LE FLEUVE

NEWSLETTER
ST. LAWRENCE VISION 2000

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IN TUNE

Agriculture

New tools have been developed to help farmers reduce pesticide use and implement integrated pest management techniques.

Navigation

Study to put into perspective the environmental pressures associated with different modes of transporting goods along the St. Lawrence corridor.

Community Involvement

Public consultations held by the Des Seigneuries ZIP Committee, targeting the region between the Montreal Archipelago and the Sorel Islands, were very successful. A total of 21 priorities for action were adopted.

New publications and follow-up indicators developed for the Pest Management Strategy

Since 1992, the Quebec Department of Agriculture, Fisheries and Food (MAPAQ) has encouraged farm producers to use more environmentally friendly pest control practices. The Programme agroenvironnemental de soutien à la Stratégie phytosanitaire *, an agroenvironmental program supporting the pest management strategy, was launched by SLV 2000 partners for this purpose. The program has resulted in the development of a number of tools for farmers, which have proven very useful. These tools can help in the achievement of the objectives of the Pest Control Strategy, for which follow-up indicators have also recently been developed.*

Experiencing the richness of biodiversity on a daily basis, farmers are very aware of the fragility of its various components and consequently have become increasingly open to the principles of sustainable agriculture. However, they express the need for support in choosing and implementing farming techniques that both protect the environment and maintain crop yields. The Pest Management Strategy, part of MAPAQ's efforts to promote new ways of doing things in agriculture, has the following objectives:

• to reduce the quantity of pesticides used in agriculture in Quebec;

• to increase the area of cropland where integrated pest management (an environmental approach to pest management based on testing and observation) is used and to implement environmentally sound weed, insect and disease control measures.

SUMMARY

Canada

Saint-Laurent Vision 2000

Québec

Between 1998 and 2001, sixty projects have been funded under the *Programme agroenvironnemental de soutien à la Stratégie phytosanitaire*. Of these, 36 involve field crops (grains, corn, soybeans), 14 involve apple growing and 10 involve problems facing potato producers. Roughly $1.5 million has been invested in these projects.

By 2003, the priority for the agroenvironmental program budget will be to support technological transfer projects rather than development projects. This will allow Agriculture Committee partners to provide farm producers with more tools to help them reduce pesticide use and implement proven integrated pest management techniques.

Well-received publications

A number of publications have resulted from the agroenvironmental program, with over 100,000 copies already in print. Documents are distributed free of charge to farmers and green club and public-sector advisors. In addition, several educational institutions have also ordered copies, thus helping to train the next generation of farmers.

One publication that has been particularly popular is the copiously illustrated brochure *Appareils de désherbage mécanique en grandes cultures*. It explains how various tools can be used to destroy weeds without endangering crops, thus reducing weed control costs. “This publication has been enthusiastically received by farm producers,” explains Yvon Douville, one of the agronomists who wrote the brochure. Douville says he saw one farmer in the field stop his work and turn off his tractor so he could read the copy he had just been given. Mechanical weeding, the goal of which is destroy weeds by burying them, uprooting them, or drying them up, is an essential part of a well-organized integrated weed control program. The interest in this publication is promising, in terms of achieving the objectives of the Pest Management Strategy.

Other new publications produced under the agroenvironmental program include the soon to appear *Réduction des herbicides -- Pomme de terre* (which deals with reducing the use of herbicides on potato crops) and *Méthodes alternatives de lutte en pomiculture* (alternative pest control methods for apple orchards). These two brochures are valuable extension tools. They contain information on control techniques for the main pests of these crops, with a priority on reducing or eliminating pesticides whenever possible. The use of integrated pest control can have a number of positive spin-offs, including reducing health risks for farmers and consumers, and reducing environmental risks, weed control costs and the occurrence of herbicide resistance in weeds.

Follow-up indicators for the Pest Control Strategy

Recently, Agriculture Committee partners examined potential indicators for evaluating the degree to which the objectives of the Pest Control Strategy are being met. The progress made in reducing the quantity of pesticides used in agriculture can already be measured based on the pesticide sales figures published annually by the Ministère de l’Environnement du Québec. As Raymond-Marie Duchesne, Pest Control Strategy coordinator, explains, “the data for 1998 show a significant drop over the previous year in the pressure index, or the quantity of active ingredients in herbicides used per hectare on targeted crops, comprising potatoes, grain, corn and soybeans.”

Secondly, to determine the increase in land cultivated using integrated pest management techniques, data collected by the green clubs will be used. These green clubs are made up of farm producers who get together voluntarily to promote sustainable agriculture through the use of environmentally sound farming practices.

There are roughly 75 green clubs currently active in Quebec. The clubs, which are scattered through all the province’s regions, contain over 4000 members. According to the 1998-99 figures for all the green clubs combined, roughly 20% of grain, corn and soybean crops by area are currently being cultivated using integrated pest management. Duchesne concludes that “by consulting the annual data from the green clubs, we can obtain, based on the green club subpopulation, an indicator for the adoption of the

integrated management approach in Quebec." For example, in 1999-2000, an increase was observed in the number of green clubs using integrated weed management. Areas under integrated management quadrupled, making up close to 18% of the total area treated with herbicides, compared with less than 9% in 1998-99.

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Sources:

COULOMBE, A.-M., and Y. DOUVILLE. 2000. *Appareils de désherbage mécanique en grandes cultures*, Bécancour, Technaflora, 24 p.

DOUVILLE, Y. 2001. *Réduction des herbicides -- Pomme de terre*, Bécancour, Technaflora, 12 p.

Pest Control Strategy website:

www.agr.gouv.qc.ca/dgpar/agroenv/slv-strategie.html■

Comparative analysis of the environmental pressures associated with shipping in the St. Lawrence corridor

Photo : Pierre Marin, Environment Canada

The mission of the Navigation Committee, which is composed of representatives of the shipping industry, environmental and community groups and governments, is to implement a sustainable navigation strategy for the St. Lawrence. The committee is currently working on an assessment of the environmental, social and economic aspects of commercial shipping and pleasure boating. As part of this exercise, a comparative study was recently carried out in cooperation with the St. Lawrence Economic Development Council. The purpose of the study is to put into perspective the environmental pressures associated with the transport of goods via water, rail and road in the St. Lawrence corridor.

The transportation of goods, whether done by land or water, puts pressure on the physical, biological and human environment. A number of environmental pressures were shared by all modes of transport studied, including atmospheric emissions, noise pollution, the waste from equipment maintenance and the risk of accidents or spills. These common pressures were evaluated in the first part of the study.

Environmental pressures specific to each mode of transport were also assessed based on previous research. For example, rail transport requires the use of defoliants, while the impacts of road transport include the use of de-icers, damage to highway infrastructures and heavy traffic. Water transport results in bank erosion through wave action and the introduction of exotic species and pollution through the discharge of ballast water; maintenance dredging causes the resuspension of sediments. The objective of the study was to estimate the environmental pressures resulting from a decrease or increase in maritime shipping traffic on the St. Lawrence.

Scenarios allowing a comparison between modes

To ensure the accuracy of the analysis, the environmental pressures resulting from nine different scenarios for the transportation of goods along the St. Lawrence corridor were determined. These scenarios all represent existing arrangements for cargo traffic. Then, alternative scenarios were formulated to compare modes of land transport (rail or road) and water transport, based on the same shared environmental pressures. Each alternative (or replacement) scenario was formulated by deciding what type of arrangement was the most realistic in the event of a break in existing service; this does not mean that an actual break was expected to occur.

For example, the Port of Montreal receives a million containers annually, most coming from or headed for Europe. If this method of shipping were eliminated, the most probable replacement scenario would be to serve North American customers by train or truck from ships putting in at the ports of New York and Halifax.

Another example is the current method of shipping petroleum products between St. Romuald and Montreal by Ultratrain. Should this

practice cease, the industry would most likely turn to sea-borne transport shipping the oil in tankers, which would constitute the alternative scenario.

The comparative analysis examined the environmental pressures compiled for each scenario. These environmental pressures concern only activities that are directly linked to the carriage of goods (carriage in the strict sense of the term), required infrastructure maintenance and the upkeep and replacement of transportation equipment. Since replacement scenarios all involve the use of existing infrastructures, pressure resulting from the construction of new infrastructures was not taken into account.

Sea-borne transport generally performs better

The results of the study show that, in terms of the pressures common to all modes of transport, maritime shipping was the most environmentally friendly transport mode. In general, significantly increased environmental pressures were observed when current sea-borne scenarios were replaced with mainly land-based scenarios. Inversely, environmental pressures decreased significantly when current land-based scenarios were replaced by water-based scenarios.

Due to their greater cargo capacity, ships have to make fewer trips than land-based transport vehicles to carry an equivalent quantity of goods. Depending on the case, this results in more or less significant reductions in fuel consumption, greenhouse gas emissions and accident risks. Sea-borne transport is particularly efficient environmentally at distances over 1,500 km.

In terms of the environmental pressures specific to each mode of transport, no comparisons between modes could be made due to the diverse nature of the pressures and the relative importance of their impact. Therefore, no conclusions could be reached on the most environmentally friendly mode of transport in terms of specific pressures.

The study also emphasizes that a mode of transport's environmental performance is not the main factor taken into account when deciding how to ship goods. The determining factors are shipping cost, transit time, whether delivery deadlines can be met and reliability. The question is how environmental considerations can be introduced into public and private decision making on shipping methods. This issue is crucial to current debates on sustainable development.

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Source:

CONSORTIUM HAMELIN -- CFoRT -- GESCO. 2000. *Étude comparative des impacts environnementaux des modes de transport de marchandises dans l'axe du Saint-Laurent*, report presented to the St. Lawrence Vision 2000 Navigation Committee and the St. Lawrence Economic Development Council, Quebec City, 131 p. + appendices.■

Chronicle
ZIP Committees in the Heat of the Action

The Des Seigneuries ZIP Committee

A regional workshop to promote mobilization and action

The area where the St. Lawrence narrows, between the Montreal Archipelago and the Sorel Islands, is currently being targeted for action by a newly formed ZIP committee (ZIP stands for Area of Prime Concern). The Des Seigneuries ZIP Committee is committed to making this part of the St. Lawrence better known and to promoting a public examination of how this region can be best protected, restored and developed. Based on public consultations carried out in December, priorities for action in the area have already been set.

The future of the section of the St. Lawrence between Varennes and Contrecoeur on the south shore and Repentigny and Lanoraie on the north was the topic of a recent workshop held by the Des Seigneuries ZIP committee with the theme of "The St. Lawrence, a community concern." Regional and community groups were invited to express their opinions on these topics at the workshop, which was held on December 1 and 2, 2000 at the Repentigny city hall. It attracted over one hundred participants, who participated in defining priorities for protecting, restoring and developing this section of the St. Lawrence.

The Des Seigneuries ZIP Committee was created under an initiative by the *Corporation de l'aménagement de la rivière L'Assomption (CARA)*, a cooperative, community-based organization in the Lanaudière region with a solid reputation acquired over the last 18 years in its work on developing and restoring the L'Assomption River.

An environmental assessment provides an up-to-date portrait of the region

As is the traditional practice, the regional workshop was a chance for the Quebec and federal government partners to release their environmental assessment for the region.

Specialists reported that water pollution in the region was on the way down, due to clean-up measures undertaken by a number of industrial plants and municipalities both upstream from and inside the region in question. Urban wastewater is still the source of significant bacteriological contamination, however. Contamination is particularly high within the plume of municipal wastewater released by the Montreal Urban Community (MUC), which crosses this section of the St. Lawrence.

One of the distinguishing characteristics of this part of the St. Lawrence is the presence of over 70 long, low-lying islands, between which meander shallow channels. These islands contain highly diverse wildlife habitats and are home to a large number of plant and animal species of interest, including many species of ducks. The shallow waters around the islands are also used by many fish species for spawning and fry rearing. The islands, with their surrounding beds of aquatic vegetation, are fragile ecosystems. They constitute the main natural ecosystems of concern in the section.

Some islands are protected due to their ownership, either by Environment Canada's Canadian Wildlife Service or by private conservation organizations. The Contrecoeur Islands are protected by virtue of their status as a national wildlife area. Other islands have been used since the 17th century for farming, which may limit their use by wildlife. On the other hand, agricultural use has probably helped to preserve the islands from uncontrolled urban development up to now.

Islands across from the shipping channel are exposed to waves from the wakes of ships. Such wave action is partly responsible for the severe shoreline erosion observed in this part of the river. Bank stabilization techniques to counter erosion are being tested. The shipping industry has also recently adopted voluntary speed reduction measures.

According to the environmental assessment, public access to the river is highly limited in this region. In addition, there is no integrated recreation and tourism route to enhance the value of the shoreline and its attractions. Furthermore, a large percentage of the banks on both sides of the river have been shored up with artificial structures and are no longer natural.

At the invitation of the ZIP committee, several regional players also presented information of special

interest to the workshop, although it was not directly related to the regional assessment. Christian Morissonneau, a geographer and historian, explained how, according to his research, this region has the greatest number of ancestral seigneuries in Quebec, hence the name of the ZIP committee. A group of students and graduates from Collège Saint-Paul in Varennes spoke of their work with the Freshwater Fish Ecowatch Network, a project carried out in cooperation with the Biosphere. Lastly, Réjean Dumas, from Quebec's wildlife and parks corporation, the Société de la faune et des parcs du Québec, showed the importance—based on the example of the spawning grounds for the lake sturgeon in the L'Assomption River watershed—of taking account of tributaries in managing the St. Lawrence.

A profitable exercise

After the environmental assessment was presented, the workshop participants took part in an exercise to define priority actions. A total of 21 actions were retained in the workshop.

Participants in the workshop on wildlife and habitats stressed the need to popularize, for the general public, knowledge on critical habitats for wildlife frequenting the river and its shoreline and tributaries, to promote greater respect of these habitats. The importance of supporting environmental groups working to conserve the islands was also stressed. Restoring natural ecosystems and taking better account of the presence of rare or endangered species when undertaking projects in the region were also discussed.

Concerning environmental contamination and its consequences on human health, disinfecting the wastewater from the MUC's outlet was particularly of concern to participants. It was proposed that steps be taken with the responsible authorities and different government departments involved in order to promote the improvement of the quality of urban wastewater. The decontamination of the Contrecoeur industrial area, the reduction of agricultural pollution in the L'Assomption River watershed and the limitation of pesticides used in the municipal and agricultural sectors were also discussed. The L'Assomption River was also the target of a recommendation to control hog and bovine manure.

Lastly, participants examined the issue of access to the St. Lawrence, recommending the establishment of a recreation and tourism corridor (including a bicycle path) on both sides of the river. In view of the fact that a number of recreational activities are currently limited by the poor bacterial quality of the water, a recommendation was made to clean up the wastewater from the MUC outlet. Participants also outlined the importance of stabilizing and renaturalizing the river banks, particularly on the islands; of surveying and characterizing contaminated sites; and of developing a certain number of beaches, which would be frequented by more and more people as the water quality was improved. Lastly, the importance of young people participating in ZIP committee activities was stressed.

Next step: formulating an action plan

The priorities identified in the regional workshop will be the basis of the first Ecological Remedial Action Plan (ERAP) formulated by the Des Seigneuries ZIP Committee. The ERAP will be used not only to guide the committee's work in the next few years but also to promote the mobilization of all the players in the region in question, based on the presence of a strong consensus on the content of the action plan.

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Sources:

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ROBITAILLE, Jean. 1998. *Regional Assessment. Secteur Varennes -- Contrecœur.* Zone d'intervention prioritaire 10. Environment Canada – Quebec Region, Environmental Conservation, St. Lawrence Centre, 92 p.■

News *in* BRiEF

The March-April 2001 issue of DÉCOUVRIR, the bimonthly popular science magazine published by the *Association canadienne-française pour l'avancement des sciences (ACFAS)*, has a special feature on cleaning up the St. Lawrence entitled *"Guérir le Saint-Laurent."* Topics addressed include beaches and fish consumption, water levels and habitat, drinking water, exotic species, sustainable navigation, community involvement and many other subjects. A number of St. Lawrence Vision 2000 (SLV 2000) partners participated in producing this special issue. At $5.95, it's a real bargain. A must-have for your library!

The March 2001 issue (number 21) of Maritime Magazine, which recently went on sale, focuses on shipping on the St. Lawrence. The co-chairs of the St. Lawrence Vision 2000 Navigation Committee, Jérôme Faivre (Quebec) and Gervais Bouchard (Canada), have written a fascinating article on the environment, the economy and sustainable navigation on the St. Lawrence. In it, they describe the cooperative approach taken by the committee; the committee's objectives, achievements and issues faced; dredging and sediment management; bank erosion; spills; ballast water and the concept of sustainable navigation. Don't miss it!

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