort activities.

It's a challenge local people have already begun facing with success!

(Copies of the report are available from the St. Lawrence Centre Documentation Centre.)

In light of the very positive experience with the smelt agreement, we can expect similar cooperation with regard to other endangered species. In fact, the MLCP and DFO are already working to harmonize their work through SLAP.

As a result, preliminary work related to eels should soon begin. A plan to reintroduce the striped bass in the St. Lawrence is also in the works; it's a joint plan involving equal input from the MLCP, DFO, the municipality of Montmagny and the Quebec Wildlife Foundation. This kind of cooperative action is promising indeed!

"Working together for greater efficiency" is the latest slogan in the public sector. We bet that the highly interesting results obtained through the MLCP-DFO effort will set a precedent and pave the way for more ventures likely to stimulate public investment.

HOT OFF THE PRESS

FACT SHEET ON THE LOGGERHEAD SHRIKE

The Loggerhead Shrike is currently the most endangered bird species in Quebec. Only two pairs have been sighted recently, an indication of how urgent the situation is.

To make Quebec ornithologists more aware of the plight of the Loggerhead Shrike, the Canadian Wildlife Service has produced a fact sheet, in cooperation with the Association of Quebec Ornithological Societies, all of which are concerned with protecting endangered birds.

The fact sheet has two principal objectives. First of all, it provides specific identification details to help birdwatchers in the province recognize the Loggerhead Shrike. If they do, they can notify the Canadian Wildlife Service to update the census file. The loggerhead bears a striking resemblance to the Northern Shrike and observation dates are not sufficient for a sighting—which is where the fact sheet comes in handy.

"Studies have also shown that one of the reasons for the decline of the Loggerhead Shrike is the disappearance of its habitat in Quebec, particularly in pasturelands," says Isabelle Ringuet, division head at the Canadian Wildlife Service. "So we set another objective, which is to encourage people to preserve existing habitats where the Northern Shrike might be likely to nest."

The fact sheet contains some fascinating information about the history and future of the Northern Shrike in Quebec, including how to identify it correctly. You can get a copy by contacting Environment Canada's Canadian Wildlife Service: 1141, route de l'Église, C.P. 10 100, Sainte-Foy, Québec, G1V 4H5. Tel.: (418) 649-6121.

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MEMORANDUM OF AGREEMENT ON SMELTS PROMISES FRUITFUL COLLABORATION

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IN BRIEF
A Methodology Guide for Managing Large Rivers

Jean Burton
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St. Lawrence Centre
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COMING EVENTS

From August 30 to September 4, 1992, Montreal will host the 9th World Clean Air Congress and Exhibition, organized by the Air and Waste Management Association. Some 2,000 scientists and environmental experts from about 30 countries will attend the conference. The 400 scheduled speakers will cover a wide range of environmental issues of global importance, including waste management.

For more information, contact Ms. Breda Nadon, (514) 283-7192 or Ms. Monique Erazola, (514) 283-0188.

From November 17 to 19, 1992, in Montreal, the Association québécoise des techniques de l'eau (AQTE) will be presenting the 15th International Symposium on Wastewater Treatment and the 4th Workshop on Drinking Water. The two events are among the most important forums in the field in North America, and are expected to draw a significant number of international-calibre speakers who will present papers on their latest work.

For more information, please contact the Association:

AQTE - Symposium 92
407, bd Saint-Laurent
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Fax: (514) 866-4020

YOUR ANSWERS ARE BETTER LATE THAN NEVER!

All our subscribers received a questionnaire with their March 92 issue of *Le Fleuve*. Your answers help us keep our mailing list up to date and allow us to send you information on topics of particular interest to you.

Many thanks to everyone who returned a completed questionnaire. And to those of you who haven't, now's the time to do so! Our address is:

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IN BRIEF

A METHODOLOGY GUIDE FOR MANAGING LARGE RIVERS

The St. Lawrence Centre (SLC) is exporting its know-how! Having successfully taken the methodology presented in the Guide for Managing Large Rivers and applied it to the St. Lawrence River, the SLC has been asked by the Canadian government to pass on this valuable expertise to the people who manage major African rivers, in particular, the Niger and the Senegal.

The project, called "Large River Management," stems from the Summit of Heads of State and Heads of Government of countries using French as a common language (the Francophone Summit), held in Dakar, Senegal, in 1989. The guide is a product of SLC seminars on managing river ecosystems: it is a user-friendly publication designed for all those whose responsibilities include managing the resources and uses of major rivers.

The methodology involves three basic stages: documentation, planning and action. Naturally, the entire process depends on the amount of information available. And since the system under study does not operate under ideal conditions, the primary challenge lies in making the diagnosis and defining priority areas for action, using data that is sketchy at best.

According to Jean Burton, the Assistant Director of the SLC who prepared the guide with Lysiane Boisvert, the process "could, with the necessary modifications, be of use to anyone in charge of planning human activities as part of a plan to ensure the long-term use of natural resources."

For example, the process proposed in the guide could be used for a lake ecosystem, like Lake Chad, or even in a desert ecosystem, like that in a Nigerian park!

"Above all, this guide contains the basics of an intelligent, logical system for gathering and processing any information that could be of help in human endeavours that have an environmental impact," concludes Mr. Burton. "That's what makes it so wonderfully adaptable."

LE FLEUVE

St. Lawrence Action Plan Newsletter

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