



R

# EFLECTIONS ON THE ST. LAWRENCE

## RIVER VOICES



**St. Lawrence**  
Vision 2000  
Health Component

Québec 

Canada 

To obtain a copy of this publication, please contact:

Regional Communications Office  
Health Canada  
200 René-Lévesque Blvd. West  
East Tower, Suite 218  
Montréal, Québec  
H2Z 1X4

Tel: (514) 283-2306  
Fax: (514) 283-6739

*Cette publication est disponible aussi en français sous le titre Reflets du Saint-Laurent—la parole aux riverains.*

© Minister of Supply and Services Canada  
Catalogue No. H21-132/1996E  
ISBN 0-662-24664-0

Legal deposit, Bibliothèque nationale du Québec 1996

*Cover photo:* Michel Gascon

# **S**T. LAWRENCE VISION 2000, HEALTH COMPONENT: A NEW WAVE OF ACTIVITY

**T**he St. Lawrence River. How does it affect the health of those who live near it? Is the water safe to drink? Are the fish safe to eat? Should people avoid using the river for recreation? Do contaminants pose a health risk?

These are some of the questions addressed in a new program, the Health Component of St. Lawrence Vision 2000 (SLV 2000). The program's main objective is to protect the health of those who live along the St. Lawrence, and of those who use its resources, from contaminants in the river basin. A cooperative venture, the Health Component is managed jointly by Health Canada and Québec's ministère de la Santé et des Services sociaux (ministry of health and social services). Its work draws upon public health professionals and university researchers from across Québec.

The Health Component is part of a wide-ranging action plan, St. Lawrence Vision 2000. SLV 2000 is the second phase of a federal-provincial plan to clean-up, restore, protect and conserve the St. Lawrence and several of its tributaries. Initiated in 1993, this vast five-year plan has six components in addition to health: biodiversity, decision-making support, protection, restoration, agriculture, and community involvement.

The Health Component's activities can be grouped under four main headings:

## **1. Assessing Exposure to River Contaminants**

A number of the Health Component's studies assess the exposure of river-side residents to contaminants. These studies focus on three areas to establish human exposure levels: fish and seafood consumption, drinking water and recreational activities. Other studies assess people's knowledge and perceptions of—and reactions to—health risks related to contamination. They paint as complete a picture as possible, so that public health measures can better address the health and concerns of those living by the river.

## **2. Studying Relationships: Contaminants and Human Health**

This is perhaps the most challenging area of inquiry. Accurately establishing the relationship between environmental contaminants and human health is difficult. Estimating risks is complicated by the fact that little is known about the long-term effects of contaminants or the effects of contaminant mixtures.

### **3. Defining Risks: Protecting and Promoting Health**

A key element of the Health Component is communicating its results to the public. The results will be used to recommend how the river can be enjoyed safely and to determine what risk-reduction strategies, if any, are necessary.

### **4. Determining Priorities: Clean-up and Environmental Protection**

Health Component studies will show where contaminants in the St. Lawrence pose risks to human

health. These results will demonstrate limits to safe uses of the river. They can also be used to develop priorities for environmental clean-up.

The Health Component is a continuing endeavour. Since its inception, a number of projects have been completed, others are on-going; still others are being planned. As results accumulate, they are made public. For example, health reports are produced and distributed to communities. In this way, the Health Component is a continuing effort to re-acquaint the people with their river—safely and in good health.

# SOUNDING THE DEPTHS . . .

## THE FIRST SURVEY OF ITS KIND

The mighty St. Lawrence—the heart of Québec!

Like the human heart, the river must be cared for. The health and livelihood of many Quebecers depend on it. For some time, the river and its health have been under increasing scrutiny. But what do the people who are closest to the river think—the more than three million Quebecers living by its shores? How does the river form part of their lives? What benefits does it bring? What concerns does it raise? Does the river's condition stop them from swimming in it? From boating on it? From drinking its water? From eating its fish?

The *St. Lawrence River Basin Survey of Knowledge, Perceptions and River Use* sets out to answer these questions. Conducted by the Centre de santé publique de Québec (Québec City public health centre), this survey is the first of its kind devoted exclusively to the St. Lawrence. Broad in scope and rich in detail, the study documents the relationship between the river and its people. Its objectives: to determine the extent to which people use the river, and to assess their knowledge and perceptions of its impact on their health. The survey focuses on four areas: drinking water, recreational

activities, sportfishing and the consumption of fish.

In all, 18,236 people aged 15 and over were interviewed by phone between March and May 1995 in the riverside regions: Montréal, Laval, Montérégie, Lanaudière, Mauricie-Bois-Francs, Québec, Chaudière-Appalaches, Bas-Saint-Laurent, Gaspésie-Îles-de-la-Madeleine and Côte-Nord.

The survey results provide the first overview of St. Lawrence uses that involve potential health risks. The results will be used to orient public health activities, to develop communication strategies, and to evaluate efforts to clean-up the river. These activities are part of a process that will allow Quebecers to return to the river and make it a more significant part of their lives.

The following pages present the survey's initial results. Results for the Saguenay and the regions along the other tributaries of the St. Lawrence have been omitted here but can be found in the survey's technical report. Given the survey's scope and the volume of data collected, it will be some time before all the analyses are complete. This publication, however, provides preliminary highlights.

The survey was conducted in 1995; 18,236 riverside residents were interviewed.

A

## GREAT RESOURCE ON TAP

The St. Lawrence provides drinking water for almost half of Québec's population. To ensure the water's safety, it is filtered and treated according to standard procedures. However, concerns about its quality and its effect on health persist.

One of the survey's objectives is to determine the proportion of the riverside population that drinks mainly tap water and the extent to which these people are satisfied with its taste and smell. The survey

also questions people who drink other types of water (such as spring water). It further determines how riverside people perceive the risks of drinking water from the St. Lawrence.

Most of the people who live by the river—2.2 million (72%)—usually drink tap water. Of those, one in seven filters or purifies the water using a household appliance. About one person in four (24%) says they usually drink bottled water.

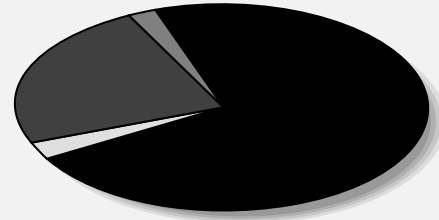
*The vast majority of people who live along the river usually drink tap water.*



Age and sex do not seem to be factors when it comes to selecting drinking water. Income, however, is. People with an annual household income under \$60,000 are more likely to drink tap water on a regular basis than those with an income over \$60,000.

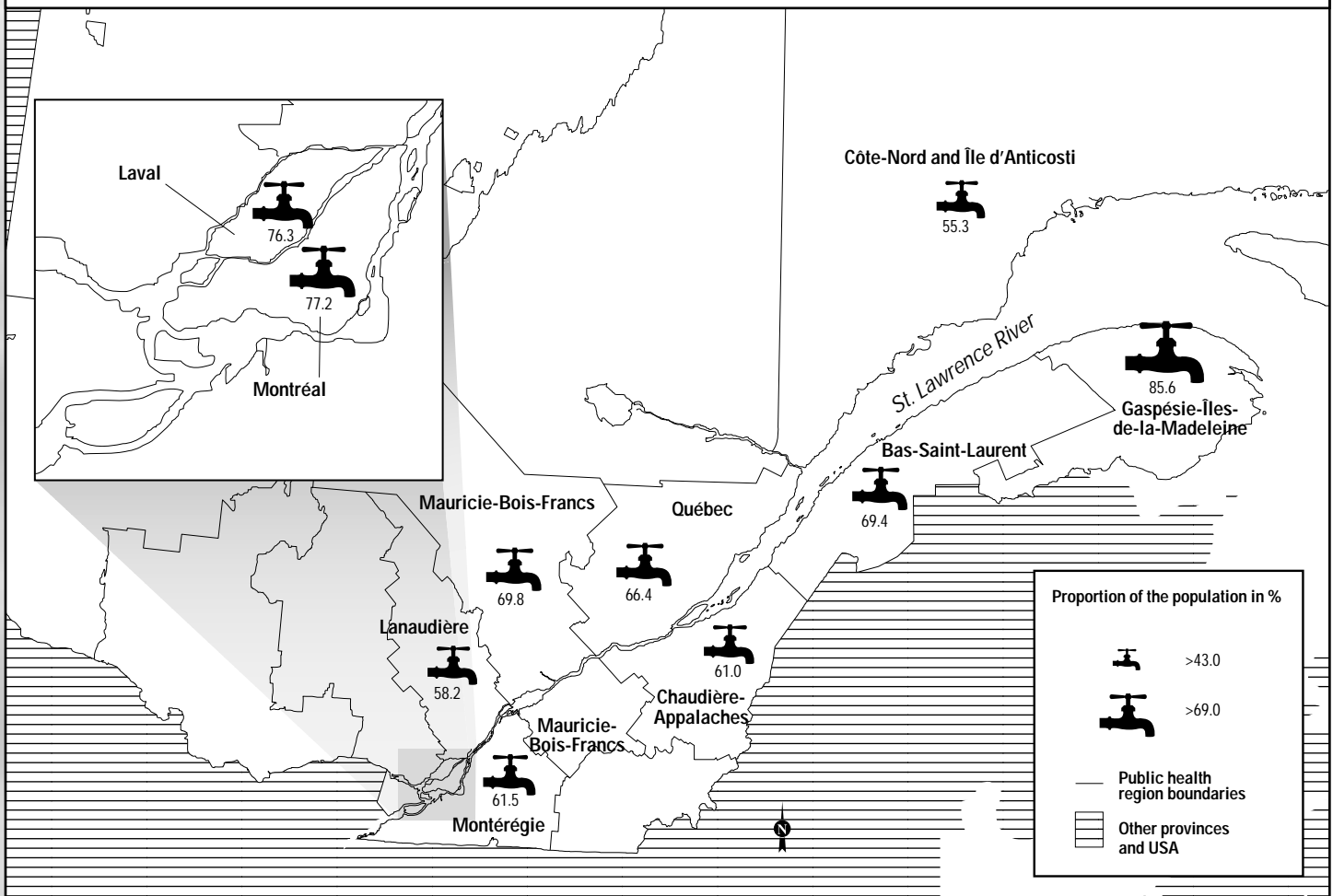
On the whole, people say they are satisfied with the quality of the tap water: 89% are satisfied with its smell and 87% with its taste. Of those who drink mainly bottled water, 46% say it tastes, smells and looks better than tap water; 7% believe it contains more minerals;

### What type of water do you usually drink at home?



- Tap water (72%)
- Mineral water (2%)
- Bottled spring water (24%)
- Demineralized or distilled water (2%)

### PROPORTION OF THE POPULATION THAT USUALLY DRINKS TAP WATER

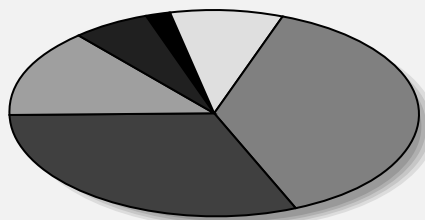


*Almost 90% of those who drink tap water say they are satisfied with its quality.*

12% feel it has fewer germs; and 15% think it has fewer chemicals.

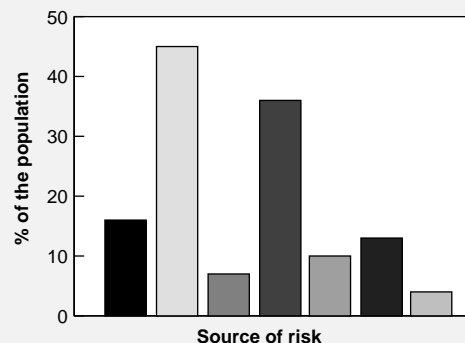
The vast majority (83%) feel that tap water poses little or no health risk. Of those who do believe there is a risk, around 40% think it is greater if the water comes from the St. Lawrence rather than from other sources; 35% say the risk is the same no matter where the water comes from.

### How high is the health risk involved in drinking tap water?



Of those few who believe that St. Lawrence drinking water poses a greater risk, most say that pollution and industry—including chemical contamination—are to blame. Few question the effectiveness of water treatment facilities in making water safe to drink.

### To what do you attribute the risk associated with the water from the St. Lawrence?\*



- Pollution from sewers (16%)
- Industry/chemical contamination (45%)
- Germs/bacteria (7%)
- Pollution in general (36%)
- Water treatment facilities (10%)
- Other (13%)
- Don't know (4%)

**\*Some people identified more than one source.**

People's overall opinion of the St. Lawrence, as compared to other bodies of water, probably influences their evaluation of water quality. If people believe that the water quality of the river has improved, they will have fewer concerns about drinking its water.

# **ON FOOT OR AFLOAT**

**T**he majesty of the St. Lawrence. It has been captured in print and in pictures, celebrated in song and commemorated in prose. Its breathtaking beauty inspires all who look upon it. Its landscape is ever-changing but always impressive. From the Îles-de-la-Madeleine to the Great Lakes, the mighty river's 1,500 kilometre course flows by awe-inspiring sights: the grandeur of Percé Rock, the picturesque cliffs of Québec, the vivacity of Montréal's skyline and the enchantment of more than 600 islands. At once an aquarium, a zoo, an aviary and a botanical garden, the river is alive and vital. Its mountains, forests and waters offer an

endless choice of activities, from the excitement of skimming its surface to the solitude of walking its shores.

In its survey of recreation along the St. Lawrence—including walking, boating and swimming—the study determines the proportion and characteristics of the population that engages in activities along or on the river. It also explores their perceptions of the risks and the advantages of using the river.

## **DOWN BY THE RIVERSIDE**

Walking the banks of the St. Lawrence is popular among those

*At least  
1.7 million  
people walk  
along the  
river to relax  
or enjoy  
the scenery.*

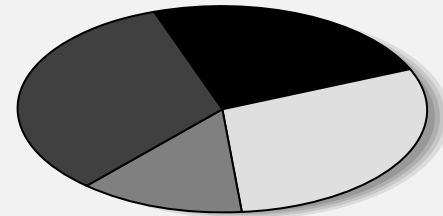


**Photo by Bob Burch**

who live nearby. While it does not involve direct contact with the river, walking is a contemplative activity for which the river provides a beautiful setting.

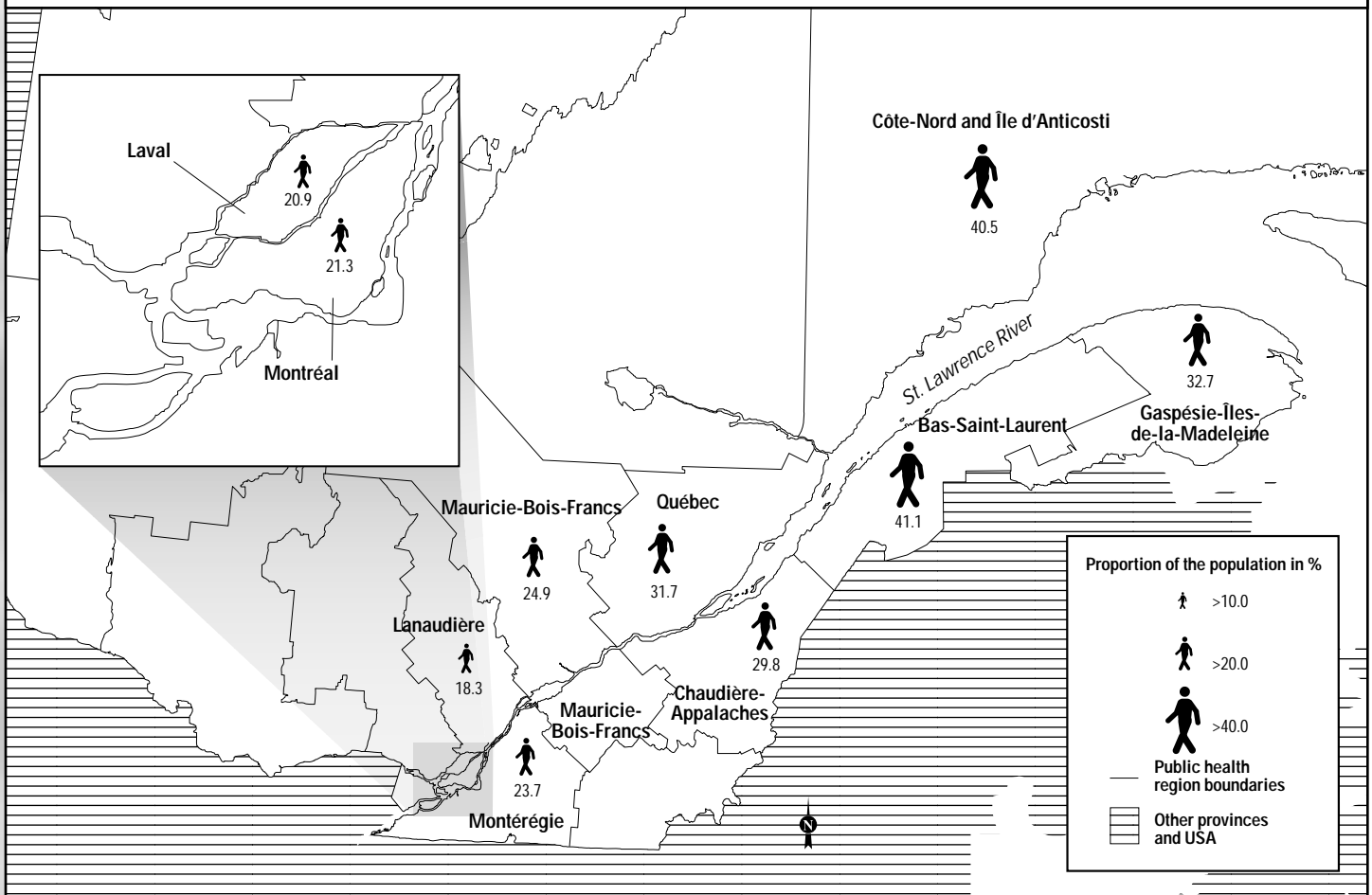
The survey estimates the number of people who walk along the river just for fresh air. In the preceding year, nearly 1.7 million people—about 54% of those who live by the river—walked along its shores to relax or enjoy the scenery. Such an impressive number suggests that the St. Lawrence plays a positive role in our well-being.

**During the last year, did you walk along the river to relax or enjoy the scenery?**



Often (24%)      Rarely (13%)  
Sometimes (30%)      Never (33%)

## PROPORTION OF THE POPULATION THAT WALKS ALONG THE RIVER



Nearly half the people who live along the river believe it is safe for boating activities.

## RIDING THE WAVES

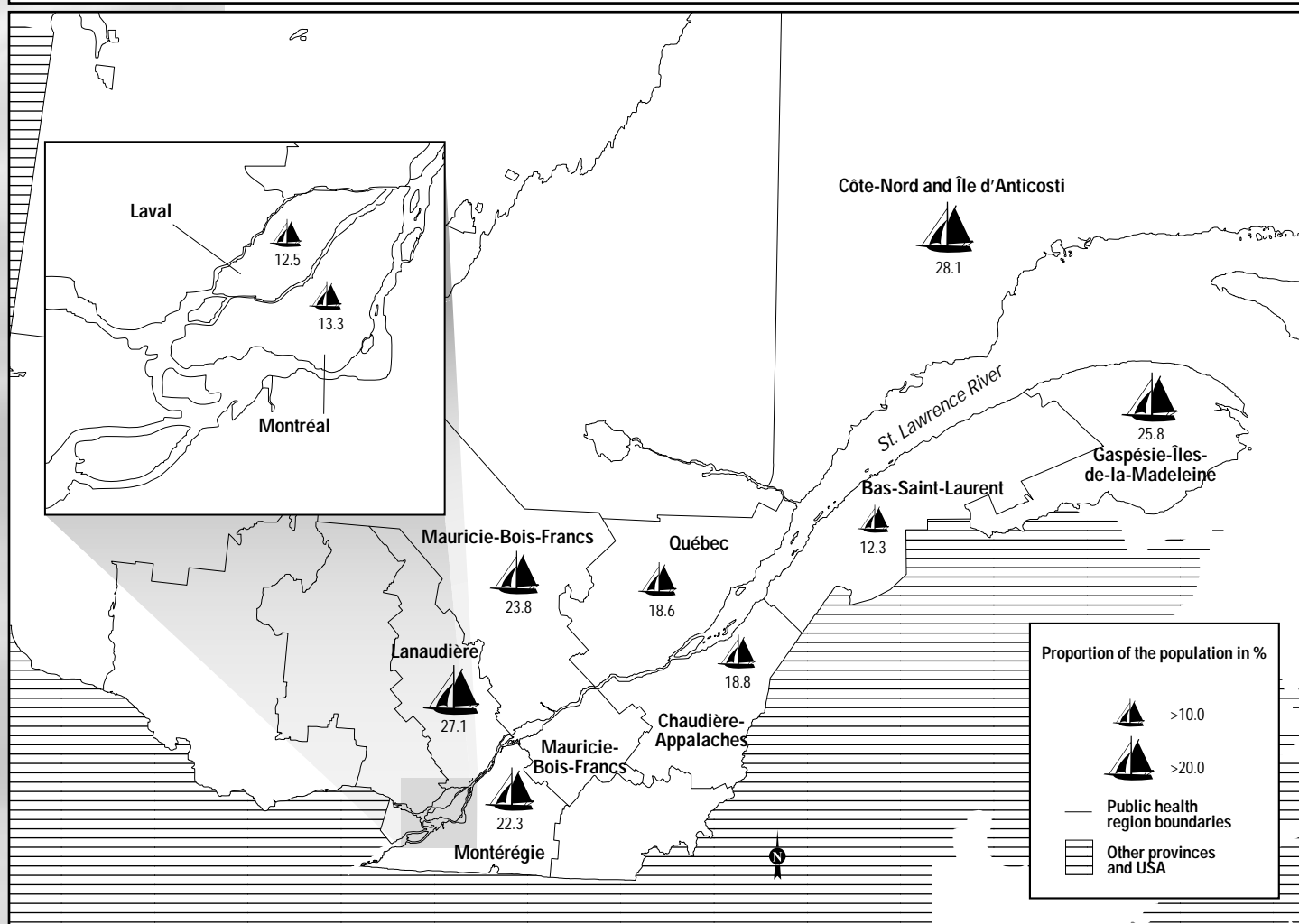
Few things are as enjoyable as a St. Lawrence boat trip on a beautiful summer day. While it is an ideal setting for all types of boating, changing currents and tides, the unpredictability of its weather, its water temperature, and the presence of a shipping lane make precautions essential.

This section of the survey determines the proportion of the riverside population that takes boat trips on the St.

Lawrence and the reason they choose this river over other waterways. It also identifies the types of boats used, defines people's perceptions of boating risks, and investigates their behaviours and attitudes with respect to life jackets.

About one person in five takes boat trips on the river. Most often, they use yachts, outboards, cruise boats and motorboats. Small craft such as canoes and kayaks are also used.

## PROPORTION OF THE POPULATION THAT GOES BOATING ON THE RIVER

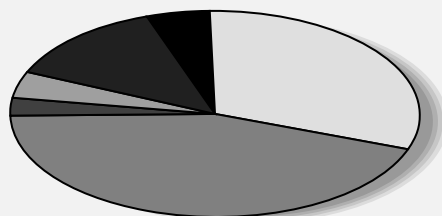


*A third of those who go boating say they are attracted to the St. Lawrence by its beauty and wide-open spaces.*

In the year prior to the survey, more men than women went boating on the river. Also, boating is more popular among people under the age of 45.

There are encouraging trends in the use of life jackets. More than half of the respondents (55%) say they always wear a life jacket. If those taking boat cruises are excluded, the number increases to 63%. Of those who rarely or never wear a life jacket, 56% say they are unnecessary because their boats are safe and there is no danger; 17% think life jackets are cumbersome, uncomfortable and hot, and prevent tanning; and 10% say that no life jackets were available on the boat.

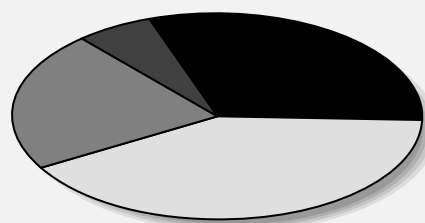
#### How do you rate the St. Lawrence for boating safety?



- Very dangerous (5%)
- Dangerous (31%)
- Safe (44%)
- Very safe (3%)
- As dangerous as other places (4%)
- Don't know (13%)

Almost half the respondents believe the St. Lawrence poses no danger to nautical activities. Over a third believe the opposite. The perceived risks are twofold. Some associate the risks with other people's behaviour: 24% cite boat traffic and the possibility of collisions; the same number single out excessive speed; and 11% mention drowning. Others associate risks with the nature of the river itself: 23% name tides and currents; 11% the size of the waves and whirlpools.

#### Do you think the St. Lawrence is more or less pleasant than other places for boating?



- More pleasant (31%)
- As pleasant (41%)
- Less pleasant (22%)
- No response (6%)

One-third of those surveyed prefer the St. Lawrence to lakes and other rivers for boating, while two-fifths have no preference. The beauty of the river's natural surroundings and its large open spaces draw many boating enthusiasts to the river.

Close to 200,000 people swim in the St. Lawrence.

### GETTING YOUR FEET WET

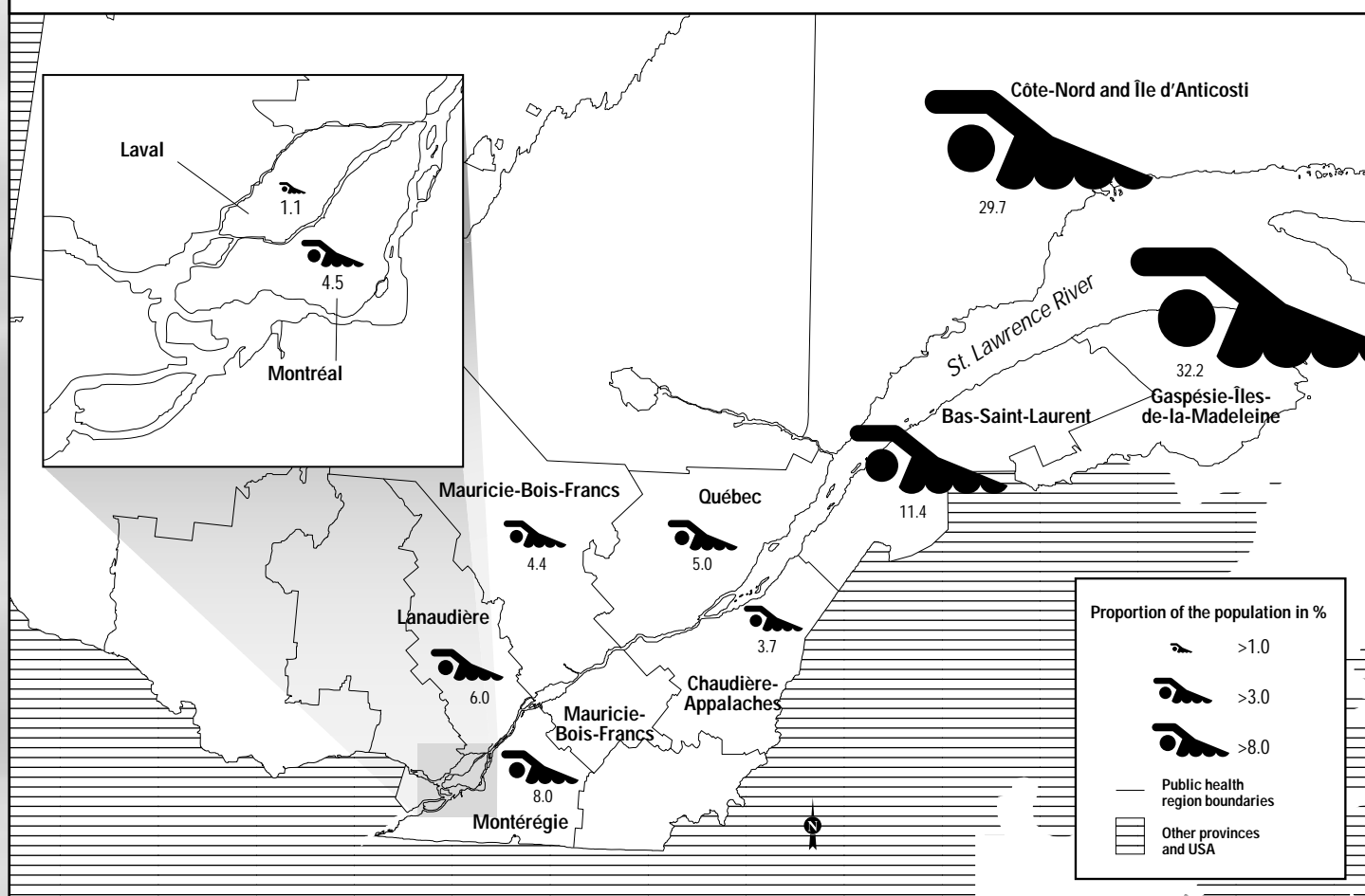
Swimming, waterskiing, windsurfing and scuba diving are among the activities that bring people into direct contact with the river. However, little information is available on the practice of these activities. Even less is known about what differentiates those who use the river from those who do not, especially concerning their knowledge and attitudes towards safety and health risks.

The survey studies the number and characteristics of people who swim in the St. Lawrence. It also measures

their perceptions of the health risks and the advantages of contact with the river.

Close to 200,000 people (6% of the riverside population) say they swim, ski or surf in the St. Lawrence. The numbers, however, vary from one region to another; people from Gaspésie-Îles-de-la-Madeleine and Côte-Nord are more apt to use the river than those in other regions. About 75% say they go to the river to cool off or swim; the rest prefer waterskiing, windsurfing and scuba diving. Two-thirds of those who

### PROPORTION OF THE POPULATION THAT GOES SWIMMING IN THE RIVER

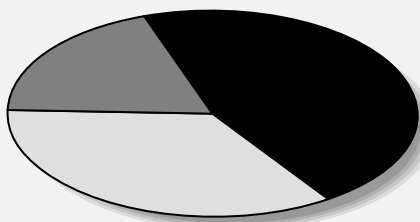


*Over half the swimmers swam in the river more than three times.*

swim or cool off in the river use public beaches. About 80% of the river's swimmers are under the age of 45. A little more than half are men.

Over half the swimmers (54%) swam in the river more than three times in the summer preceding the survey.

### **Last year, did you swim in the river...? \***



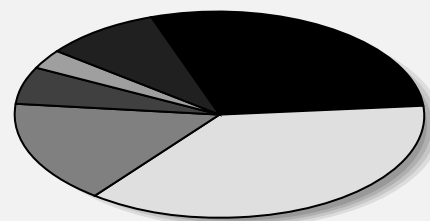
- Less than 3 times (46%)
- Between 3 and 10 times (35%)
- More than 10 times (19%)

**\*Among swimmers only.**

Like boating enthusiasts, swimmers appreciate the St. Lawrence for its beauty and feeling of open space.

Two-thirds (66%) of those surveyed consider the risk of swimming close to their home high or very high; 25% believe it is low or non-existent. People who swim in the river are less likely to say that the risks are high or very high (40%). Those who do not swim in the river are more likely to see high or very high risks (75%).

### **How high is the risk involved in swimming in the St. Lawrence close to your home?**

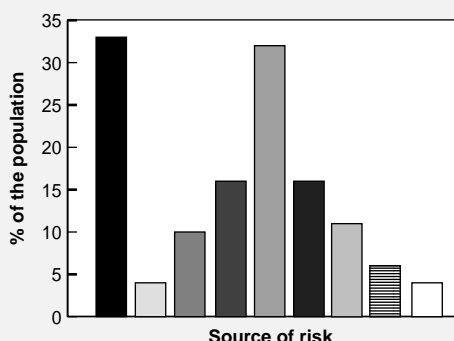


- Very high (29%)
- High (37%)
- Low (16%)
- Very low (6%)
- No risk (3%)
- Don't know (9%)

People who feel there is a risk attribute it mainly to general pollution and to industry (including chemical contamination). More than half of those who enjoy swimming in natural surroundings think the health risks are greater in the St. Lawrence than elsewhere. Among all respondents, skin problems, eye and ear infections, and gastroenteritis are considered the main risks.

More than one million people say they would swim in the St. Lawrence if they were assured the quality of the water is good.

### To what do you attribute the risks involved in swimming in the St. Lawrence? \*



- Pollution in general (33%)
- Illnesses in general (4%)
- Germs/bacteria (10%)
- Pollution from sewers (16%)
- Industry/chemical contamination (32%)
- Other\*\* (16%)
- Solid debris (11%)
- Colour/clearness of the water (6%)
- Don't know (4%)

**\*Respondents could indicate up to three sources.**

**\*\*Bad odour of the water, danger of drowning, lack of surveillance, etc.**

One-third of those surveyed say they would swim in the St. Lawrence if told the quality of the water were good. This is surprising, given that a majority of those who live along the river do not swim in lakes or other rivers. An important element comes into play here: mistrust of the quality of the environment. Indeed, the less people swim in the river, the more they believe that there are health risks.

# A

## FISHING TALE

**F**ishing is one of Québec's most popular outdoor activities. It offers a mix of relaxation, nature, sport, and the satisfaction of eating your catch.

The survey estimates the proportion of the riverside population that enjoys the sport. It also reports on the consumption of fish, and evaluates the perceived risks and benefits of eating fish from the St. Lawrence.

About 21% of the riverside population enjoys sportfishing. Of these, 41% (260,000 people) fish in the St. Lawrence. In every region, lakes and rivers other than the St. Lawrence are the preferred sites. Those who prefer the St. Lawrence (7%) do so

because of the beautiful surroundings, the wide-open spaces and the size of the fish. Eight percent of those who fish say they also enjoy ice fishing on the river.

Three out of every four people who fish on the St. Lawrence are under the age of 45. An equal proportion are men.

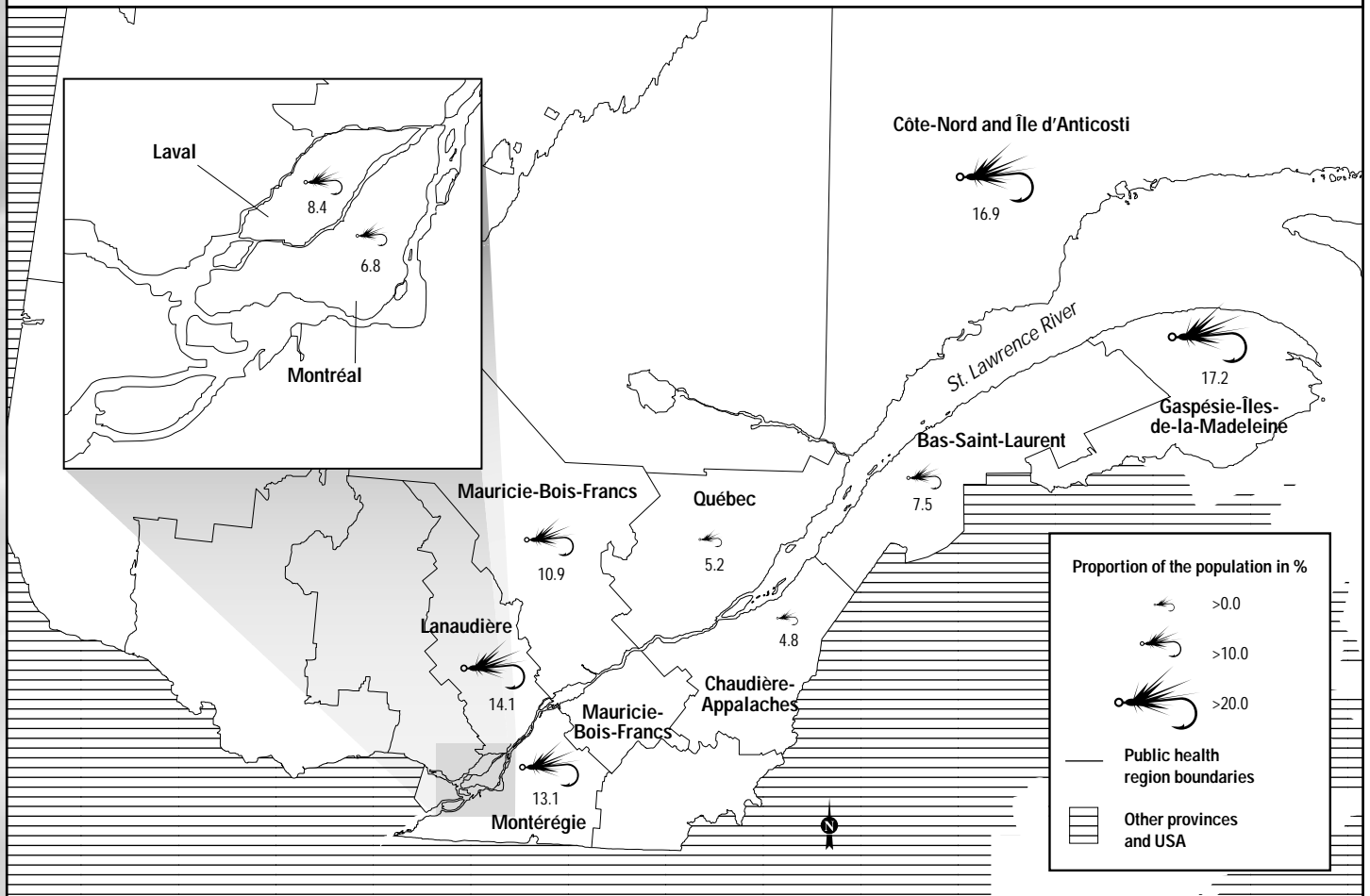
The main species caught in the river are perch (46%), pike and muskellunge (42%), walleye (40%) and bass (23%). Burbot, sucker, eel, lake whitefish and sturgeon are less frequently fished. Several other species were mentioned, but none by more than 15% of those who enjoy fishing.

*260,000  
people fish  
for sport  
in the  
St. Lawrence.*



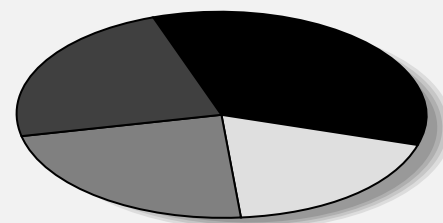
Photo by Gil Jacques

## PROPORTION OF THE POPULATION THAT SPORT FISHES ON THE RIVER



Of those who fish in the St. Lawrence, more than a third say they always return their catch to the river; nearly one in five says he or she does so frequently. People who release their catch do so because the fish is too small, they fear contamination or they are fishing only for the sport. People in Gaspésie-Îles-de-la-Madeleine, Bas-Saint-Laurent and Côte-Nord are more likely to keep their catch. But those from Laval, Montréal, Lanaudière and Montérégie are more likely to return their catch to the water.

## Do you return the fish you catch to the water?

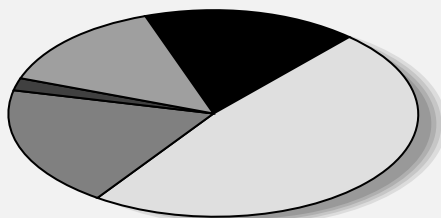


- Always (35%)
- Often (19%)
- Rarely (23%)
- Never/No response (23%)

About  
130,000  
people eat  
fish caught  
in the St.  
Lawrence.

About 130,000 people (4% of the riverside population) eat fish from the St. Lawrence. Among those who fish, one in ten eats fish from the river more than 20 times a year. Others eat fish less frequently, even though most survey respondents believe eating fish is beneficial to health. Most people think it is dangerous to eat fish from the St. Lawrence, but one person in five feels there is no cause for concern.

### To what extent do you think it is dangerous to eat fish from the St. Lawrence?

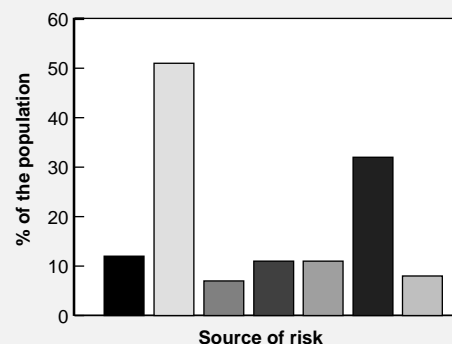


- Very dangerous (17%)
- Dangerous (48%)
- Safe (19%)
- Very safe (2%)
- Depends on species, quantity, etc./Don't know (14%)

Half of those who feel there is a risk attribute it mainly to industry and chemical contamination.

Survey data for the Gulf region also reveal that the reduction in, or loss of, use of the St. Lawrence directly affects what people eat. In fact, more than a third of the Gulf population has been affected by the decrease in

### To what do you attribute the risks involved in eating fish from the St. Lawrence?\*



- Pollution from sewers (12%)
- Industry/chemical contamination (51%)
- Germs/bacteria (7%)
- The fish are sick (11%)
- Some species are more contaminated (11%)
- Pollution in general (32%)
- Other (8%)

**\*Some people indicated more than one source.**

fish stocks. The main impact is on diet, although some say their standard of living and employment have also been affected.

But are the fish safe to eat? And, if they are, under what conditions and in what quantities? In the survey, fishing enthusiasts identify their preferred source of information on the quality of the fish. They also state how familiar they are with recommendations on the consumption of fish from the St. Lawrence.

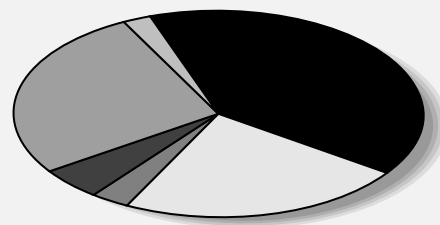
*Of those who fish, 40% say that they always follow recommendations on fish consumption.*

The ministère de l'Environnement et de la Faune du Québec (ministry of the environment and wildlife) and the ministère de la Santé et des Services sociaux du Québec (ministry of health and social services) publish a guide to the consumption of freshwater sportfish. The guide is entitled the *Guide de consommation du poisson de pêche sportive en eau douce*. According to the survey results, few fishing enthusiasts know of the guide. Other ways of providing information on the quality of fish could include television programs, specialized magazines and brochures. However, none of the proposed information sources was chosen as an overall favourite among fishing enthusiasts.

Many respondents say they follow the recommendations issued by public authorities on contaminated fish from the St. Lawrence. Others, however, say that they do not need these recommendations.

The quality of the river's fish seems to influence not only sportfishing,

#### **What do you think of the recommendations on the consumption of contaminated fish?**



- Always follow them (40%)
- Don't need them (23%)
- Advantages of eating fish outweigh the risks (3%)
- They are exaggerated (5%)
- Not really familiar with them (27%)
- Don't know (2%)

but also the consumption of what is caught. Few people prefer to fish in the St. Lawrence. Those who prefer other sites do so mainly because of the quality of the fish. Because of the river's poor reputation, very few people eat its fish.

# WHEN THE RIVER CALLS

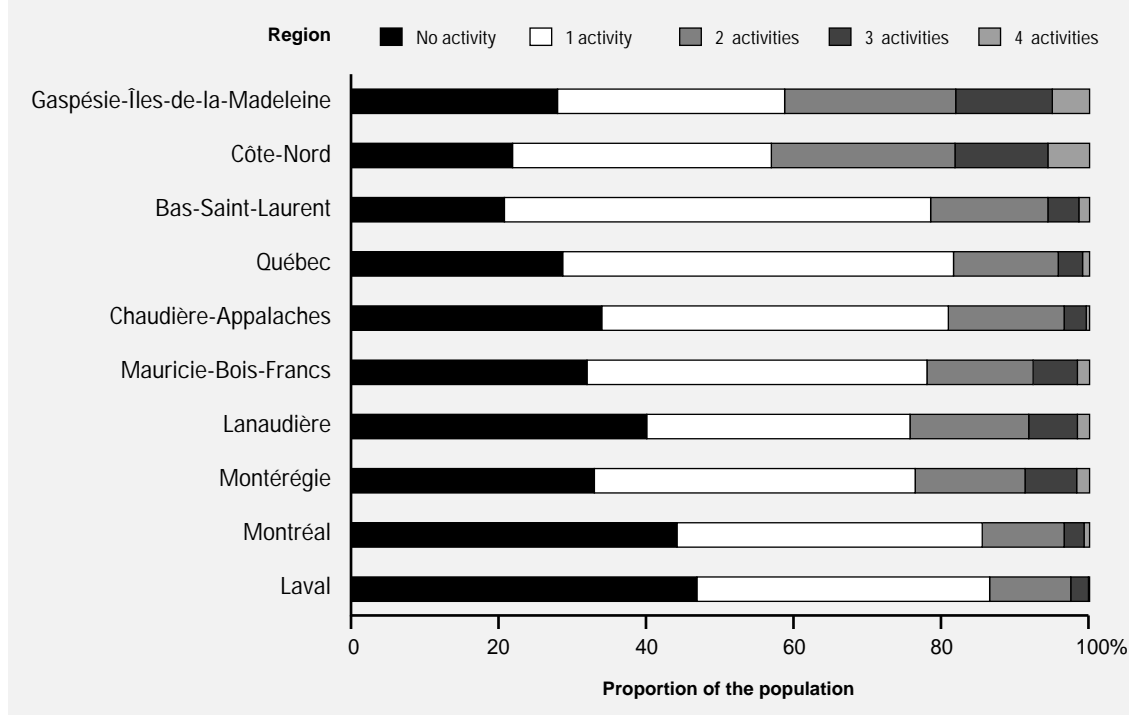
The majority of people living along the St. Lawrence (56%) enjoy one or two activities related to it. Five percent say they enjoy three or four activities. On the other hand, 39% claim to have no contact with the river.

A more complete analysis of these numbers reveals significant dispari-

ties between regions. For example, almost 20% of the people in Gaspésie-Îles-de-la-Madeleine and Côte-Nord engage in at least three or four activities, while only 3% do so in the regions of Laval, Montréal and Chaudière-Appalaches. In short, the farther people are from large urban centres, the more likely they are to make the river a part of their lives.

*The majority of people living along the St. Lawrence enjoy one or two recreational activities related to the river.*

**Number of river-related activities per person and by region**





## ULL SPEED AHEAD

*Returning the St. Lawrence to its people—an idea whose time has come.*

Currently, people living along the St. Lawrence seem to have little direct contact with its waters—walking along the river is by far the most popular activity.

The popularity of river-related activities and the risk associated with them vary with the degree of contact with the water. Those who enjoy close contact with the river are more apt to engage in a greater number of activities. On the other hand, activities that involve close contact are less popular because they are considered riskier.

This first glance at the survey results reveals four other important elements:

- When people are aware of an activity's risks, they tend to minimize the consequences. Rather than listen to authorities, they rely on their own experiences and observations.
- The number of people who consider the St. Lawrence safe for recreation is greater than the number who use it. Thus, many who consider the river safe do not use it. This suggests that the river's limited accessibility may affect contact with it.
- To encourage use of the river, clean-up efforts must continue and the public must be informed about the improvements. Only then will

the river's poor reputation stop shaping people's perceptions of its risks.

- It is important to make people aware of risk-reduction strategies so they can once again place the river at the centre of their lives.

This snapshot of the St. Lawrence and its people paves the way for future analyses and studies. Further results from this survey will help in monitoring the use of the river and evaluating the impact of communication strategies. Only then will we see the full picture of what lies ahead for this magnificent waterway.