

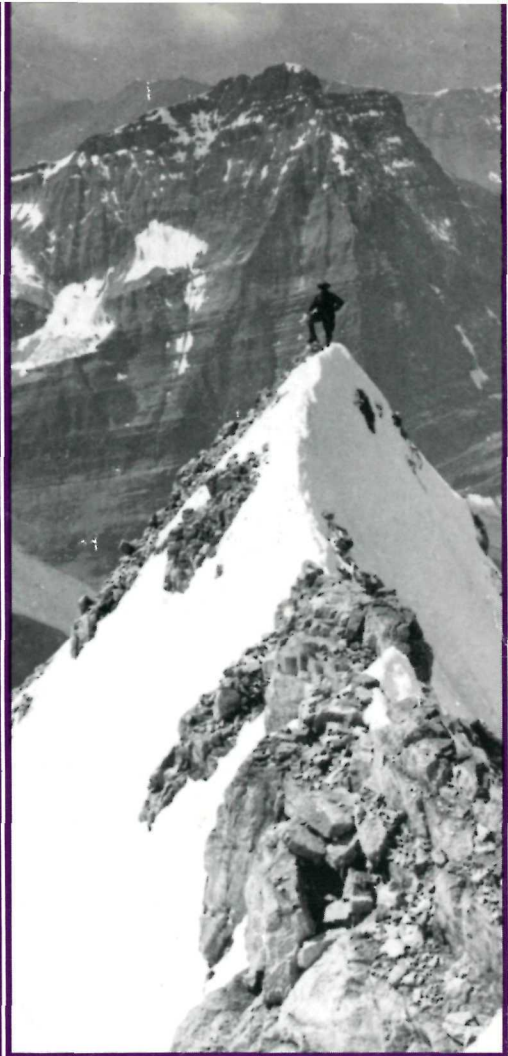


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1885



1985

Heritage for Tomorrow

Canadian Assembly on National Parks
and Protected Areas



Heritage for Tomorrow

**Canadian Assembly on National Parks
and Protected Areas**

The frontispiece: a plaque celebrating the Canadian Assembly Project was unveiled on September 8, 1985 by Canada's Minister of the Environment, Honourable Tom McMillan. The plaque will be displayed in Banff National Park. (For background see Volume 1, Appendix B.)

THE SECOND CENTURY LE DEUXIÈME SIÈCLE

On the Centennial of Canada's National Parks, marking the establishment of Banff as a public park in 1885, many interested citizens from across Canada and Ministers responsible for federal, provincial and territorial parks met at a Canadian Assembly in Banff to look to the future of Canada's parks and protected areas. This plaque commemorates the start of the second century of heritage conservation in Canada.

À l'occasion du Centenaire des parcs nationaux du Canada marquant la création en 1885, du parc public de Banff, de nombreux citoyens de diverses régions du Canada ainsi que les ministres responsables des parcs fédéraux, provinciaux et territoriaux, se sont réunis à Banff, dans le cadre de l'Assemblée canadienne afin de se pencher sur l'avenir des parcs et des aires protégées du Canada. Cette plaque commémore l'avènement du deuxième siècle de conservation du patrimoine au Canada.

Heritage for Tomorrow

Proceedings of the
Canadian Assembly on National Parks and Protected Areas

Volume 4

A National Parks Centennial Project

Participants

the Citizens of Canada

Sponsor

Parks Canada
Department of Environment

Assembly Theme

“Heritage for Tomorrow: Canada’s National Parks and
Protected Areas in the Second Century”

Proceedings Editors

R.C. Scace and J.G. Nelson

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Heritage for Tomorrow

Canadian Assembly on National Parks and Protected Areas

Project Management Team

Dr. Robert C. Scace (Manager)–Reid Crowther
Dr. J. Gordon Nelson–University of Waterloo
Dr. Gilles-H. Lemieux–Université du Québec à Chicoutimi
Mr. Barry Sadler–Consulting Associate, The Banff Centre
Ms. Susie Washington–The Banff Centre

Caucus Coordinators

Dr. Peter J. Dooling–British Columbia
Dr. Christian de Laet–Prairie Provinces
Mr. Don Huff–Ontario
Dr. Jules Dufour–Quebec
Ms. Janice Brown–Atlantic Provinces
Ms. Nancy MacPherson–Yukon Territory
Mr. John Donihee–Northwest Territories

Parks Canada Coordinator

Mr. Gary Lindfield
Hull, Quebec

Project Manager

Reid Crowther & Partners Ltd.
Calgary, Alberta

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Volume 4
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Contributors

Michel Beaulieu
3 900 rue Marly
Boîte 34
Ste-Foy
Québec
G1X 4E4

Pierre Belec

Claude Bernard
4947-F rue Du Fourcin
St-Agustin
Québec
G3A 1E3

Jean-Luc Bourdages
2302 est St-Zotique
Montréal
Québec
H2G 1J9

Louis Cabral
1195 Sherbrooke Ouest
Montreal
Québec
H3A 1H9

Daniel Caron

Jean Désy
Department de géographie
Université du Québec à Chicoutimi
555 Boul. Université
Chicoutami
Québec
G7H 2B1

Michel Drew
422 rue des Moulins
Mont St-Hilaire
Québec
J0L 1L0

Chantal Dubreuil
3 900 Marly
Québec
G1X 4E4

Jules Dufour
Doyen
Etudes de 1er cycle
Université du Québec à
Chicoutimi
555 Boul. Université
Chicoutimi
Québec
G7H 2B1

Jacques Kurtness
Département des sciences
humaines
Université du Québec à
Chicoutimi
555 Boul. Université
Chicoutimi
Québec
G7H 2B1

Harvey Mead
2728 rue de l'Anse
Ste-Foy
Québec
G1W 2G5

Luc Morel

Jean Pelletier

Jacques Prescott
1205 Route Gustave Langelier
Cap Rouge
Québec
G0A 1K0

* For further information on contributors please contact
Dr. Jules Dufour.

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Jules Dufour and his caucus colleagues embarked upon a most ambitious program of explorations to determine citizen aspirations for heritage futures in Quebec. This volume attests to the thoroughness with which the program was executed and appreciation is extended to all who made the caucus so successful. A special note of gratitude is extended to the many individuals who contributed to the documents appearing in Volume 4.

We thank Environment Canada, Parks for making possible the publication of this volume and we acknowledge the herculean efforts of Julie Bean, Yvonne Budden, Vivian Cabana, Gary Lindfield, Claude Jarry, Ian Joyce and many others to bring this document to the printer's door.

The Editors

Preamble

Proceedings of the Canadian Assembly on National Parks and Protected Areas are being published in English and French editions. The volumes are organized in such a way as to present systematically the work of the assembly. Volume 1 provides background on the origins, structure, program and principal findings of the assembly. The volume includes the national issues paper and agenda for the Banff assembly, the proceedings of the workshops, final plenary session and other activities in September, 1985. It also includes a participant list.

Volume 2 includes the main reports prepared by each of the seven regional caucuses. Supplementary documents which support the main reports are contained in Volumes 3 (all caucuses except Quebec) and 4 (Quebec only). Volume 5 contains papers and statements by individuals and organizations who responded to a public invitation to contribute to the assembly process.

The following guidelines should be noted on editing procedures. Editing has focussed on consistency in organization, layout and spelling. Tables and illustrations are numbered according to the paper or report in which they appear. Overall emphasis has been upon maintaining the style and contents of texts received from respective authors and organizations.

Introduction

In the report from citizens in Quebec to Heritage for Tomorrow (Volume 2) caucus coordinator Jules Dufour observes that for a decade and more, environmental issues increasingly have become a matter of concern to Quebecers. In cities and rural areas, industrial zones, harbour areas and elsewhere, "the protection of heritage and natural spaces has become everybody's business." Concerns have emerged in various ways - through citizens' groups, regional and local communities, and government agencies - to coalesce in an overall approach expressed in the provincial Environmental Quality Act. Notwithstanding this heightened awareness Quebec was and remains a reservoir of natural resources essential to the industrial development of central and eastern Canada and the northeast United States. It is a hinterland long exposed to the extraction of abundant and cheap raw materials - notably pulp wood, hydraulic energy, minerals and wildlife - and development of industrial activities which significantly impact on the natural environment.

The advent of the National Parks Centennial and "Heritage for Tomorrow: The Canadian Assembly on National Parks and Protected Areas" enabled the Quebec caucus, through sponsorship by l'Union quebecoise pour la conservation de la nature, to assess the state of conservation in Quebec under the general title "Environment, Resources and Society: The Future of Quebec's Heritage, A Collective Challenge." By this means citizens set about the task of examining questions such as:

- are the rhythms of natural renewal among forest and wildlife resources being respected?
- is the development of rivers for energy purposes accomplished with due regard to regional, environmental, and socio-economic conditions?
- can agricultural land continue to support production cycles currently in place?

- will marine resources remain sufficiently abundant to feed us twenty years from now?

"In other words," asks Dufour, "can we ensure abundant resources for future generations? Is the network of protected areas sufficiently large and functional, so that we can learn today to conserve existing resources and to develop them in such a way as to ensure that they remain plentiful for the future?"

The caucus structured an unusually comprehensive framework wherein to consider these and other fundamental questions about Quebec's heritage future. The province as a whole was considered and both resources development and resource conservation practices evaluated. Seven theme areas and a large number of issues were identified (Table 1) and for each issue five questions were posed:

- what major aspects characterize resource development, protected areas and conservation practices?
- what problems affect areas under development and protected regions?
- what solutions does government recommend for these problems?
- what solutions are proposed by citizens' groups and associations for these problems?
- what is the suggested global strategy for 1985 - 2000?

In dealing with the issues and the foregoing questions the Quebec caucus employed an unusually effective series of maps to illustrate problems and concerns. Many of the maps are included in this volume; information on others may be obtained through contact with the caucus coordinator.

A variety of means were used to ascertain the views of Quebecers, including document inventory and analysis, consultations and group meetings. Originally participants were to address twenty-five issues identified on Table 1; seventeen of the more substantial reports on these issues are presented in this volume of Heritage for Tomorrow. These issue reports contributed

TABLE 1
 QUEBEC CAUCUS: THEME AREAS AND ISSUES

Theme	Issue
1. Areas under development	<ul style="list-style-type: none"> ● forestry sector ● agricultural sector ● lakes and rivers ● humid zones ● coastal and marine environments ● urban environments ● northern regions
2. Reserves or conservation areas	<ul style="list-style-type: none"> ● parks for conservation and recreation ● wildlife reserves ● controlled operation zones (ZECs) ● cave sites ● ecological reserves ● open-air activity centres ● ocean parks ● migratory bird sanctuaries ● interpretation centres ● heritage rivers ● biosphere reserves ● natural districts
3. Tourist areas	<ul style="list-style-type: none"> ● tourist and recreational facilities
4. Historical and cultural heritage	<ul style="list-style-type: none"> ● historic sites and districts ● native heritage
5. Research and education	<ul style="list-style-type: none"> ● research and education
6. Economic and social impact of conservation	<ul style="list-style-type: none"> ● economic and social impact of conservation
7. International aspects of conservation	<ul style="list-style-type: none"> ● international aspects of conservation

significantly to the main caucus report contained in Volume 2 of the Proceedings.

The work of the Quebec caucus represents one of the most comprehensive assessments to date on relationships among people, resource use and environment in Quebec. As an expression of the sentiments of citizens in Quebec the caucus reports should contribute greatly to decision making and action for many years.

Quebec participants at the Canadian Assembly in Banff strongly supported assembly recommendations that caucus activities should continue so as to address important issues affecting heritage futures.

The Editors



Quebec Forests

Michel Beaulieu

What will remain of Quebec's sugar bushes in ten years? The way things are going, very little. Eighty-three percent of them are already suffering the effect of acid rain, and forests in the Eastern Townships are already on the same fatal road as the famous Black Forest in West Germany.

The paragraph above paraphrases part of an editorial printed in the April 13, 1985 issue of a major Quebec daily. One year earlier, it would have been termed an alarmist view. When it was published, however, it barely contrasted with the general tone adopted by editorialists in other newspapers throughout the province. The alarm has been sounded; maple stands are dying.

What were the causes of all this agitation? An intergovernmental conference on acid rain, which was held in Quebec City from April 9 to 11, and attended by political leaders of fifteen American states and seven Canadian provinces - as well as federal government delegates - was one cause. The second cause was the alarming results of a study of Quebec maple stands by a team of researchers from the Ministère de l'énergie et des ressources (Quebec Department of Energy and Resources - MER). The last five years have seen a 39 percent decline in the growth rate of maples in comparison with the previous twenty years; the mortality rate has increased from two percent to 16 percent; the pH of soils in the 29 stations sampled by the MER researchers varied between 3.2 and 4.8; 83 percent of maples are affected to varying degrees; and there is every reason to believe that mixed and softwood stands are or will also be affected by disease.

The present report does not focus on acid rain. Rather, it reviews the status of forests and of forestry in Quebec in 1985. Nowadays, however, one cannot discuss Quebec forests without the threat of acid rain in mind.

End of a hot and humid July afternoon. A thunderstorm has finally erupted. Snuggled in an old easy chair in the shelter of the veranda, manuscript in hand, surrounded by the pitter-patter of raindrops on the leaves...

Industrial forestry developed rapidly in Quebec in the mid-nineteenth century. At that time, part of the province was covered by vast stands of white pine. The wood of this imposing tree was prized by British shipyards and serious harvesting of this resource, thought to be inexhaustible, began around 1820. Sixty years later the white pine forests had slipped into memory, but the resulting profits made possible the establishment of a powerful forest harvesting infrastructure. Insensitive to the fate of red (sic) pines, British and later American companies fell back on other species of Quebec trees judged "inexhaustible" - a myth which took one hundred years to dispel.

Throughout the twentieth century, logging companies held sway over Quebec forests. For a fee the government ceded to these companies vast fiefdoms, called logging concessions, where they were allowed to do as they pleased. Though responsible for every aspect of forestry, companies concerned themselves solely with harvesting. Reforestation was limited to a few ornamental trees planted in front of headquarter buildings in Montreal.

Concerned about the situation, the government ordered a study, the results of which were made public in a White Paper in 1972. The Quebec government was then asserting itself in every area, and began taking a dim view of the stranglehold which private industry had on Quebec forests. Following the recommendations of the White Paper, the government began, little by little, to recover concessions. It also took over responsibility for regeneration. Henceforth, companies would cut and the government would plant.

The Quebec government, however, was driven to action for many reasons in addition to forest regeneration. Convinced more than ever that the forest was inexhaustible - it would be the 1980s before MER launched a major reforestation program - the government

firmly believed that the logging concession system did not allow maximum use of forest potential. Some concessions were under-utilized; certain types of trees were left standing. Machinery was revived as a result of government reform and cutting levels reached new highs, increasing from 23.6 million cubic metres in 1970 to 34.2 million in 1979.

In 1982 some 250,000 workers - or 10 percent of the Quebec work force - depended directly or indirectly on the forest industry. Over one hundred municipalities drew their livelihood essentially from the forest. Forest product exports were valued at \$3.4 billion, representing 23 percent of all Quebec exports. Forestry constituted the driving force behind the Quebec economy.

During the 1970s the small number of people who protested the chosen method of management - old fashioned, romantic ecologists or disenchanted forest engineers - were unable to penetrate the stone wall put up by MER and the logging companies, whose expertise tolerated no questions. The fortress seemed impregnable. No one had counted, however, on a tiny insect called the spruce budworm.

The spruce budworm first appeared in West Quebec in the mid-1960s. In very little time, conifer forests were infested with voracious larvae that soon destroyed hundreds of thousands of trees. The phenomenon is not new; it is cyclical and repeats itself every thirty years (the last infestation occurred in the 1940s). The epidemic spread slowly throughout the province. Between 1970 and 1984, over 100 million cubic metres of wood were destroyed.

In 1969, to counter this threat, the government began a program of systematic chemical insecticide spraying of the areas most affected. Ten years later, spraying continues - at a cost of \$18 million annually - and the epidemic continues as well. After a long period of indifference, the public is becoming worried. Insecticides receive negative treatment in the press, and systematic spraying near streams and even housing developments is beginning to raise criticism.

The establishment of the ministère de l'Environnement (provincial department of the environment - MER) in 1980, the adoption of an impact assessment procedure for major projects threatening the environment, and the advent of the Bureau d'Audiences Publiques sur l'Environnement (office of public hearings on the environment - BAPE) called into question the omnipotence of the MER with respect to forest policy. In 1982, after being forced legally to submit an impact assessment study of aerial spraying projects, the MER found itself at the centre of a public hearing which raised considerable interest and questions.

The controversy focussed on the toxicity of insecticides sprayed by MER on a large scale, with each party citing its studies and experts. In this respect, the debate very soon bogged down. Opponents of insecticides encountered the classic obstacle preventing incrimination of many presumably toxic compounds: how can an impact on human health be linked, beyond reasonable doubt, to the use of a given product when dozens of possible variables come into play in nature, making it nearly impossible to establish a cause and effect relationship?

During these public discussions, many other aspects of the MER forest policy came to light. Thousands of people thus realized for the first time that long ago the government gave up the idea of conquering the epidemic through spraying, although this was the watchword in the early 1970s. Since 1976, in fact, insecticides have been used solely to maintain "standing trees" so as to give logging companies time to harvest them. As for the epidemic, well, it will come to an end - naturally.

How long must we continue to spray? No one really knows. In 1978, it was felt that spraying would go on until 1980; then it was believed that 1986 would mark the end of the spraying program. Now, 1990 is being discussed, with an option on 1996. For comparison, we should note that spraying has been conducted in New Brunswick since 1952. The epidemics of 1910 and 1940 lasted thirteen and eighteen years respectively, however, and both came to a natural end, without spraying.

In light of these deceptive figures, some interveners suggested that spraying, far from eliminating the epidemic, instead made it quasi-endemic. By reducing the insect population each summer - 25 percent to 40 percent of spruce budworm larvae survive chemical spraying - and preserving an abundant food supply for survivors, spraying prevents the epidemic from consuming itself through lack of food and thereby completing its cycle.

In 1925 the Canadian researchers Swaine and Craighead concluded that spruce budworm epidemic control depends on certain silvicultural practices. They therefore suggested clear cutting of fir trees over a short period of rotation, diversification of age classes through block cutting, and so on, in order to prevent development of the epidemic over vast sensitive areas. The advent of chemical insecticides resulted in the indefinite shelving of their discovery.

Nearly sixty years later, the BAPE, meeting to rule on the use of insecticides, reached the same conclusion as Swaine and Craighead. In its report published on April 6, 1983, the BAPE concluded that, in order to be effective in spruce budworm control, the MER program should be based on an integrated solution involving biological insecticide spraying, early removal of budworm-infected trees, reforestation, improved cutting techniques and increased use of species other than softwoods.

This did not prevent the government from authorizing MER, through order-in-council, to conduct aerial spraying of chemical and biological insecticides - but only for 1983 and under certain conditions. A victory for the MER? Within a few months, this department's forest strategy, which went nearly uncontested for years, came under fire from a multitude of interveners: pressure groups, community health services, the Syndicat des Travailleurs Forestiers (union of forest workers) as well as officials with the provincial department of the environment, the Ordre des Ingénieurs forestiers (order of forest engineers) and the Quebec Forest Industries Association. The MER emerged rather shaken from these first public hearings.

In the summer of 1984, the MER again came before the BAPE; this time, it sought approval for its new action program for 1985-1989. The MER presented a voluminous 2,000 page impact study prepared by consultant André Marsan. Unfortunately, the consultant had to correct a certain amount of erroneous data during the course of proceedings, thereby altering the conclusions "slightly."

The MER's new five-year program calls for the progressive replacement of chemical insecticides (Aminocarb, Fenotrothion) with biological insecticides (e.g., B.t.), to be completed by 1988. It also includes a silvicultural component for forest management in the Gaspé/Lower St. Lawrence region (preharvesting of wood affected by spruce budworm, annual reforestation, thinning). Is MER changing?

A few weeks before the start of the 1984 public hearings, MER published a consultation document entitled "La politique forestière du Québec" (Quebec forest policy). For the first time, the government recognized the impasse into which the Quebec forest has been led by current forest management practices.

The report stated that, within thirty years, public forests in the Gaspé/Lower St. Lawrence region, the Quebec City region, the Eastern Townships and the Trois-Rivières region will no longer be able to meet the wood supply needs of the forest industry. The report further noted that stock shortages will occur ten years later in more northern areas such as the Abitibi, Saguenay/Lake Saint-Jean and North Shore regions, and that harvesting levels already outstrip annual growth levels in seven of nine administrative regions.

What happened? According to Marcel Lortie, a professor with the forestry faculty of Laval University in Quebec City, the forestry strategy of Quebec - and Canada - since the nineteenth century, has focussed on just one thing: meeting new wood needs by building new roads to provide access to previously isolated resources. Quite recently - between 1974 and 1984 - the Canada-Quebec agreement on forest resource development granted \$118 million for reforestation and \$119 million for the construction of forest resource access roads.

Today, even roads dozens of kilometres in length lead only to stands of small scattered trees. Available reserves are not, and will never be, what they were before. We must accept the truth; the natural forest is exhausted. Quebec forestry has reached a turning point. Whether it wants to or not, the MER, having come to the end of the road, must put down its broadaxe, sit on a stump and reconsider its approach.

Viewed from the end of the road, what does the Quebec forest landscape resemble in 1985 and how do we view its future? In the confrontations of recent years many interveners repeatedly had to review this matter thoroughly.

However to whom honour is due: after considerable equivocation the MER finally recognized the scope of the problem. In "La politique forestière du Québec," it noted that if current harvesting methods and management levels were maintained, Quebec would no longer have sufficient forest resources to ensure development of the forest industry - or even to maintain production at its present level.

The Regroupement pour un Québec vert (group for a green Quebec), a lobby group created in September, 1984, called the spruce budworm a scapegoat for the poor management of our forests and placed much of the blame for the present state of affairs - specifically the scarcity of certain species - on the logging companies' practice of clear cutting over vast areas in concessions. There is a definite reason why Quebec forests are bereft of pine trees. Cedar and spruce will become just as rare if we pursue this type of harvesting.

The Syndicat des Travailleurs Forestiers (union of forest workers) is in full agreement. In its view, the primary cause of worsening spruce budworm infestations is the excessive homogeneity of the forest, which is largely a direct consequence of past harvesting methods. To a great extent the renewal and future availability of the forest have been signed away by pesticide spraying, inadequate harvesting methods, the lack of systematic reforestation and the wasting of raw materials.

In a memorandum submitted to BAPE, the Quebec Forest Industries Association retorted that the desire to use available resources to create employment and economic activity took only a little more than ten years to place most regions in a deficit position in terms of potential versus harvest. The Association also noted that it was unrealistic to maintain such harvesting levels without first adopting more intensive forest management programs. By harvesting without looking to the future, Quebec has jeopardized the long-term supply of its forest industry. In the present context of forest management, the Association added, only those who are out to turn a quick profit feel at ease.

This analysis is accurate and one seeks in vain the replacement forests that should have been planted sixty years ago, when companies had a stranglehold on our forest resources.

In a preliminary working paper issued in August, 1984, the Quebec Liberal Party, then serving as the official opposition in the National Assembly, analyzed the situation in the following terms:

Our forest industry is threatened to its very foundation. As the resource grows more remote, less abundant and more expensive, our forest industry is entering the first phase of its decline. Government is subsidizing modernization and private industry is demanding high yields to reduce amortization. This is not the behaviour of confident investors, but that of investors who have no desire for long-term risking of purely private capital.

Behind the capital, is there still, somewhere, room for the forests?

We can draw some small consolation from the fact that Quebec is not the first place to experience an acute forest crisis. In the early twentieth century Scandinavian countries were more or less confronted with the same problems that we are facing today: damaged forests, wood shortages, lack of replacment forests. In Sweden, Finland and Norway the crisis lead to a new awareness and the adoption of many measures to safeguard and revitalize the forest. Sixty years later, these forests are more productive than ever.

With 55 million hectares devoted to forest exploitation, Quebec each year produces 30 million cubic metres of wood. With 25 million hectares, Sweden produces 45 million cubic metres of wood. The future of Quebec's forest industry must involve a reduction in harvested areas and an increase in the rate of yield. In the past it was simply a matter of extending the road to reach new virgin stands of large trees. As a result, we cut our best production sites forty years ago. Located near the mills, these sites have regenerated with non-commercial species. In the forestry context of tomorrow, these production sites will have to be "reborn" as "cultivated" forests.

In modern forestry rebirth means reforestation. Quebec has a long way to go in this area. The first reforestation experiments were tried during the 1960s. A rather primitive approach was used, in which reforestation was often considered to be nothing more than improvised extra work to relieve local unemployment. The contents of a brochure published by the MER in 1976 give some idea of how seriously the task was taken: the only maintenance work done on crown lands since 1970 consists of three aerial sprayings - two in the Gaspé and three in the Lake Saint-Jean region - and some repair planting work. The end result of this heroic era: plantation survival rates varied between zero and eight percent.

Faced with the exhaustion of the resource, the MER has since altered its sights. In 1979, 1983 and 1984, the number of trees planted increased from 32 million to 64 and 80 million respectively. The survival rate of seedlings increased from less than 50 percent before 1975 to over 80 percent today. In the last three years, monies have been budgeted for plantation maintenance. With the planting of 300 million trees annually, starting in 1988, the MER hopes to build the forest of the future today. Many consider this objective unrealistic; there is a lack of proper infrastructure in terms of seeds, nurseries, personnel and equipment, and it is difficult to see how such infrastructure could be developed in only a few months. Regardless of the number of trees planted in 1988, however, the forest regeneration industry has definitely been launched.

It is not enough to simply plant trees; we must also ensure their survival. To that end, two essential conditions must be applied: selection of tree species best suited to the type of soil under reforestation, and prior preparation of plantation sites.

Concerning soil preparation techniques, the Minister responsible for forests, Mr. Jean-Pierre Jolivet, admits that Quebec lacks expertise. This shortcoming is one of the reasons why an applied research program of \$8.2 million is included in the Canada-Quebec subsidiary agreement signed May 1, 1985 between the two levels of government. This research will focus on the clearing of sites, working and improving of soil, controlled burning, mechanical clearing methods and evaluation of new phytocides.

Innovation will also be required in forestry machinery. In 1984, during an international forestry congress in Quebec City, participants from Sweden and Finland presented some of their "tools." "Light" machinery, adapted to the forest, makes possible selective work and inflicts a minimum amount of damage on forest stands. This is truly a technological turnaround compared to the heavy artillery used in this country. More appropriate technology would perhaps also make it possible for us to recover stumps, branches and crowns currently discarded in cutting areas. This debris can represent up to 40 percent of the wood matter contained in a tree.

In fact, a long-neglected facet of forestry, namely silviculture or "the culture of trees," must be developed in Quebec. As professor Marcel Lortie noted recently, a country which practices intensive forest culture generally has one forest engineer per 15,000 hectares; in 1984 Canada had one forest engineer per 50,000 hectares, which leads us to assume that the forestry profession in this country is limited to tree harvesting only. This is the good old "cut and run" strategy.

There is a cloud on the horizon in that the massive reforestation campaign started by the MER will inevitably lead to another major debate of the "spruce budworm" type. At the centre of

the next debate will be phytocides. On November 13, 1983, the Quebec government decided to completely eliminate the use of chemicals in the maintenance of plantations. In the opinion of the MER and the Ordre des Ingénieurs Forestiers, the use of phytocides in a plantation is essential because of the competition between young plants and weeds for access to the resources. If a plantation is abandoned to its own devices, raspberry bushes and other undersirable plants grow more rapidly than tree seedlings, block the seedlings' access to light and ultimately choke them out, thereby dooming all plantation work to failure. How long will the government be able to resist such arguments?

The opponents of phytocides, without denying the need to protect young seedlings, point to the long-term toxicity of the chemicals used and note that mechanical methods are available to solve the problem (such methods are widely used in Swedish forests). They accuse the MER of planning a new escape route, through the chemical option, and of evading the real problem. In this sense, the debate touches upon the very core of the forestry problem in Quebec, which we have discussed previously: the calling into question of harvesting methods.

To revive the forest, many battles must be waged in laboratories, in the field and in the legislative assembly. Since 1903, Sweden has adopted a law obliging loggers to replant what they harvest. In Quebec, 82 years later, companies cut trees and the government reforests.

The most important battle, however, will be waged outside the National Assembly. Fresh off the boat from Europe, our ancestors came up against what they must have then considered a green hell. For generations, we have dreamed of being "out of the woods," not hesitating to make a deal with the devil in return for a quick binge. Today, for the vast majority of people, the forest is nothing more than a green strip along each side of the highway. The "green hell" is no more; hostility has been replaced by indifference, which paves the way for many excesses. The next important battle will be waged at this level - in the conscience of Quebecers.

This completes my report. The storm, which I am sure you have not forgotten, continues to beat down on our forests, contributing day after day to the acidification of soils.

Recently, an American firm of financial analysts which establishes business credit ratings sounded an alarm about logging companies. Citing the example of West Germany - where the mortality rate of trees attributed to acid rain has increased from eight percent to 34 percent in one year - the firm advised its clients that the value of North American logging company shares could very soon plummet unless some action is taken to counter the acid threat.

Is it not unreasonable to expect that what we get from the Stock Market in New York, we can also hope to receive from the White House in Washington?

Agriculture: Degradation of Agricultural Land

Claude Bernard

After a heavy rain, tourists always ask us about the chocolate brown colour of the river. We tell them that it's our soil being washed away. The public doesn't know much about erosion. People don't understand that what they are watching flow away is their source of food for the next 30 or 40 years.

Jacque Laforge (New Brunswick)

This testimony by a New Brunswick agricultural producer before the Canadian Standing Senate Committee on Agriculture, Fisheries and Forestry illustrates what could well become one of the most serious environmental problems facing Canada in the years to come.

Progressively intensive use of agricultural land leads to an ever-increasing degradation of its physico-chemical and biological characteristics. This results in a decline in productivity which is already costing producers some \$1,000 M annually.

The impacts of such degradation are not limited to the land itself. Water quality is also seriously compromised by this phenomenon. One American study has shown that water pollution resulting from soil degradation imposes even higher costs on society than the direct costs to the farm: higher drinking water treatment costs, more frequent dredging of harbours and reservoirs, and so on.

The accelerated degradation of agricultural soil is therefore a problem that concerns society as a whole, since it mortgages the future satisfaction of two fundamental needs, that is, the availability of food and drinking water.

Availability of Land in Quebec

The problem of soil degradation is particularly acute in Quebec in that the province has only small strips of land with a high capability for agriculture (see Table 1).

The province of Quebec covers an area of approximately 136 million hectares. Only a small fraction of this area, however, is occupied and is suitable for agriculture. It is estimated that barely 5.0 Mha (four percent of the total area of the province) present conditions suitable for farming activity. According to 1981 Census data, however, only 2.8 Mha are effectively in agricultural use.

Soils suitable for production of field crops (Classes 1 to 3) cover only 2.36 Mha, or 1.7 percent of the province's territory. Class 4 soils, which may be suitable for certain specialized cultures, cover an additional 2.82 Mha.

It is estimated that 90 percent of the soils in Classes 1 to 3 are already in use. Increased food production on Quebec land, therefore, cannot stem from the conversion of new land to agricultural use, but rather from a more intensive use of existing land resources. Thus the degradation of soil properties further reduces the availability and productivity of an already limited resource.

The FAO considers that a country must have a cultivated area of approximately one hectare/person in order to tend toward nutritional self-sufficiency. Based on this criterion, Quebec's resources in terms of soils with a high capability for agriculture are therefore not extensive.

A period of 10,000 years was required to form these soils as we now know them. Accordingly, we must not allow the rapid degradation of this limited asset. Our agricultural land must be considered a

TABLE 1
 AGRICULTURAL LAND IN QUEBEC

Soil Capacity Classes	Area (thousands of hectares)	Percent of Total
1	14.3	0.01
2	976.3	0.71
3	1,381.7	1.02
4	2,823.7	2.08
5	1,632.4	1.20
6	8.9	0.006
7	21,803.2	16.03

non-renewable resource and we must take the necessary steps to ensure its perpetuation.

Degradation of Soils Under Intensive Use

Three major types of degradation are generally considered:

- material losses
- physical degradation
- chemical degradation.

MATERIAL LOSSES

This heading includes erosion by water and wind, as well as the oxidation of organic matter.

Soil erosion results from the loosening of soil particles and the carrying of such particles by runoff waters or by wind.

Under the conditions which exist in Quebec, water erosion is by far the most prevalent form of erosion.

A number of the major factors that account for observed erosion rates are beyond human control: intensity of precipitation, type of soil, topography. Conversely, the degree of aggregation and structural stability of soils, the type of culture and the method of soil management are influenced considerably by agricultural activities.

In Canada, the soil formation rate is estimated at between 0.25 and 1.0 t/ha/year. In Quebec, the few measurements made in the field have shown annual erosion rates ranging from less than one tonne per hectare for grass crops to some 60 t/ha for fallow land. Corn crops register losses of as much as 22 t/ha/year. In recent years there has been a steady increase in the amount of land used for annual crops (corn and cereals). In the absence of a soil conservation program, we can therefore expect a further increase in the erosion of our soils in the future.

Figures 1 and 2 illustrate this situation. Figure 1 shows that the majority of agricultural land in Quebec has a high potential for erosion. In the light of current uses, areas where the risk of erosion is truly high cover only a fraction of the territory (Figure 2). An increase in the overall land areas devoted to annual crops, however, will increase the sensitive zone proportionately.

Cultivation of land generally causes a reduction in the organic matter content of the soil. Factors contributing to this decline include the reduction of organic matter returns, the incorporation of residues into soil preparation works and the warming of soil following upon the improvement of drainage.

In Quebec a drop in organic content of as much as 33 percent was reported in the transition from forest cover to dairy farming, which is characterized by long rotations based on forage crop production. This decline reaches 60 percent in the transition from dairy farming to an annual crop monoculture system.

Organic matter plays a vital role in the maintenance of soil characteristics and productivity by serving as a ligand which binds mineral particles into a stable structure. Under the conditions in the province of Quebec, moreover, organic matter accounts for up to 40 percent of the cationic exchange capacity of soil, that is, its capacity for retaining and exchanging phyto-sanitary improvements and products that are applied.

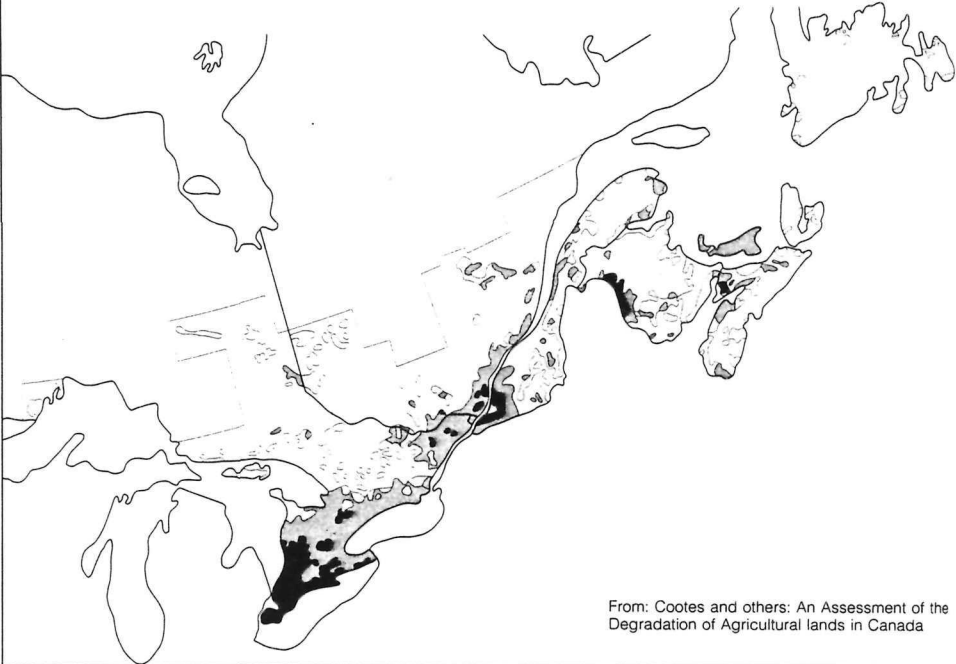
An overly significant decline in organic matter, therefore, makes soil more vulnerable to erosive processes. The affected soil will also be less capable of retaining the fertilizers and pesticides applied to it.

PHYSICAL DEGRADATION

The principal form of physical degradation attributable to intensive agricultural use of land is compaction, which consists of a redistribution of soil particles that reduces the interstices surrounding them. This phenomenon raises the density level of the

Figure 1
RELATIVE WATER EROSION RISK

- Low
- Moderate
- High

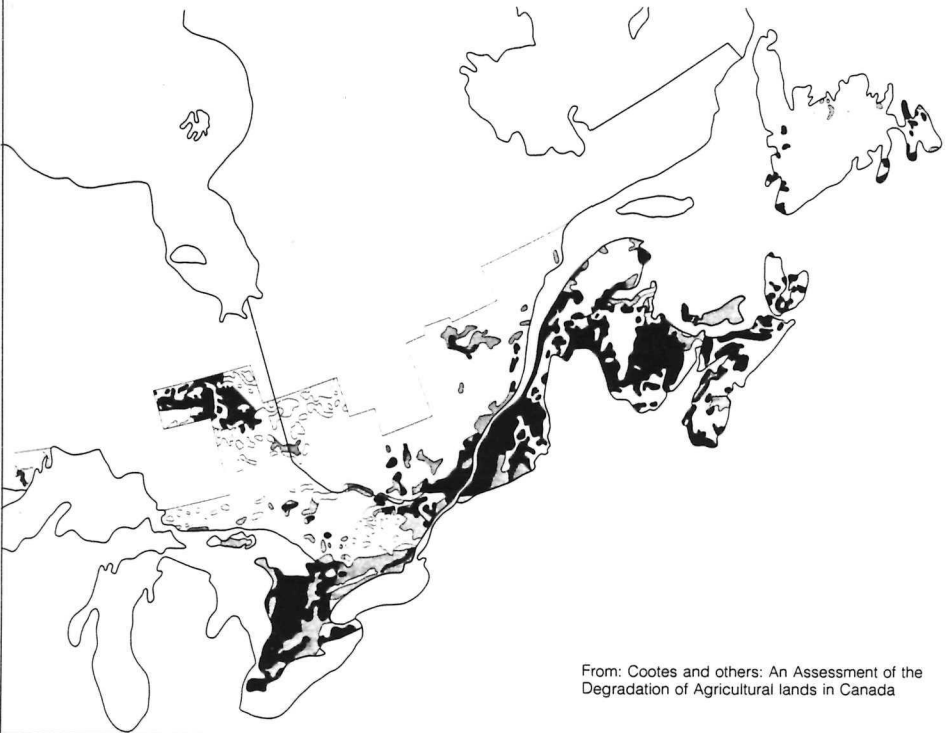


From: Coates and others: An Assessment of the Degradation of Agricultural lands in Canada

Figure 2

**RELATIVE WATER EROSION RISK, MODIFIED BY
1976 CROPPING PRACTICE**

- Low
- ▒ Moderate
- High



From: Cootes and others: An Assessment of the Degradation of Agricultural lands in Canada

affected soil. The principal causes of compaction are loss of organic matter and the decline in structural stability resulting therefrom, the repeated passage of heavy machinery, and repeated working of the soil under excessively humid conditions.

Compaction reduces the productivity of affected soils by reducing their drainage and favouring the appearance of anoxic conditions harmful to the development of roots. Compaction also favours surface runoff, thereby increasing the risk of water erosion.

Figure 3 shows the areas in Quebec most susceptible to declines in organic matter and compaction. These areas occur in the Montreal plain, where cultures are most intensive.

CHEMICAL DEGRADATION

This expression generally covers the salinification, acidification and contamination of soils.

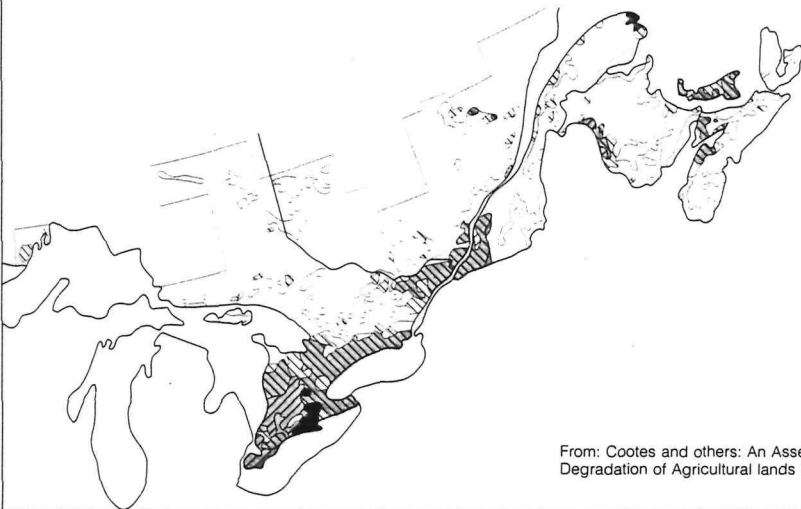
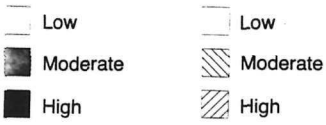
Salinification is a problem that occurs essentially in Western Canada. The acidification of soils results from the combined effect of acid rain and the increased use of nitrogenous fertilizers. Although their low natural buffering ability makes our soils highly susceptible to this type of degradation, the use of agricultural lime, which is a long-standing practice, makes it possible to control the effects of this process.

One form of soil contamination which exists in Quebec at significant levels of certain hydrographic basins is the production of organic measures in quantities far beyond the recycling capacities of soils. This problem has been the focus of some attention primarily because of the severe water quality problems that generally result from it.

While overall manure production in Quebec meets only a fraction of the province's fertilizer needs, some areas of the province are affected by a significant imbalance between manure production and manure needs. Three hydrographic basins are particularly affected

Figure 3

**RELATIVE RISK OF SOIL ORGANIC MATTER LOSS AND
COMPACTION ESTIMATED FROM 1976 CROP DISTRIBUTION**



From: Cootes and others: An Assessment of the Degradation of Agricultural lands in Canada

by this situation: those of the Chaudière, Yamaska and l'Assomption river basins.

Recycling in the soil is the most economical method of manure disposal available to farmers. In areas where manure production is excessive, this leads to the spreading of manure doses that clearly exceed the needs of soils and crops. This results in the contamination of affected soils. In some areas, soils have had their capability for agriculture completely annihilated by repeated excessive manure spreading.

Figures 4 to 6 show the areas of manure overproduction in the Chaudière, Yamaska and l'Assomption river basins.

Impacts on Water Quality

The impact of soil degradation is not limited to the terrestrial environment. Water quality can also be affected in various ways and to varying degrees.

Such water pollution is diffuse however, since it does not originate from a single point source; in fact, all of the land in a given area may contribute to such pollution. This type of degradation is usually most evident following rain. Because of these characteristics, the importance of such pollution has been underestimated in the past. It is now known, however, that diffuse agricultural pollution contributes significantly to the deterioration of our watercourses.

Degraded soils contribute the following principal pollutants to the aquatic environment: solids, nutrients and toxic substances.

PROBLEMS RELATED TO SOLIDS

Eroded soil entering watercourses is considered a major pollutant, not only because of its own impacts, but also because of its role as a vector for many other pollutants.

Figure 4

CHAUDIERE RIVER WATERSHED

- Agronomical Summary
- Community Survey
- Calculation Base : Assumption 1

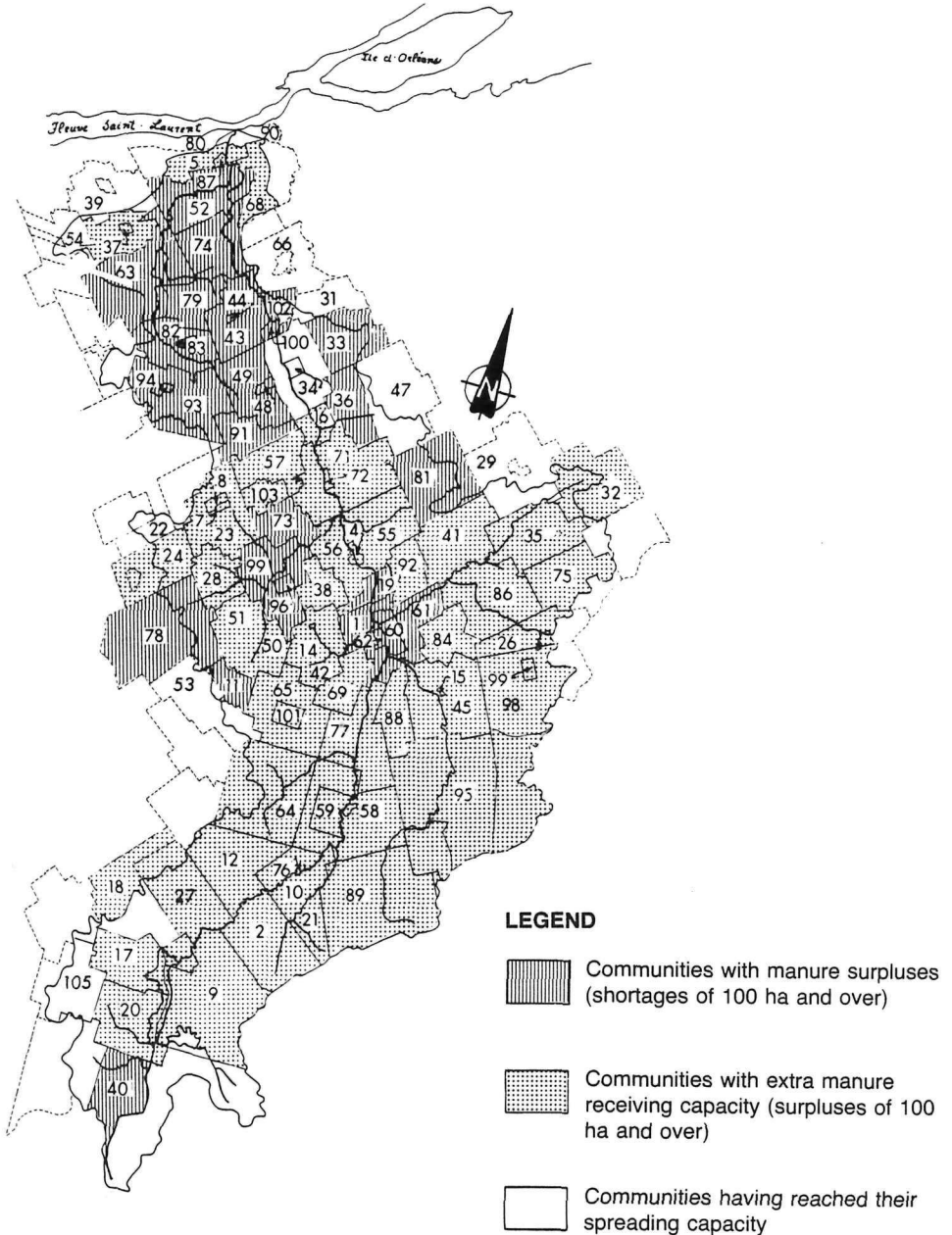


Figure 5

YAMASKA RIVER WATERSHED

- Agronomical Summary
- Community Survey
- Calculation Base: Assumption 1

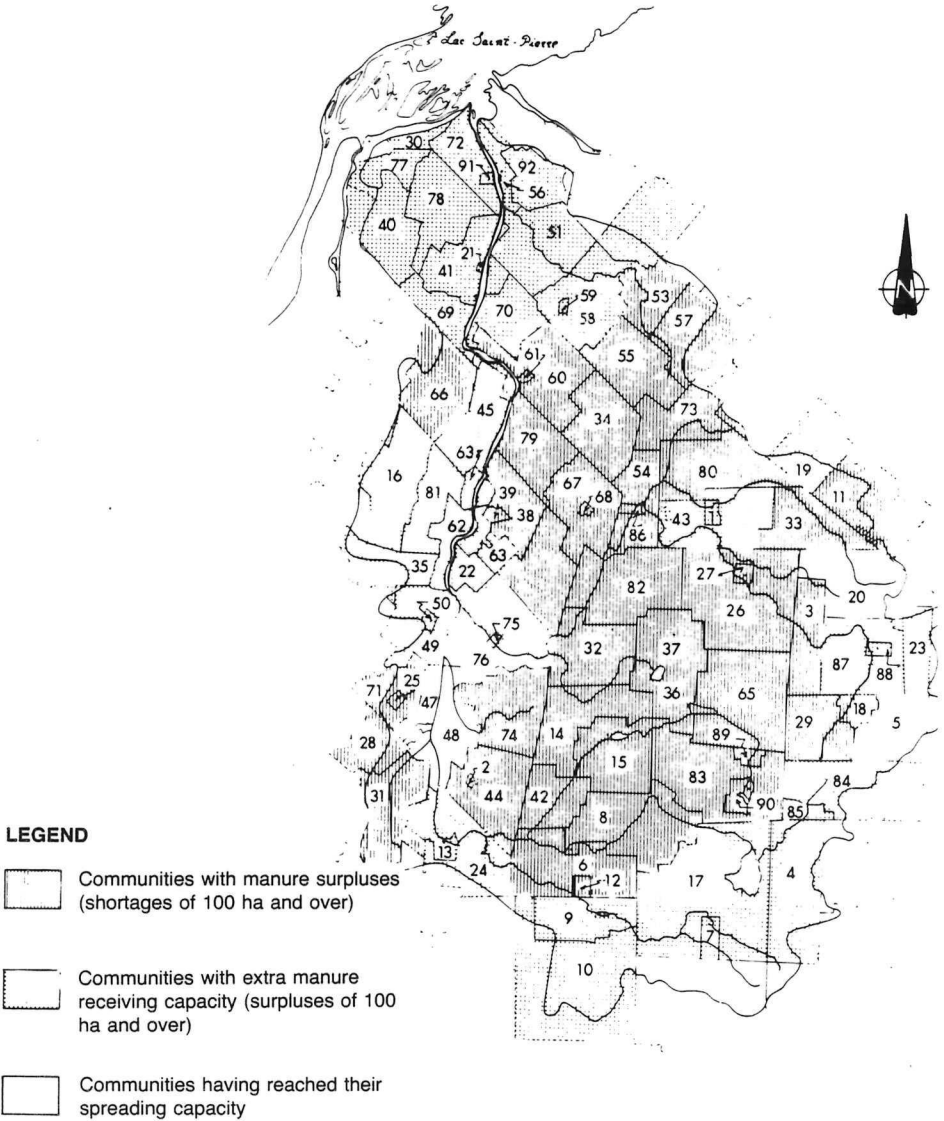
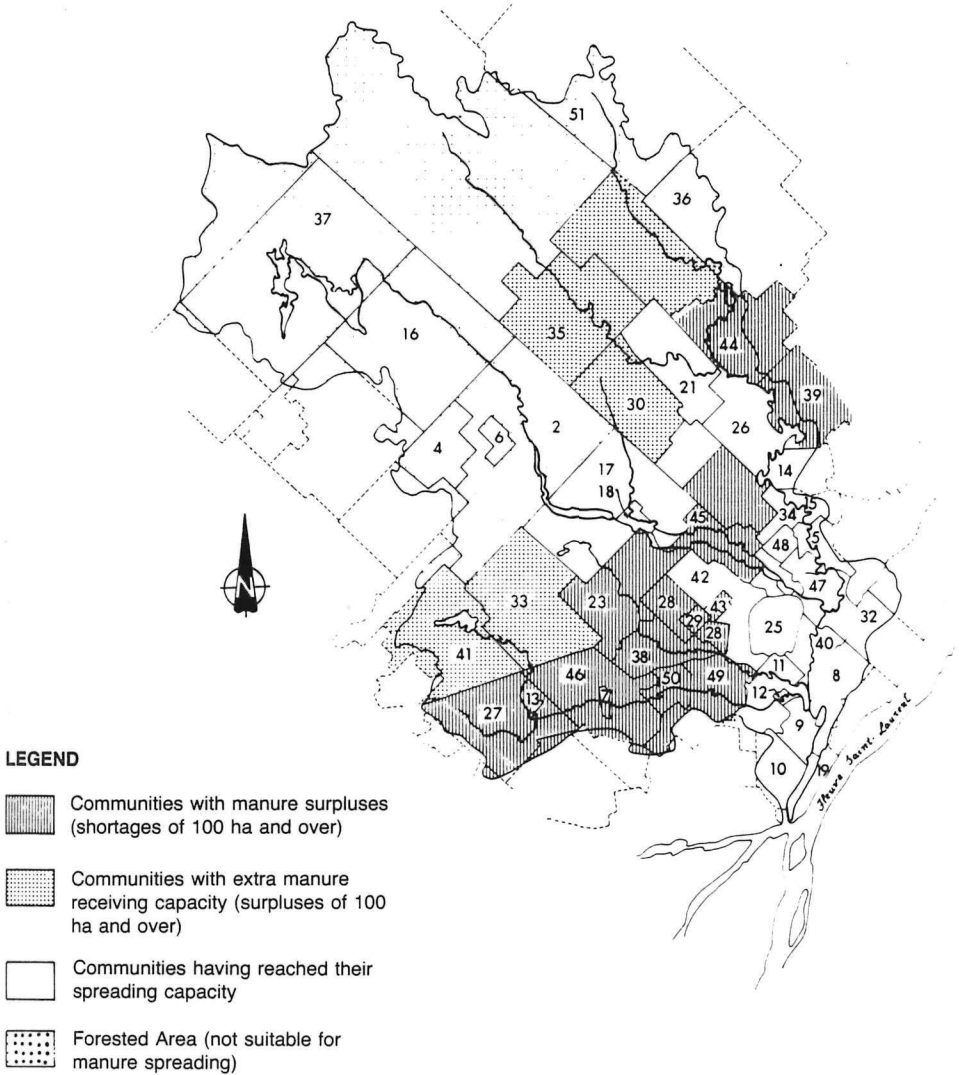


Figure 6

THE ASSOMPTION RIVER WATERSHED

- Agronomical Summary
- Community Survey
- Calculation Base: Assumption 1



Solids entering the aquatic environment cause increased turbidity. In lakes and in the still waters of rivers, a fraction of the suspended solid load is deposited on the bottom as a result of the slowing of the current. Such deposition raises the bottom and alters the course of nature.

The photosynthetic activity of primary producers is reduced by increased turbidity, which reduces the penetration of light into the environment. Attached algae and rooted macrophytes have certain substrate requirements. The type of solids deposited (granulometry and chemical composition) and the rate of sedimentation will have an impact on the species present and their productivity.

Benthic invertebrates are also affected in various ways. High turbidity will drive away motile organisms, while sessile organisms may be decimated as they are buried under sediment or following the appearance of physiological problems.

Heavy concentrations of suspended solids can attack the branchial tissue of fish. Strong sedimentation can affect the ichthyofauna by destroying spawning grounds, as well as by covering and suffocating eggs and alevins, in the case of organic deposits.

Turbidity and sedimentation also affect other uses of water and of aquatic systems. A high level of turbidity makes bodies of water less attractive and reduces their recreational usage. The treatment of drinking water prior to distribution is also made more difficult and expensive. Sedimentation in small agricultural streams reduces their hydraulic capacity, thereby reducing the efficiency of surplus water evacuation.

PROBLEMS RELATED TO NUTRIENTS

Degraded soils release increased quantities of nutrients into bodies of water.

Nitrogen is a source of concern primarily with regard to nitrates. A concentration of $N-NO_2-3$ of more than 10 mg/L makes water unfit for consumption. Such levels of concentration are

frequently observed in waters draining lands under intensive agricultural use.

To preserve water quality, the priority element to be controlled is phosphorous because of its major role in the water eutrophication process. Excessive nutrient enrichment of waters generally leads to a population explosion among macrophytes and phytoplanktonic algae in lakes and stillwater portions of rivers.

After it dies, this luxuriant growth settles and decomposes. This degradation amplifies the disoxygenation of bottoms. The decomposition of cyanophytes can also cause odour and taste problems. The result is a more or less significant change in the benthic and ichthyological fauna.

PROBLEMS RELATED TO TOXIC SUBSTANCES

The principal toxic substances released into the aquatic environment are ammonia nitrogen and pesticides.

Ammonia nitrogen, in harmful concentrations, comes mainly from areas where excessive manure spreading is practiced. This form of nitrogen is toxic to most forms of life at concentrations of more than 0.02 mg/L of $N-NH_3$. Concentrations exceeding 0.5 mg/L also make drinking water treatment hazardous.

The level and form of pesticide losses from agricultural land vary according to the nature of the product, its persistence in the soil, its presentation and so on. Generally such losses are less than five percent of the quantity used.

The actual impact of such losses, however, must be estimated in light of the fact that they may occur following episodes of rain, on each occasion releasing concentrated waves of toxic substances into the environment. Moreover, the more persistent substances can accumulate in the environment and create toxic zones in the long term.

Conclusion

The degradation of agricultural land therefore presents a serious problem which merits close consideration.

Our meagre resources in terms of soil of high agricultural capability demand that conservation efforts be made.

Such efforts are all the more necessary in that the impact of soil degradation is not limited to the terrestrial environment, but also affects a resource that is equally vital: water.

Accordingly, soil and water conservation in all likelihood constitutes one of the major environmental challenges of the years to come.

Proposals

Soil and water degradation appeared following the industrialization of our agriculture. This relatively recent phenomenon is growing rapidly and, what is more, can go unnoticed for several years before it makes its presence felt.

Because of these characteristics and the importance of the resources involved, a soil and water conservation strategy should be developed and implemented.

This strategy could be centered on the following two principles.

- Preventive approach: It is very difficult and expensive to reconstitute healthy growth conditions in severely degraded soil. Similarly, pollutant emissions from soil into bodies of water cannot be picked up for subsequent treatment. Our aim, therefore, must be to prevent and control degradation processes by adopting agricultural practices that favour the conservation of edaphic resources.

- Integrated multidisciplinary approach: The conservation of soil and water resources at the drainage basin level requires the intervention of many agricultural and environmental science experts. Moreover, soil and water conservation must be integrated with and complementary to the development of such resources, and should not seem opposed to such development. It is therefore a matter of getting at the root of the problem rather than dealing with the symptoms alone.

Many actions can be taken to achieve the objectives of soil and water resource conservation. Chief among these are the awareness and education of interveners, research on and development of agricultural techniques favouring soil and water conservation and, finally, the development of policies integrating and facilitating resource conservation.

- Awareness of interveners: Soil degradation is an insidious phenomenon that can go unnoticed for years before making itself known in spectacular fashion. Also, because of the high number of interveners concerned (producers, agronomists, the general public), any intervention program in this area must start with a promotional campaign. The goal of this campaign will be to generate awareness of the existence of the problem, its agronomic and environmental impacts, possible solutions and the interest which producers and the entire Quebec population have in seeking to reduce the incidence and scope of this phenomenon.

Various tools are suitable for this operation: production of popularization documents, televised reports, declaration of a soil conservation week, and so on.

- Technical research and development: A wide variety of agricultural conservation practices have been developed, primarily in the American Midwest; accordingly, they are adapted to the climatic conditions of that region.

Many are applicable in Quebec, however, because they are based on sound principles of soil management and known agricultural practices. The soil conservation programs already in place in the New England states, Ontario and New Brunswick demonstrate the applicability of these techniques under bio-climatic conditions similar to ours.

Certain Quebec characteristics, however, may limit the potential for use of such techniques. The principal limiting factors in this regard are the shortness of our growing season, the excessive moisture of some of our soils and the geometry of our farms.

A review of existing conservation practices must therefore be conducted - in light of these characteristics - in order to determine their potential for use under the conditions prevalent in the province. Research and development efforts must also be made at the university and government levels to alter existing practices that are not well suited to our conditions and even to develop new practices where necessary.

- Conservation policy. A policy must be devised to integrate soil and water conservation into the development of agricultural activity.

The first aim will be to harmonize the various government programs that may affect the use of soils and to ensure that no such program contravenes the overall objective of conservation.

Subsequently, we must seriously consider adopting a soil conservation policy devoted explicitly to the prevention of soil degradation and the rehabilitation of already affected soils.

Given the varying periods that may elapse between the start of degradation processes and the moment when they make themselves known in terms of reduced yields, we cannot hope

to be successful in the control of soil degradation without some form of aid to encourage and help producers adopt conservation practices and structures. The experience of neighbouring provinces and states as well as the many accounts given by producers clearly establish the need for such assistance.

The best way to set up this type of assistance is by means of a soil conservation program.

Such a program would take the form of technical and financial assistance offered to producers and would include analysis of the scope of the problem, design of an erosion control program and financial assistance for works to implement soil conservation practices and/or structures.

By means of its Preservation of Agricultural Land Act (RSQ, c.P-41.1), Quebec has adopted the necessary tools to protect its most fundamental agricultural resource - the land - from uses that are incompatible with its primary vocation. Given the scarcity of land with a high capability for agriculture, we must now protect the productivity of such land by means of a soil and water conservation program. The Act and the program are therefore complementary, the first taking on its full meaning only when accompanied by the second.

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Lakes and Rivers

Jules Dufour

Quebec is a peninsula at the northeastern tip of North America. It is therefore in close contact with the sea. Consequently, a number of marine facilities have been developed in the province, particularly in the St. Lawrence Valley.

Added to this strategic advantage is another element which played a major role in Quebec's development: fresh water. Indeed, Quebec may be considered a vast water reservoir. With its 1,600,000 lakes¹ and six million watercourses (including primary streams), Quebec contains more than 10 percent of the world's freshwater reserves.

This abundance has made it possible for Quebec to develop an incomparable hydraulic energy system and to establish a remarkable tourist industry (fish and game outfitting services, camping and canoeing circuits, a network of parks and reserves, a network of controlled harvesting zones for fauna and controlled harvesting zones for salmon, and so on).

The present report will review the status of lakes and rivers in Quebec, examine government policies and measures adopted in this area, describe the solutions advocated by citizens' organizations or associations, and set out a global strategy to increase freshwater quality in Quebec during the next twenty years.

Status of Lakes and Rivers

In general, lakes and rivers in Southern Quebec have suffered considerable impacts during the twentieth century: construction of hydroelectric dams, effluent discharges from thermal and thermonuclear power stations, municipal wastewater discharges, effluent discharges from manufacturing industry and from wood and

metal primary processing plants, log floating, and the dumping of significant amounts of insecticides, herbicides and chemical fertilizers.

ST. LAWRENCE RIVER

The work of the St. Lawrence River Committee described the state of contamination of this watercourse.² The report of this Committee (Québec Sciences 1978) classifies environmental impacts on the river into six categories, by order of importance:

- a) dissemination of toxic substances
- b) bacteriological contamination
- c) encroachment on the territory of biological resources
- d) destruction of aesthetic value
- e) abundance of suspended sediments
- f) excessive nutrient enrichment.

More recently, the Societe pour Vaincre la Pollution (SVP) prepared a map showing, by sector, the degree of poisoning of the St. Lawrence River by toxic industrial wastes. This document³ reveals the following:

- plants are often concentrated in industrial complexes
- concentrations of industry occur in the following areas: Valleyfield, Beauharnois, La Prairie, Montréal-Est, Varennes, Contrecoeur, Sorel, Trois-Rivières, Portneuf, Quebec City, Riviere-du-Loup, Baie-Comeau, Port-Cartier and Sept-Iles
- the zones immediately downstream from these thirteen Industrial areas are those most affected, as shown by the existence of stretches of contaminated sediment and by notices issued to warn against the consumption of fish
- in many cases, municipal water intakes are located downstream from these contaminated zones.

OTHER DRAINAGE BASINS

During the same period, the Office de Planification et de Développement du Québec (OPDQ), in close cooperation with the SPE (Quebec environment protection services), the MRN (Quebec department of natural resources) and the MTCP (Quebec department of tourism, fish and game), prepared a summary of the various uses of water in Quebec, and sought to take stock of problems affecting water resources in Quebec and to develop an approach that would favour the integration of water into a global land management program.⁴

This study made it possible to identify the major impacts on the rivers and lakes in Québec.

- water quality is significantly reduced throughout the inhabited portion of the province, although to varying degrees from one region to the next. Even in lightly populated areas, water is not pollution free (e.g., the Bell and Quévillon rivers and Lakes Metagami and Waswanipi).
- the nature and importance of water as a resource are misunderstood by major socio-economic interveners and by the population as a whole.
- the illusion of water abundance and of its unlimited capacity to clean itself is still quite strong in people's minds.
- in fact, the concentration of industrial activities and the increase in pollution sources and in non-biodegradable materials are the major factors behind the pollution of rivers and lake waters in Quebec.

The 1970s in Quebec were therefore marked by a general realization of the lamentable condition of water in major lakes and rivers such as the Yamaska, Saint-François, La Malbaie, St. Maurice, Saguenay, Ottawa and Péribonka, which made headlines on a number of occasions. Certain lakes received special attention from the SPE (i.e. Temiscouata, Saint-Jean, Memphrémagog, Magog, etc.).

Many analyses revealed the presence of toxic substances such as mercury, lead and zinc.⁵

Commercial shrimp fishing was banned in the Saguenay River starting in 1973. Swimming was prohibited at a large number of public beaches on the shores of the St. Lawrence near major centres and on the shores of lakes that are popular with visitors.

Analyses of the drinking water reservoirs of Quebec municipalities have revealed certain dangers to public health.⁶

Acid Rain

During the 1980s, the extent of environmental damage to lakes and rivers caused by acid rain began to come to light.⁷

According to the SVP, because of its geographical location as well as the nature of lithological formations and climatic conditions, Quebec so far has been severely affected by acid precipitation.

More than one third of acidified lakes are threatened: this endangers the reproduction and the very survival of fish stocks. These lakes are located in recreation and tourism zones in the Abitibi, Outaouais, Laurentian, St. Maurice, Saguenay/Lake Saint-Jean and North Shore areas. Those located in the Eastern Townships, the Gaspé and Northern Quebec, have resisted longer the assault by pollutants.

According to more recent studies by Environment Quebec,⁸ acid levels in precipitation in Southern Quebec are comparable to those in the northeastern United States. On the basis of pH, 28.1 percent of sampled lakes are considered acid (pH 5.5). They are not highly mineralized and are poorly buffered, and their sulphate content is at least three times the natural level. The population density of speckled trout is much lower in acid lakes (pH 5.5) than in more alkaline lakes; this causes certain sport fishery management problems. The acidity of precipitation dissolves aluminum on fish gills, thereby causing abnormalities which limit the distribution of

oxygen from water into the blood stream; this can cause asphyxiation. A study of seventeen lakes in the Témiscamingue area shows the existence of a direct link between water acidity and a number of species present in lakes. Two of these lakes have no fish population. The highest sulphate concentrations in precipitation over 60 mg/L) occur in the Montreal and Quebec City areas, the Upper Saguenay and in Noranda.

Government Solutions

What solutions have been adopted by various governments to clean up pollution in Quebec rivers and lakes?

Two types of solutions are advocated by government; the adoption of preventative measures and the establishment of corrective facilities.

PREVENTIVE MEASURES

The Quebec government has proposed four preventive measures: land management and socio-economic development planning, rational and integrated resource management, development of legislation to improve water management, and increasing the environmental education and awareness of Quebecers.

The principal measures under consideration are as follows:

- minimized use of drinking water for washing and spraying
- maximum recycling of coolant, wash and solution waters used in industry
- storage of natural livestock-generated fertilizers in impermeable pits
- more carefully measured use of chemical fertilizers, pesticides and herbicides
- improvement of drainage techniques so as not to deteriorate collector streams
- avoiding mechanical clear cutting on steep slopes
- reforestation of cutover areas as quickly as possible

- toleration of log floating only on large rivers with a strong rate of flow
- barking of wood in cutting areas prior to floating or transportation by truck
- control of insect epidemics through appropriate silvicultural practices
- location of slag heaps as far as possible from lakes and rivers, and reforestation of each slag heap
- zoning the perimeter of lakes destined for resort use
- control of forest clearing along shores and prohibiting lake and river bed filling.

CORRECTIVE MEASURES

Preventive measures proposed by government should produce significant changes in water resource development and use practices. There is a pressing need, however, for immediate action to improve water quality and its relative abundance everywhere. Here, in brief, are the principal government measures in this area:

- treatment of wastewater from 750 municipalities
- reduction of water consumption
- industrial wastewater recycling
- separation of storm sewers from sanitary sewers.

Added to these solutions are many direct government intervention programs in this areas, such as the "Berges neuves" shore clean-up program (Bill 6 on development of the aquatic environment), the Quebec water pollution control program,⁹ the east coast air pollution program,¹⁰ and the inventory of hazardous waste dump sites as well as improved management of such sites.

These various actions will all help to clean up the riparian and aquatic environment, and will serve to complement existing provincial legislation, that is, the Environment Quality Act, the Three Chains Act,¹¹ the Tree Protection Act and the Watercourses Act.

Citizens' Recommendations and Measures

A large number of environmental agencies are active in returning aquatic ecosystems to optimum health. The major activities of these agencies have the following goals: to guarantee high-quality drinking water to all communities, reduce toxic substances, ensure the quality of water bodies for recreation, and protect the ecumene in flood plains.

FORESTS SURROUNDING LAKES AND STREAMS

The Environmental Advisory Council (EAC) makes the following recommendations.¹²

- In a forest environment public land drainage basins must be managed in compliance with MER standards; for private lands, it is felt that a riparian strip of at least 10 or 15 metres, depending on the degree of slope, must be maintained.
- For hydrographic basins in areas where fauna is harvested, it is felt that the forest cover on public lands must meet the requirements of existing wildlife species and that a wooded strip of 15 metres must be maintained; for private land, a minimum immediate strip of 10 metres (slope of less than 30 percent) or 15 metres (slope of more than 30 percent) is recommended.
- In resort areas, the EAC advises that, within 300 metres of a lake and 100 metres of a stream, special requirements of the forest should apply; all clear cutting should be prohibited within 60 metres of shorelines.
- In the agricultural environment, the same measures as those identified for basins where fauna is harvested are recommended.
- In cities, it is thought that everything natural must be preserved and that shores should be restored through reforestation along a breadth of 10 metres (slope of less

than 30 percent) or 15 metres (slope of more than 30 percent).

FAPEL AND THE PROTECTION OF LAKES

The Quebec Federation of Associations for the Protection of the Environment of Lakes Inc.¹³ (FAPEL) is quite active in the following areas: wastewater pollution, erosion, protection of surrounding forests, protection of shoreline integrity and flood plains, acid rain, control of motor boats, pesticide pollution, and changing the attitudes of citizens.¹⁴

SVP AND PUBLIC AWARENESS OF WATER POLLUTION PROBLEMS

As we have already mentioned, the excellent work done by the Société pour vaincre la pollution (SVP) should be recognized, in particular the reports which it prepared on water pollution in the St. Lawrence and on acid rain.

PROTECTION OF RIVERS

There are many associations, groups, committees, movements and societies working regionally or locally to protect rivers. These include the following:

- The "comité de protection de l'Ashouapmouchouan"
- The "Association des riverains et usagers de la rivière Magog"
- The "Association sportive et écologique de la Batiscan"
- The "comité d'assainissement du bassin de la rivière Saint-Charles"
- The "comité contre la pollution de la rivière des Hurons et du bassin de Chambly"
- The "comité d'assainissement du bassin de la rivière Saint-François"
- The "comité de citoyens de la Baie des Briser"
- The "comité de dépollution du bassin de la rivière Bécancour"
- The "comité de protection de la rivière l'Achigan"

- The "comité de restauration de la Jacques-Cartier"
- The "Mouvement d'assainissement de la rivière Yamaska (MARY)"
- The "Service de protection du bassin de la rivière Ouareau"
- The "Société d'aménagement des ressources de la rivière Mitis"
- The "Société d'interprétation maritime et écologique de la rivière Saint-Charles"
- Para-Environmental Agencies: The "Fédération québécois du canot-camping inc."
- Scientific Recreation: The "Association régionale des aquariophiles de Québec."

Toward Abundant High-Quality Water

Despite government efforts to clean up the lakes and rivers of southern Quebec, our aquatic heritage remains considerably polluted. Stocks of pure natural water continue to decline, and cities must draw their water supplies from progressively remote sources or spend more and more on water treatment.

The technical solutions advocated by government and industry do not call into question the production/consumption model of our society, which is at the origin of pollution. In point of fact, these solutions add still another source of contamination: the water pollution control or management industry.¹⁵ In the long run, this production-oriented approach will not make it possible to improve water quality. This government vision has been fully endorsed by the Association québécoise des techniques de l'eau (AQTE), which brings together industry representatives and businessmen working in this field.

In short, the government, through its timid enforcement of the Environment Quality Act, is condescending toward industrial undertakings that are the most polluting.

A second approach also cannot bring about the necessary changes. This is an approach advocated by supporters of recycling

and people who have a romantic view of ecology. They dream of a return to nature and conduct operations to increase awareness of pollution problems without calling into question the foundation of the economic model responsible for those problems.

Finally, a third approach has been sketched out by political ecologists; it consists of promoting the global ecological model. This model advocates the development of a more just, equitable, egalitarian society based primarily on the production of necessary durable goods within a regional framework.¹⁶ Considered unrealistic and even utopian, this approach is nevertheless the only one in the long run that would guarantee abundant, high-quality water suppliers to all communities and citizens and, by extension, a healthy natural environment.

Conclusion

The technical solutions adopted to return Quebec's lakes and rivers to health will henceforth be promoted within a liberal economic context. Citizens will have to pay the cost. Bodies of water will be in a precarious state of health, because other sources of contamination will take the place of acid rain, polychlorinated biphenyls and nuclear waste.

Public awareness campaigns to justify government and technical solutions will increase in number. Similar operations will be conducted by citizens' groups to reveal the extent of danger to human life from pollution and to apply pressure for government intervention. These actions will be subordinate to the major imperatives of an economy dependent on the production of major military-industrial complexes. In such a context, we will have to continue promoting maintenance and even expansion of the present network of protected spaces. Parks will still be needed, and still larger parks will be needed.

Will the model of society advocated by political ecology make it possible to conceive fair and long lasting solutions? The overview we have sketched in this report should encourage us to find

out more about this new approach. It must be remembered that Quebec's freshwater resources are part of the natural heritage of humanity.

NOTES

1. 100,000 large lakes.
2. Quebec Sciences, Pour un fleuve de qualité. Summary of the final report of the St. Lawrence River Committee. Supplement to the magazine Québec Sciences, Volume 17, Number 3, November 1978.
3. Société pour Vaincre la Pollution, Carte du fleuve Saint-Laurent intoxiquée. Montreal, 1985.
4. OPDQ, L'eau et l'aménagement du territoire. Quebec City, 1980.
5. Conrad Anctil, Toxiques reliés à l'exploitation minière. SPE, Quebec City, 1977. Unpublished.

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Comité interministériel sur la mercure, Le mercure au Nord-Ouest québécois, aspects environnementaux. Quebec City, July, 1976.

C.E. Deslisles, Le mercure dans les écosystèmes aquatiques de la province de Québec. Environment Canada, August, 1977.

6. Services de Protection de l'Environnement, Problèmes bactériologiques dans l'eau d'alimentation des municipalités du Québec. 1975. Unpublished report.
7. Société pour Vaincre la Pollution, La carte acide du Québec: le diagnostic est inquiétant. Montreal, 1984.

Ministère de l'Environnement du Québec, Les précipitations acides au Québec et leurs effets sur le milieu aquatique. Quebec City, August, 1984.

8. Ministère de l'Environnement du Québec, 1984, p. 14-15.
9. This program concerns four principal types of projects: identification of parasite water contributions into existing sewer systems, rehabilitation of sewer systems, interception

- and transmission of waste water to treatment plants, and construction of treatment plants and their treated water outlets.
10. Agreement between Canada and the eastern provinces signed February 5, 1985 for the reduction of sulphur dioxide emissions.
 11. This act came into effect June 1, 1984 and concerns lots ceded by the Quebec government for agricultural and colonization purposes between June 1, 1984 and January 1, 1970 in a 60 metre wide strip along the edge of non-navigable and non-floatable lakes only.
 12. Quebec Environmental Advisory Council, Politique d'encadrement forestier des lacs et cours d'eau du Québec. Quebec City, 1982.
 13. This federation comprises 600 member associations representing a total of 100,000 cottagers.
 14. FAPEL, undated. FAPEL et sa lutte pour la protection des lacs. Information brochure. Montreal.
 15. This industry, based on spending of seven million dollars in the next 10 years, represents a non-stop "general clean-up" that must be carried out at all cost.
 16. M. Jurdant, Le défi écologiste. Éditions du Boréal Express, Montreal, 1984.

Northern Spaces¹

Jules Dufour

Introduction

The vast northern spaces of Quebec generated considerable public interest in the 1970's because of ongoing work to develop the hydroelectric potential of the La Grande Complex. The north had never attracted so much attention in this century. The stakes were high. Could Quebec meet the renewable energy needs of North American capitalism in a context of ever-spiralling oil prices? Could Quebec do so without causing too much environmental and social upheaval?

This brief report attempts to describe the major characteristics of northern Quebec, provide some understanding of the problems related to natural resource exploitation, examine government policies concerning resource utilization and conservation, analyse those of native communities, and prepare a global development strategy for the years 1985 to 2000.

Major Characteristics

What elements characterize the northern Quebec environment?

VAST TERRITORY

Northern Quebec is all that space situated north of the 50th parallel. It corresponds primarily to what, by agreement, has been termed the Middle North; the New Quebec Peninsula or Tundra is part of the Far North.

This territory represents more than two-thirds of the total area of the province and is inhabited by less than one percent of Quebec's total population.

Because it is not readily accessible to residents of the St. Lawrence lowlands, northern Quebec has always been perceived by southerners to be an inhospitable, hostile land that is difficult to develop and, in particular, lacks organization.

The territory covers a total area of approximately 1,000,000 square kilometres; this corresponds roughly to the size of Spain, both Germany and Portugal combined. The distances between settlements are considerable, varying from 80 to 360 kilometres. Ijujivik, the village located at the northern tip of Ungava Peninsula, is about 2,000 kilometres from Montreal by air, while Chisasibi, Poste-de-la-Baleine and Kuujuaq are respectively 1,014, 1,130 and 1,850 kilometres from Montreal.²

In general terms, the James Bay territory is part of the Middle North while the Kativik region is entirely in the Far North.

GROUPED, DISCONTINUOUS AND FIXED HABITAT

The population of these regions is grouped into 20 communities established primarily along the shores of Hudson Bay, Hudson Strait and Ungava Bay. Only the localities of Némiscau, Waswanipi and Baie-du-Poste (Mistassini) are located inland.

It should be noted that this is a discontinuous grouped habitat. The Cree and Inuit no longer need to migrate, as they did in the past, to seek better hunting and fishing grounds. They have become sedentary and using the village as a base, they can cover a vast radius to reach desired wildlife resources.

Cree settlements are generally established at the mouths of the rivers flowing into James Bay or on lakeshores. Inuit settlements are most often found at the backs of bays or in the interior of fjords.

SMALL, YOUNG AND STABLE POPULATION

In 1979 the 20 native communities comprised 12,581 inhabitants (6,871 Cree, 4,921 Inuit and 790 non-natives) who were permanent northern residents. The main Cree villages are Baie-du-Poste, with 1,898 inhabitants, and Chisasibi, with 1,852 inhabitants. The main Inuit villages are Kuujjuaq (1,068 persons), Kuujjuarapik (762), Povungnituk (787) and Inukjuak (662). The populations of other communities range from 66 (Aupaluk) to 552 (Salluit).

The population is young. The age pyramid is broad at the base. In 1978, the proportion of those under fifteen years of age was 49.8 percent among the Inuit and 43.5 percent among the Cree; the proportion for Quebec as a whole was 25 percent in 1976.

In general, the permanent population of northern Quebec has experienced sustained growth since 1970. The Cree population increased from 5,510 in 1971 to 6,871 in 1978; the Inuit population grew from 3,385 to 4,933. Annual population growth rates, however, have sagged in recent years; this leads us to anticipate that the population will stabilize around 16,000 inhabitants during the next decade.

RENEWABLE RESOURCES (WATER, WILDLIFE AND FORESTS) ARE THE BASIS OF REGIONAL ECONOMIES

Northern hydrographic basins are vast and their energy potential is considerable. The hydroelectric and tidal power that may be harnessed totals 36,100 megawatts. Since the signing of the James Bay and Northern Quebec Agreement in 1975, this resource has been integrated into Quebec's heritage as a whole and placed at the near-exclusive disposal of North American capital interests. It is therefore extracted and transported outside the territory.

Wildlife resources are essentially harvested by inhabitants of the North and are at the basis of the regional economy.

Much like hydraulic resources, forest and mineral resources are extracted and exported outside and thus escape the control of regional communities.

NORTH/SOUTH RELATIONS GOVERNED BY AGREEMENTS OR TREATIES

Since 1975, with the signing of the James Bay and Northern Quebec Agreements, and since 1978, with the signing of the Northeastern Quebec Agreement, northern communities have been subject to particular legislative provisions. In fact, some twenty acts have been adopted or amended to implement various aspects of these two general agreements, to which, in turn, subsidiary agreements have been added.

In short, henceforth northern Quebec is integrated with the south. Exports of its resources to the south are increasing progressively.

To survive, northern communities must either base their economy on traditional hunting and fishing activities and continue to promote ancestral values, or develop services revolving around natural resource extraction complexes or around tourism and outdoor recreation activities.

Problems Related to Resource Exploitation

What are the major impacts of natural resource development operations in northern Quebec? Although they are numerous, they may be classified into two major categories; impacts on the natural environment, and impacts on the life of native communities.

SIGNIFICANTLY ALTERED NATURAL ENVIRONMENTS

Without preparing a detailed analysis, it is important that we note the consequences on the natural environment resulting from the establishment of major hydroelectric dams in the James Bay territory and in adjacent basins, as well as the impact of logging and mining in the southern half of the territory.

Environmental Impacts of Hydroelectric Dams

The major impacts may be summarized as follows:

- significant changes in the flow regime of waters in the middle and lower reaches of affected rivers
- flooding of vast areas
- capture of waters from adjacent receiving basins.

The following hydrographic basins have been altered:

La Grande, Caniapiscau, Opinaca, Eastmain, Du Vieux Comptoir, Du Castor.

Effects of Logging

In a vast part of the southern fringe of the territory - between the 49th and 51st parallels - the forest is subject to clear cutting. There are numerous effects on the environment: marked bleaching of fine soil particles, filling in of marshy depressions, significant altering of aquatic habitats, reduction in the productivity of lakes, and so on.

The extreme limit of the commercially exploitable forest corresponds roughly to the 52nd parallel, at the height of the Eastmain River. In fact, there are no Quebec forest land development and management units north of the Rupert River valley. Furthermore, the vital role played by the sparse forest lands in the taiga, as wildlife habitat, precludes any systematic logging. In addition to being the primary habitat of fur bearing animals most often harvested by natives, forest stands along lakes and streams provide vital protection against the isolation and excessive warming of aquatic wildlife.

Effects of Mining

Most areas of mineral extraction are in the southern part of the territory. The principal impacts are as follows:

- piling of sterile rocks and mining spoil, which constitute a significant source of toxic substances³
- water contamination from mining shafts, concentrators and surface drainage.

SIGNIFICANTLY ALTERED HUMAN ENVIRONMENTS

From the moment when northern inhabitants saw the limits of their living space altered by the introduction of the concept of land categories, they were led to devise a new approach to social development. What are the principal problems which they must face?

- a local economy based less and less on environmental resources
- an economy linked to the vagaries of major North American capital projects
- an economy that consumes imported goods and services
- an economy that is growing more dependent and fragile.

Resource Use Policies Proposed by Non-Native Governments

The development policies first defined by southern governments in the 1970s were, for the most part, designed with a view to global development of Quebec's regions. Northern Quebec is one of many such regions that is thus integrated into the general economy; it is a periphery that places a wealth of natural resources at the disposal of the North American economy.

This view of things led to a series of policies and measures developed and applied by the Quebec government during the last ten years, the principal examples of which are as follows:

- to develop all of the hydroelectric potential capable of being harnessed and thus proceed with preliminary and pilot studies of the Grande Rivière de la Baleine and Petite Rivière de la Baleine basins, as well as the NBR and KCM complexes

- to continue extensive exploitation of forest resources south of the 52nd parallel and reserve more northern wood resources to meet the needs of local communities
- encourage wildlife harvesting to meet the needs of local communities and the demands of hunting and fishing outfitters
- ensure wildlife protection through the activities of the Joint Hunting, Fisheries and Trapping Committee; in this context, the Quebec government, through the MLCP, shall hold decision making authority concerning fishing, hunting and trapping rights, distribution of leases, catch quotas and any application to operate an outfitting service
- to ensure the development of tourism resources through the medium of the MICT: participate actively in the preparation of tourism development plans and projects, primarily by providing technical and financial support to tourism enterprises; also work to promote the tourism capability of northern lands by publishing an annual advertising bulletin,⁴ and by cooperating with NORTREK to develop a certain type of tourism centered on outdoor activities and expeditions⁵
- to propose the creation of conservation parks, and to that end, examine the following landscapes:⁶
 - the New Quebec meteor crater
 - the Hudson Strait Fjords
 - the Torngat Mountains
 - the Lake Guillaume-Delisle region
 - the vast hydro-scenic corridors formed by the rivers of James Bay and the Ungava coast⁷
 - tundra landscapes of the Ungava Peninsula and of Louis XIV point
 - the area surrounding Lakes Mistassine and Albanel.
- More specifically, the MLCP has retained the following spaces:⁸
 - Lake Guillame-Delisle
 - Otish Mountains
 - Colline Blanche Hill and Temiscamingue River
 - Baie aux Feuilles Islands

- Assinica Lake and rivers
 - Torngat Mountains and Koroc River
 - Cape Wolstenholme (St. Louis)
 - Des Loups Marins Lake and Petit Lac des Loups Marins Lake
 - New Quebec Crater
 - Lake Opémisca spawning ground
 - Bienville Lake
 - Caribou calving grounds
 - Boatswain Bay
 - Lake Yasinski spawning ground
 - Louis XIV Point
 - Povungnituk and d'Youville Mountains
 - Hutte Sauvage Lake
 - Ministikawatin Peninsula
 - Eaton Canyon
 - Cambrien Lake
 - Burton Lake and Roggan River
 - Lake Colombet
 - Delay River
 - Douglas Harbour
 - Lakes Albanel, Mistassini and Waconichi
 - Kovic Bay.
- to develop secondary industries based on environmental resources, for example:
 - canoe manufacturing (Kuujuuarapik)
 - snowshoe manufacturing (Baie-du-Poste)
 - construction enterprises: Cree Construction Company, Kigiak and "Société de relogement des Naskapis"
 - fish processing plants on the Lower North Shore and in native communities
 - construction of sawmills in the souther part of the territory
 - increased use of caribou.
 - to encourage cottage industries
 - to improve commerce and services in villages.

In brief, in the absence of alternatives, the exploitation of natural resources - other than wildlife resources - will remain the preferred method of intervention by non-natives. Greater diversification of regional economies is necessary to ensure that the dramatic situations produced by the closing of Schefferville and of Gagnon are not repeated.⁹

Native Government Policies

Elements designed to safeguard the natural heritage in this part of Quebec, notably the establishment of the Anguivigaq Wildlife Management Company, have reinforced the provisions of the James Bay and Northern Quebec Agreement and the Northeastern Quebec Agreement in recent years.

This company was established in 1982 to represent the interests of northern Quebec Inuit in wildlife resource management and utilization work, primarily for the purpose of ensuring the protection and sound management of subsistence harvests. Hence, Anguivigaq is in charge of all operations related to wildlife and seeks to provide advice to all agencies, communities and individual hunters. It also enables northern Quebec Inuit to contribute their ideas and expertise in the field of wildlife management.¹⁰

To date this company has been very active along the shores of Hudson Bay in developing a beluga management and protection program. In this connection an agreement has been signed between this company and the communities of Kuujjuarapik and Inukjuak to ensure improved beluga hunt management in the area.

Development Prospects, 1985-2000

Since 1975 the stakes involved in northern resource development in Quebec have changed. In fact, with the signing of the James Bay and Northern Quebec Agreements and the Northeastern Quebec Agreement, natives now have a clear role in the conquest of vast

northern spaces by the forces of western capitalist economies. They can only take action within a given framework and are thus forced progressively to obey the imperatives of the conquest of the periphery by the centre.

We are now faced with two distinct northern spaces. One corresponds to the Inuit and Cree settlements and their living space. The other is the territory under the Quebec government, with its mineral, energy and forest resources. Therefore, we have two northern realities polarized by diametrically opposed forces. These unequal forces - one for survival and the other for transnationalized capital interests - must clash. It is in these terms that the future of the North is set out. Is it possible to ensure the survival or even the development of native nations while allowing capital to pursue extraction operations or the continued pillage of resources? What role must government play in this process? Must government favour the native peoples or encourage large companies to invest in the North?

CONQUEST OF THE NORTH

Like other peripheral spaces in the world, northern Quebec is a pool of natural resources of strategic value for the development of industrialized nations. It must therefore be subject to the production-oriented rules of western economies: rules of competition, rules of dominance and subservience, rules of short-term vision and monovalence - in short, rules of non-development or poor development.

The conquest of northern Quebec continues, to the detriment of native habitats. As in third world countries, the Quebec northern development model is characterized by the following major elements:

- primary extraction production
- commercial export production
- monovalent economy
- economy under remote control.

In northern Quebec everything is sacrificed to the imperatives of the forest, mineral, energy and wildlife resource exportation economy. The vast majority of development projects are slanted in this direction.

FUTURE OF THE NORTHERN HERITAGE

The development model that native people seek to promote is endogenous and self-centered. The construction of a durable economy for and by the North seems to be the only possible avenue in the present context. With the shelving of megaprojects, northern communities can now build a production system based on the environment's renewable resources and ensure their survival by developing the major components of the cultural heritage with which they have been identified for thousands of years.

NOTES

1. Please note that the opinions expressed in this report are those of the author.
2. Quebec, Le Nord du Québec. Profil régional. OPDQ/UQAC, Quebec City, November, 1983, p. 6.
3. There are more than 100 abandoned slag heaps in this part of the territory.
4. Quebec, Nouveau-Québec - Baie-James. MICT, Quebec, 1984. H. Jamet, Le tourisme versus la 389. Working paper. MICT, September, 1984. This report recommends completion of Highway 389 between LG4 and Labrador.
5. Alain Herbert, Colloque sur le trekking au Nouveau-Québec. Proceedings, Symposium Plein air 2,000, Montreal, November 1984.
6. Quebec, Le Nord du Québec. Profil régional. OPDQ/UQAC, Quebec, November, 1983, p. 120.
7. See proposals made in the report on heritage rivers.
8. Quebec, Pitsiataugik. "Que l'on te protège." MLCP, Quebec, September, 1982, p. 34.
9. Quebec, Elements de proglématique du développement en milieu nordique. Working paper with a view to preparing

recommendations on northern development policies and strategies. OPDQ, Quebec, February, 1984.

10. Data supplied by Makivik.

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Quebec is a Big Park: To be Developed or to be Preserved?¹

Jean Pelletier

Some will say 1,024,184 km²; others will say 1,540,681. In Quebec we can easily give or take 100,000 square miles. We do have space. As we learned in school, this represents an area three times bigger than that of France, and 7.1 times bigger than that of Great Britain. Or if you prefer a comparison with the United States, it is equal to the combined areas of the states of New York, Vermont, New Hampshire, Maine, Massachusetts, Rhode Island, New Jersey, Pennsylvania, California - and Texas. And unlike most western countries, Quebec still owns 90 percent of its land.²

People talk about Quebec as though it had a million lakes. We will have to learn to count: according to the white water enthusiasts, there are "(Trans) 100,000 full-fledged lakes in Quebec, and if we were to include even the smallest pond, there would be 1,600,000. As for rivers, counting the smallest stream, the number is estimated to be 6,000,000 (that's right - six million)."³ What a lot of water-frontage! In the Montreal archipelago alone, there are more than 300 islands and over 1000 km of shoreline.

From Ville-Marie to Lourdes-de-Blanc-Sablon, from Coaticook to Ivujivik, it is beautiful, it is immense. But it is impossible to see everything. From the maple stands of the south to the taiga of the north, there is something for everyone: all you need is the means.

The problem is that there are fewer than seven million of us to share that space, to develop its resources, to think about making use of it now, knowing full well that we will be able to leave almost as much behind for those who will come after us. As proof, one need only to look to the small communities of native peoples that have been scattered in every corner since time beyond memory.

What is more, the great majority of us have opted to live along the St. Lawrence, one of the major rivers of the world with a flow (at Montreal) of 8500 cubic metres a second and whose shores in the Anticosti Island area are 126 km apart.

With our immense territory, our well-defined climatic seasons, our almost unlimited hunting and fishing grounds, we are the envy of the old countries and of our American neighbours, all of whom find it hard to believe that in our tundra, in 1983, a herd of caribou migrating in small groups formed a column 40 km wide by 90 km long (500,000 head).

We should not be surprised then, that others might be taken aback at the sight of us busily preparing urban development plans and projects, creating wildlife or ecological reserves, declaring certain lands to be natural districts, dreaming up master plans for the conservation and development of sites.

More than one foreigner - from France, for instance - has been astounded as, night and day, we remodel nature, divert powerful waterways, prepare roads in the sub-Arctic that will eventually become an enthralling tourist area only one hour's flying time by jet from Montreal.⁴

Whereas in the past we used to go exploring the inhabited part of the country along byways skirting the edges of farmlands, now we have expressways leading in all directions towards lakes subdivided for cottagers, ski resorts and parks for camping enthusiasts.

One need only fly over the small, more or less populated portion of our province - from Hull to Sept-Iles and from Valleyfield to Rimouski - to spot our playgrounds: golf courses, marinas, ball parks, tennis courts, backyard swimming pools, and so on. No other city in the world can compare to Montreal when it comes to the number of bodies of water its residents can use for water sports. We must point out in passing, however, that the water is a little too polluted for bathing....

What do these ideas of land development and organization of space have to do with us?

What does developing an approach to tourism while taking account of constraints have to do with us?

The Americans have always come to hunt on our lands, to spend part of the summer at Murray Bay (La Malbaie to the uninitiated). As for Quebec families, many have their own private holiday homes, while the less affluent must make do with a trailer or a fishing camp!⁵

This, then, is the playing field of the technicians and the technocrats who have the responsibility to improve our way of life. And, while they take on their share of power, the government suggests that we go play outdoors!

A Government in a Fine State

Quebec barely has ten inhabitants for every square mile. One can easily imagine the magnitude of the problems encountered by the planners (politicians or technocrats) whose task it is to develop so sparsely populated a land.

The civil servant in the Department of Cultural Affairs (MAC) is preparing inventories of architectural landscapes, while his colleague in Agriculture, Fisheries and Food (MAPAQ) is working on a comprehensive study pertaining to construction of tide gates. Meanwhile, his friend in Energy and Resources (MER) is writing guidelines for preparation of a plan for administration of public lands, and the one in Environment (MENVIQ) is putting together an atlas of green spaces, natural sites and ecological reserves. Their counterpart in Recreation, Fish and Game (MLCP) is devising general standards for the integrated development of wildlife and forestry, and his opposite number in Industry, Commerce and Tourism (MICT) is programming the development of facilities for a resort such as the one at Magog-Orford.

What department does not have its own legislation and regulations, and its own approach to management of its part of the territory? The MAC has its Cultural Property Act (1972), the MENVIQ has its Ecological Reserves Act (1974), the MLCP has the Parks Act (1977) and the Wildlife Conservation Act (1969, amended in 1983 to read "Conservation and Development"). And what about the poor minister who must listen to - and perhaps even abide by - the decisions of a Commission des Biens culturels, of a Conseil consultatif de l'Environnement, of a Conseil sur la Faune?

We have cautiously avoided any mention of the Environment Quality Act (1972, revised in 1978) and the Bureau d'Audiences publiques sur l'Environnement, the Agricultural Land Preservation Act (1978) and the Commission (CPTA) derived from it, Bill 125 - the Land Use Planning and Development Act (1979) - and the Commission nationale de l'Aménagement, which according to Section 221 of the Act:

shall give assessments respecting the conformity of a planning program or zoning, subdivision, or building by-law with the objectives of a development plan and with the complementary document of a regional county municipality, respecting the conformity of a zoning, subdivision or building by-law with the planning program of a municipality, or respecting the conformity of a government intervention with the objectives of a development plan or with an interim control by-law.

Fortunately, there are only 94 RCMs in addition to the Montreal urban community, the Quebec urban community, and the Outaouais regional community.

Nevertheless, we should stress in passing that, for his part, the Minister of the Environment may, under Section 2 of the Environment Quality Act,

- "a) coordinate research carried out by Government departments and bodies on the problems of the quality of the environment;
- b) carry out or cause to be carried out research, studies, inquiries and inventories on whatever concerns the quality of the environment;

c) prepare plans and programs for the conservation, protection and management of the environment...."

For its part, the CPTA's terms of reference require that it ensure that all land suitable for agriculture is reserved for that purpose.⁶

Thus, if the Minister of State for Economic Development wants to discuss "(Trans) spatial development of the tourist product,"⁷ while his colleague in Regional Planning and Development suggests that we plan the future in terms of a choice of regions,⁸ it is almost natural to be completely baffled when, in 1984, between the statement of two standards by the Commission de Toponymie, the agency responsible for linguistic development, one finds a MAPAQ folder stressing the fact that agriculture, wildlife and the environment have "(Trans) always been neighbours" and a MENVIQ poster advocating protection of the wild leek.

Above all, we should not lose sight of the fact that administration of public lands is a MER responsibility. "(Trans) Public Lands, as the structure supporting the multiple natural resources of the environment and the activities taking place in that environment, become of capital importance and are seen as an especially effective instrument for rational planning and development of the land."⁹ Moreover, the MER does put its shoulder to the wheel with regard to its policy of accessibility by leasing residential holiday sites and through its forest education centres - not to be confused with the ecological (MENVIQ) and wildlife reserves and the conservation parks (MLCP). It is, of course, doing likewise with regard to the rationalization and development of the wood processing sector - public forests cover almost 90 percent of forested land and supply 80 percent of the annual harvest - and with regard to development of our mineral resources.

With even greater caution, we have also refrained from any mention of that other level of government, which, compared with its country counterparts, still exhibits the odd impulse for taking direct action.

For example, we need only mention Parks Canada (Environment Canada) which is developing and administering two great and magnificent so-called national parks (Forillon and la Mauricie), restoring a baker's dozen of parks and historic sites (from Fort Chambly to the Forges du Saint-Maurice) and four historic canals.

There is also the Canadian Wildlife Service (Environment Canada) which, since 1916, has been supporting the establishment in Quebec of 22 sanctuaries for migratory birds and, since 1977, has developed six "national" wildlife reserves. In this same connection, we must point out a recent minor coincidence: in the fall of 1983, the MLCP had its Wildlife Conservation Act amended among other reasons to provide for the creation of a special fund for the purchase and development of threatened habitats; and in February, 1984, Ottawa announced (discretely) the creation of a new crown corporation - Wildlife Habitat Canada - interested in acquiring any habitat threatened with disappearance. According to a federal spokesman, "(Trans) the most urgent problem is still the rapid degradation of wetlands, the areas preferred by waterfowl; it is the marshes of the St. Lawrence Valley in Quebec...that are of particular interest."¹⁰

Ducks Unlimited Canada, a private group, will be the first to rejoice at our two levels of government getting together - each on its own side - to support the work it began in 1937.

Another fine example of federal-provincial complementarity is the Outaouais. On the one hand there is the work of the National Capital Commission (NCC) which was created in 1958 and which, under the provisions of the Act that governs it, is empowered among other things to implement projects jointly with the municipalities, build parks, preserve historic sites, organize cultural activities and "do anything incidental to the attainment of its responsibilities."¹¹ The NCC's territory in Quebec encompasses several municipalites as well as Gatineau Park. On the other side stands the Société d'aménagement de l'Outaouais (SAO) whose objective is to foster the economic growth of the region and carry out projects for industrial, commercial, recreational and tourist development.¹²

These are a few examples that would lead one to think, when all is said and done, that things are not all that simple with regard to administration of the territory. Quebec, a big park? Or perhaps a pulp and paper mill, or a power plant? One huge field to be used for agricultural production? A fish and game preserve?

Almost everyone in Quebec lives along the shores of the St. Lawrence system: the three million Montreal area residents who are familiar with the Laurentians think that they know all about the North. On a one-for-one basis, the beaches of Maine and Florida, and the banks of the Seine are easier to sell to the Quebec traveller than our own waterways and our remote hinterland.

Tourism and Space: Subtle Dialectics

Tourism is undoubtedly one of the socio-economic activities that must maintain a very intimate - perhaps even an organic - relationship with the environment. Unlike those who develop natural resources, whether for industrial or agricultural purposes, the promoters of tourism - governments included - depend (in theory!) on the quality of the environment, on its preservation and its development. Otherwise, what kind of landscape would we have to offer? A casino? A place of pilgrimage?

The immensity of our land and our conviction that our resources are inexhaustible historically have encouraged promoters, whether private or public, to administer the Quebec domain as though every citizen would always find what he/she was looking for in the natural peace of "his/her" lake and "his/her" waterway. The two million people who live on the Island of Montreal now realize that their shores are almost inaccessible. In those few places where the river banks are not privately owned, the water is usually unfit for bathing. More than one Montrealer is hoping to see the Laurentian autoroute extended as far as Mont-Laurier so that new holiday centres may be opened for the city dweller yearning for green spaces and decent water.

Apart from the more or less pampered fish and game enthusiast (see Appendix I), the example of cottage living is an interesting symbol of our relationship with the environment. Not half-a-century ago, we were leaving the land in droves to try to make a living in the city, and now in similar droves, we are occupying the shores of every lake and river within a 200 km radius of Montreal, Hull, Québec and Trois-Rivières, just so that we might be able to breathe some fresh air - if only on weekends. The defenders of the cottage-owner concept even point to its economic impact and the cottage-owner's concern for the environment by stressing that "(Trans) the septic tank business is nearing the \$40 million a year mark."¹³

Analysts recently began to look at the secondary residence phenomenon: it is, of course, not peculiar to Quebec, but oh! how widespread it is here. "(Trans) The rationale advanced to explain this new form of exodus is the alienation typified by our cities and the pace of our lives...it is, however, a matter of fashion and even an indication of a certain snobbishness in that it shows that our aspirations rather than our needs are being fulfilled."¹⁴

In this context, then, it is not surprising that government psychiatrists are pondering the question: "(Trans) the anarchic and destructive development of large urban centres, the proliferation of secondary residences in regions designed for creation and relaxation are an indication of confused values....How have we, in the course of our short history, managed to move from a situation of being masters of our space to one of colonizing and occupying that same space?"¹⁵

After several years of our tourist resources (scenery, wildlife and other attractions) being developed in every direction and in every manner, should we not pause to wonder about the end purpose of the changes that we have thus far encouraged and tolerated? What could be more "normal" than to want to play host to tourists/customers; but what could be more desirable than to make them want to come back by supplying them with the basic conditions they are seeking? Does the government have any responsibility for the protection and development of our lands beyond the creation of an

ecological reserve at Point-Heath (eastern tip of Anticosti) or of Aiguebelle Park (Abitibi)?

Our immediate environment by and large has been built. The government, however, is beginning to show obvious signs of concern: restoration of the old ports of Montreal and Quebec, redevelopment of Old Montreal. We have, after a fashion, embarked on a quest to reconquer our built-up areas. Large sums of money are now being allocated to a water development project in the Montreal area. Perhaps we shall also see the re-emergence of the early 1970s project "one river, one park...."

The recent major pieces of legislation on urban development and planning are indicative of a concern for organizing the present so as to preserve the future. In the words of the sponsor of Bill 125, "(Trans) Quebec has special characteristics. Basically, it is a new land. We came to spaces so vast that we never felt the need to be thrifty when it came to the land; we developed bits of it as it became necessary. Today things have changed...there is this notion that we should, right now, become more frugal with our space, and of course, that we should look to the future."¹⁶

Despite the multiplicity of acts and regulations, despite the very many government measures pertaining to conservation and the use of the land, it is far from obvious that we have a clear understanding that "(Trans) tourist development must henceforth be considered part of a more extensive system that would include outdoor recreation, tourism and conservation of nature."¹⁷

For the past 50 years, we have all too frequently allowed each person to occupy a space, "his" space or "her" space, without always measuring the effects of such aggression on the environment, the environment that provides us with support, the environment in which we find refuge. Henceforth, we must do more than assess tourism through convoluted calculations of the financial benefits derived from direct and indirect spending by travellers. We must lend more weight to the important need for the government to keep a sharp eye and to act on its determination to engage in a planning exercise that would make the most of our concern to adapt our spaces so that

they may serve more than one purpose, more than one clientele, more than one generation.

It not only remains to identify the objectives, the spaces, the conditions and the means...the government must act. But where, when and how?

A Case in Point: The Department of Recreation

The Department of Recreation, Fish and Game (MLCP), as its names does not indicate, is, in fact, our department of tourism.

Did you know that, in addition to administering parks (recreation and conservation) and wildlife reserves, the MLCP owns and manages campgrounds, beaches, a zoo, hostels, golf courses, an aquarium, marinas, an historical village (Val-Jalbert), cottages, the Batiscan rectory, and any other number of recreational and tourist properties? For its wildlife and outdoor recreational areas alone, the MLCP has an annual budget allowance of more than 80 million dollars with which to operate a vast network of parks, reserves and recreational and tourist attractions.

But there is still more! Who is responsible for administration of Mont Sainte-Anne, and who leases the land at Mont-Tremblant and Mount Orford to the concession operators? None other than the department responsible for downhill ski policy, the MLCP. It is not because of a new competitive situation in eastern North America that Quebec is no longer in the running.¹⁸ Major expenditures were made at Mont Sainte-Anne in 1983 for installation of snow-making equipment; an agreement was signed with a new promoter for the revival of Mont-Tremblant; the Minister of Recreation recently announced a \$3.5 million subsidy for Gestion Orford.¹⁹ And let us not forget, among other things, the costly studies under way about the Petite Rivière Saint-François site (Charlevoix).

The same department is responsible - in connection with the wildlife and parks legislation - for administering many sizable pieces of land jointly with the ZEC managers and the 700 or so

outfitters. In this connection, the department is obliged to employ a few dozen experts to establish standards governing who may hunt or fish, where, when, how much can be taken, and several hundred peace officers to ensure that those standards are respected.

Thus, there is a reason why, for several years now, the MLCP has been conducting advertising campaigns urging us to go play outside. There is perhaps a reason why a bill has just been tabled in the National Assembly to entrust the future "Société des établissements de plein air du Québec" with the responsibility for managing facilities now being administered by the MLCP. Because the bill is not expected to be adopted until the fall, interested parties will have a few weeks in which to learn more about that particular move, its nature and its scope. Although the minister's preliminary statement underscores the advantages of a more flexible administration and of the anticipated decline in operating costs, one should also wonder about the reasons for such an initiative. The government could have decided to transfer, to sell, to lease concessions, or to devise mixed formats in association with public or private parties. Is this just a method of downsizing the civil service, or is it a new approach to public management? Will the future holding company "Plein Air Québec" be able to reconcile collective responsibility and profitability?

As we saw earlier, the MLCP is not the only sectoral department to take on its share of responsibility for heritage resources. The fact that the MLCP wanted to turn the Mingan archipelago - already classified a natural district by the MAC - into a park did not prevent the federal government from offering a more substantial purchase offer to the holder of the deed of the property.

It is not because the MLCP is proposing an interesting master plan for the conservation and development of Lake Saint-Pierre (1983) that farmers and the MAPAQ no longer care to protect their lands with dikes.²⁰ We had already witnessed situations of conflicting interests on the occasion of the Kamouraska tide gate battle. There will be others where the delicate balance between protection of the ecosystem and the interests of producers will blow up into a battle, for lack of a concerted effort.

It is fortunate although demanding that many mechanisms have been created to enable groups and private citizens to present and defend their points of view. This applies to the subject of parks (creation, alteration or abolition), in respect of which the minister is legally bound to hear all interested parties (Section 2 of the Act).

Let us hope, however, that the process of learning how to use these participatory mechanisms will not be accomplished by the unfortunately oft-repeated tendency of the political and bureaucratic machinery to respect as few as possible of its own obligations. Otherwise, why and for whom all this planning and development?

These aspects, most of which are positive, should not make us lose sight of the fact that the MLCP has historically been concerned about the conservation of lands far from densely populated centres. It is not because of such parks as Mont Saint-Bruno and Paul-Sauvé (Oka) - which, by the way, have the official status of fish and game reserves (sic) - that the inhabitants of metropolitan areas will be jumping up and down. The deficiencies in the urban milieu are sizable, and here, rather than on Bonaventure Island, is where the Quebec government should be striving to achieve a more balanced environment.

A Country to Build

In 1983 we celebrated the centennial of the Quebec government's involvement in sports fishing. With the federal government not wanting to be outdone, public development activities, when all is said and done, go back a long time. But over the past 20 years, Quebec has gradually been training new experts who have, in turn, invented a new language. One has the impression that, since the adoption of Bill 125, several thousand local elected officials have to learn anew. Environmental matters have become almost permanent concerns. Moreover, development is seen as, or intended to be, a political process: there is going to be some friction between the

technocrats and the elected officials, between investors and citizens' groups, wishing to measure the compatibility of each other's development objectives.

Furthermore, because the people of Quebec like a handicap, the demands of the sectoral approach are complicated by the difficulty resulting from the absence of a homogeneous framework of spatial reference: in passing, let us add that more than one person is doing quite well as a result, but at the expense of whom?

The Quebec government, for one, has its hand in everything, at times showing obvious determination to incorporate a concern for ecological planning in its developmental projects and approaches; and at others, displaying an urgent need to assure the first promoter on the scene that he will be allowed freedom of action with no restrictions attached.

The government, as the defender and promoter of the common good, is caught between four or five priorities: control of excessive expenditures, jobs for tomorrow, the multiple demands of interest groups, the electoral verdict the day after tomorrow, a heritage for generations to come.

Quebecers would like to have the nicest country in the world. Charlebois's palm trees and Vigneault's Lower North Shore. The government of Quebec wants to satisfy its citizens and its ecologists as developers, and attract strangers and tourists as investors. The government is necessarily both judge and jury when it legislates, acquires or develops in order to preserve and offer services. If the government is to continue to be involved in management of the territory, it would be better if we knew what objective(s) are being sought.

A writer recently stressed that caution and coordination were the two virtues of Quebec's tourist development, as a result of recent legislative and regulatory action.²¹ Let us hope that this is not a cross between stifling and stimulating the characteristics peculiar to a more integrated country, people and land.

The landlord state, like the entrepreneurial state, has a world to rebuild. The welfare state is in crises; the welfare land lies fallow.

NOTES

1. The text is drawn from Téoros, a publication of the Tourist Management and Development Module, Université du Québec à Montréal.
2. Department of Energy and Resources, 1982-1983 Annual Report. (Québec), p. 49.
3. Quebec Canoe-Kayak Federation, Guide des rivières du Québec. Editions du jour, 1973, p. 262.
4. L. Martin-Tard, Au Québec. Blue Guides, 1976, p. 207.
5. One Quebec family in five owns a cottage or trailer; M. Girard, La Presse, 15 May, 1984.
6. "(Trans) Any non-agricultural use of land located within the agricultural zone is forbidden. It is therefore forbidden to establish a business, to build a factory or any other building not directly useful to agriculture or to the farmer," says a general information brochure issued by the MAPAQ, 1979, p. 22. There are exceptions, of course...
7. Bâtir le Québec. Énoncé de politique économique. Government of Quebec, 1979, p. 134.
8. Consultation documents on regional development, Government of Quebec, 1983.
9. Department of Energy and Resources, 1982-1983 Annual Report, Quebec, p. 49.
10. B. Mountain, Assistant Deputy Minister, Environment Canada, La Presse, 3 March, 1984.
11. National Capital Commission, 1980-1981 Annual Report, p. 45.
12. The SAO is a corporation created under Title III of the Communauté régionale de l'Outaouais Act. Under that Act, the corporation enjoys the rights and privileges of a Department of the Government of Quebec.

The territory entrusted to the Corporation as its field of action covers 34,260 square kilometres in the Outaouais region.

13. FAPEL, La villégiature une force économique. 1983, p. 2.
14. J.-P. St. AMOUR, La villégiature au Québec, problématique de l'aménagement du territoire, Éditions Asticou, 1979, p. 7.
15. La politique québécoise du développement culturel, Government of Quebec, 1978, p. 159-160.
16. J. Leonard, Minister of State for Development, Développement Québec, Vol. 6, No. 1 (March-April 1980) p. 19.
17. G. Cazez, R. Lanquar, and Y. Raynouard, L'Aménagement touristique, Presses universitaires de France, 1980, p. 7.
18. La politique québécoise pour le ski alpin, MLCP, 1983.
19. La Presse, 13 June, 1984.
20. Public consultation: abstract of briefs, MLCP and COLASP, November, 1983.
21. Y. Archambault, "Des outils et des intervenants," Téoros, Vol. 2, No. 3 (October 1983), p. 6-7.

Appendix I

Hunting, Fishing, ZECs, and Outfitting

It was in 1883 that leasing of waterways to incorporated sports clubs officially began. The revenue generated by leasing amounted to \$56,226 in 1901, with fishing license fees accounting for \$46,537 of that total.¹ On the other side of the coin, a total of \$16,030 was spent that same year on protecting game. Thus there already existed an effective policy for protecting wildlife while generating income for the state.

During that same period, several salmon fishing clubs were already being established. In 1899 there were also more than 30 clubs in the Laurentians and 15 years later, there were 70. Eighty percent of the members of these clubs were Anglophones, many of them associated with the forestry and mining firms.

In 1905 consolidation of the club system began to take shape: the group of lessees now included residents of Quebec whose numbers increased gradually until 1945, then soared until 1960 (86 percent of the membership).

During those same 15 years the number of leases rose from 615 to 1908, most of them for the benefit of the clients and electors of the government of the day. That same period witnessed the introduction of the commercial leasing (outfitting) system - and the poaching system, since the best lands were leased.

The Quebec Federation of Hunting and Fishing Associations was created in 1946: it would quickly have to deal with increasing public pressure. The Federation therefore recommended to the government that it create public fishing areas in each region, "(Trans) lakes or rivers not covered by leases and near the cities."²

DEMISE OF THE "CLUB" CONCEPT

Early in the 1960s, protests were being staged in the St-Maurice Valley and on the North Shore. In 1961, 32 protestors were arrested on the Matapédia River: they were demanding that a lease granted to an American club be revoked.

Widespread opposition to the system of private leasing rights was about to develop: creation of the Movement for abolition of private clubs on the crown lands, the Movement for recovery of Quebec's salmon rivers, supported by the CNTU labour group.

The public commitment of columnist Serge Deyglun and certain statements made by a few senior civil servants sought a change in the system. But resistance was considerable and strong, in spite of political speeches in favour of democratization. The struggle intensified and became more radical in the late 1960s: the protesters were occupying the lands.

It was not until 1977 that the government abolished the exclusive rights of the private hunting and fishing clubs³ and created the ZECs managed by associations of users. Today there are 67 wildlife ZECs and six salmon ZECs (12 rivers accessible to everyone). The action taken by the government in 1977 created an irreversible movement towards democratization, and without entailing enormous expenditures.

Several observers, however, are concerned about the current trend: "squatters" continue to occupy the lands, the ZEC officials have limited means for managing the wildlife resource, former clubs carry on in disguise, outfitters are operating illegally, most of the salmon rivers have not yet been "declubbed."⁴

How can one ensure both collective management of the resource and profitable operations, without tolerating the appropriation of lands by minority groups at the expense of universal accessibility? At last count, there were 600,000 hunters and 1.3 million anglers in

Quebec.⁵ As one anonymous fisherman once wrote, "I don't know who discovered water, but it certainly wasn't a fish."

NOTES

1. All historical and statistical data have been drawn from a master's thesis in political science: Jacques Desjardins, "La politique de concession des droits privés de location en matière de chasse et de pêche au Québec de 1960 a 1977," University of Montreal, February 1983.
2. In 1965 the FACPQ became the Quebec Wildlife Federation (FQF).
3. Cottage and camp owners retained ownership of their assets.
4. Refer to this connection in the recent CNTU statement of its demands, Nos loisirs et nos vacances, c'est pas du luxe! April, 1984.
5. Sentier chasse-pêche, June, 1984, p. 10.

The National Parks of Canada and the Nature Parks of Quebec

Jean-Luc Bourdages

Introduction

The centennial of the first national parks in Canada provides a unique opportunity to review conservation in Canada. The national park concept represents the first government step to protect the most outstanding natural landscapes. Over the years this status has played a fundamental role as a measure for the conservation, planning and development of our natural environment. It has encouraged provincial governments to set up their own systems of parks and reserves of all kinds.

Although we are celebrating a hundred years of Canadian national parks, it also seems important to consider the nature park systems managed by the Quebec government, since this system plays a primary role in various conservation measures. I have no intention of presenting an exhaustive description of the situation in the two park systems; rather, I would like to identify the main problems and submit a few strategies for development as the year 2000 approaches. Even though the Canadian and Quebec park systems have certain points in common, I have opted to treat them in two separate parts.

The National Parks of Canada

MAJOR FACTS

In Canada the national park concept has been in use for a hundred years. The earliest parks were first created in the west, when the federal government had jurisdiction over natural resources of the provinces concerned. Although the expansion of the park system eastward was undertaken in 1914, with creation of St. Lawrence Islands National Park, and in 1918 with Point Pelee Park,

the earliest activity in Quebec came only in the late 1960s. Thus in 1970, the Government of Canada created Forillon National Park and Le Mauricie National Park. More recently (1984), a third area, the Mingan Archipelago, was reserved for national park purposes.

These three federal government projects in Quebec have had their problems at times. The main ones were the huge numbers of expropriations for Forillon and the difficult negotiations which led to establishment of the reserve for the Mingan Archipelago National Park. Furthermore, certain park projects, such as that of the Saguenay, could not be implemented - at least under the sponsorship of Parks Canada - because the Quebec government moved first to carry out similar plans.

In any case, Canada's national parks contribute substantially to the conservation and development of the natural heritage of Quebec and Canada.

MAJOR PROBLEMS

Planning of the Parks System in Canada

Before 1972 the Canadian park system was developed incrementally on an ad hoc basis. The choice of a region was justified by listing the characteristic elements to be protected. In 1972, however, the National and Historic Parks Branch submitted a planning manual for the national parks system, and this has become the official policy of Parks Canada in this respect.

The Parks Canada approach can be summarized as follows. First, Canada was subdivided into 22 physiographic land regions based on the physiographic units determined by Bostock (1970). With these were integrated the ecological subdivisions representing the major plant units of Canada, described by Rowe (1972).

The country was then divided into 39 natural land regions within which would be designated representative natural areas of Canadian interest, wherein national parks eventually could be created. This new approach, centred on integration of certain

biophysical parameters of the natural environment, has enabled Parks Canada to base planning of the national parks system on ecological criteria.

In its policy Parks Canada has set an objective of representing each of the natural regions in the national parks system. In Quebec three of the 13 natural regions occurring in the province are represented: the Mont Notre-Dame and Mont Mégantic region in Forillon National Park in Gaspésie, the Precambrian region of the Great Lakes and St. Lawrence in La Mauricie National Park and the eastern St. Lawrence Lowlands region in the recently created Mingan Archipelago National Park reserve.

The federal government hopes to complete its national parks system as quickly as possible. However, its program is considerably slowed by the need to transfer complete jurisdiction over the land and its resources from the province in question to the federal government.

Land Acquisition

The problems related to land acquisition for the creation of national parks lie mainly in the apprehension of provincial governments about losing forever any economically attractive natural resources which may occur on the land in question (Brooks 1970). The only two national parks created in Quebec in the 1970s are eloquent examples of delays caused by difficult negotiations which degenerate into real battles between the federal and provincial governments. At Forillon the agreement had to be limited to a long-term lease allowing the province of Quebec to remain owner of the land. For creation of La Mauricie National Park, the Quebec government agreed to transfer the required land to the federal government only as part of a land exchange. Acquisition of the Mingan Archipelago would certainly not have been possible had the federal government not been able to buy the group of islands directly from Dome Petroleum for \$5 million. This unusual if not unique procedure gave rise to a heated debate between the Quebec and Canadian governments. This case, as well as the controversy marking creation of the Saguenay park, demonstrated the real problem in

cooperation between the two levels of government regarding preservation of representative samples of our natural heritage.

Resource Inventory

Since 1973 Parks Canada has steered toward an integrated inventory of resources, rather than a thematic approach, with the aim of obtaining an overall comprehension of the environment in question, and being able to determine the relationships between various components. To achieve this integrated inventory, Parks Canada applies the ecological classification of land, which allows it to identify and map ecological units determined from relationships between climate, geology, land forms, surficial deposits, soils, vegetation and water characteristics. There is something missing, however; the ecological classification does not readily allow inclusion of information about wildlife, and this diminishes the operational nature of the ecological units identified.

The resource inventory of the national parks usually starts after creation of the park and results in implementation of a natural resource management plan. Before establishment of a final master plan, however, Parks Canada develops certain sectors on the basis of a preliminary resource evaluation. This involves defining provisional guidelines for management, to be used in orienting park development during the period preceding approval of the management plan. Nevertheless, some of the people involved (Cottell 1977; Theberge 1978) emphasize the importance of having information that is as complete as possible before providing a park with service and recreational infrastructure. Briefly, these two authors underline the importance of adequate planning before undertaking development of a park.

Conservation and/or Recreation

Throughout the existence of the national parks, the Canadian government has never thought of creating - as is done in most of the provinces which have established park systems - categories of national parks with different objectives, that reflect the

biophysical and socio-economic characteristics of the land areas chosen. Hence, the national parks, once created, have been developed and made accessible as a function of the characteristics of the park and the demand by users.

Over the years those responsible for the parks have observed that the national parks often differed from each other with respect to their objectives and the services and facilities they offered the public. In fact, some parks have been more devoted to protection of the natural environment or even a particular species, while others are recreational sites in a natural setting.

This demonstrates the dual role of the national parks: conservation and recreation.

With the aim of lessening this ambiguity about the role of the national parks, the National and Historic Parks Branch, in its 1969 document, clearly established the primary objective of the national parks: to conserve as national heritage, in perpetuity, regions which contain important geographical, geological, biological or historical elements, for the benefit, education and enjoyment of the Canadian people. For Parks Canada, the conservation of the natural environment has thus become a priority in development and in services to visitors. Hence, the use of the national parks for recreational purposes will always be a major objective.

The changes in the conservation-recreation duality reflect the overall evolution of the national parks of Canada. In fact, the almost completely touristic orientation of the earliest parks very slowly gave way to conservation of the natural environment, where recreational activities must first promote its understanding and appreciation.

This orientation of the national parks toward conservation of the natural environment became more specific in 1979, when Parks Canada indicated in its new policy that alpine skiing and golf were outdoor activities that were incompatible with the objectives of the national parks (Parks Canada 1979).

Wilson (1984), however, fears that all measures which may restrict public access to the national parks may result in a decline in public interest. He even thinks that the welfare of the national parks and their conservation role could entirely depend in the future on the support provided by the tourism and recreation sectors. The author goes further with his contention that the public will soon demand to know what real benefit conservation contributes to the general welfare. If this demonstration cannot be made, the conservation function of Parks Canada will be subjected to pressure from developers and industry; there will even be a danger the agency will gradually decline through the lack of financing. In short, Wilson emphasizes the need to substantially increase the space provided for the tourist industry and recreation in the national parks.

Wilson's position appears exaggerated when we look at the popularity of the national and historic parks (25 million visitors in 1984) and the variety of recreational activities which they offer. On the other hand, certain American experiences have shown the magnitude of the impact of large-scale tourism on the national parks. For example, Boyer (1985) wonders about the survival of the famous Yosemite National Park, where tourism and concessionaires have become so important that the natural environment and the enjoyment of visitors have been greatly affected. In this respect, we believe that the objective of conserving representative examples of our natural heritage should remain a priority. Recreational and tourism objectives must be secondary and accessory to the basic objective, as suggested by the International Union for Conservation of Nature and Natural Resources (IUCN 1978, 1980). To this must be added rigorous planning for conservation and recreational activities as a function of the biophysical characteristics of the environment. Moreover, serious efforts must be devoted to integration of each park within its surrounding region, whose development must allow optimization of economic spin-off effects associated with tourism.

Setting Park Boundaries

In recent years, greater understanding of the biophysical elements of target areas has prompted park planners to give more

consideration to the ecological aspects and to integrate them with other decision criteria related to creation of a new park. Thus the ecological region and the ecological district derived from the ecological classification of an area usually comes into the preliminary definition of the boundaries of a national park.

However, we must not have any illusions about application of the ecological classification of land in setting park boundaries. In fact, the authorities involved are not regarding the economic and social aspects to any lesser extent; indeed, these aspects still have priority in many cases. During negotiations between the federal and provincial governments, economic considerations associated with the use of natural resources have precedence. It is quite understandable that governments do not wish to disturb the regional and local economy any more than necessary. The boundaries of a park are therefore also fixed as a function of the various pressures for land use, making it more difficult to ensure the integrity of natural ecosystems. The dilemma of protection for natural ecosystems and commercial use of resources is therefore still constantly present, even in the most recent Parks Canada policy.

Not only must the setting of national park boundaries cause the least long-term upheaval to the economic life of a region, it must also minimize social disturbances. This concern, however, is quite recent for Parks Canada. Only in the last few years has the existence of communities within or near a new park been taken into consideration during determination of national park boundaries. In the past those responsible for the parks, in accordance with parks policy, made a point of excluding all persons living within the boundaries of a park before its creation. For example, the local communities of Forillon and Kouchibouguac parks were excluded through massive expropriations; this procedure caused a great deal of animosity toward Parks Canada on the part of residents. After these bad experiences, the agency changed its approach. For Gros Morne National Park, Parks Canada chose not to include the largest communities within the park boundaries and authorized residents of these communities to continue their traditional activities of fishing and cutting firewood in certain sectors of the park. The

residents of small communities included within the park were allowed to continue residing there or to move out in return for substantial financial compensation. In this respect, the planning of Gros Morne National Park is an excellent example of Parks Canada's new objective involving greater respect for relations between man and his living environment.

Public Consultation

Parks Canada's interest in the concerns of the public is quite recent and belongs to the period of reorientation of national parks objectives and planning, begun around 1970. However, the requirement to consult the public only became formal in 1979 in the Parks Canada Policy (1979), in which the elements to be submitted to public attention were identified.

Parks Canada has elected to consult the public at various stages in the process of creating a national park, especially before creation of the park, and then during the planning process, particularly in development of the master plan. In developing procedures to allow public input, Parks Canada adopted the so-called cooperative formula. The first step consists of an exchange of information based on discussions with regional and national groups interested in the planning of the park. Then the project is studied and an evaluation made of the planning, alternative proposals and the solutions envisaged by participating agencies. Finally, the public is invited to meetings for evaluation of the master plan.

By participating in various stages in the planning of a national park, the community can better grasp the project as a whole. Moreover, consultation facilitates incorporation of elements provided by those responsible for the parks, who are more familiar with the problems of national parks, and by the public, who are closer to local and regional concerns.

DEVELOPMENT STRATEGIES

Expansion of the System

To ensure protection of representative samples of all natural regions of Canada, Parks Canada must substantially expand its national parks system. In fact, it is estimated that the system is only half complete, even after 100 years of work (Mondor 1984). However, growth of the system presents many problems, especially when the sites considered are in provinces which already have park systems well under way.

In view of the problems for the federal government in establishing parks on provincial land, new approaches may be required, based on cooperation, to complete the Quebec section of the national parks system. Indeed, unless the Quebec government is completely receptive government to Parks Canada's intentions, recourse to joint projects could be the only alternative. As the two levels of government have similar objectives regarding protection of representative examples of natural regions of their respective jurisdictions, we might expect that a given natural site would be of interest to both of them. As soon as the Quebec government moves to protect a desired site, it is no longer possible for the federal government to include that area in its system or perhaps even to have that natural region represented. The creation of the Saguenay conservation park by the Quebec government is a specific example of this situation. Parks Canada had been interested in this sector for several years and wanted, among other things, to ensure conservation of marine resources, which has become much more difficult in the current situation.

Because of these real problems in advancing the national parks system, the federal and provincial governments might well envisage the joint creation, management and development of parks wherever the characteristics of an area correspond to the criteria that each has set for its large nature parks. If we take the example of the Saguenay park, we can imagine that the combination of financial resources of the two governments would allow protection of a larger

area and inclusion of the most significant marine elements. Similarly, joint action could have been considered for the Mingan Archipelago. I remain convinced that the objectives of Quebec's conservation parks are close enough to those of Canada's national parks that a Quebec park could receive the status of a national park of Canada. However, for Quebec parks that are already established, it may become necessary to change some elements in the zoning, master plan and management to create a certain degree of uniformity within the system.

National Marine Parks

For a number of years now, Parks Canada has been very interested in the protection of marine resources that represent Canada's natural heritage. Although several existing parks include coastal zones, none of them includes a large area of marine environment. Parks Canada thus sees the necessity, even the urgency, of incorporating large marine components in its parks system. For this purpose, the federal agency has submitted a draft policy on marine parks for public discussion. The policy presented repeats many elements of the policy on land parks, to which are added aspects peculiar to the problems of marine environments. In fact, several new problems arise in considering marine parks. For example, we might wonder how the zoning concept can be applied. Similarly, the questions of commercial fishing and marine traffic remain complex.

It seems that a number of analyses and studies are still required before final development and creation of the first truly marine park can be achieved. For the moment Parks Canada is hesitating to act in this area, as is recently demonstrated in the Mingan Archipelago National Park project. Contrary to what many people believed at first, this park plan only affects the land components of the archipelago. Nevertheless, the prudent attitude of Parks Canada where marine parks are concerned is understandable, considering the lack of precision surrounding the concept of marine park.

Several groups involved in the subject, particularly the National and Provincial Parks Association of Canada, are encouraging Parks Canada to create marine parks and suggest, first of all, that the boundaries of existing coastal parks be expanded to include a substantial portion of the marine environment adjacent to these parks. At its last annual convention, the Association asked Parks Canada to take such action, first in Terra Nova National Park in Newfoundland. Moreover, it seems that the federal agency is giving very serious thought to the possibility of creating a marine park at the mouth of the Saguenay River in Quebec, a project in which the Quebec government is willing to cooperate (Duhamel 1985).

The Nature Parks of Quebec

MAJOR FACTS

Quebec became interested at a very early date in the American and Canadian movements to create large-area national parks. In fact, less than ten years after establishment of Rocky Mountains Park in 1887 by the Canadian government, the Quebec government created two vast nature reserves with the legal status of parks: Parc des Laurentides and Parc de la Montagne Tremblante. Despite this concern for establishing nature parks, the Quebec experience was marked by a very small number of concrete achievements. From 1895 to 1979, therefore, only four parks were created, since all the other areas identified as parks (Parc Paul-Sauvé, Parc du Mont-St-Bruno and Parc de la Vérendrye) were legally only hunting and fishing reserves. However, development of the parks system took a new lease on life in 1977, following passage of the first general law on parks.

Multiple-Purpose Forest Reserves

The first Quebec government initiatives in establishing parks had objectives that tended to be conservationist: the wish stated in the legislation was to protect the forests, the fish and the game, to maintain a continuous reserve of water, and to encourage the study and culture of forest trees. These areas were therefore

set aside as forest reserves, hunting and fishing areas, public parks and places for relaxation. Nevertheless, despite explicit evidence of the government's desire to protect nature, forestry operations were not excluded, nor were they abandoned, in these parks. In fact, even by 1905 - ten years after its creation - 93 percent of the area of Parc des Laurentides was covered by forestry concessions.

Since the role of the Laurentides and Montagne Tremblante parks corresponded little to that of the large Canadian and American national parks, the government created Parc de la Gaspésie in 1937 in the Gaspésie forest, hunting and fishing reserve, established in 1906. This time, the concept of forest reserve disappeared and there was henceforth to be no forestry or hunting operations. Reserved as a public park and a place for relaxation, the park was created to ensure conservation of outstanding natural elements, such as Mont Albert and the Monts de la Table.

However, this brand new will to provide for conservation was very short-lived, since the Act was amended in 1938 to authorize the use of trees in the park that were at least 50 years old. The chances of conservation declined even more when, in 1943, a new amendment allowed mineral exploration and mining operations. Thus Parc de la Gaspésie became another multiple-purpose forest reserve, on the same basis as Laurentides and Mont-Tremblant parks.

When the Quebec government authorized the cutting of trees in Parc de la Gaspésie, it passed another law providing for establishment of a fourth park, that of Mont Orford in the Eastern Townships. In this case forest and mining operations continued to be prohibited, mostly because of the small area of the park and the essentially deciduous nature of the forest.

Of these four parks, the Mont-Tremblant, Laurentides and Gaspésie parks, until their change in status in the late 1970s, were true multiple-purpose forest reserves where cutting - and mining in Parc de la Gaspésie - predominated, sometimes to the detriment of hunting, fishing and outdoor activities in general, leaving significant scars on very valuable natural landscapes.

The First General Law on Parks

To make up for Quebec's extreme tardiness in nature park development, the Quebec government passed the first general law on parks in 1977.

The new Parks Act introduced very important provisions, such as the prohibition of any resource exploitation for purposes of forestry, mining or energy production, prohibition of hunting and the obligation to consult those interested in the creation of a park or amendment of its boundaries.

The government also elected to create two distinct categories of parks: conservation parks and recreation parks. The conservation park is "a park primarily intended to ensure the permanent protection of territory representative of the natural regions of Quebec, or of natural sites presenting exceptional features, while rendering them accessible to the public for the purposes of education and cross-country recreation" (RSQ 1977, P-9, s 1(c)).

The concept of cross-country recreation is very important, since it indicates the intensity of activity permitted in a conservation park. Cross-country recreation is defined as "a type of recreation characterized by the use of little frequented territory [sic]¹ and the use of relatively simple equipment" (s 1). On the other hand, the primary purpose of a recreation park is "to foster the practice of various outdoor recreational activities, while protecting the natural environment" (RSQ 1977, P-9, s 1(d)).

Development of the Parks System from 1977 Onward

When the status of the four existing parks was revised, it seemed clear that the department responsible for parks, at first known as the Ministère du Tourisme, de la Chasse et de la Pêche² (MTCP) and later as the Ministère du Loisir, de la Chasse et de la Pêche³ (MLCP), would propose reduction of the areas they covered, since it was difficult to conceive of prohibiting forestry and

hunting activities over such vast tracts. Thus the overall area covered by these parks was reduced by 78 percent.

Legally created parks. Of these parks, Parc de la Gaspésie was classified as a conservation park, while Parc des Laurentides was turned into two conservation parks: Parc de la Jacques-Cartier and Parc des Grands-Jardins. For the Mont-Tremblant and Mont-Orford parks, the government maintained the status of recreation park. In addition, seven new parks have been established since the Act was passed: the conservation parks of Saguenay, Bic, Aiguebelle, Miguasha and Ile Bonaventure-Rocher Percé, and the recreation parks of Iles-de-Boucherville and Yamaska.

Proposed parks. In 1982 the MLCP proposed creation of two more recreation parks: Mont-St-Bruno and Paul-Sauvé. For the first, the controversy surrounding its classification is still delaying creation of the park; at a public hearing, a majority of interveners favoured the status of conservation park for this area. More recently, the department announced its intention of creating a conservation park at Pointe Taillon, at Lac St-Jean.

MAJOR PROBLEMS

Planning the System of Conservation and Recreation Parks

The recently adopted policy on Quebec parks provides for planning of the parks system in terms of a development plan, a five-year plan and an annual program. Aside from the economic and legal aspects of park creation, the conservation parks are planned on the basis of natural regions in Quebec, whereas the recreation parks depend on the recreational potential of areas under study and on community needs.

The MLCP made its policy on Quebec parks public only in 1982, identifying the criteria used in developing the parks system. To ensure sufficient representation of Quebec's diversity within the system, the department is planning to establish a conservation park in each of the natural regions it has defined. Numbering 44 at first (MLCP 1982), the natural regions were recently revised by the

department. Accordingly, the map of December 1983 (MLCP 1984) shows 43 natural regions for the entire area of Quebec, excluding Labrador, unlike the previous version.

Even though they represent the diversity of landscape in Quebec, these natural regions do not necessarily illustrate all of the ecological diversity of Quebec, since they are essentially based on physiography. While not denying the real importance of physiography in identifying natural regions, I believe greater attention should have been paid to incorporation of other abiotic or biotic parameters, especially vegetation. With respect to vegetation, it seems that only the major "plant domains" were considered - deciduous forest, boreal forest, forest tundra and tundra (MLCP 1984) - without regard for the variations within each of these domains. Because of this, the natural regions - the physiographic regions, in other words - can be uneven and sometimes not very homogeneous in content. For example, the Laurentian boreal region (B17) extends from 46° to 52° north latitude and overlaps the climax domains of both fir and spruce.

Land Acquisition

According to the Parks Act, the government may, by regulation, designate as a park any portion of public lands it indicates. This provision, however, is not accompanied by the power of expropriation. Unlike the federal government, it is easier for the Quebec government to settle this aspect of park creation, since it has jurisdiction over the resources and development of its territory and can therefore reconcile the priorities of action on its own.

However, in difficult economic times we can expect the MLCP to act mainly with regard to land over which it already has jurisdiction, to the detriment perhaps of other sites worthy of protection. The first steps taken by the department tends to confirm this orientation, which will probably prevail for several years to come.

Thus, after classifying the four old provincial parks, the MLCP proposed new parks in areas already under its jurisdiction

(Mont-St-Bruno, Paul-Sauvé, Iles-de-Boucherville and Yamaska). Only the proposed Saguenay Park was not on land under MLCP jurisdiction, although the area chosen consists of more than 90 percent public lands.

Biophysical Inventories

In its recent policy the MLCP (1982) adopted a thematic approach for its inventories. According to this approach an individual inventory is done for each component of the biophysical environment and, where applicable, for the archaeology and current or former use made of the land. Although such an approach provides adequate knowledge of an area, it is sometimes difficult to achieve an overall understanding of the environment studied and to establish the relationships between the various components. Moreover, this is why many people interested in the parks recommend an integrated inventory of the biophysical resources of each park, of the kind Parks Canada has been preparing for a number of years.

In the park development the recently adopted policy places the resource inventory in the first phase, which leads to development of a provisional master plan. In practice, only Parc du Mont-Orford has had a complete biophysical inventory done. Elsewhere, the inventories are still partial and, in some cases, clearly inadequate for preparation of a lucid master plan. Since the objectives of the parks are both the protection of the most outstanding natural elements and the practice of outdoor interpretation activities, it is indispensable that the department acquire sufficient knowledge of the biophysical characteristics of the area concerned in order to adequately apply these protection and use objectives at the zoning and master plan level.

Conservation and/or Recreation

The conservation/recreation duality took form, with passage of the Parks Act in 1977, as two distinct categories of parks; those for conservation purposes and those for recreation. During the four years of application of the Act, however, the lack of a policy specifying the objectives sought by the two categories of park and

determining the recreational activities allowed in each of them has led to controversy. Hence the Mont-Orford and Mont-Tremblant parks were classified as recreation parks, largely because of the presence of alpine ski centres, despite the representative nature of these areas.

With publication of the parks policy, recreational activities are henceforth stipulated in terms of the park classification. It turns out that most recreational activities can be permitted in both types of park. Only four of the 22 activities authorized in the parks are too intensive to be allowed in the conservation parks; these are alpine skiing, water skiing, golfing and snowmobiling. However, within each type of park zoning guides the practice of recreational activities. For example, the parks policy (MLCP 1982) provides for zoning of the conservation parks into four zones, to which is added a fifth zone in the recreation parks. Two zones have as a priority the protection of the natural environment: the extreme conservation zone and the conservation zone. On the other hand, the ambience zone, the services zone and the intensive recreation zone - for recreation parks - are oriented toward the use of land for recreational purposes.

Even though the zoning classification developed by the MLCP seems entirely adequate for the two-class parks system provided by the Parks Act, its application appears to favour recreation, at the expense of conservation. For example, if we analyse the zoning plans for the Gaspésie, Jacques-Cartier and Grands-Jardins conservation parks, we see hardly any difference between them, except for the presence of intensive recreational zones and a ski centre in the last two. For example, in the Jacques-Cartier conservation park, about 19 percent of the land area is zoned for conservation purposes, while the ambience and services zones occupy 81 percent of the area. A very similar situation occurs in the Mont-Tremblant recreation park, where the conservation zones total about 10 percent of the park area and the remainder is divided between the ambience zone (64 percent) and the intensive recreation zone (26 percent) (Bourdages et al. 1984).

If we compare the zoning of Quebec conservation parks with that of Forillon National Park, assuming that the latter, by definition, is similar in nature to Quebec's conservation parks, since the objective of the national parks is to conserve representative areas of Canada's natural regions, we find that 93 percent of the area of Forillon Park is devoted to various forms of conservation, while seven percent is allocated to different forms of fairly intensive development (Parks Canada 1980). The situation is similar in Ontario, where the conservation zones cover more than 90 percent of the area of the wilderness parks, the equivalent of Quebec's conservation parks.

An interesting element in the zoning of Quebec's parks, compared to that of Canada's national parks, is its legal recognition. Since zoning is prescribed by regulation, there is a kind of guarantee that it will be applied and complied with.

Setting Park Boundaries

Since exploitation of natural resources was allowed in the earliest Quebec parks, the government did not hesitate to reserve very large areas for this purpose. With the Parks Act in 1977, the prohibition of any kind of natural resource use (except fishing) led to a substantial reduction in the area of existing parks and to the proposal for significantly smaller parks. For example, when Parc de la Gaspésie was revised, its area was reduced by almost one-third. Considering the three vital sectors of economic activity in the region - mining, forestry and tourism - the planners of the MCTP tried "(Trans.) to develop an optimum model in terms of economic performance of the area."

With this in mind, the boundary determination was submitted to careful examination to include only those sectors that were vital for the conservation and protection of the fauna and the flora, such that the new park would remove practically nothing of the usable potential of the Chic-Choc Crown forest. (MCTP 1978). (Trans.)

Hence, when the boundaries of the four older Quebec parks were being established, the decisions resulted in most cases from

discussions and compromise between the Ministère du Loisir, de la Chasse et de la Pêche (MLCP) and the Ministère de l'Énergie et des Ressources; above all, they reflect the earlier use made of these parks. This concern of the government for the economic resources of the regions involved in creating parks is very laudable, to the extent that repercussions on economic activities related to natural resource exploitation should be limited. However, such considerations should not be determining factors and should not constantly be detrimental to conservation of the natural environment, since in the long term this manner of establishing parks could compromise the integrity of the natural ecosystem partially included within their boundaries.

For new parks of substantial area, particularly Parc du Saguenay, it seems that the procedure followed was the same as before, as the documents on this park show:

These strips will have enough depth to ensure the integrity of the landscape as seen from the river and will allow development of major hiking trails.

Similarly, the boundary has been established in consideration of the impact of park creation on the regional forest industry. (MLCP 1982). (Trans.)

Moreover, as in determining the natural regions of Quebec, the department has usually treated the setting of park boundaries as a function of the landscape - in other words, the physiographic units. Although this parameter must be considered, it must also be associated with other, biophysical parameters in order to determine the limits of ecosystems and ensure their integrity.

Public Consultation

Unlike the National Parks Act, which provides for no public consultation before creation of a park, the Quebec Parks Act, assented to in 1977, obliges the department responsible for the parks to hear, at a public hearing, those opposed to its plan to create or abolish a park or to amend its boundaries or classification. At the public hearings, however, the MLCP has

always heard those who were interested in the question of Quebec parks, in addition to those opposed to its projects.

The department's consultation process involves two stages preceding creation of a park. The first step serves to publicize the government's intentions and attempts to persuade the public of the project's value. The public then has 60 days to file briefs with the department. The second stage is a public hearing at which interveners are invited to speak on the classification, the boundaries and the development of the proposed park.

The first hearings on parks already in existence resulted in amendments, some of them substantial, of the MLCP proposals, although only in the setting of boundaries. In no case has the proposed classification been changed, despite quite strong opposition to the status of recreation park suggested for the Mont-Orford and Mont-Tremblant parks. In most cases these amendments have been an improvement over the initial proposal. The public consultation undertaken for Parc du Mont-Tremblant is the only case in which the results have been less satisfactory than the initial departmental proposal, which was itself very much disputed during the hearing.

Although the current procedure of public consultation used by the MLCP is not without its faults, it has enabled the department to make many agencies and citizens aware of the parks and their problems and to obtain their cooperation in developing the parks system.

Moreover, it should be pointed out that some interveners on the subject of parks would like these public consultations not to be conducted by the department or its authorized agents, but rather by a neutral committee outside the department in a structure analogous to the Bureau d'audiences publiques of the Ministère de l'Environnement.⁴ In addition, several interveners have insisted, at hearings or before a parliamentary commission, on inclusion in the current Act of a provision which would ensure public consultation should there be any substantial amendment to any park zoning plan passed by regulation.

DEVELOPMENT STRATEGIES

In reality the Quebec parks system only began to flourish with passage of the Parks Act in 1977. It is understandable, therefore, that much remains to be done. On the other hand, the task is not just to establish and develop new parks. At the same time, there must be policy development, system planning, inventory preparation and public consultation.

Expansion of the System

Quebec currently has a dozen legally created parks, only eight of which are conservation parks. If we consider that the MLCP has identified about forty natural regions for all of Quebec (MLCP 1984), then more than thirty conservation parks must still be established in the fairly long term. It is not my intention, nor my mandate, to identify here the potential sites for conservation park purposes. However, I do want to emphasize the necessity for the MLCP to prepare a precise, rigorous overall plan which will not be amended because of the vagaries of different kinds of pressure and political will. In this respect I believe the hypothetical procedure presented in the parks policy (MLCP 1982) is adequate. In developing an overall plan, the department must give priority to an exhaustive inventory of sites which would be potential conservation parks. However, to identify the priorities for action, special attention must be given to the degree of vulnerability of each of these to human impact. To this, obviously, I must add the consideration of intrinsic properties of the biophysical environment. In short, everything must be done so that we do not create parks, in the words of Germain (1984), "(Trans.) of the leftovers, on land abandoned by major industry, exhausted of its resources and difficult to get to, parks which pique the curiosity of no one."

Moreover, it is important in the short term to consider the geographical distribution of the parks, especially in southern Quebec. Currently, the regions of Quebec City, Gaspésie, Saguenay-Lac St-Jean and Abitibi have at least one conservation park. On the

other hand, there is no conservation park in the metropolitan region the closest being Jacques-Cartier, 300 km away. A real effort must therefore be made in this respect. In addition, the MLCP must take a greater interest in the northern environment, where several sites merit the status of conservation park. In the face of development pressures on Quebec's north, such action will become increasingly urgent.

As far as establishment of recreation parks is concerned, I believe that certain regions show a real need for this class of park and for the associated recreational infrastructure. However, I hope that the MLCP will show greater perspicacity than that demonstrated for the Mont-Tremblant and Mont-Orford parks (c.f., Section on "Conservation and/or Recreation"). Furthermore, the creation of recreation parks requires, in my opinion, greater cooperation between the department and the regional and local municipalities.

Inventory, Boundary Determination and Zoning of Parks

I insisted earlier on the role and importance of biophysical inventories to ensure adequate protection, planning and management of parks. In fact, only a relatively thorough inventory of the various components of the natural environment will allow identification of the representative and outstanding elements which should be protected by means of the zoning plan. Moreover, knowledge of these elements allows us to orient interpretation programs. For the moment, such biophysical inventories are lacking for several of the existing parks. It cannot be denied that more effort must be made by the MLCP for this purpose. Of course, it would be unrealistic to expect to have all this information at the time a park is created. However, the inventory process could, for example, be spread over a period of five years following creation of a park, after which the master plan would be adopted.

Regarding the park boundaries, it would be advisable to re-orient the current procedure and to attempt, as far as possible, to establish park boundaries - especially those of conservation parks - at the boundaries of natural ecosystems. Obviously, this procedure requires prior knowledge of the regions, especially of

their biophysical parameters. Moreover, there would be some merit in producing an ecological classification of the parks, for this would undoubtedly facilitate their planning and subsequent management.

Finally, as I have mentioned before, the zoning of the parks presents some problems, particularly in regard to the distinction between the two classes of parks. In fact, the zoning plans of the conservation parks and recreation parks differ little as far as the area occupied by the various zones is concerned, so that one might wonder about the potential of conservation parks to effectively achieve their objectives in the protection of the natural environment.

These observations therefore prompt me to suggest that greater importance be given to the extreme conservation and conservation zones in the conservation parks, as well as in the large recreation parks; otherwise, it will be difficult for the status of park to ensure permanent protection of areas representing Quebec's natural regions or of outstanding natural sites, or to encourage protection of the natural environment.

Conclusion

Undoubtedly, nature parks, whether under the jurisdiction of the federal government or the provincial government, have a primary role among the various conservation measures developed by these two authorities. Essentially, Canada's national parks and Quebec's provincial parks ensure conservation of large natural landscapes, sites representative of the natural regions as determined within the two jurisdictional entities. To this priority role of conservation is added, in both cases, a role of outdoor education and recreation. At least, this is the view currently supported by Parks Canada policy and Quebec's parks policy (with regard to conservation parks).

Nevertheless, the conservation/recreation debate continues. In fact, some of those concerned at the national level in Canada

suggest that the national parks should be made more open to tourism and recreation, while others are anxious about the reduction in conservation measures applied in those same parks. In Quebec the government recently suggested in a bill that the current distinction between conservation and recreation parks be abolished, to give precedence to a procedure by objectives - which threatens to be a less rigorous approach. However, faced with opposition demonstrated by all involved in a restricted parliamentary commission, it seems that the government has elected instead to maintain the distinction and to make a few amendments to the Act passed in 1977.

All these doubts are astounding, considering that, in recent years, the conservation objectives in two national and provincial parks systems have been consolidated, while recreational activities compatible with these conservation objectives have been encouraged. It is lamentable that these matters are still being debated, when the expansion of each system (especially Quebec's) remains a priority.

Moreover, the nature parks have always been subject to intense pressure for the purpose of commercial exploitation of the resources they contain, especially the forest, wildlife and minerals. In Quebec resource operations and hunting were even authorized in the parks until 1979. It is understandable, then, that pressures there are greater than in the national parks. Referring mainly to the concept of multiple-purpose use of the environment - especially of the forest - a number of people have expressed their desire to see the parks re-opened to forest cutting, mining and hunting, especially as a noticeable reduction of certain resources has been detected. Moreover, I find it very disquieting that the federal Department of the Environment has stated that it did not exclude the possibility of authorizing resource exploitation in the national parks. I believe the reduction in resources results largely from poor planning of resource use, and it would appear most inadvisable to again open up the parks when nothing has yet been done outside those parks. In addition, the use of natural resources for commercial purposes is not at all compatible with the conservation objectives of the two parks systems. In my opinion, however, the instances of authorization being given in the two parks systems for

certain traditional practices of natural resource harvesting are appropriate. For example, native people can hunt and trap in Wood Buffalo National Park, and the residents of villages bordering Gros Morne National Park in Newfoundland are authorized to cut their firewood in the park. In Quebec the MLCP has allowed the growing of corn to continue within the recreational park of Iles-de-Boucherville.

To my way of thinking, therefore, it seems ill-advised to question the current objectives being followed in the two nature park systems. On the contrary, these objectives must be publicized and understood, now more than ever, not just by a specialized public, but by the general public, so that everyone can see their primary role as being the protection and development of our natural heritage. Unfortunately, I am very much afraid that the politico-economic views characteristic of North American society will compromise certain achievements and even the growth of the parks systems of Canada and Quebec. In fact, we have recently seen the Canadian government substantially reduce the Environment Canada budgets, particularly those for Parks Canada and the Canadian Wildlife Service. According to the National and Provincial Parks Association of Canada, these budget restrictions will mainly affect nature interpretation and research in the parks, as well as the capitalization and development programs of the most recent parks - especially expansion of the system for the next two or three years.⁵ Although these cuts threaten both the conservation measures in the parks and the quality of service to the visiting public, my apprehensions are just as much concerned with their impact on conservation in general. The national parks of Canada have an excellent reputation, both internationally and with the provinces. Indeed, the first achievements of the federal government, in the late 1800s, prompted Ontario and Quebec to create their first parks. Today, the national parks serve as a model, both in the objectives of conservation and use for recreational purposes, and in management and planning practices. Now I fear that the recent decisions of the federal government in the parks field will encourage the provinces to take similar action in their own nature park systems.

Already in Quebec nature interpretation is not receiving all the attention that is necessary in the parks under MLCP responsibility. In fact, the interpretation programs have been abandoned in part or in whole in the recreation parks; these usually receive the greatest number of visitors in the system. For this reason, the department should give preference to interpretation activities to ensure greater dissemination of knowledge and appreciation of the natural and cultural heritage of Quebec and to demonstrate the need and benefits of conserving nature and its resource, both for present and for future generations.

At the dawning of a second century of existence for the national parks of Canada, and ten years from the centennial of the first two provincial parks in Quebec, efforts should be focused on maintaining achieved levels of protection for the natural environment and on expanding the Canadian and Quebec parks systems. In the first case, special attention must be given to northern areas and to the natural regions not yet represented. To this, we must add the challenge presented by the establishment of marine parks. In Quebec, the MLCP must ensure adequate geographical distribution of the parks in the southern part of the province and must think of creating the first northern parks. Obviously, much remains to be done in Quebec, since the first legislation concerned specifically with parks was not passed until 1977. Moreover, it would be very desirable for the two levels of government to demonstrate more cooperation in parks matters and to encourage effective and continued participation by citizens' organizations and local and regional governments. However, the public cannot promote conservation alone; it is the duty of government to ensure that there is rational and lasting use of natural resources and protection and development of representative and outstanding examples of our common natural heritage. The fate of the nature parks of Canada and Quebec will be directly related to the political will demonstrated by our elected representatives.

NOTES

1. The official English version of the Act contains an apparent mistranslation at this point; the French reads "caractérisée par une faible densité d'utilisation du territoire" ("characterized by the low-density use of territory." Translator.
2. (Department of tourism, hunting and fishing.)
3. (Department of recreation, hunting and fishing.)
4. (Public hearings office, department of the environment.)
5. Park News, Vol. 20, No. 4; and Vol. 21, No. 1.

Preservation of Sites of Speleological Interest in Quebec: Present Situation and Prospects, 1985-2000

Daniel Caron

Introduction

For members of the general public and natural resource managers, sites and phenomena of speleological interest are, without a doubt, among the least known aspects of our natural heritage. This situation is due to an array of historical, social, cultural or even psychological considerations and explains in large part the weakness of conservation measures aimed at such phenomena, which are often overlooked because they are "buried" in the landscape. Not enough people are sufficiently familiar with the scientific, educational, recreational and even aesthetic values of these natural elements to correlate them with needs that are considered more vital, and essential to our human society.

The following pages will therefore provide a brief glimpse of what, to my knowledge, exists in the field of speleological conservation in Quebec by describing the nature of the resources concerned and their territorial distribution. Data are also given on factors threatening this component of the natural environment. The conclusion of this report suggests elements of a strategic approach to achieve rational utilization of Quebec's speleological resources by the year 2000.

Speleological Phenomena: A Definition

Given the specific nature of this topic, I will begin by explaining the natural phenomena that are the subject of this report. The term "speleological phenomenon" used throughout the report refers to all types of natural underground cavities, such as rock shelters, shelter-caves, caves, caverns, chasms or other natural cavities of various origins, in which man can set foot.

The term includes all Karst phenomena,¹ often related to the presence of such cavities. These may include interrupted streams,² sink holes,³ underground stream exits or other phenomena resulting from the same geomorphological process.

The scope of phenomena concerned is obviously variable. Here are a few examples illustrating their special diversity. In terms of major phenomena, we should first mention the Boischatel cave, near Quebec City. It represents some 2,600 metres of explored galleries and an overlying surface covered with spectacular Karst phenomena such as interrupted streams, sink holes, and underground stream exits. We should also mention the Haute-Saumons Karst on Anticosti Island which covers an area of 38 square kilometres, 24 of which have entirely underground drainage. Included are chasms, interrupted streams and scattered sink holes as well as a very large underground stream exit. The phenomena present are not only numerous, but many are quite spectacular, including three underground drainages measuring a minimum of 14, 13 and seven kilometres respectively.

Some of the more modest phenomena include: the Saint-Leonard cavern, which is located in the heart of Montreal Island and which, despite its modest 35 metres of development, each summer receives thousands of young speleology trainees; the natural bridge at Kazabazua in the Outaouais region, where thousands of curious visitors stop on impulse; and the shelter-cave on Ile-au-Massacre in the Lower St. Lawrence, which alone attracts thousands of visitors because of its legendary aesthetics and appearance.

It would therefore be futile to define the interest of such phenomena in terms of size alone. We would thus be forced to deny the archaeological, wildlife or other interests which characterize certain smaller sites. It is essential to note that each of these phenomena can have various components that reinforce its scientific, educational, recreational and aesthetic qualities.

Territorial Distribution

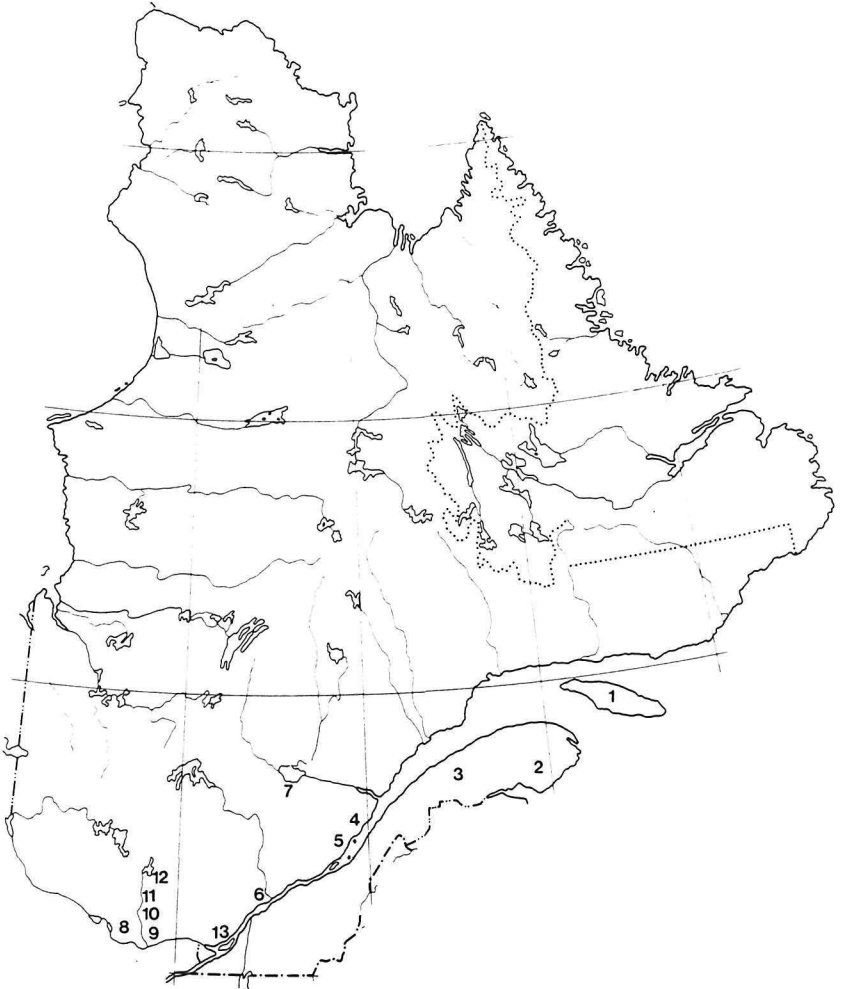
According to our present knowledge, speleological phenomena are not equally spread throughout the province of Quebec. They are found more specifically in southern Quebec. This is primarily due to the presence in locales in this part of Quebec of a limestone substratum more suitable for speleological formations. Their location may also be ascribed to the advanced degree of cave research in the most accessible part of a very vast territory. From a more regional standpoint, it should be noted that such phenomena occur more particularly in the Outaouais region, the St. Lawrence and Lake St-Jean lowlands, Anticosti Island, the Lower St. Lawrence and the Gaspé (Figure 1).

Locally, their status can be surprising. The Saint-Léonard, Boischatel and Courville caves are located under highly urbanized areas; the St-Casimir, Crabtree, St-Alban and several other caves are in agricultural areas; while some are obviously located in forest areas, such as the Lusk, St-Elzéar and La Rédemption caves.

Threatened Resources

Human encroachment on the natural environment causes often irretrievable damage, particularly in the cave environment. Many disturbances are caused by human activity, ranging from urban development, agriculture and industrialization to tourism - or even recreation - are quite often the result of a failure to understand the value of the phenomena concerned. In certain rare cases, damages result from ignorance about the existence of these sites. We can only attribute to ignorance or thoughtlessness the dumping of all sorts of wastes into an interrupted river stream, urban development of an area with a highly Karstified subsoil, installation of heavy tourism infrastructures in small cavities, or excessive visiting of an important bat hibernation site. Quite obviously, a vast amount of publicity and education work remains to be done to create awareness of speleological phenomena among the

Figure I
IDENTIFICATION OF CAVES



- 1- Cave of the eastern tributary of the Observation River, Anticosti
- 2- St-Elzéar Cave
- 3- La Rédemption Cave (Spéos de la Fée)
- 4- Boischatel Cave (Laval River)
- 5- St-Casimir Cave
- 6- Crabtree Cave
- 7- Fourneau de Val-Jalbert Cave and Ouiatchouan River Cave
- 8- Lusk Cave Gatineau Park
- 9- Lafleche Cave
- 10- Ours Cave
- 11- Notre-Dame de Pontmain Cave
- 12- Lac des Iles Cave
- 13- Lorraine Cave
- 14- Lac Jourdan Cave New Quebec territory.

public, planners, developers, managers, and even their more specific users, speleologists. Several examples of speleological phenomena are described below.

Road construction, urban development, agriculture and the building of dams are some of the landscape changes capable of damaging such phenomena. Blockage of infiltration points can stop the growth of concretions,⁴ lead to their destruction or disrupt the flow of nutrients essential to cave dwelling wildlife. Changes in the drainage network can cause an influx of sediment that may fill the cavity in whole or in part. In certain cases cavities may be flooded permanently, making them inaccessible to humans and animals.

The use of natural underground cavities and related surface phenomena (sink holes, interrupted streams and so on) as dump sites is nothing new. In 1901 Edouard-Alfred Martel passed a law in France prohibiting the use of such sites as charnel houses. Such practices, still prevalent in some areas of Quebec, lead to groundwater contamination that can make water unfit for human consumption. The same is true for domestic waste, sewage outfalls, septic tank drainage and drainage from reservoirs containing toxic chemicals; or for drainage from farms or agricultural land. None of this water is filtered and, because of Karst permeability, it is spread throughout the subsoil with sometimes disastrous consequences both for the cave environment and the people who live above on the surface.

Other damage of external origin is attributable to the use of pesticides that have an indirect effect on cave wildlife, deforestation which destabilizes overlying soil, mining and dynamiting which destabilize or simply destroy underground conduits.

Threats of internal origin, while they are equally diversified, appear more controllable and easier to counter than those previously mentioned. They are most often related to individual or collective behaviour and habits. They do not involve such unequal confrontations as the saving of a cave confronted by a hydroelectric

project. A few examples of disturbed cavities are shown in Table 1.

Underground human activity sometimes causes the introduction of various elements that can be foreign to the original environment. These may include wastes of all sorts, such as carbide waste,⁵ batteries, pieces of wood, plastic, metal or even, in developed caves, the introduction of parasitic microflora, whose development near lamps which light the tourist circuit, can destroy concretions. In other situations, the presence of individuals can severely disturb the hibernation cycle of certain animals, such as bats.

The extraction and collection of native material for transportation outside constitute a common practice. Examples include removal of obstructions and evacuation of sediments,⁶ collection for scientific analysis - purposes which often should be more selective - and the all too popular gathering of souvenirs - particularly concretions - by occasional visitors.

Other physical alterations also result from the presence of humans (e.g., footprints, traces left by muddy hands on concretions, excessive fixation of mooring points,⁷ blasting to widen passages, or graffiti marking the passage of "Sunday visitors") Table 2 shows specific examples of sites affected by internal human activity.

It may be noted that disturbances from outside have a more severe impact on the cave environment and are more difficult to combat. Often these can be stopped only through a clash of diverging interests - usually economical. Accordingly speleologists are trying progressively to emphasize to resource managers their vision of the rational development and use of speleological phenomena (land management scheme, etc.) in order to have a say in decisions. As to control of internal disturbances, growing importance is placed on conservation in speleologists' activities, and this aspect is reinforced in educational programs provided to users of their services.

TABLE 1
 EXAMPLES OF SPELEOLOGICAL PHENOMENA AFFECTED
 BY EXTERNAL HUMAN ACTIVITIES

Name of Cavity	Region	Types of Aggression
Poisson Blanc cave	Outaouais	Submerging due to creation of a reservoir
Lorraine cave	Montreal	Water course pollution
Pont-Rouge cave	Portneuf	Use to supply a hydro-electric turbine
Courville cave	Quebec City	Total urbanization of overlaying area
Jean Larose cave	Quebec City	Submerging due to creation of a reservoir
Boischatel Karst and cave	Quebec City	Significant urbanization of overlying area
"Toute en marmite" cave	Lake St-Jean	Evacuation of a ditch
Epée cave	Missisquoi	Dump
St-Joques-sud stream interruption	Gaspé	Dump

TABLE 2
 EXAMPLES OF CAVES AFFECTED
 BY INTERNAL HUMAN ACTIVITIES

Name of Cavity	Region	Types of Aggression
Lafèche cave	Outaouais	Inconsiderate use for tourism involving severe climatic and wildlife disturbances, looting, graffiti and so on
Saint-Léonard cave	Montreal	Graffiti
Crabtree cave	Lanaudière	Graffiti, introduction of wastes
La Rédemption cave	Gaspé	Broken or soiled concretions, excavation of sediments
St-Elzéar cave	Gaspé	Looting, inconsiderate sampling
Desbiens cave	Lake St-Jean	Blasting to widen the entrance and movement of blocks inside

Underground Exploration (Recreation) Related to Conservation

Within nearly all major national speleological organizations, conservation is a concept that inevitably goes hand-in-hand with exploration (outdoor recreation). Rapidly becoming aware of the relative vulnerability of many speleological phenomena, spelunkers have adopted codes of ethics designed to safeguard these phenomena upon which the traces of irrational use are often irreversible. Just about all speleological organizations impose voluntary restrictions on visits to particularly sensitive sights; they have conservation education programs; and they cooperate with governments or other interested interveners to restrict a site threatened with vandalism or destruction. This will, together with acute awareness of the need to combine the modest energies at their disposal to defend resources which they appreciate, explain in large part the amalgamation of conservationists and recreationists in speleological organizations - just as the history of the activity explains the presence of scientists and exploration enthusiasts. This similarity of viewpoints, too often considered to be widely apart, makes possible recreational practice of higher quality, conservation that is perhaps less extremist, and science that is less hermetically sealed.

Of course the model is not perfect; applications vary, much like individual practices, but it is obvious that the desire for conservation is becoming progressively omnipresent in the interventions of speleological groups and it should lead to a brand of speleology that is more ecologically aware.

Quebec Intervenors

Since the first Quebec speleologists appeared, and particularly since they gathered together to form the Société québécoise de spéléologie (1970), there has been a substantial increase in the number of interventions aimed at preserving and developing speleological phenomena in Quebec. As a direct result of the

group's involvement and contribution, many cavities and Karst zones have been or will be more suitably developed. This ongoing concern with the preservation of speleological phenomena has led, over the years, to the maintenance within the Société québécoise de spéléologie of a specific program on this subject and, more recently, the establishment of the Société de préservation des cavernes du Québec Inc.

The task however, is enormous and regrettably interventions must be limited to specific cases due to limited resources. The relative success of the "fireman operations" carried out by speleologists is the direct result of their devotion and vigilance. The planning of more long-term interventions is considered, but is often impossible in such a situation. Finally, the interventions of spelunkers happily also contribute indirectly to the increase in awareness among natural space managers of the value of speleological phenomena.

Speleology in Quebec and Canadian Parks

Traditionally, the practice of speleology in parks received a rather mixed welcome from provincial and federal park managers. More often than not, the authorities hid behind two major strategies to prohibit access to underground natural cavities - or at least severely limit their frequency of use: resource conservation; and user safety. Happily this attitude, which probably resulted from a poor understanding of the characteristics of the cave environment and of speleology itself, is changing.

At the provincial level, speleology is now recognized as an outdoor activity that may be practiced in parks⁸ and the terms and procedures of its practices are defined.⁹ At the federal level, the matter is now also under review. At least, that is how one may interpret the recommendations made to the Interpretation and Visitor Services Division of Parks Canada.¹⁰ In fact these recommendations suggest an increase in services in this area - even promotion of this activity. In the case of Parks Canada, we hope that these recommendations were well received. In any case, an

TABLE 3

EXAMPLES OF SPELEOLOGICAL PHENOMENA SUITABLE FOR INTEGRATION
 INTO A NETWORK OF EDUCATIONAL, RECREATIONAL AND SCIENTIFIC SITES

Identification of Phenomena	(1) Intensive Use		(2) Extensive Use	
	Region	Degree of Present Use	Present Status	Comments
Laflèche cave	Outaouais	1	municipal	heavy use by tourists
Lusk cave	Outaouais	2	federal park	recent interpretation program
Saint-Léonard cave	Montreal	2	municipal	interpretation program for the last 5 years
St-Casimir cave	Portneuf	2	private	initiation site
Boischatel Karst	Quebec City	2	mun./pr.	specific interpretation program
Jacques Cartier rock-shelter	Quebec City	2	prov. park	specific interpretation program
Desbiens cave	Lake St- Jean	2	municipal	currently used by tourists
Philomène hole	Lake St- Jean	2	prov. park	no interpretation facilities
Bic shelter- cave	Lower St. Lawrence	2	prov. park	interpretation program under preparation
La Rédemption caves and Karst	Gaspé	2	private	initiation site
St-Elzéar cave	Gaspé	2	public land	interpretation studies and programs under preparation

opening-up process seems to have begun in both levels and gives us hope that speleology will be recognized as an outdoor activity in all parks (see Table 3).

I sincerely believe that it is in the best interest of the parks authorities to involve speleological groups in their actions. These groups could be very useful in terms of their expertise and through their participation. Similarly, I feel it is essential that the too-frequent perception by park managers that speleological phenomena - and specifically caves - are comparable to simple geological phenomena such as glacial moraines or rock peaks, be changed. All too often, one forgets that a cave is natural space comprising a series of biophysical characteristics, much like a pond or woodland, and it merits study in every aspect before authorities' decree a specific use for it or prohibiting access to it. One can readily imagine the development of specific zones for caves - and even for cave sections - supported by impact studies (support capacity, safety and so on), and not on a simple presumption of fragility and/or hazards.

Prospects for 1985-2000

Adequate development and conservation of major sites of speleological interest in Quebec rests on a global intervention strategy consisting of a number of phases:

- inventory of all phenomena of speleological interest known to date, and identification of their principal characteristics
- establishment of a list of phenomena to be preserved and developed, considering factors such as biophysical characteristics, utilization possibilities and restrictions, danger of deterioration or destruction, present use, and so on
- raising awareness and calling on the services of concerned interveners through various protection procedures (regulation, acquisition, control, zoning and so on)
- pursuing education work on the scientific, educational, recreational and aesthetic value of these phenomena

- integrating all Quebec speleological phenomena developed for educational, recreational and scientific purposes into a coherent and complementary network of specific sites
- taking appropriate measures to make speleology a recognized activity in parks and similar territories and to ensure that the authorities concerned develop more adequate management models for this resource, in cooperation with competent speleological organizations
- obtaining the passage into law or the inclusion in a law of the legal elements required to conserve these phenomena, as is the case in many American states, such as West Virginia.

NOTES

1. Caused by dissolution of certain rocks (e.g., limestone).
2. Point at which a water course disappears underground.
3. Closed depression.
4. Rocky forms resulting from calcite precipitation (e.g., stalactites and stalagmites).
5. Fuel used for acetylene lamps.
6. Opening of an obstructed passage for exploration.
7. Metal anchors to attach ropes and ladders required for exploration.
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Ecological Reserves: A Timid Effort at Total Conservation

Chantel Dubreuil

Introduction

The least familiar of our natural heritage protection mechanisms is the ecological reserve. In truth, only a handful of people seem aware of their existence in Quebec. It is easy to become confused, what with the existence of ecological reserves, wildlife sanctuaries, conservation parks, wildlife areas and so forth. Particularly in recent years, these various types of protected status have changed considerably. It is hoped, however, that one need not be an expert to understand the true purpose of these mechanisms.

Ecological reserves are recent creations. Passed in 1974 as a result of the international conservation movement of the 1970s, the Ecological Reserves Act did not receive a particularly warm welcome in Quebec. In fact, most Quebec citizens did not feel concerned by this new legislation. Ten years later, one notices that the dozen ecological reserves established to date have not been a subject of public debate. Media coverage of their successive appearance on the conservation scene has been cool and reserved. How can we explain this general lack of interest? And if this trend continues, what ecological reserves will we have in 10 or 50 years? Can we continue to remain indifferent to such new natural heritage protection efforts?

Before we consider the future, we should try to understand the present situation and demystify, to some degree, these special areas known as ecological reserves.

A Tool for Total and Permanent Conservation

Ecological reserves preserve completely and permanently natural environment samples representative of the ecological diversity of Quebec. They also make it possible to shelter against alteration by man any rare or endangered physical or biological phenomenon in Quebec, such as rare species, endangered habitats, specific geological phenomena and so on.

Ecological reserves differ widely in their objectives from other forms of natural environment protection. Like provincial and federal parks, the primary objective of ecological reserves is conservation of the environment. Unlike provincial and federal parks, however, no development (however minor) or change of any kind can be carried out in an ecological reserve; nature is preserved permanently and intact.

The second objective, exclusive to ecological reserves, is scientific research. Through the development of scientific research, these protected samples of nature take on their true significance: special sites for improving our knowledge of natural ecosystems, sources of long-term environmental data, and reference sites. By combining conservation and learning, ecological reserves become precious tools for the planning and development of protected or exploited natural space.

Unlike parks or wildlife areas, ecological reserves cannot be used for recreational purposes. Furthermore, no one may enter an ecological reserve without special permission from the provincial authorities. Convicted offenders are liable to a fine. Such authorization may be obtained only for scientific research purposes and, if the case arises, for educational purposes.

Although outdoor recreation is prohibited in ecological reserves, it is possible to develop the educational potential of suitable sites. Here again, however, restrictions are placed on the type of activity allowed.

PRESENT NETWORK AND ITS ADMINISTRATION

In 1985, ten years after the Ecological Reserves Act was adopted, the establishment of a network of ecological reserves is well under way, even though it has gone unnoticed by many of us. Twelve sites scattered throughout southern Quebec have been accorded this highly restricted protection status; they cover 68 square kilometres. Each region of Quebec has one to three ecological reserves - with the exception of the Outaouais, the Eastern Townships and the New Quebec Territory, which have none (see Appendix I).

To administer the existing network and plan for the future, the ministère de l'Environnement du Québec (Quebec department of the environment) (MEQ) has appointed a small team of employees: the Direction des réserves écologiques et des sites naturels (Ecological reserves and natural sites branch). Also an advisory board, 50 percent of which is made up of Quebec university researchers, is responsible for advising the Minister on matters pertaining to the enforcement of the Ecological Reserves Act. It should be noted, however, that there is no compulsory public consultation procedure in the ecological reserve establishment process.

Present Problems

Given the lack of any debate on the issue of ecological reserves, we as citizens have a right to wonder whether these sites are properly selected, how much is spent on this program and how these sites are managed. Do ecological reserves today meet the commendable conservation and research objectives for which they were established?

SITE SELECTION

The sites of the twelve existing ecological reserves and of the future proposed network were selected primarily from a bank of

potential sites developed through the International Biological Programme¹ in the early 1970s.

At that time a number of ecological sites worthy of consideration were known. Planning, however, did not take into account actual protection needs - which were then poorly defined - or the representativeness of sites in relation to a definite reference framework. This lack of planning, which marked the earliest days of the program, is still reflected in the existing and projected network.

For example, primary ecological reserves² protect forest ecosystems exclusively. Wetland and aquatic ecosystems, which are omnipresent in Quebec, have been overlooked.

None of the special ecological reserves,³ meanwhile, safeguards endangered species of fauna; the six existing special ecological reserves protect either rare plants, such as pitch pine, or rare plant communities (e.g., hemlock stand with white pine, maple stands at the limit of their range in Quebec, or a peat bog).

The same unequal distribution exists in ecological reserves now being planned. The majority of planned primary ecological reserves are aimed at forest ecosystems (approximately 40 proposed reserves). Special ecological reserves now being planned focus on the protection of a particular type of environment, such as the littoral or tundra (about 20 planned reserves), or the protection of rare or endemic plant species (a dozen projected reserves). About twelve planned reserves are for the purpose of protecting certain species of fauna, essentially the great blue heron, peregrine falcon, turtles, white-tailed deer, Atlantic salmon, freshwater harbour seal, and several species of migratory birds (waterfowl and sea birds). Of these species, only the peregrine falcon and the freshwater seal are considered rare or endangered.

Because of a lack of knowledge about rare or endangered phenomena or species and a lack of planning as to the choice of representative reserves, site selections sometimes remain the fruit of a somewhat opportunistic approach. The ecological mapping of

Quebec, however, is progressing slowly. Quebec may one day have at its disposal a complete planning tool, such as the mapping of ecological regions, that can provide a frame of reference for the selection of representative ecological reserve sites.

TRUE PROTECTION?

The purpose of the ecological reserve status is to ensure the maintenance of natural ecological pressures, far from anthropic disturbances, and to safeguard species that are becoming scarce. Is declaring given sites to be "prohibited areas" sufficient action to achieve these goals? The protection of a rare plant involves more: in particular, the establishment of management, administrative or scientific measures. It presupposes the following minimum:

- knowledge of the autoecological characteristics of the species
- long-term monitoring of the population (expansion or reduction, disease and so on)
- knowledge of actions that may be carried out on the environment or population to avoid any disappearance.

Administrative management consists mainly in effective supervision of access to the site and preparing environmental emergency response mechanisms. To date, the establishment of new ecological reserves has never been accompanied by a management budget. Serious consequences have sometimes resulted. What can we say about Arthur and Bienville Islands (Micocoulier (hackberry) ecological reserve), which someone wanted to transform into a zoological park? Worse still, dozens of pounds of this vulnerable plant were harvested last summer in this very reserve. Such is the respect given to our ecological reserves. It is up to managers to put a stop to such practices and help inform and educate the public.

SCIENTIFIC RESEARCH

Few pieces of legislation in Quebec are specifically designed to promote the development of scientific research. The Ecological

Reserves Act is the only such legislation which focuses on the conservation of Quebec's natural environments.

The fact that so little progress has been made in this field after ten years can only be deplored. With \$40,000 spent by the MEQ in this area in the last ten years, one cannot expect miracles. The very real need that exists has not yet become a priority for the MEQ.

Some claim that ecological reserves are reserved for a "scientific elite" and can contribute nothing concrete to citizens at large or to society in general.

Research in ecological reserves, however, can and should concern everyone through its activities and its results. There is nothing to prevent a group of ornithologists or entomologists from getting authorization to inventory or monitor a given population within an ecological reserve. "Highly scientific and serious research," such as a comparative study of the formation and evolution of various types of peat bogs, can be of benefit to all by contributing directly to improved management of the peat bog resource. Imagine for one moment the benefits that Quebec society could derive from a network of ecological reserves participating fully in scientific research. We could find out how our natural ecosystems work in order to better manage forests, lakes, peat bogs, and so on, promote a more appropriate, more complete and more durable use of species and habitats - in short, develop a harmonious use of our resources according to need and with a view to perpetuating natural ecological processes.

WHERE DOES EDUCATION FIT IN?

Curiously, the Ecological Reserves Act, the primary purpose of which is total and permanent conservation, stipulates that an ecological reserve may be constituted for educational purposes, where appropriate. Some claim, and it was long the position of the MEO, that such is not the true purpose of ecological reserves and that other agencies already meet such needs. Others, in particular the Advisory Board on Ecological Reserves and certain regional

interested parties, feel that ecological reserves will only be understood and respected insofar as some amount of access is allowed for groups or individuals.

In any case, five of the twelve existing ecological reserves are located too far from population centres to make development of an education program feasible: the three sites in the Gaspé, the Lac-Malakisis ecological reserve in Abitibi and the Pointe-Heath ecological reserve. The seven other sites are much more accessible, but five have very little capacity to support visitors because of their limited area and the fragility of their ecosystems; these are the special reserves, which would in fact be of most interest to visitors.

Could we not foresee the future existence of a small number of ecological reserves designed essentially with education in mind? These few "examples" could serve to familiarize the general public with the entire network of ecological reserves and demonstrate its value.

PROSPECTS NOT VERY ENCOURAGING

The authorities fail to see the need for further investment in this program. The informed public tends to believe that this status stems from a somewhat elitist view of conservation. In other words, prohibiting access to an ecological reserve for reasons other than scientific research is a policy that is not well received. Because they are small, such reserves are tolerated. In the eyes of most, they are still unknown or insignificant. In terms of space, ecological reserves are viewed as padlocked and isolated areas within various developed spaces. It is unfortunate that they were created without consultation and without concern for their future.

Solutions for the Future

The Direction des réserves écologiques et des sites naturels is working assiduously to improve this state of affairs. A desire

has even been expressed to adopt new formulas. Experience has shown that ecological reserves which are poorly integrated into their surrounding territory are extremely difficult to manage and monitor and will in all likelihood be failures.

With the advent of the Land Use Planning and Development Act in 1979, the context changed somewhat, forcing the Direction des réserves écologiques et des sites naturels to adjust its sights in order to face new regional prerogatives. New ecological reserves must henceforth be integrated into regional county municipalities.

INTEGRATION EFFORT: THE MASSIF DU SUD PROJECT

Located in Bellechase County, the Massif du Sud is the site of a proposed multi-purpose regional park. Comprising regional county municipality mayors and wardens, the Corporation de développement du Massif du Sud (Massif du Sud development corporation) took matters in hand and assumed responsibility for an ecological reserve project proposed by the MEQ, thereby reconciling complete conservation with the other objectives of the park. In this new concept, it is up to the proponent of the ecological reserve to detail the ecological value of the project, defend its necessity and importance as part of a national network, and to demonstrate the necessary flexibility in selecting boundaries.

PUBLIC INVOLVEMENT: THE BRION ISLAND PROJECT

The establishment of an ecological reserve in their immediate environment is of concern to citizens. No longer can an area be closed to its traditional use without first consulting the public. The citizens of the small community of Gross-Ile, on the Magdalen Islands, have made themselves heard. Located one hour from this village by boat, Brion Island is a true jewel in terms of virgin natural space; because of its wealth of biological treasures, it undeniably merits ecological reserve status. The inhabitants of Gross-Ile, however, are dead set against the closing of this area, which is a traditional local hunting, fishing and weekend recreation spot. Talks have thus been undertaken with the Direction des réserves écologiques et des sites naturels to develop a management

plan and to draw the boundary of the ecological reserve so as to safeguard the most fragile physical and biological components of the island. Part of the island would remain open to Magdalen Islanders and summer residents for extensive recreation purposes. At stake in these negotiations is the management of the future ecological reserve: created without the agreement of the local population, the ecological reserve would be practically impossible to monitor.

LAC EDOUARD: AN EXPERIMENTAL EDUCATIONAL PROJECT

The people of Lac Edouard have gone one better. In this small municipality on the railway line between La Tuque and Lac Saint-Jean, a proposal was developed for an ecological reserve. The site lies directly beside the Village Pâle outdoor centre. Here, too, no-one wants to see inviolable nature put under glass. If current negotiations with the MEQ progress satisfactorily, a government project with a very strong local flavour could soon be developed. Part of the proposed ecological reserve would be withdrawn from the initially defined site and set aside primarily for educational use; this area would be managed by the Village Pâle outdoor centre. The municipality would assume responsibility for monitoring the ecological reserve. One can readily imagine the positive impact that such a project would have on the future valuing of the ecological reserves network and on promotion of a pro-conservation philosophy among visitors to the outdoor centre.

Conclusions

Until quite recently, the lack of interest in ecological reserves was indicative of a certain lack of understanding by the public and even by governments of the need to preserve the ecological diversity of Quebec. This lack of understanding was compounded by a certain amount of disenchantment: the presence of an ecological reserve was thought to mean a loss of acquired privileges, a loss of access, a loss of logging potential, mining potential and so on.

Today, the issue is being debated. Recalcitrants now have the right to make themselves heard and the means of doing so. At the same time, thanks to this confrontation, the notion of heritage conservation is making inroads.

We can therefore dream of the day, perhaps nearer than we think, when ecological reserve status will be perceived as a sort of quality label; an area whose nearby residents can be proud, a form of reward for finally recognized conservation efforts, a victory - modest though it may seem - over those who support unconditional exploitation of our natural resources.

NOTES

1. International Biological Programme (IBP): international agency set up by the FAO and UNESCO for the protection of natural environments.
2. Primary ecological reserves: correspond to a representative sample of a bioclimatic zone (or ecological regions).
3. Special ecological reserves: refers to habitats protected because they are of particular and exceptional interest from an ecological, taxonomic, physical or other standpoint, or harbour rare or endemic species.

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NOTE:

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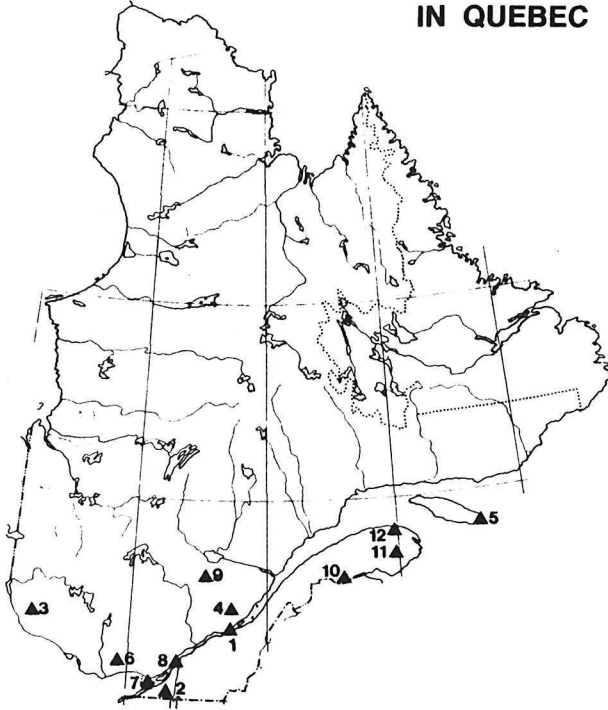
Appendix I

Ecological Reserves in Quebec

1. Rivière-du-Moulin ecological reserve: special ecological reserve; 1975; 3.53 hectares; protects a unique sample of hemlock stand with white pine.
2. Pin-Rigide ecological reserve: special ecological reserve; 1977; 66 hectares; protects the only known stand of appreciable size in Quebec of pitch pine.
3. Lac-Malakisis ecological reserve: primary ecological reserve; 1978; 2,000 hectares; protects several ecosystems representative of the southern Upper Outaouais ecological region.
4. Tantaré ecological reserve: primary ecological reserve; 1978; 1,491 hectares; protects the representative ecosystems of the Lower Laurentians ecological region. Scientific research is currently being conducted in this ecological reserve by INRS-Eau on the acidification of Lake Tantare's waters by acid rain.
5. Pointe-Heath ecological reserve: special ecological reserve; protects a rich sample of peat bog evolving in a maritime climate on chalky soil.
6. Laurentides ecological reserve: primary ecological reserve; 1981; 604 hectares; protects a typical portion of the northern Lower Outaouais ecological region.
7. Micocoulier ecological reserve: special ecological reserve; 1981; 29 hectares; protects an ecosystem in which hackberry and slippery elm are both found; these two species of trees respectively occur rarely and infrequently in Quebec and, at this site, are at the northern limit of their range.

8. Ile-aux-Sternes ecological reserves: special ecological reserve; 1981; 20 hectares: this island was created artificially in 1965 during dredging of a channel in Lake Saint-Pierre. Following earthworks in 1967, the island was left to evolve on its own. It is important that it be safeguarded to provide scientists with the opportunity to monitor the various stages of its evolution.
9. Couchepaganiche ecological reserve: special ecological reserve; 1983; 38.6 hectares; protects a sugar bush with yellow birch and a small amount of red oak. This site is of considerable scientific interest because of the scarcity of these species in the Lake Saint-Jean area. Ongoing research on the dynamics of these maple and oak populations is being conducted by the Université du Québec à Chicoutimi.
10. Ristigouche ecological reserve: primary ecological reserve; 1983; 468 hectares; protects a representative sample of the Chaleur Bay ecological region. Maple stands with yellow birch are the climax plant community in this region where the climate is among the mildest in the Gaspé.
11. Ernest-Lepage ecological reserve: primary ecological reserve; 1983; 810 hectares; protects a representative site of the Upper monts Notre-Dame ecological region characterized by the presence of fir stands with silver birch.
12. Manche-d'Épée ecological reserve: primary ecological reserve; 1983; 446 hectares; protects a Gaspé maple bush as well as several ecosystems representative of the St. Lawrence estuary ecological region and of the Lower and Upper monts Notre Dame ecological regions.

ECOLOGICAL RESERVES IN QUEBEC



1. Rivière-du-Moulin ecological reserve: special ecological reserve; 1975; 3,53 hectares; protects a unique sample of hemlock stand with white pine.
2. Pin-Rigide ecological reserve: special ecological reserve; 1977; 66 hectares; protects the only known stand of appreciable size in Quebec of pitch pine.
3. Lac-Malakisis ecological reserve: primary ecological reserve; 1978; 2,000 hectares; protects several ecosystems representative of the southern Upper Outaouais region.
4. Tantaré ecological reserve: primary ecological reserve; 1978; 1,491 hectares; protects the representative ecosystems of the Lower Laurentians ecological region. Scientific research is currently being conducted in this ecological reserve by INRS-Eau on the acidification of Lake Tantaré's waters by acid rain.
5. Pointe-Heath ecological reserve: special ecological reserve; protects a rich sample of peat bog evolving in a maritime climate on chalky soil.
6. Laurentides ecological reserve: primary ecological reserve; 1981; 604 hectares; protects a typical portion of the northern Lower Outaouais ecological region.
7. Micocoulier ecological reserve: special ecological reserve; 1981; 29 hectares; protects an ecosystem in which hackberry and slippery elm are both found; these two species of trees respectively occur rarely and infrequently in Quebec and, at this site, are at the northern limit of their range.
8. Ile-aux-Sternes ecological reserve: special ecological reserve; 1981; 20 hectares: this island was created artificially in 1965 during dredging of a channel in Lake Saint-Pierre. Following earthworks in 1967, the island was left to evolve on its own. It is important that it be safeguarded to provide scientists with the opportunity to monitor the various stages of its evolution.
9. Couchepaganiche ecological reserve: special ecological reserve; 1983; 38.6 hectares; protects a sugar bush with yellow birch and a small amount of red oak. This site is of considerable scientific interest because of the scarcity of these species in the Lake Saint-Jean area. Ongoing research on the dynamics of these maple and oak populations is being conducted by the Université du Québec à Chicoutimi.
10. Risligouche ecological reserve: primary ecological reserve; 1983; 468 hectares; protects a representative sample of the Chaleur Bay ecological region. Maple stands with yellow birch are the climax plant community in this region where the climate is among the mildest in the Gaspé.
11. Ernest-Lepage ecological reserve: primary ecological reserve; 1983; 810 hectares; protects a representative site of the Upper monts Notre-Dame ecological region characterized by the presence of fir stands with silver birch.
12. Manche-d'Épée ecological reserve: primary ecological reserve; 1983; 446 hectares; protects a Gaspé maple bush as well as several ecosystems representative of the St Lawrence estuary ecological region and of the Lower and Upper monts Notre-Dame ecological regions.

Heritage Rivers

Jules Dufour

Introduction

The network of Canadian watercourses measures hundreds of thousands of kilometres in length. Serving as vital transportation routes during the initial phases of land occupation by Europeans, these watercourses made it possible to penetrate the interior of the continent and transport products from the interior to major cities and the sea.

In Quebec, the hydrographic network is extensive because of the impermeability of the crystalline subsoil, the abundance of precipitation (rain and snow) and the high water retention rates in receiving basins (extensive forest cover, large peat bogs and marshlands, vast lake systems and so on). Hence, the linear and surface parameters of this network make it one of the most highly developed in North America.

From the installation of water mills to the construction of major hydroelectric dams, rivers have played a vital role in the economic development of Quebec: first the small tributaries in the St. Lawrence lowlands as well as wider tributaries; then the St. Lawrence itself near Montreal; then watercourses draining the highlands of the Laurentian Shield and the boreal forest; and finally the major tributaries of the St. Lawrence marine estuary and James Bay. With the construction of the La Grande Complex in the 1970s, Quebec acquired sufficient hydroelectric capability to meet the need of its economy as well as those of the northern United States.

The growing use of Quebec rivers for hydroelectric purposes as well as the floating of pulpwood has had a considerable impact on stream channels: major changes in reception basins, significant changes in the flow regime of waters in lower reaches, physico-

chemical contamination of sediments, shoreline deterioration, significant disturbance of aquatic wildlife habitats and so on. Studies and analyses conducted as part of the major James Bay projects as well as those conducted by QEPS and Environnement Québec in the St. Lawrence and its tributaries (the Yamaska, Richelieu and Saguenay) have shown the considerable extent of changes undergone by these aquatic environments.¹

In Canada similar studies have led a great many conservation groups to propose the establishment of a network of wild rivers or heritage rivers. This report examines this proposal and defines the strategy that should be deployed in Quebec in this area during the next fifteen years.

Major Characteristics

What are the major characteristics of the Quebec hydrographic network? What Quebec rivers still show little sign of deterioration resulting from economic activity? Is there a network of heritage rivers in Quebec?

RIVERS MARKING THE HISTORY OF QUEBEC

The St. Lawrence River was and still is the most important watercourse in Quebec. Initially a major means of transportation penetrating the continental interior from the Atlantic Ocean, this river axis and its immediate shorelines then served as the foundation of the ecumene and the major factor in industrial development; today, it remains one the most important seaways in the world.

The major tributaries on the northern side of the St. Lawrence (the Ottawa, St. Maurice and Saguenay) made possible the exploitation of wood resources in the boreal forest. Their hydroelectric potential was then turned to account during the expansion phases of primary industry in the first part of the twentieth century.

Later during the last thirty years, the watercourses along the North Shore and the major tributaries of James Bay were developed for hydroelectric purposes.

In short, the rivers of the St. Lawrence basin and of James Bay, for the most part, had a marked influence on the historical evolution of Quebec.

RIVERS STILL ONLY SLIGHTLY ALTERED BY ECONOMIC ACTIVITY

Within these two hydrographic systems, very few rivers remain that have been completely spared from wood harvesting and hydroelectric energy development in their basins. The main rivers still not significantly affected are the following: the Ashuapmouchouan or Chamouchouane, Mistassibi, Nottaway, Harricana, Broadback, Rupert, Matamek, Moisie, Romaine, Shel Drake, Mécatina, Saint-Augustin, Saint-Paul, Natashquan, Aguanus, Olomane and Magpie rivers. Added to these are watercourses of which certain sections have escaped all forms of exploitation, such as the Sainte-Marguerite, Mistassini, Malbaie and Péribonka rivers.

In order to establish a sufficiently broad network of heritage rivers, we must therefore consider other hydrographic basins: rivers in the taiga and the tundra which are part of the drainage basins of Ungava and Hudson bays.

NETWORK OF QUEBEC HERITAGE RIVERS IN 1985

At this point we should list those rivers which already receive some form of protection, either because they are located in a conservation or recreation park, or because portions of them have so far escaped all forms of intensive exploitation.

These rivers should be the first to be considered in the establishment of a network of Quebec heritage rivers. Table 1 provides a partial list.

TABLE 1
 QUEBEC HERITAGE RIVERS IN 1985*

NAME	BASIN SECTION		
	Lower	Intermediate	Upper
1. Saguenay	x		
2. Jacques-Cartier			x
3. Ashuapmouchouan		x	x
4. Mistassibi		x	x
5. Mistassini			x
6. Sainte-Marguerite			x
7. Romaine	x	x	x
8. Moisie	x	x	x
9. Matamek	x	x	x
10. Shelldrake	x	x	x
11. Gros Megatina	x	x	x
12. Nottaway	x	x	x
13. Broadback	x	x	x
14. Harricana	x	x	x
15. Malbaie			x
16. Magpie	x	x	x
17. Natashquan	x	x	x
18. Rupert	x	x	x

* Rivers which receive some form of protection, either in whole or in part.

NOTE: Major rivers in the drainage basins of the Kativik region, such as the George, Aux Mèlères, Koksoak, À la Baleine, Arnaud, Kovic, Innuksuac, Aux Feuilles, Koroc and Povungnituk, should also be looked at closely.

Issues Related to the Development of Rivers in Quebec

The waters of Quebec rivers have been significantly altered by four major factors: mechanized clear cutting of forest stands on the immediate slopes of watercourses, log floating, the establishment of hydroelectric dams, and domestic and industrial sewage discharges as well as waste snow dumping.

CLEAR CUTTING OF FOREST STANDS ON THE IMMEDIATE SLOPES OF STREAMS

Clear cutting is still generally practised in Quebec logging operations. The boreal forest in the Laurentians and in the interior highlands of the Laurentian Shield is most affected.

Clear cutting has two major effects on the water flow of rivers and on aquatic habitats. First, it reduces the water retention capability of slope soils; surface runoffs increase and carry with them fine particles from the upper levels of forest soils. There is thus a tangible variation in the water flow, and suspended substances carried by the water disturb aquatic habitats. Secondly, soils are disturbed considerably by the use of heavy machinery for extraction and transportation; this causes delays in the reconstruction of pedological profiles.

LOG FLOATING

Most of the wood from softwood species extracted in Quebec forests is transported to the mills by floating on rivers and lakes.

The major rivers in which log floating is still practised are the following: Manicouagan, Toulousteuc, Péribonka, Shipshaw, Pikauba, Chicoutimi, Aux Sables, Ouasiemsca, Aux Rats, Du Sault aux Cochons, St. Maurice, Gatineau, Coulonge, Ottawa and Malbaie (see Table 2).

Log floating has long been a widespread practice in Quebec. According to the OPDQ, early in the logging history of Quebec, log

TABLE 2

ENVIRONMENTAL CONSEQUENCES OF LOG FLOATING

- (A) Ecological changes in river bottom due to log floating
- (1) Bark deposits
 - i) Slow decomposition, which considerably reduces the oxygen content of water
 - ii) Contribution of tannin, lignin and hydrogen sulphide, which are toxic to fish eggs
 - iii) Contribution of phenols, which give a bad taste to drinking water
 - iv) Brackish color of water reduces photosynthesis or the penetration of light into water
 - (2) Deterioration of fish habitat
 - i) Spawning grounds of fish covered by bark habitat deposits
 - ii) Fish food affected in quantity and quality by such deposits
 - iii) Harmful to fish reproduction, according to when floating is carried out.
 - iv) Ultimately affects entire food chain.
- (B) Environmental impacts of other logging practices related to log floating
- (1) Retention dams to vary the flow of rivers with insufficient transportation capacity
 - i) Destruction of spawning grounds
 - ii) Erosion of shores and river bottoms
 - iii) Considerable contribution of suspended solids
 - (2) Straightening of water courses and dredging to facilitate passage of logs
 - i) Destruction of spawning grounds
 - ii) Suspended solids in water
 - iii) Modification of runoffs and variation in rates of flow
 - (3) Depositing of wood along shores and storage on lakes
 - i) Nuisances for recreation and esthetics
 - (4) Operation of cutting equipment
 - i) Encroachment upon river shorelines where tree cutting residue is accumulated
- (C) Characteristics of salmon rivers in which logs are floated
- (1) Floating affects the salmon run and reproduction of this species in rivers (e.g., Métis)
 - (2) Salmon run in autumn during the floating season; this biological function is thus disturbed

Source: See Note 3.

floating was an economic necessity. It was the only means of transporting wood to the mill, and floating became a public right. Companies that use floating have obtained rights and privileges whereby they cannot be held legally responsible for nuisances caused by normal floating operations on a river, other than exceptional cases of negligence. Such rights can run counter to legislation on pollution or fishing.²

Effects on Small Streams

Before access roads were built, secondary watercourses in receiving basins were developed to provide rapid log transportation to the major watercourse during the spring flood: thalwegs were then levelled, straightened and rid of natural obstacles; dykes or locks were built to form reservoirs that would further swell spring runoffs and ensure more efficient transportation. Consequently, natural habitats, trout spawning and breeding grounds were destroyed. With the establishment of access roads, small streams are no longer considered for floating.

Effects on Major Rivers

The major collectors mentioned above and still used today remain the most economical long-distance transportation method available. Floating has major effects on these rivers:

- extended storage of wood on large water surfaces reduces photosynthesis possibilities and fish movement because of the resulting unlighted tunnel effect
- the presence of floated wood is a physical obstacle to the use of the river and its shores for fishing, canoeing or swimming
- half-submerged floating logs are also hazardous to navigation
- log floating causes water pollution via the leaching of tannin, phenols and lignite from wood and bark
- floating causes riverbeds to become clogged with bark and water-logged wood, which use much of the available dissolved oxygen for decomposition.⁴

According to estimates, lost logs represent approximately three percent of the volume of floated wood, while lost bark represents five percent; in 1975, the two accounted for the loss of some 240,000 tonnes of wood solids.

CONSTRUCTION OF HYDROELECTRIC DAMS

The principal hydrographic basins developed for hydroelectric purposes in Quebec are the following:

- Ottawa
- St. Lawrence
- St. Maurice
- Péribonka
- Saguenay
- Des Outardes
- Bersimis
- Manicouagan
- Shipshaw
- La Grande

Over 15 million kW, from an exploitable potential of 60 million kW, had been developed in 1977; in 1985, after the La Grande complex went into operation and following the completion of work on Outardes 2, over 30 million kW will be generated from the above-mentioned basins. It is therefore estimated that approximately 30 million kW are still exploitable, including 15 to 20 million considered economically developable after 1985. These kilowatts could be drawn from basins on the North Shore, in James Bay and in Hudson Bay.

The principal consequences of hydroelectric development of rivers are the following:

- flooding of large areas
- modification of the flow of watercourses
- increased sedimentation of materials upstream from dams
- intensification of shoreline erosion in sections where flow rates are increased
- increased sedimentation in sections where flow rates are reduced
- minor changes in local climate caused by the appearance of large lakelands

- Obstruction of energy transportation corridors
- new physico-chemical and biological conditions are introduced into the basin with the creation of large bodies of water
- new water temperature variations within these bodies of water Reduction of dissolved oxygen and modifications in the physico-chemical characteristics of water
- increase in primary productivity
- modification in biological productivity
- disappearance of Terrestrial fauna habitats
- modifications in water quality and biological changes downstream from new reservoirs.⁵

DOMESTIC AND INDUSTRIAL WASTEWATER DISCHARGES AND WASTE SNOW DISPOSAL

To get a specific idea of the impact of industrial and domestic activities on Quebec river waters, we would have to review all of the studies conducted by QEPS, Environnement Quebec and Environment Canada in the last 15 years; this would prove a massive amount of work. Nevertheless, it is important that the main points be mentioned.

- 1) The 59 pulp and paper mills in the province use approximately three billion litres of water per day, or nearly two-thirds of the industrial water demand in Quebec. Organic matter pollution expressed in terms of biological oxygen demand (BOD₅) equals that produced by over 15 million persons. Moreover, the combined pulp and paper mills each day pump into our rivers 60 tonnes of oil and fats and 200 tonnes of tannins and lignin which are responsible, in part, for the high toxicity of effluents. In 1976 the mills dumped over 600 tonnes of suspended solids and produced nearly 1400 tonnes of biological oxygen demand BOD₅. These mills also discharged phosphorus, nitrogen, nitrates, resinic acids and so on. The principal rivers affected by these discharges are the following:

- | | |
|---------------|------------|
| ● Ottawa | ● Bell |
| ● St. Maurice | ● Nottaway |

- Malbaie
- Saquenay
- Saint-François
- St. Lawrence
- Chaleur Bay⁶

- 2) The province's seven oil refineries use 360 million litres of water per day, for a production capacity of 670,000 barrels of oil (1977). Each day they discharge ten tonnes of suspended solids, five tonnes of oil and fats, one tonne of phenol, two tonnes of sulphide and six tonnes of ammonia nitrogen. The theoretical pollution assessment, in BOD₅, represents a pollution load equivalent to that produced by a population of nine million people. Refinery effluents are all dumped into the St. Lawrence particularly around Montreal-East.⁷
- 3) The province's 54 organic and inorganic chemical plants, in the mid-1970s, used approximately 430 million litres of water per day. The pollutant loads discharged were not known, but effluents contained significant levels of cyanide, phenol and so on. These industries mostly affect the hydrographic basins of the Richelieu, Yamaska, St. Lawrence and St. Maurice. The theoretical balances used make it possible to estimate that the organic pollution from this industrial sector is equivalent to that produced by three million people. The dumping of inorganic substances, some of which are highly toxic, is the major problem generated by this industry.
- 4) The province's 20 metallurgical plants use more than 900 million litres of water daily. Their effluents contain toxic substances (heavy metals, acids, cyanide and so on). The principal watercourses affected by this industrial sector are the St. Lawrence and the Saguenay.
- 5) The province's 450 food plants use approximately 110 million litres of water per day. Theoretical pollution in terms of BOD₅ is equivalent to that produced by 11 million people. Food industry establishments are found in nearly all hydrographic basins in Quebec.
- 6) The textile industry (180 mills) uses over 110 million litres of water per day. The pollution produced by this sector is relatively low in relation to industrial activity as a whole, but attains critical levels particularly in the Du Nord,

Yamaska and Saint-François rivers, where the textile industry is concentrated.

- 7) The province's four chlor-alkali plants constitute a special case because of the use of mercury in the manufacturing process. The St. Lawrence and Saguenay rivers, and the Nottaway basin (Lebel-sur-Quévillon) are the principal watercourses affected by this industry, which uses 55 million litres of water daily.

Government Policies on the Use and Conservation of Quebec Rivers

Measures proposed in this area by the Quebec government are both preventive and corrective. The interventions recommended by the government are listed below by region; they are summarized in Table 3.⁸

EASTERN QUEBEC

- 1) Disinfection of wastewater from pulp and paper mills, particularly in the Chaleur Bay area.
- 2) Disinfection (chlorination or ozonization) of municipal sewage dumped into the St. Lawrence and Chaleur Bay.
- 3) Treatment of municipal and industrial sewage discharges at the headwaters of basins and limitation of development in these areas.
- 4) Establishment of water supply and wastewater/solid waste disposal methods to protect groundwater supplies on the Magdalen Islands.
- 5) Termination of log floating.
- 6) Application and monitoring of a series of corrective and preventive measures in agricultural establishments.
- 7) Protection of lakes.
- 8) Limiting development of industrial infrastructures and services in flood plains.

TABLE 3(a)
GOVERNMENT POLICIES ON THE USE AND CONSERVATION OF QUEBEC RIVERS

ACTION REQUIRED

	Disinfection of pulp and paper mill wastewater	Municipal wastewater treatment	Solid waste management	Stoppage of log floating	Industrial effluent treatment
Eastern Quebec	x	x	x	x	x
Saguenay/Lake Saint-Jean	x	x		x	x
Quebec City Region	x	x		x	
St. Maurice Valley	x	x		x	x
Eastern T/ships	x	x			x
Montreal Reg'n		x			x
Outaouais Reg'n	x	x		x	
Abitibi-Témiscamingue	x	x		x	x
North Shore	x	x			x
Northern Quebec		x			

TABLE 3(b)
GOVERNMENT POLICIES ON THE USE AND CONSERVATION OF RIVERS

ACTION REQUIRED

	Reduce agricultural pollutants	Improve management methods for resort lake	Flood Plain zoning	Dredging of lake sediments	Improve quality of potable water
Eastern Quebec	x	x	x		
Saguenay/Lake Saint-Jean	x	x			
Quebec City Region	x	x	x		
St. Maurice Valley	x	x	x		
Eastern T/ships	x	x			
Montreal Reg'n	x	x	x	x	
Outaouais Reg'n		x	x		x
Abitibi-Témiscamingue					x
North Shore					
Northern Quebec					x

SAGUENAY/LAKE SAINT-JEAN

- 1) Ensure adequate treatment of pulp and paper mill effluents; such effluents affect Lake Saint-Jean and the Saguenay River.
- 2) Treatment of municipal wastewater.
- 3) Reduction of pollution from agricultural sources.
- 4) Consolidation of Lake Saint-Jean shorelines to prevent erosion.
- 5) Termination of log floating after reviewing the economic impact of such a decision (Pikouba, Péribonka, Shipshaw and Aux Sables rivers - Lake Saint-Jean).
- 6) Protection of the Chamouchouane River from any activity that might prove harmful to landlocked salmon spawning.
- 7) Adequate treatment of effluents from Alcan aluminum plants.

QUEBEC CITY REGION

- 1) Ensure adequate wastewater treatment at the following paper mills: Reed, Donohue (Clermont), Abitibi (Beaupré), Domtar (Donnacana), St-Raymond Paper (St-Raymond), Building Products (Pont Rouge), and Fort (Portneuf).
- 2) Disinfection of wastewater produced by the Quebec City metropolitan region.
- 3) Ensuring conservation of the Beauport wetlands.
- 4) Limiting deterioration of peripheral resort lakes.
- 5) Zoning of flood plains and construction of flood protection works on the Chaudière, Du Sud, Sainte-Anne and Du Gouffre rivers.
- 6) Reducing pollution contributions from agricultural sources.
- 7) Treatment of wastewater produced by major municipalities that dump sewage into the tributaries of the St. Lawrence.
- 8) Termination of log floating on the Malbaie River.

ST. MAURICE VALLEY

- 1) St. Maurice River
 - Treatment of wastewater from chemical plants located in Shawinigan.
 - Adequate treatment of wastewater from pulp and paper mills

(La Tuque, Grand-Mère and Shawinigan, Trois-Rivières).

- Termination of log floating.⁹
 - Disinfection of wastewater produced by municipalities along the St. Maurice.
- 2) Nicolet, Becancour and Gentilly Rivers
- Developing and implementing a retention method for asbestos tailings stored in mining slag heaps in the Thetford Mines (Bécancour basin) and Asbestos (Nicolet basin) areas.
 - Minimizing pollution from agricultural sources.
 - Establishing and applying resort lake management methods with a view to limiting lake deterioration.
 - Flood plain zoning (Bécancour River).
- 3) St. Lawrence River
- Disinfection of municipal effluents dumped into the St. Lawrence.
 - Flood plain zoning along the St. Lawrence.
 - Limiting discharges of coolant from the Gentilly nuclear power stations.

EASTERN TOWNSHIPS

- 1) Ensuring adequate treatment of pulp and paper mill effluents (East Angus, Bromptonville, Windsor).
- 2) Wastewater treatment for municipalities along the Magog River, as well as the Municipality of Disraeli on the shores of Aylmer Lake.
- 3) Ensuring adequate wastewater treatment at the Dominion Textile plant in Magog and the Celanese plant in Drummondville.
- 4) Disinfection of wastewater from the major municipalities along the Saint-François River.
- 5) Revising the operational objectives of the Allrad (Aylmer Lake) and Saint-François (Lake Saint-François) dams.
- 6) Establishing and implementing resort lake management methods with a view to limiting deterioration of lakes (in particular, Lake Magog).
- 7) Minimizing pollution from agricultural sources.

MONTREAL REGION

- 1) Northern Basins (Rouge, Du Nord, Assomption and Bayonne Rivers)
 - Establishing and implementing resort lake management methods with a view to limiting deterioration of lakes.
 - Adequate treatment of municipal and industrial wastewater in the middle portions of the Assomption and Du Nord rivers.
 - Minimizing pollution from agricultural sources (lower sections of basins).
 - Limiting land development in municipalities of the Du Nord River basin.
- 2) Southern Basins
 - Immediate treatment of wastewater from the municipality of Waterloo.
 - Limiting the use of insecticides and herbicides.
 - Minimizing pollution from agricultural sources through the application of preventive and corrective measures.
 - Treatment of municipal wastewater from the principal cities in the Yamaska, Richelieu and Châteauguay basins.
 - Flood plain zoning.
- 3) St Lawrence River in the Montreal region (Des Prairies and Mille-Iles rivers, lakes Saint-François, Saint-Louis and Deux Montagnes)
 - Eliminating toxic chemical discharges into the waters of the St Lawrence.
 - Dredging of sediments in Lake Saint-Louis to remove accumulated toxic substances.
 - Ensuring adequate wastewater treatment for municipalities above and around lakes Saint-Louis and Deux Montagnes.
 - Adequate collection and treatment of municipal wastewater discharged into the Des Prairies and St. Lawrence rivers.
 - Limiting encroachment on the aquatic environment.
 - Flood plain zoning and, in certain cases, protection works.

OUTAOUAIS REGION

1) Ottawa River

- Ensuring adequate treatment of effluents from pulp and paper mills along the edge of the river.
- Treatment of wastewater from municipalities along the Quebec side of the river.
- Termination of log floating.

2) Tributaries of the Ottawa River

- Flood plain zoning and restriction of infrastructure construction in flood plains.
- Ensuring high quality fresh water supplies to municipalities that have experienced occasional or regular bacteriological contamination problems.
- Termination, if possible, of log floating on the Gatineau and Du Lièvre rivers.
- Disinfection of municipal effluents.
- Establishment and application of resort lake management methods with a view to limiting the deterioration of lakes.

ABITIBI-TÉMISCAMINGUE REGION

- 1) Improving the quality of drinking water in Rouyn-Noranda.
- 2) Eliminating water pollution from mine slag heaps.
- 3) Installing technical systems to prevent atmospheric emissions of mercury from Noranda Mines copper smelters in Rouyn-Noranda.
- 4) Ensuring adequate wastewater treatment in local pulp mills (Tembec in Temiscamingue and Dontar in Lebel-sur-Quevillon).
- 5) Ensuring adequate treatment of mining effluents.
- 6) Disinfection of municipal wastewater.
- 7) Termination of log floating on Lake Témiscamingue.

NORTH SHORE REGION

- 1) Raising to adequate levels the operation of existing wastewater treatment equipment at the following pulp and paper mills: ITT-Rayonnier in Port-Cartier and Quebec North Shore in

Baie-Comeau.

- 2) Disinfection of sewage from coastal municipalities through chlorination and ozonization.
- 3) Providing systems for the treatment of iron ore concentrator water.
- 4) Adequate treatment of wastewater from the Reynolds aluminum plant in Baie-Comeau.
- 5) Adequate wastewater treatment in municipalities located at the head of basins.

NORTHERN QUEBEC

- 1) Providing Cree and Inuit settlements with a safe and constant supply of drinking water.
- 2) Developing, for these settlements, technical wastewater disposal methods that protect public health and do not affect the extremely fragile ecological environment.

In brief, these corrective measures proposed by the government will, as a whole, lead to the recovery of rivers as usable space for various outdoor recreational activities. Furthermore, a number of segments of these streams and their immediate shores could become protected or recreational spaces, notably those referred to in the Archipelego project. All interveners must nevertheless be encouraged to adopt conservation - and even preservation-oriented attitudes.

Activities of Citizens' Committees and Associations

What solutions have been submitted by the various citizens' organizations or associations with a view to cleaning-up the aquatic environment in Quebec? These solutions are part of a strategy established by these organizations in each region of Quebec. In general, they propose activities focusing on the following four elements:

- establishment of a network of rivers protected from logging and hydroelectric development

- complete and final elimination of log floating in lakes and rivers
- use of the drainage basin as a framework for river management and protection
- establishment of a network of heritage rivers in Quebec.

ESTABLISHMENT OF A NETWORK OF RIVERS PROTECTED FROM LOGGING AND HYDROELECTRIC DEVELOPMENT

Conservation groups and recreation organizations have been working for twenty years to safeguard a certain number of rivers in Quebec against logging and against the construction of hydroelectric dams (e.g., the Chamouchouane and Jacques-Cartier rivers).

COMPLETE AND FINAL ELIMINATION OF LOG FLOATING ON LAKES AND RIVERS

Citizens' committees have targetted the same rivers which are the subject of government intervention. These committees, however, ask that log floating be completely and definitely banned. In some circumstances, a moratorium is proposed on the interdiction for certain sections of rivers. Alternative solutions are then suggested for wood transportation (trucking, skidding) and it is asked that logs be barked before they are floated in waters where floating operations must be allowed to continue.

USE OF THE DRAINAGE BASIN AS A FRAMEWORK FOR RIVER MANAGEMENT AND PROTECTION

The drainage basin is the basic unit of the biophysical environment on the surface of the earth. It is a system wherein all components are interactive. It would be difficult and even impossible to protect a flow channel without establishing rules for the protection of drainage basin waters.

ESTABLISHMENT OF A NETWORK OF HERITAGE RIVERS IN QUEBEC

Following the example of other protected spaces in Quebec, rivers and lakes of high natural and historical quality, as well

as those that are well preserved and have a significant recreation capability, must constitute a network and be treated as conservation parks.

Prospects for 1985-2000

This section suggests the global strategy that could be developed to equip Quebec with a true network of heritage rivers by the year 2000.

NETWORK OF HERITAGE RIVERS IN THE YEAR 2000

What criteria should preside over the establishment of a network of heritage rivers in Quebec? Henceforth what might be the profile of such a network?

Parks Canada Project

In 1978 Parks Canada called on a working group to formulate a proposal for the creation of a Canadian network of heritage rivers. This group presented the results of its work in 1981.¹⁰

The working group recommended the following main points:

- a network of Canadian heritage rivers must be established in cooperation with the provinces and the territories
- Parks Canada could provide financial assistance to enable nominating agencies to conduct studies and develop plans related to the nomination and/or management of rivers
- the network would include only one category of rivers, namely "Canadian heritage rivers." The following criteria or values would be applied for the selection of rivers:
 - noteworthy value in terms of Canada's heritage
 - noteworthy value in terms of Canada's human heritage
 - significant capability for outdoor recreation and tourism.
- high rate of conservation.¹¹

Federal legislation must be adopted to create the network of Canadian heritage rivers and ensure participation by Parks Canada and other federal agencies in the network; an amendment to the National Parks Act is suggested.

The proposal made by this group was acknowledged by Parks Canada which, in May 1984, took the initiative of constituting a network of Canadian heritage rivers.

Drainage Basin

River conservation must be conducted within the reference framework of the hydrographic basin. In this context, therefore it would be essential to focus on the hydrographic basin as a whole.

Accessible Rivers

A number of rivers are already used extensively by canoe-camping enthusiasts, notably in the Laurentian highlands and North Shore basins. Easy access should be included in the selection criteria.

NETWORK OF QUEBEC HERITAGE RIVERS

The network should be made up of four major components (see Figure 1):

- 1) Major rivers best preserved in their natural state and remarkable in scenic and aesthetic terms:
 - Jacques-Cartier¹²
 - Malbaie¹²
 - Mistassibi¹³
 - Moisie¹²
 - Petite Mecatina¹²
 - Sainte-Marguerite¹³
 - Chamouchouane¹³
- 2) Major rivers with a high capability for canoeing and canoe-camping:¹²
 - Sainte-Anne-du-Nord
 - Saint-Maurice (upstream from La Tuque)

- Saguenay
 - Malbaie
 - Jacques-Cartier
 - Mistassibi
 - Moisie
 - Rupert
 - Bastican
 - Chamouchouane
 - Chicoutimi
 - Gatineau
 - La Lievre (upstream)
 - Matawin
 - Petite Macatina
 - George
 - Matabetchouane
 - Mistassini
 - Ottawa (as far as the City of Ottawa)
 - Ouareau
 - Petite Nation
 - Du Loup
 - Rouge
 - Sainte-Marguerite
- 3) Major northern rivers:
- George¹²
 - Rupert¹⁴
 - À L'eau Claire¹⁴
- 4) Small rivers¹⁵
- À Mars
 - Ha! Ha!
 - Barachois

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The Urban Outdoors

Pierre Belec

Introduction

The expression "urban outdoors" is daring to say the least. The term "outdoors," which I remember first hearing from one of my professors in the mid-1950s, has nearly always been used to refer to the "greater outdoors." Only in the last five or six years has it been applied to the urban environment. There is still a paradoxical element about this use of the word, but cities are paradoxical places, full of contrasts stemming from the various aspects of our collective wealth (assets, knowledge, customs, symbols) which the culture slowly digests to produce surprising syntheses that constitute our overall image. The reintegration of nature into the city will undoubtedly be remembered as one of the characteristics of urban evolution in this decade.

Need

A QUESTION OF DEMAND

The many actions aimed at bringing nature back to the city are in response to a deep-seated design and will - the expression of a need.

Before we understand what is expressed, we should examine the source of expression. Generally, the major planning work produced in the early 1970s proposed a series of very generous measures with respect to green spaces. These measures were all the more generous because their authors were not immediately responsible for their implementation. Proponents were expected to shed a global and stimulating light that would improve our understanding and orientation toward the future. The days following these vast efforts were more disappointing. Hence, the Alie report providing

for the establishment of large regional parks in the Montreal Urban Community would sit on the shelf for some ten years before any real action would be taken.

The mid-1970s witnessed the establishment of citizens' groups calling for more green space and devoted to the protection of specific sites. Their militancy and the fact that they won so few of their cases perhaps contributed to the spread of this type of pressure group. They are now widespread and public opinion always latches readily upon this type of claim.

Such groups are usually established to protect an endangered resource. It is quite rare to find groups that existed previously; their existence is in response to a specific need. The relative inaction of organized recreation groups with regard to the demand for green space and increased urban outdoors, however, may be specifically ascribed to the purpose of such organizations, namely organized recreation, which requires specific spaces developed for very urban practices. By definition, green spaces correspond to relatively non-organized practices, often individual or in very small groups. Therefore, new groups were required to fit this new demand. Municipal services are not for all that entirely absent from the scene. They help to spread certain development formulas that are favourable to the urban outdoors, such as community gardens, bicycle paths and the renovation of alleyways. Their approach, however, is much more timid concerning the protection of woodlands and the protection/reinsertion of greenery other than in ornamental form. Moreover, because of the usual division of responsibilities among municipal services, it is quite rare to see a request for outdoor and green spaces emanate directly from the recreation service. The urban development, engineering and parks services seem much more often the initiators of new ideas and projects in this area, while the recreation services focus more on the organization of sports and, more recently, cultural activities. Must we add that such services seem generally farther removed from land management decision makers?

DEMANDS EXPRESSED

A certain variety exists. Some demands focus on the protection of green spaces and are patterned after the most basic demand of ecologists in purest form: "Let us protect this space for itself, for its heritage value, without encouraging its use other than for (controlled) nature observation purposes." This type of approach is more readily found in upper-middle-class or university environments. A second type of demand is very local in colour and focuses on the multi-purpose and green use of space, as well as on participatory management of this space once it is developed. Such claims feature a very user-oriented view of the space concerned: the aim is to make it more functional, more flexible, and sometimes safer. There is also a desire to be consulted on its development and associated with its management. A third type of demand crops up in surveys of the population and in the current positions of agencies such as outdoor activity federations, which would like to see more multi-purpose development of green space geared toward contact with nature, as well as spaces and activity programs designed for the entire family. This trait was particularly well underlined in the "consult'action" on recreation organized by the City of Laval slightly over one year ago.

The common link between all of these demands is nature. In specific cases or in an abstract discussion, certain groups will nonetheless square off on the subject of recreation versus conservation. In general, this demand for urban natural space is apparently not in the same corner as present municipal administrations, although it cannot readily be identified with specific political options. The general distrust of municipal administrations is a major theme usually associated with the entire question of urban outdoors and green space, and was manifested strongly in consultations concerning the Green Paper on recreation in 1979. The same phenomenon is repeating itself in the debate on Bill 6 (December 1984), the purpose of which is to provide municipalities with increased shoreline development powers. All groups, whether their interest is fish and game, interpretation of flora, district parks or various outdoor activities, share this

distrust for municipalities. Their demands usually call for direct or at least regulatory government intervention.

CAN NEEDS BE SPECIFIED?

The concrete demand for outdoor activities is measured regularly. We are less familiar, however, with the needs underlying this demand. They are certainly related in large part to the type of urbanization in our cities. Perhaps many of these factors fall under the heading of "lifestyle." In our culture, work activities necessitating direct contact with a given manifestation of nature are growing rarer. Even in rural areas, a distance has been created. Inside our houses, the presence of textures and shapes from nature was clearly in decline until the end of the 1960s. This absence probably creates an identity problem, because only certain dimensions of the human persona, such as rationality and productivity, are very strongly reflected in the daily environment and the management of time. For reasons of productivity, biological rhythms are denied by today's society, while synthetic materials and their geometrical shapes take up every available space. Less and less room is given over to the mobile, uneven, and sensual nature of man. In reaction, we are seeing a return of wood - new or refinished - and an invasion of house plants. People are surrounding themselves with the product of life, or life itself, which has been brought back to the forefront. The fragility of life and the responsibility it creates - which is well understood by people with green thumbs - have become an almost daily theme. The same revolution is taking place outdoors: people are cultivating, planting, oxygenating. Man seeks contact with nature or semi-nature to maintain a personal balance, relax, find himself, and learn to accept himself: a changing and evolving being, sensitive to the environment and surpassed by the technical perfection and Euclidian aesthetics of urban development, as well as by all the shocks and stresses of community living.

In short, we have collectively identified the need to plug into the other strata of life on this planet. Has some deep-seated instinct warned us that life on earth is in danger?

PRESENT PRACTICES

Although the rate at which outdoor activities - particularly kinetic activities - are practised has been studied, very little attention has been focused on global behaviour associated with various types of practice. Little is as yet known about the interests of a man in the 35-year age group who bicycles with his eight-year-old daughter. Why? When they stop, is it to picnic? Is observation of the landscape a significant aspect of their outing?

One thing is certain: the urban environment and its development are becoming progressively permissive in terms of the diversity of practices and behaviours. Not so long ago, an adult had to have the proper attire and be part of a team to practise a physical activity in a park. It is now possible for this same adult to sunbathe in the park; for an old woman to wear shorts while riding her bicycle; for others to focus their binoculars on birds. Our urban culture is nowadays enriching itself with new behaviours and attitudes toward the human body in relation to parks and open spaces.

So far, this report has treated outdoor activities and green space conservation activities as a single entity. It is obvious that this view is not necessarily shared by all. It should be remembered that the outdoors is defined by a certain quality of relationship with the natural or semi-natural environment. In the city, this environment is quite often called green space or woodland, unless it is blue space.

Ten years ago outdoor practices were mostly weekly and seasonal. Today, urban outdoor practices are becoming more and more daily and year-round. Furthermore, not so long ago, they were defined exclusively as kinetic activities (bicycling, walking and so on). Today, in accordance with changing values, the focus on sensory perception has grown in importance. People look, listen, taste and smell. The intellectual aspect continues to grow through the medium of interpretation. Finally, the socializing character of practices, long ignored by organized forms of recreation, has regained the forefront.

The Resource

CHANGING GREEN SPACES

Our oldest parks did not always have their present appearance. Turn-of-the-century engravings and photographs show them as much greener and even more natural than they are today. Aesthetic concerns have clearly militated in favor of progressive artificialization. The development of sports has also had an artificializing effect. These first two factors, associated of course with trampling and other effects of the neighbouring environment, have considerably reduced the value of our parks in the last fifty years.

Even today, a focus on highly "geometric" aesthetics seems the only explanation possible for the appearance of certain parks. Tall grasses and shrubs are far from being established in our parks. For a good many years parks have apparently been made only to look at; no parks have been designed to accommodate activities, with the exception of organized sports. Riparian parks are notable examples of this "visualist" tradition. Slowly, the valuing of nature, with its "disorganized" appearance, is beginning to find acceptance in our parks. The trick has not yet been turned entirely: some old ghosts still remain. A small clump of woods is not safe at night and in fact invites all sorts of disorderly activities. Nonetheless, this reappearance of nature in our parks and throughout the city itself is essential to satisfy the basic needs underlying the demand for green spaces.

HOW MANY HECTARES PER 1000 INHABITANTS?

So-called "international" standards are a convenient shortcut to illustrate our severe deficit situations, but are in fact only a secondary analysis tool. The four hectares of regional parks per 1000 inhabitants and the four others of metropolitan and local parks are a stimulating objective. It is essential, however, that more

in-depth focus be placed on needs so that they are not viewed as simple, excessively general statistics.

Management

The issue most discussed, after the protection and creation of parks, is that of park management.

DECISION TO ACQUIRE AND DESIGNATE

This decision is a difficult one for a municipality to make. Acquisition, development and operating costs are high. When green space is designated parkland, the municipality is deprived of significant tax revenue. As the Chairman of the Montreal Urban Community put it in 1982, during a joint meeting on shoreline development, "Deliver us from temptation." This remark was aimed specifically at the government of Quebec. Because of the carelessness and obvious lack of foresight exhibited by both levels of government with regard to urban parks and green space, the cost of catching up in this area is quite high and clearly presupposes government intervention. Concerning parkland designation, it should be noted that these are the years of development schemes. Citizens are beginning to avail themselves of the consultation framework at their disposal to present papers and exercise pressure. Some land owners, who have seen their land designated as parks through public pressure and in certain plans, consider the matter settled to all intents and purposes and are simply awaiting an offer.

ENVIRONMENTAL CONSERVATION

During the recent consultations held by the Ministère du Loisir, de la Chasse et de la Pêche (MLCP) on the proposed Mingan Archipelago Provincial Park, many observers noted surprising progress in conservationist ideas. Municipal elected officials were interested in wildlife management, forest protection, and "soft" developments favouring outdoor activities. It is therefore possible that citizens' groups and associations, as a result of government efforts, will encounter municipal officials who seem in favour of

and, in some cases, are already won over to certain ecological ideals. Beyond radical protesting, the time may be right to make more concrete proposals lending structured and functional content to ecological demands (e.g., preferred types of development, levels of recreation/conservation specific to the urban environment).

BEYOND CONSULTATION

The consultation phase, now practically compulsory for any such project, is a tense period for all concerned - a socio-political spectacle through which everyone retains doubts as to the true intentions of the "partner." A relaxation of tensions is required. We must no longer focus on consultation alone. We must go beyond this theatrical *modus operandi* and adopt a more simple approach.

Parks and green spaces should be defined even further as being under the heading of recreation and should conform to current uses. Recreation is essentially an area in which government, municipality, associations and private sector share interventions. Henceforth, parks and green spaces should be viewed in that light. The consultation process would then be de-dramatized, because subsequent steps would be taken within a framework of dialogue.

Experiments should be carried out immediately and analyzed. Many forms of delegated management and management participation should now be tried. Success and failure factors should be analyzed on the basis of several years of testing. Formulas for success suitable for general application could then be uncovered progressively.

Development

Although it is always hazardous to try to predict the future, it is possible to outline a few trends.

DEVELOPMENT TRENDS

Linear

In the last six or seven years, the linear development perspective has grown considerably. Although we have not gone beyond bicycle paths in practical terms, it is quite obvious that what is now taking place favours the development of linear parks, not only along shorelines but also in city cores. Such is the direction of the proposal retained by the Quebec Government in its policy on urban parks.

The linear approach also encourages the recovery of a large number of sites with other vocations (energy transportation, railway and so on), the redesignation of old industrial sites and the use of uneven lands not suitable for residential development or for traditional concept parks. This approach also favours use by the community of portions of sites already devoted to community purposes: hospitals, churches, schools and so on.

Nautical

With its wealth of water resources, Quebec is still open to many nautical developments. Sailing is becoming more popular and accessible, the popularity of fishing is growing among women, progressively cleaner water is attracting more and more city dwellers, and the extraordinary popularity of sailboarding is also a new factor. There are many indications of a boom in nautical activity. It will nevertheless be important to create new types of facilities that are better suited to the new demand than the large nautical facilities of recent decades.

Reticulated

The often residual nature of available space, and the increase in such space as a result of other urban realities imposes the need for a new type of organization and communication of outdoor space opportunities. By adding the present - generally

underpublicized - supply of residual spaces to the overall system, we obtain properly integrated and developed networks. This approach has been selected by the MLCP for the creation and development of the Mingan Archipelago Provincial Park.

Multi-purpose

Strangely enough, this demand stems more from citizens than from municipal services, which are too often dominated by a highly specialized focus on sport and its non-specific extension: ornamental concerns. The concept of multi-purpose capability stems as much from an awareness of the diversity of users, particularly those who are not served by present parks (families, adults, women), as from the simple observation of rapid changes in recreational activity fads (tennis, bicycling and so on). Fluctuations and returns should impose the greatest possible care in terms of specialized facilities.

MANAGEMENT TRENDS

Private

The private sector has not distinguished itself by the quality of its nature facilities. The growing popularity of environmentalist ideology should lead present managers of recreation sites (fishing ponds, waterslides, riding centres, marinas) to place progressively more emphasis on nature in their facilities. We should also expect to see major companies attach their names to urban parks. Why should not Alcan, Hydro-Quebec, the National Bank and the "Caisses populaires," to name but a few, develop a woodland, a section of shoreline, or an island that would bear their name? The practice is common elsewhere. It has even been done in the case of a plant on the edge of the Lachine Canal.

Self-management

Housing cooperatives and citizens' groups would also be quite capable, with minimal support, of assuming the supervision,

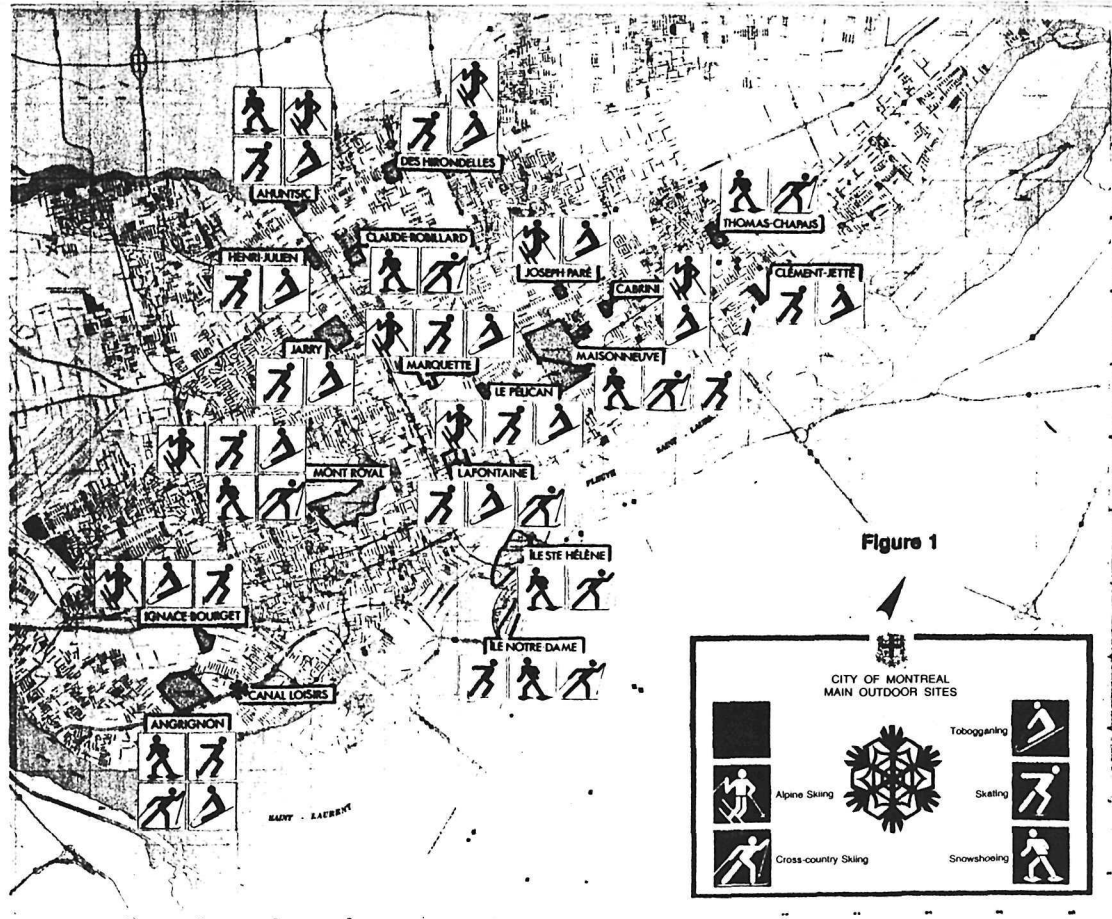
animation and maintenance of neighbouring parks and outdoor spaces. All that is required is a certain relaxing of the climate between local politicians and leaders of public opinion. Obviously, one must perhaps decide beforehand whether a given park or outdoor site constitutes an election "goodie," or ammunition in a fight against city hall, or whether it is simply a quality of life objective.

Conclusion

THE OUTDOORS: A MEANS OF ADAPTATION TO URBAN LIVING

Are deserted cities and boring parks things of the past? The urban outdoors can have a significant role to play in the habitat of the new city we hope to create. The revitalization of winter in the city and facilitating of a physically more active life are examples of improvements to our collective quality of life when they are viewed from an outdoor perspective (see, e.g., Figure 1).

In the past cities excluded nature or tried to domesticate and geometricize it. In this manner, men conquered their fear of the wild and expressed their mastery over the constant threat of nature. Symbolically tamed, nature nevertheless remained within reach. Urban sprawl and the deterioration of downtown cores placed the city in question and provoked an identity crisis for modern man. The outdoors is one of the keys that may help us to re-establish a balance and, paradoxically, to make our cities more human.



Social-Tourism Accommodation in Quebec¹

Jean Désy²

Introduction

Over the past two years, three key elements have stood out in Quebec's social-tourism agenda: a province-wide debate on the adoption of the Villages-Vacances-Familles (VVF) model in Quebec, sandwiched between two major conferences of the International Bureau of Social Tourism, one world-wide, the other Northern American.² These conferences, which were intense and highly charged events, stimulated reflection and action on the part of those involved - either centrally or peripherally - in the social tourism debate. They also provided an excellent opportunity to focus on socially-oriented tourist accommodation in Quebec, and to bring to an international forum the debate begun over two years ago by the Ministère des loisirs de la chasse et de la pêche (MCLP) concerning the possibilities and conditions for the development of the VVF model in Quebec. Whatever its relevance today, this issue has been the topic of many symposia, seminars, discussion papers and articles, all essentially inspired by the Regroupement des organismes nationaux de loisir du Québec (RONLQ).

Amid this increasingly crowded debate, we propose an overview and exploratory examination of social-tourism accommodation in Quebec. First, we will describe the sector in its present state, and then we will trace its development from the beginning.

On the basis of Bellefleur and Levasseur's key theories³ about leisure in contemporary Quebec society, and a fairly precise chronology of the events that dominated Quebec history over the past 180 years, we will attempt to:

- draw a provincial and regional⁴ profile of this type of accommodation

- take a brief look at the evolution of this type of accommodation since its inception, placing it in its social and institutional context
- comment on the results of the government's recent consultation with interested parties regarding the possible implementation of the VVF model in Quebec.

A Portrait of Social-Tourism Accommodation in Quebec

In an effort to maintain a minimum of coherence and homogeneity between our data and that of the latest exhaustive analysis of the Quebec hospitality industry,⁵ we have retained in this study the accommodation categories defined in that document. Moreover, since the MLCP has not carried out any updates, we will rely primarily on the 1978-79 figures provided therein. We did, however, obtain some additional and more accurate data from other government services and reliable organizations. Our effort to bring all figures up to date proved in vain since we were unable to fill all the statistical gaps in time to meet our production deadlines.⁶

This analysis will deal with social-tourism facilities both in Quebec as a whole and in each administrative region. The units of measurement used are the number of accommodation units and their theoretical capacity, calculated in person-days.⁷ We may occasionally also consider occupancy rates, but essentially the analysis will be based on statistical data. Lastly, to give the figures greater relevance, we will compare them with regional demographic data and arrive at a "facilities-to-population index."⁸ This index is similar to P. Defert's "taux de fonction touristique"⁹ (tourist accommodation index) and it seems pertinent to introduce it here, given that social-tourism facilities must benefit a region's resident population even more than commercial tourist facilities.

SOCIAL-TOURISM FACILITIES: ONE CHOICE AMONG MANY

Of the fifteen or so types of accommodation available in Quebec's hospitality network, we deliberately disregarded two:

- hotels and motels priced above \$25 a day for two people. This financial ceiling was chosen arbitrarily and corresponds to \$30 to \$35 a day per family; it represents the lowest rate posted for the cheapest rooms in each motel.
- fishing and hunting outfitting services, whose fees are generally higher than what most vacationers and sport enthusiasts can afford.

We included second homes and private cottages, since this type of accommodation clearly dominates the industry, with 98 percent of the units and 70 percent of the accommodation capacity, hotels included. The number of cottages available for rental is estimated at only 10 percent. However, this does not change the fact that, for thousands of Quebecers, this type of facility represents a relatively inexpensive vacation option.

We are also aware of the extremely profit-oriented goals of commercial hotels, most camping grounds and even holiday farms. We have assessed all facilities solely in terms of their affordability, a criterion that we agree is very narrow, but that is crucial in social-tourism.

We have therefore considered ten types of accommodation:

- hotels, motels, tourist rooms, and other types of accommodation priced at less than \$25 a day for two persons
- camp and trailer sites
- cottages and cabins in parks
- private cottages
- holiday farms
- bed-and-breakfast accommodation

- CEGEP and university student residences
- youth hostels
- tourist camps
- outdoor centres.

PROVINCE-WIDE TRENDS

Obviously, it is pointless to comment at length on the distribution of units according to category, since 98.3 percent of the facilities are private cottages. However, the high accommodation rate of the thousands of camping grounds equalizes somewhat the distribution of the theoretical accommodation capacity. These grounds can accommodate almost one in four vacationers, reducing to less than three out of four (70 percent) the number of tourists seeking other accommodation. Hotels and tourist rooms can accommodate one vacationer out of forty (2.5 percent) each. In total, the 170,000 units can theoretically accommodate over one million people in Quebec. By comparing this capacity with the resident population, we obtain an average provincial "social-tourism accommodation index" of 16.7 percent, which we will further break down by region.

A SURPRISING AND VARIED REGIONAL DISTRIBUTION

The Montreal area has the lion's share of accommodation available in Quebec, with 46 percent of all units and 44 percent of the accommodation capacity. It is followed by Quebec City and the Outaouais, which rank far below in both and are on relatively equal standing (13 percent to 16 percent). Next comes the St. Maurice Valley with eight percent and nine percent, while the Gaspé-Lower St. Lawrence, Saguenay-Lac-St-Jean¹⁰ and the Eastern Townships hover around 4 percent and 6 percent. Not surprisingly, the North Shore and New Quebec rank last.

This imbalance shifts strangely with the introduction of the social-tourism accommodation index. Montreal's demographic dominance makes this area's rating drop below the provincial average to seventh place at 13 percent, whereas the low population of the

Outaouais, together with its high accommodation capacity, makes this region rank first at 52 percent.

The Eastern Townships come next with a rating of 27 percent, followed by three peripheral regions, the Gaspé, Saquenay-Lac-St-Jean and the St. Maurice Valley with ratings from 21 percent to 23 percent. Far behind, below the provincial average, are the North Shore and Abitibi-Temiscamingue at 11 percent and 12 percent.

ACCOMMODATION BY TYPE AND BY REGION

Hotel Facilities

We thought it might be interesting to take a relatively close look at this type of accommodation, which has undergone many changes over the past few years. The economic crisis had a severe impact on the price of rooms and on the overall profile of the hospitality infrastructure. It should be pointed out that only 800 Quebec hotels, that is, two out of five (41 percent), offer a total of 12,000 rooms at affordable rates, which represents a capacity of 26,000 person-days, or one-fifth of all available rooms. However, at the other end of the spectrum, 377 hotels, or one out of five (19.2 percent), offer 31,000 rooms priced at more than \$40 a day for two persons, which translates into a theoretical capacity of 67,300 person-days, or more than half of all rooms available in Quebec (51.6 percent).

Let us now examine this phenomenon by region. The Montreal and Quebec City areas both offer one-quarter of available units and rooms (priced at less than \$25 a day for two persons), which in total means half of all affordable hotel rooms in Quebec. The Saquenay-Lac-St-Jean area and the North Shore - excluding the New Quebec areas where there are none - occupy the low end of the scale in terms of both number of rooms and number of hotels. The Gaspé-Lower St. Lawrence, a traditional tourist area, has 13 percent to 15 percent of the low-cost units, while the other four regions vary from five percent to 11 percent.

Montreal clearly leads the way in the number of deluxe units available (over \$40 a day for two persons), with two out of every five hotels and over half of all rooms available in Quebec. The Quebec city region follows with one room and one hotel out of five in this category. These two regions account for three-fifths of the deluxe hotels and three-quarters of the deluxe rooms available in Quebec. The cumulative capacity of these two regions unbalances the regional distribution of the provincial average in this category (one out of five hotels and one out of two rooms); the other regions vary between two percent to eight percent for this type of accommodation, which is inaccessible to the majority. In short, two trends are evident: the geographic concentration of international hotel chains and a decrease in the number of reasonably priced rooms. One encouraging development: the Société Vacances-Familles has been moderately successful in making these establishments (70 in total) more accessible to families through substantial discounts, particularly in the low season.

Camp and Trailer Sites

The north and south shores of Montreal hold the monopoly in this area, since two-thirds of Quebec's camping grounds are located there, and can accommodate two out of every five campers. Next are the Quebec city region (1/5 of the grounds and the capacity) and the St. Maurice Valley (11 percent and 13 percent).

Second Homes and Private Cottages

The long tradition of vacationing in the Laurentians north of Montreal ensures the clear supremacy of this region over the rest of Quebec. Forty-six per cent of all private cottages are concentrated here. This region is followed by the Outaouais (16.4 percent), where this is the main type of accommodation available, giving this region the highest social-tourism accommodation rating in Quebec. The Société Vacances-Familles network has been making an increasing number of private cottages available to its members for rent.

Holiday Farms

Holiday farms were introduced in Quebec less than ten years ago by Agricotours and Vacances-Familles. These farms also offer private cabins, camping grounds and bed-and-breakfast accommodation. One-third of them can be found in the Gaspé-Lower St. Lawrence-Magdalen Islands region; one-fifth in the Quebec City region; and a considerable number in the Saguenay-Lac-St-Jean area and in the rural areas surrounding Montreal (12 to 16 percent). This is an irregular network, but it is progressing and adapting gradually.

Bed-and-Breakfast Accommodation

Although this is still a new type of accommodation, it has great potential for growth in these hard times. There are 315 such units in Quebec capable of accommodating 630 people. Villages such as Desbiens and Chambord in the Lac-St-Jean area, in conjunction with the Société Vacances-Familles, were the first to pioneer this field about five or six years ago. One-third of such accommodation can be found there, one-quarter in Montreal and one-fifth in Quebec City.

Student Residences

The concrete jungle era of Quebec education in the 60s provoked many ecological debates at the time, but it has now given rise to a very positive form of recycling: the use of student residences as low-cost accommodation. There are approximately twenty-six college and university residences that can theoretically accommodate up to 8,500 people per day during the summer months. One-third of these rooms are in Montreal, of course, with another third in Quebec City and 16 percent in the Eastern townships.

Youth Hostels

Youth hostels have been in existence in Quebec for over fifteen years. There are currently thirty-five of them for a total

accommodation capacity of 2,000 people a day. They are concentrated in three areas: Montreal, Quebec City and the Gaspé-Lower St. Lawrence, each with similar percentages and accounting for 75 percent of such accommodation in Quebec.

Tourist Camps

Again, the Montreal region is overwhelmingly superior in this area, with three out of every five camps. The total accommodation capacity for Quebec as a whole (27,000 persons) rivals that of moderately priced hotels but with a much lower number of units (233 camps versus 808 hotels). For a little over ten years, the Mouvement québécois des camps familiaux has been reshaping this religious heritage both structurally and ideologically, and there are now approximately thirty family groups which rent or manage family camps that can accommodate more than 1,000 working-class Quebec families.

Outdoor Centres

There are approximately sixty outdoor centres in Quebec; of these, thirty theoretically provide accommodation for a maximum of 5,300 people, two-thirds of them in permanent buildings and the remaining third in camping units. The Montreal area has 44 percent of such facilities, with Quebec City a distant second with one-fifth, the Eastern Townships with 16 percent and the Saquenay-Lac-St-Jean area with 11 percent.

The clientele for such centres is made up largely of teenagers and young couples, but at least six such establishments have been catering to a family clientele over the past few years.

Summary

From this rough sketch of the widely diverse social-tourism facilities in Quebec, the following conclusions may be drawn:

- there has been a considerable decrease in the number of affordable accommodation units in the hotel industry, though

- there has been a slight effort on the part of deluxe hotels to offer discount accommodation to a family clientele
- there is likely to be a levelling in the number of private cottages, but also greater accessibility through rental
 - the number of camp and trailer sites will grow at a more moderate pace; the accent is on their modernization and adaptation to trailers, with a resulting increase in costs
 - there will be growth and diversification in the type of social-tourism accommodations introduced over the past ten years; some of these constitute new approaches to traditional forms of vacationing (tourist camps) and institutions (student residences).

It would be expedient, at this stage, to examine the historical and social evolution of these facilities in order to better understand their future dynamics.

The Growth of Recreation: The Result and Reflection of Quebec Society

In their eye-opening study of past, present and future trends in Quebec's recreational practices, Bellefleur and Levasseur essentially argue that "(Trans.) our recreational institutions are heavily influenced by the dominant standards and values of our social model."¹¹

In this system, where people are equal under the law but not equal in fact, recreational patterns mirror the social stratification and the economic and cultural disparities evident elsewhere. Since under the liberal model the state has only a residual function, the first recreational organizations and structures in Quebec were the result of highly dynamic private initiatives.¹² (Trans.)

Opposed to this liberal model, or superimposed on it, are the technocratic model - power based on information and scientific knowledge¹³ and the participatory model, which stresses citizen participation in social development through organized groups. On the basis of this information, we will attempt to construct a table illustrating a socio-cultural, vaguely systemic approach to the

issue. Table 1 will trace the evolution of certain major elements over time and highlight key events from 1850 to this decade.

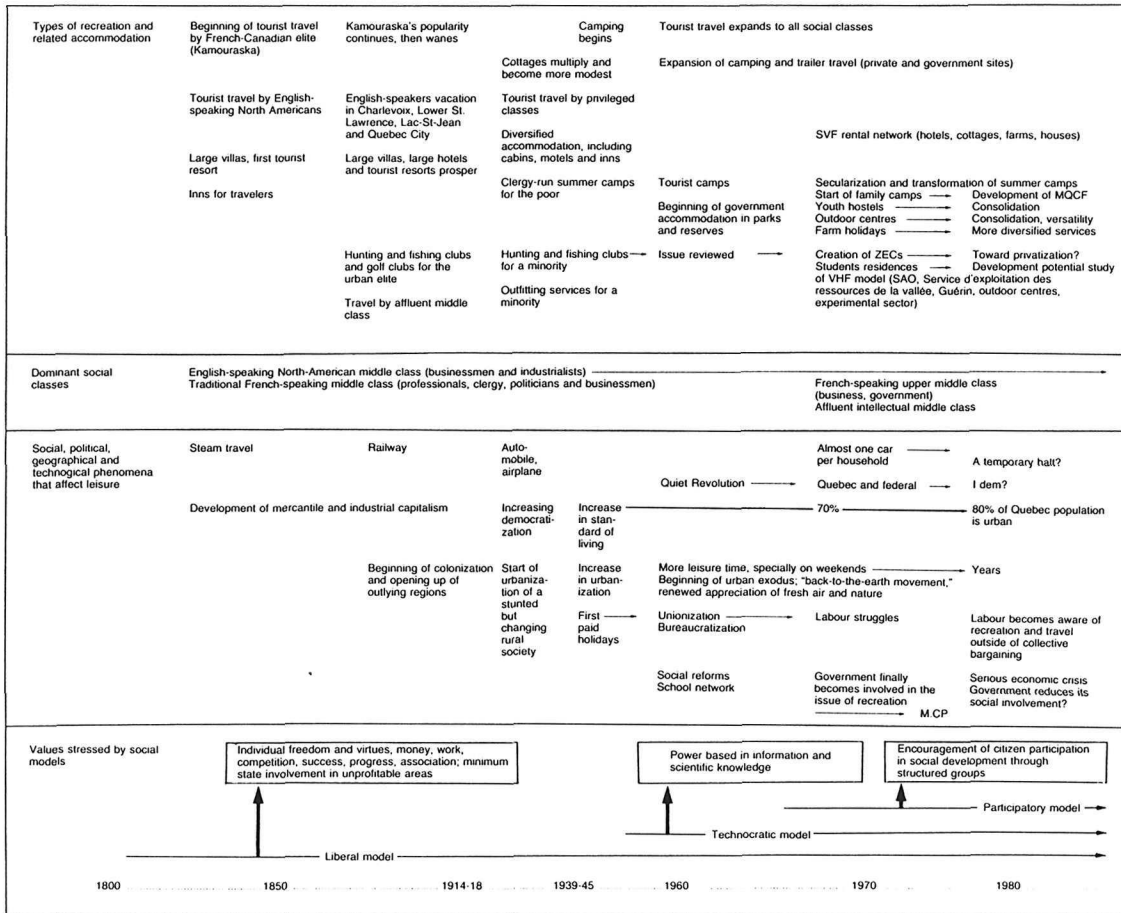
The elements presented are the following:

- the dominant social classes that evolved and that had a preponderant influence on -
- the social, political, geographic and technological developments over this period, which in turn affected -
- types of recreational activities and accommodation.¹⁴

We will comment only briefly on the contents of this table, which, although roughly hewn, does in our opinion represent fairly accurately the current and future development of Quebec's social-tourism accommodation network.

Initially, tourism in Quebec was restricted to the traditional French-Canadian elite of the time, which had a certain amount of leisure time and money at its disposal. A resort first opened in Kamouraska, in the Lower St. Lawrence, following by others near Quebec City and Montreal (Cap Rouge, Beauport, the slopes of Mount Royal). Additional facilities were soon built to accommodate the wave of American, British and English Canadian tourists who arrived in Lower Canada by stagecoach or steamer. These establishments consolidated the network of existing inns. As in Europe, however, tourism did not become a major activity in Quebec until after 1850, with the development of a wealthy and influential English-speaking middle class in control of the continent's industrialization. This was the golden age of the holiday resort, with prestigious hotels and villas in the grand style dotting the landscape in La Malbaie, Pointe-au-Pic, Cap-à-l'Aigle, St-Irénée, Cacouna, Métis, Tadoussac and Roberval. Tourists would sometimes spend the entire summer at these resorts, all of which were accessible by railroad. In the Montreal area, resorts initially developed along the banks of the St. Lawrence, and subsequently spread all around the island. At the turn of the century, the Laurentians and the Eastern Townships began to experience the same type of growth. While the urban population of Montreal did make brief excursions to the surrounding area, such activity does not seem to have resulted in affordable and suitable accommodation for this social group. "Religious" tourism probably

Table 2
Development of Tourist and Social-Tourism Accommodation In Quebec
1800 - 1982



did more in this regard, if we consider the crowds that were already flocking to Ste-Anne-de-Beaupré at this time.¹⁵

It was also the clergy that built the first summer camps (Les Grèves, in Contrecoeur) for the children of the urban working class in 1912, "(Trans.) in order to protect Montreal children, especially those from poor families, from the multitude of dangers to which they are prey during the summer holidays."¹⁶ We are all aware of the success enjoyed by these camps, of which there were hundreds throughout Quebec and which accommodated over 2,000 children around 1950. With the advent of the Quiet Revolution, they underwent a change of name and a change of spirit. No longer under the control of the clergy, the 233 camps diversified their clientele and began to accommodate families.

Another type of holiday accommodation underwent a gradual transformation after World War I, as automobile travel, urbanization and disposable income increased. This was the summer cottage. In 1941 there were over 28,000 cottages in Quebec,¹⁷ most of them clustered in and around resort areas. In the sixties, this type of accommodation expanded to all areas of Quebec, with high concentrations around the Laurentians and the Appalachians. It was available to all social classes, but was preferred by the middle and working classes, which were perhaps striving to emulate the upper classes.¹⁸ To be sure, the process of social stratification in recreation, argued by Touraine, must have played a key role. However, other factors came into play, including those that spurred an interest in camping after World War II: the appeal of the outdoors, the company of other people, and a certain wanderlust that was perhaps not shared by the more sedate vacationer.¹⁹ By the end of the sixties, the summer cottage had become a mass phenomenon, and this type of social-tourism facility - or at least its "software" version - is still the most accessible to the majority of people, although automobile ownership is a prerequisite.

The post-war hotel industry was also able to accommodate an increasing number of vacationers, primarily in squalid cabins that have now disappeared, but also in hotels, motels and lodges that tried to evoke the memory of the luxury hotels of a bygone era. As

we have already stated, the only criterion for including commercial tourist accommodation in this study is its financial accessibility to the middle and working classes or to specific clienteles (families). However, the rapid - and welcomed - expansion over the last two decades of deluxe hotels owned by multinational chains such as Sheraton, Hilton and Holiday Inn has greatly reduced the number of moderately priced rooms.

Hunting and fishing clubs and outfitting services, located outside the populated regions and resource areas and created over a century ago for the enjoyment of the affluent middle class, have done little to expand the network of social-tourism accommodation. Until the creation of the "zones d'exploitation contrôlées" (controlled harvesting zones), or ZECs, in the seventies, private clubs accounted for 87 percent of the hunting and fishing territory accessible by land, with a membership that made up less than five percent of the regional population. The figures for the number of camps are the for most part available, but we would likely find them disappointing. The division of public lands carried out by the Ministère de l'énergie et des ressources may alter the situation to some degree. We will not comment on outfitting services, whose financial accessibility is extremely limited. To summarize, the post-war years saw the following developments:

- 1) The marked expansion of some types of tourist accommodation for the upper middle class: hotels, second homes, and hunting and fishing clubs.
- 2) The expansion of charity holiday facilities (summer camps) run by the clergy.
- 3) The rapid growth of a commercial but popular type of tourist facility: the campground. Over the last twenty years, campsites and cottages have skyrocketed in popularity, but have always been privately run. The Quiet Revolution of the sixties may have resulted in an impressive number of social measures, but none of them concerned recreation. Government and unions were too busy attending to more urgent areas that had been neglected for too long. It was only in the following decade that the government became involved in this sector in a purposeful way, by:

- providing financial assistance to family camps, which were beginning to appear
- providing financial assistance to youth hostels and outdoor centres
- supporting holiday farms
- creating the Société d'aménagement de l'outaouais (SAO), thus paving the way for the VVFs
- creating the ZECs
- creating a recreation department after extensive consultation - establishing an interdepartmental committee to study the feasibility of VVFs in Quebec
- sending numerous missions to study the VVF model in France.

At the same time, the movement for affordable recreational facilities became organized and pushed for change, with the following results.

- 1) The Groupe ressources-vacances sites (GRVS) gave technical support to Montreal working-class groups searching for holiday sites and facilities suited to their needs.
- 2) These groups organized and became the Movement québécois des camps familiaux (1981).
- 3) The Société Vacances-Familles opened up the field of social tourism by setting up an increasingly diversified network of facilities, including cottages, hotels, farms, student residences, bed-and-breakfast establishments and inns (1971-82).
- 4) The Confédération des loisirs du Québec (CLQ) and the Regroupement des organismes nationaux de loisir du Québec (RONLQ) stepped up their activities and proposals for the expansion of social tourism (1970-1982).
- 5) The Groupe de ressources en tourisme social was created (1982).
- 6) Agricotours was created jointly by the Union des producteurs agricoles (UPA) and the Ministère de l'agriculture.
- 7) Educational institutions were opened for use as tourist accommodation.
- 8) Many regional groups expressed an interest in applying the VVF model in their regions.

Tourist travel thus underwent its own "quiet revolution" in the seventies. Whether this movement can last through the eighties and lead to the development of an adequate social-tourism accommodation network by the nineties remains to be seen, but the recently released report on the consultation regarding the possible introduction of the VVF model in Quebec²⁰ gives us an idea of what is likely to happen.

Toward a Consolidation of the Existing Network, With or Without VVFS

For the last twenty years, Quebec has been sending missions and delegations to France to study the VVF concept with a view to applying it in this province, and the net result has been a series of reports that have been left to accumulate dust. Finally, as a first concrete step, the government released its Livre blanc sur le loisir au Québec (white paper on recreation in Quebec) in which we read: "(Trans.) Consequently, the government plans to support and encourage the development of a network such as villages-vacance-familles (VVF) and the consolidation of youth hostel networks and outdoor centres.²¹ In January 1980, an interdepartment committee was formed which submitted a proposal in April 1981 and heard responses from the industry until the following autumn. Its report, released in July 1982, describes the reactions of about 26 agencies that had presented written submissions and had attended public consultations. There must have been a great deal of brainstorming in the world of recreation and social tourism, a phenomenon which Bellefleur and Levasseur might define as characteristic of the participating model despite the technocratic origins of the process. Only time will determine the accuracy of this supposition.

Let us instead glance at the report's conclusions, which examine the areas in which the OPDQ-MLCP report and industry opinion agree and the areas in which the two disagree. The report also settles the issue of the VVF model and its application in Quebec.

The major areas of agreement with the OPDQ-MLCP report

It is agreed that Quebec has inadequate and insufficient facilities and services for family recreation and travel.

Community-type family holidays have a degree of potential and should be investigated.

It is agreed that family holiday centres should stress group activities, participation, and multiple and varied use of the facilities.

The state will have to make a significant financial contribution toward the establishment of suitable facilities, and may even have to provide assistance to individuals to make the VVF concept work. This type of aid should not be limited to the VVFs, but extended to existing networks as well.

The MLCP will probably have to assume some responsibility in the areas of planning and management support.

The main reservations expressed

Below are the main reservations expressed about the report of the joint OPDQ-MLCP committee and the specific nature of the subject under discussion.

Concerning the joint OPDQ-MLCP committee report:

Most participants felt that the Quebec travel and recreation network's potential in the area of family accommodation had been underestimated and should have been studied in greater depth.

The concept proposed

Participants deplored the almost exclusive reliance on foreign models. They argued that the concept of a holiday village should be more tailored to Quebec society and reflect local habits and customs with regard to recreational activities and facilities; even the name was considerable unsuitable.

The committee's proposal to create a provincial corporation that would assume responsibility for setting up a management structure for testing the concept was rejected.

Concerning the specific nature of the subject under discussion:

Most of the participants would have preferred that the government, instead of holding consultations on a model for community-type tourist accommodation, had invited comment on the broader issues of a policy on social tourism focusing on family access to recreational activities, the availability of leisure time, and the consolidation of existing facilities and services.

Test Period

Despite their reservations, and if the MLCP wished to move forward in the matter, most participants agreed it would be preferable to test the VVF model, in particular the "scattered" holiday village, prior to any final decision.²² (Trans.)

Having read the arguments against the proposal, carefully worded so as not to appear strident, an impartial observer is nevertheless left with a positive impression of the consultations and the report. He might question, however, the almost unanimous decision to test the VVF model if he closely examines column 4.2.1 of appendix 2. Yet few participants rejected the proposal to test the concept of the scattered holiday village, which is defined as (Trans.) "a collection of various types of holiday accommodation spread over a rural area encompassing one or more municipalities."²³

The argument for consolidating and adapting existing facilities for use as family accommodation is clearly made and difficult to refute. Why, asks the opposition, risk that MLCP cut the funds it has contributed for the past ten years in favour of an extremely costly imported model - the typical village, in any event - that has no guarantee of success? Certainly, the French experience with the transition from family-run establishments to VVFs only reinforces this apprehension.

If the debate is extended to include all the social-tourism facilities discussed above, the solution is clear: make more rational use of existing types of accommodation that have a low annual occupancy rate, that is, cottages, inns, hotels, bed-and-breakfast establishments, farms, student residences, and so forth. Private cottages in particular, given their great number in Quebec, should provide a higher proportion of the accommodation,

although 90 percent of the owners are unwilling to make them available.

The scattered village might be a good starting point for the process, and may prove a worthwhile experiment not only for the 167,000 Quebec tourists, but also for thousands of other participants who might in future wish to adopt such a model on high-potential municipal lands. However, the MLCP must show the necessary political will, and provide funds for GRTS studies and possibly for the development of some basic infrastructures and activities needed to implement one or more clearly defined projects over the next five years. Let us hope that these are not just pipe dreams.

Acknowledgements

I wish to thank the individuals and organizations that responded so willingly to my requests for data needed to write this article. I can only deplore, along with many of my colleagues, the fact that there will be little direct benefit from their investment in time and energy, for reasons which will be explained in more detail later in this text.

I also wish to thank the following:

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Marcel Lemay of the Service de l'hébergement de la Société Vacances-Familles

René Bastien of the Association des camps du Québec

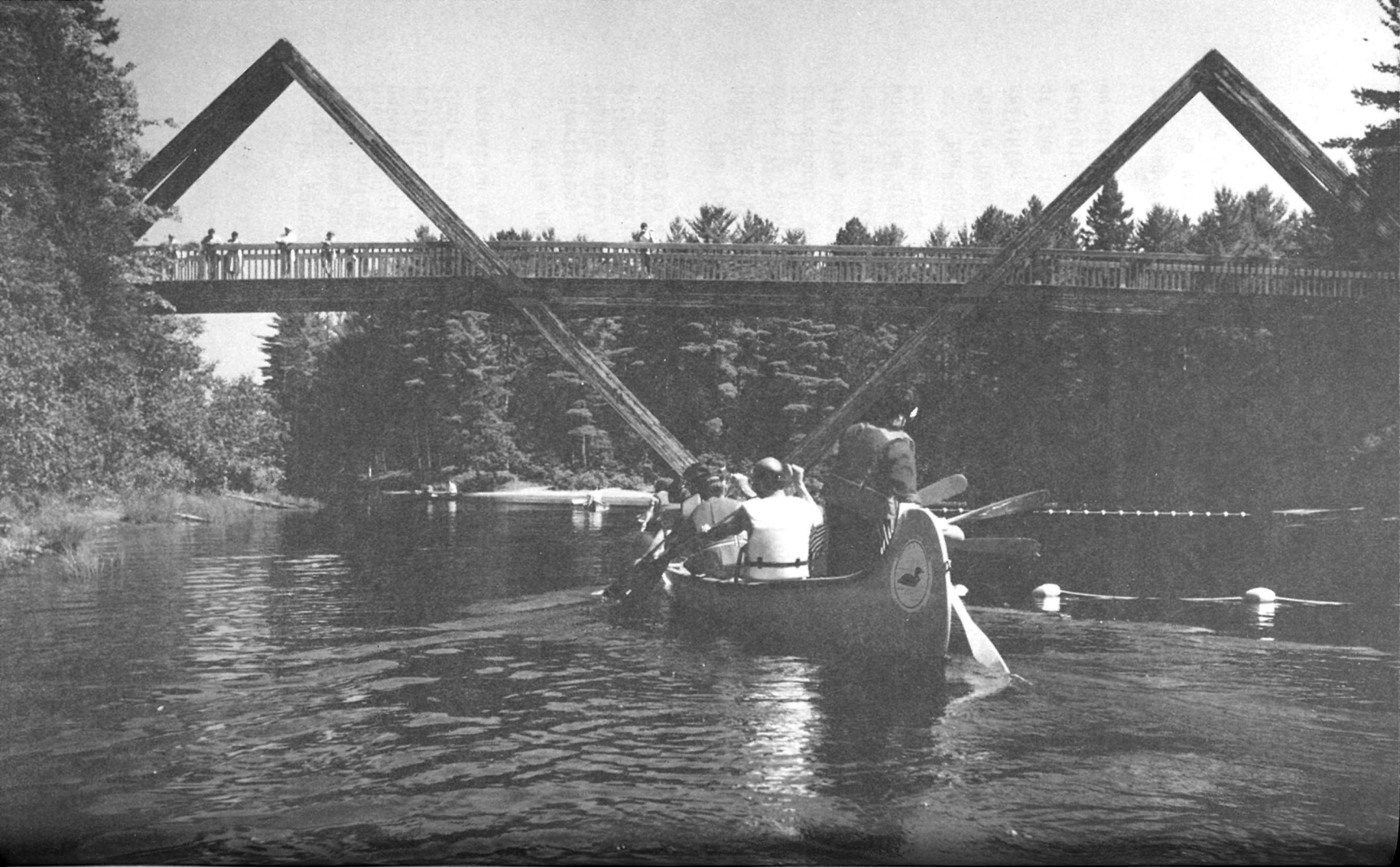
Guy Cloutier of the Service de l'agrément (Ministère des affaires sociales (MAS)

NOTES

1. Translator's note. "Social tourism," used both as a noun and as an adjective in this text, is the term preferred by the client; some possible alternatives are "affordable (or "moderately-priced") tourist accommodation."
2. We should not overlook, however, a number of other important events, such as the symposium on social tourism held in March 1982, organized by the Movement quebécois des camps familiaux and the Groupe ressources-vacances sites.
3. Michel Bellefleur and Roger Levesseur, Loisir Québec 1976, Les dossiers Beaux Jeux 1, Ballarmin - Desport, 1976.
4. Based on the administrative regions.
5. Patrick Cluzeau and Gilles Meunier. Une analyse du Réseau d'établissement d'accueil et d'hébergement du Québec utilisables pour des vacances familiales. Technical document No. 2, "L'Etat de la Situations," from the working document prepared for the Comité Interministériel sur les villages-vacances-familles (VVF). MLCP. Quebec City, 1980.
6. Editors' note. Table 1 "Capacité du réseau d'hébergement socio-touristique au Québec par régions administratives - 1978" which accompanied the original paper has not been included in the Proceedings.
7. This unit sometimes refers to the number of beds and sometimes to the number of places. While these three figures may vary, the differences have little significance for this type of establishment. The unit is the "tourist day" or "journee de sejour," a statistical unit that corresponds to one visitor spending one day at a given tourist location. From the Vocabulaire du tourisme anglais-francais. 1979. Ch Dupont, Linguattech, Montreal, 1979, p. 92.
8. Translation of "indice de la distribution des équipements/ établissements par rapport à la repartition de la population," term used in the MTCP's Bilan statistique 1977-1978/79, Quebec City, 1979; see Table 61 on p. 78.
9. $Tf(t) = \frac{L \times 100}{P}$, where L = number of beds, and P = population.

See R. Baretje and P. Defert, Aspects économiques du tourisme, Collection L'Administration nouvelle, Burger-Levreault, Paris, 1972, ch.2.

10. The French name, "Sagamie," is the new name suggested for the Saguenay-Lac-St-Jean area.
11. Bellefleur and Levesseur, p. 68.
12. Ibid., p. 38.
13. As defined by Gérald Fortin in "Participation et société," Economies et Sociétés. Vol IV, No. 19 (September, 1970.), p. 1603 and following.
14. This rather daring foray by a geographer into the realm of sociology is meant only as a guide and does not claim to be authoritative; the reader should use it accordingly.
15. Data obtained from "Les grands traits de l'évolution du tourisme au Québec," by Roger Brière in Bulletin de l'Association des géographes de l'Amérique française, No. 11 (September, 1967), p. 83 - 95.
16. The words of the abbé Adélarde Desrosiers in "La colonie des Grèves," Loisir Plus, No. 61 (September, 1977), p. 22.
17. Figure given by R. Wolfe in La villégiature au Québec, J-Pierre St-Amour, Editions Asticou, Hull, 1979, p.22.
18. Alain Touraine. La Société post-industrielle. Denoel, Paris, 1969.
19. Denis Poulet. "Le camping en 1980," Loisirs et sports, No. 94 (June, 1980), p. 8-11; Nos. 95-96 (July-August, 1980), p. 36-41.
20. Government of Quebec, MLCP, Bilan de la consultation concernant les possibilités et conditions de développement de la formule (VVF) Villages-Vacances-Familles au Québec. Quebec, July, 1980.
21. Government of Quebec, On a un monde à recréer. Livre blanc sur le loisir au Québec. Claude Charron, ministre, 1979, p. 58.
22. Bilan de la consultation, p. 64-66.
23. La formule Village-Vacances-Familles (VVF) au Québec, 1980, p. 96.



Outdoor Centres in Quebec

Luc Morel

In connection with the National Parks Centennial, it is heartening to note that the existence of outdoor centres in Quebec is recognized as a vital element in the development of Quebec's natural heritage. Although the history of these outdoor centres is relatively recent, the rapid evolution of these establishments and their dynamic character leads us to believe that collective recreation has a promising future.

While national parks occupy much larger areas, there are nevertheless few of them. Conversely, outdoor centres occupy smaller areas, but they are far more numerous. Both are concerned with recreation, education and of course, conservation - but according to a different set of priorities.

The following report attempts to describe outdoor centres in Quebec as they exist and to define their collective future. If there is growth in use of the Quebec outdoors, it is because it corresponds to a real need. This effervescence is a sign of vitality, but also suggests underlying thorny problems; any form of rapid evolution must be questioned to avoid possible chaos that would be difficult to repair at a later time.

The opportunity to reflect collectively on our actions and our future leads me to believe that we can build, by the year 2000, a healthier environment that is more centred on the recreational needs of the individual in terms of recreation, quality of life and ecological balance. Let us hope that we are not mistaken in the way we attempt to build our future.

Principal Facts

DEFINITION OF OUTDOOR CENTRES

The provincial government's support program for outdoor centres defines outdoor centres as visiting places in the natural environment that constitute an integrated series of human and physical resources. Outdoor centres provide for a variety of users, offer animation and programs in a recreational situation that are centred on the relationship between people and nature.

PIONEERS

The Auberge du P'tit Bonheur, at Lake Quenouilles in the Laurentians, was the first to develop activity and service programs which later became characteristic of outdoor centres. This first outdoor centre came into being in the early 1960s.

Jouvence, in Bonsecours (in the Eastern Townships) and the Pohénégamook outdoor centre in Estcourt (in eastern Quebec) then followed. They began their operations in the late 1960s and the early 1970s.

Originally a holiday camp, Jouvence was transformed progressively into an outdoor centre. Pohénégamook was developed from scratch on the basis of the reflections and concerns of the then leading proponents of the outdoor concept. Both were models in terms of operation methods and management experiences of vacation centres.

NEW ARRIVALS

Ten or so other outdoor centres appeared in various parts of Quebec around 1975, thanks largely to the funding program of the Haut Commissariat à la Jeunesse, aux Loisirs et aux Sports, which was the predecessor of the present ministère du Loisir, de la Chasse et de la Pêche (MLCP).

Finally, more units were added to the network in the early 1980s. There are now 19 outdoor centres recognized and partially funded by the MLCP.

CONSOLIDATION

In the early 1970s, outdoor recreation was growing in popularity; accordingly, the Fédération québécoise du plein-air was established to consolidate outdoor centres and federations as well as several other organizations concerned with the development of the outdoors. Subsequently, around 1977 - 1978, the FQPA became the Société québécoise du plein-air (SQPA). The SQPA pursued the same mandate, except that its membership was made up of outdoor centres almost exclusively.

In 1982 in order to publicize outdoor centres to a larger population bases, the SQPA created "Réseau Plein Air" (outdoor network). The mission of this agency is to publicize and promote outdoor centres. Réseau Plein Air also acts as a travel agent specializing in this field.

In September, 1984, the SQPA and Réseau Plein Air were merged into one corporation bringing together outdoor centres recognized by the MLCP.

This agency promotes the interests of its members, provides them with administrative services, develops a common market strategy for the entire network and offers an information and reservation service to the public.

GOALS AND OBJECTIVES OF OUTDOOR CENTRES

In light of directions given in the white paper on recreation published in 1979 by the MLCP, the government and its partners have the following general goal: to provide the Quebec population as a whole with the opportunity to visit the natural environment and practice therein a variety of outdoor recreation actions and activities.

With regard to outdoor centres specifically, the following objectives are set out: outdoor centres are perceived as establishments which facilitate the development of outdoor recreation, particularly for adults, families and various socio-economic groups.

Beyond these prime objectives, individual outdoor centres can emphasize one or more of the following basic objectives: for some, outdoor activities and recreation make up a large part of the programs offered; for others, environmental awareness and education are more central to the activities and specific nature of the organization. Still others focus primarily on the conservation, observation and knowledge of the natural environment.

All of these establishments have one common link: they offer to adults, families and groups of all backgrounds, accessibility to nature in a unique package providing accommodation, food, animation and equipment.

In more specific terms, the goals of outdoor centres are as follows:

- to serve a diversity of users, with priority given to adults and families
- to develop and offer programs focussing on time spent in the natural environment, with the primary objective of developing the relationship between the individual and nature
- to offer an animation service as a support for persons engaged in outdoor recreation activities
- to facilitate, among users, the development of ecological awareness and practices
- to develop, manage and use natural space rationally and to promote such space for outdoor recreation purposes
- to establish and manage reception, accommodation and restaurant facilities and to encourage the public to visit and stay in the natural environment.

GEOGRAPHICAL LOCATION

Figure 1 shows the outdoor centres in Quebec recognized and subsidized by the MLCP in 1984.

UNIQUE PROGRAMS

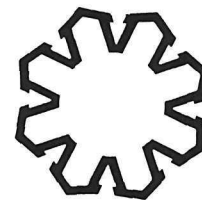
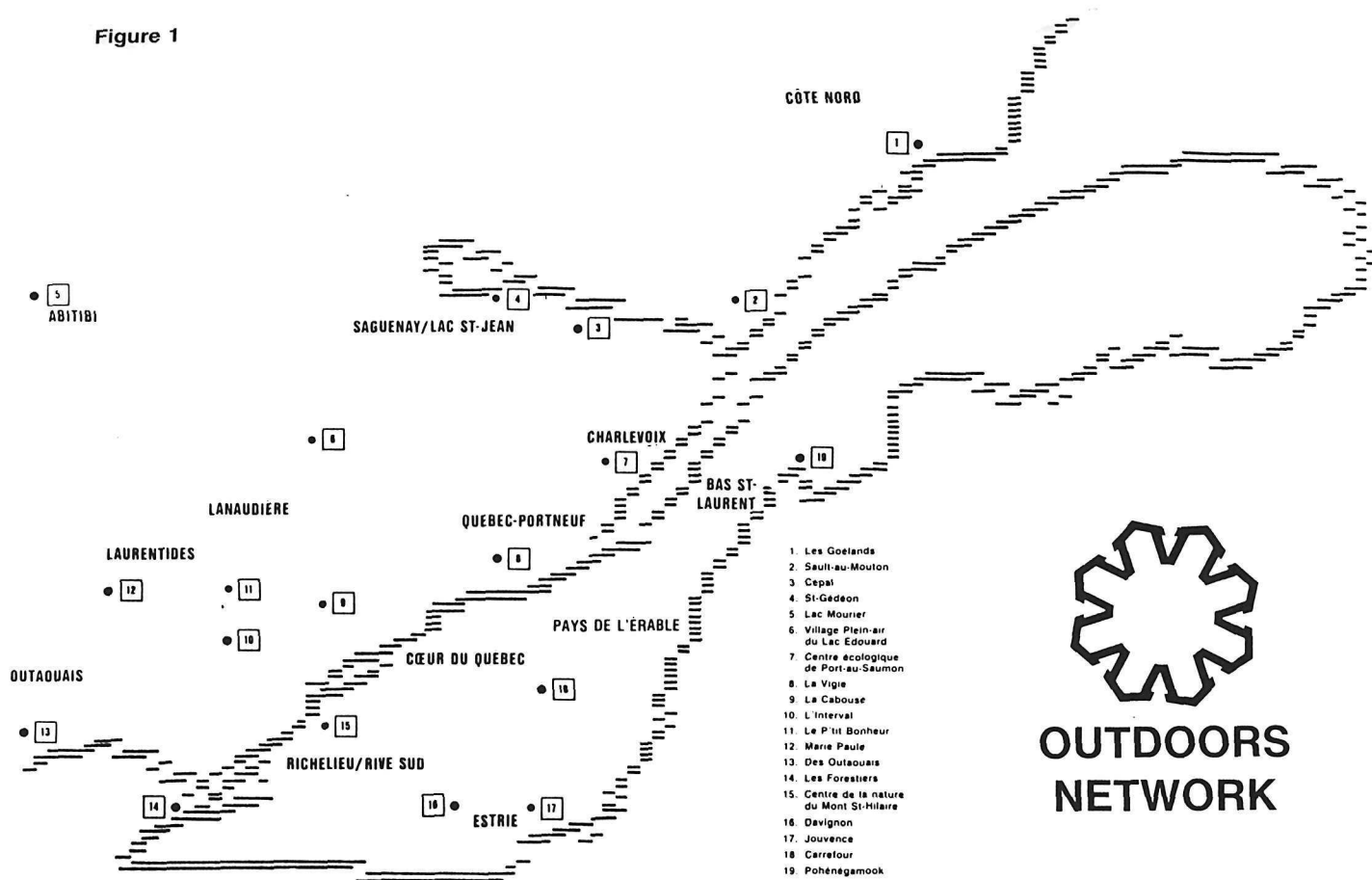
The manner in which outdoor centres are used in Quebec is unique to the province. No organizations of this type exist anywhere in Europe, the United States or other Canadian provinces. Outdoor establishments that bear similarities to ours exist, of course, but the majority cater to organized groups or are specialized in offering special training assignments. Not one can claim to offer visitor programs for adults and families such as those found in the outdoor centres of Quebec.

Some examples of outdoor centre programs will help to shed some light on these circumstances.

In winter a multitude of rare, unique experiences are offered to participants during their stay: trail skiing and guided excursions, night skiing, snowshoeing and winter nature interpretation, winter camping and forest survival, astronomy for the general public excursions on ice or loose snow, cross-country skiing excursions with dog sleds, winter bird watching, trapping, horse-drawn sleigh rides, observation of wild animals, skating on lakes or rivers and under the stars, expeditions lasting several days, snow surfing, snow sailing, igloo construction, building of shelters and many other activities limited only by the degree of inventiveness of animators.

In summer vacationers can enjoy hiking either solo or with the aid of a naturalist, observing wildlife in its natural habitat, freshwater or deep-sea fishing, canoeing on lakes or rivers, sailing, sailboarding, kayaking, climbing, speleology, geology, natural sciences of all types, picking wild fruit, camping, orienteering with maps and a compass, archery, tours of the natural environment, sensory and discovery games, varied excursions and

Figure 1



**OUTDOORS
NETWORK**

expeditions, bicycle touring or cross-country bicycling, water sports and many other activities.

These programs are designed to initiate people to the practice of outdoor recreation and to enable them to discover and respect nature. They require little skill and are primarily designed with accessibility in mind, in the broadest sense of the word, rather than sports achievement.

Main Problems

SUBSIDIZED CENTRES

There are 19 government subsidized outdoor centres. Such government recognition and support came about with no real planning, and as a result, have created problems such as the degree of funding provided by various establishments, and discussions on the relevancy of a given establishment in a government network. For the present we must live with the situation and hope that we can eventually benefit from greater coherence between criteria for acknowledgement proposed by the government on the one hand, and what actually occurs in outdoor centres on the other.

The MLCP provides two types of subsidies:

- annual operating subsidy: this assistance represents approximately 15 percent of the financing of outdoor centres. The remaining 85 percent of financing is provided by the operators themselves - which constitutes a very respectable level of performance
- development subsidy:
 - a) development of physical resources through capital subsidies (buildings, equipment, renovation, improvements). Such assistance, when granted, generally covers between 90 and 100 percent of capital costs;
 - b) development of expertise through assistance in resource management (training assignment) or support at the promotional level. Generally such assistance can cover

up to 60 percent of the cost of activities and, in certain special cases, assistance may cover the total cost.

NON-PROFIT CENTRES

The 19 centres in the Réseau Plein Air are non-profit corporations. Other establishments have been identified as outdoor centres and operate on a non-profit basis without MLCP subsidization. There are many reasons for this exclusion: for example, some establishments do not meet certain criteria set by the MLCP; moreover, the funds set aside to support centres have been static for nearly three years - this eliminates the possibility of accepting other establishments because the already meagre subsidies, granted currently to those already acknowledged, would be reduced proportionately. Such government assistance is certainly needed by the majority of centres to promote accessibility and thereby keep costs down.

PROFIT-MAKING CENTRES

Some private commercial operators manage similar establishments in the Quebec outdoors; however, they do not have a rallying point. Here again, we will have to determine how these establishments can fit into the outdoor tourism recreation context and eventually benefit from it.

VAGUE IMAGE: POINTS OF RESEMBLANCE AND DIFFERENCES

The biggest weakness of the present network of outdoor centres is its image with the public, the media, associations or users themselves. Indeed, many citizens associate outdoor centres with children's holiday camps.

Outdoor centres came about spontaneously and issued from a variety of distinct organizations. For example, many outdoor centres were created from summer camps, training retreats, and religious communities' summer residences.

Many others came from old youth hostels, which were oriented much more towards tourism. Others were created from ecology or conservation centres. And still others were established from scratch to meet recreology and recreation needs.

Accordingly, in the public view an outdoor centre is variously a camp, a hostel, a conservation centre, a recreation centre. To correct this misconception and avoid confusing users, the network, as a whole, has tended to become more homogeneous and adopt a common view of the outdoors. Although each centre will retain its specific character, greater emphasis will be placed on establishing a global image.

There are a great many points of resemblance:

- rich natural environment
- regional character
- varied types of stays
- unique experience
- affordable prices
- specialized and competent animators
- enjoyable social exchanges
- all-inclusive vacation format
- year-round operation.

There are even more differences:

- different regions
- visitor capacity varying from one establishment to the next
- quality of accommodation
- outdoor activities and services available
- costs of stays
- specific character and features of the natural environment.

FINANCING

Aside from subsidies and operating income, which accounts for a large share of self-financing, most establishments benefit from employment programs under the various governments. Moreover, each also has its own source of funding: donations, membership fees, beneficial organizations, sponsors, service exchanges, and so on.

INTERVENING OPPORTUNITIES

Because of the popularity of the outdoors, many facilities catering to nature enthusiasts have developed over the years. Competition, if it can be so stated, is very strong and so it is difficult for each interest to attain a sizable market share. What are these intervening opportunities?

- national parks
- provincial parks
- educational forest centres
- wildlife areas
- controlled harvesting zones
- holiday camps
- hotels, inns and so on, offering certain active vacation programs.

Each of these interests understands that people need access to nature, that they need to practice activities and require visitor facilities to do so. It goes without saying that government-run establishments have equipment, personnel, premises and facilities beyond the ordinary because of excellent means of funding.

Private non-profit organizations, on the other hand, have much fewer funds and must work very hard to achieve a level of quality comparable to that of government establishments.

CONSERVATION VS. RECREATION

As in national parks, conservation is presently a real problem in outdoor centres. In fact, because their areas are generally smaller than those of parks, centres find it difficult to preserve portions of lands they control. Certain recreation activities cause deterioration of land through overuse. Some centres, such as the Centre écologique de Port-au-saumon and the Centre de conservation de la nature du Mont St-Hilaire, for instance, have developed a conservation strategy corresponding to their primary vocation - ecology.

Each centre must therefore establish a strategy to achieve a peaceful coexistence of both vocations: recreation and conservation.

COMPLEMENTARITY AND DUPLICATION

A sustained effort must also be made to counter the effects of duplication between establishments and to increase complementarity. There is much to be done in this sense.

Government Policies

PIECEMEAL DEVELOPMENT

As mentioned elsewhere in this report, government support for outdoor centres came about with no great planning - as human and financial resources became available, in response to governmental recreation policies, and to more or less specific local needs for assistance to provide more adequate services.

The aim was to establish centres in all areas of Quebec and to find operators that would be reliable in terms of cost-effectiveness and continuity.

Acknowledgement criteria were developed, but were not consistently applied for procedural reasons and because of time limitations.

THE ADVENT OF SUBSIDIZATION

Around 1974, the Canada-Quebec Agreement made it possible for all outdoor centres to build or renovate facilities in order to improve their capacity to welcome visitors. Moreover, the MLCP was given a program budget to distribute to the establishments, and the granting of an annual operating subsidy stems from this program.

Conversely, the amounts of subsidies awarded to outdoor centres have not been indexed to present realities; the status quo has been

maintained for three years and financial difficulties have become more acute each year because of rising operating costs.

Furthermore, some establishments did not receive start-up subsidies and have a certain amount of catching up to do in terms of equipment. We hope that they can benefit from a new federal-provincial agreement to improve their facilities.

Citizens' Movements

NO CITIZENS' ORGANIZATION

Users of Quebec outdoor centres unfortunately have no province-wide organization they can adhere to for protection. Yet many organizations are concerned with the environment and environmentalists. This situation begs the question: is the outdoors rather a way of life than a form of culture to be defended?

ASSOCIATIONS OR MEMBERS

Many outdoor centres have formed user associations that participate in the evolution of the establishment. Others have developed a membership which carries significant clout in terms of survival of the centre.

The outdoor centres which they use could therefore provide outdoor enthusiasts with a special rallying point to ensure their representation.

Development Strategies

CHOICE POSITIONING

Based on a number of surveys, including a socio-economic survey of outdoor centre users in Quebec, it is interesting to note that

the product pleases its users and is generally rated quite highly in terms of satisfaction. The product offered is unique to Quebec, it is accessible and adequately meets the needs of the modern world: recreation, relaxation, new experiences, low-cost, access to nature, environmental awareness and so on.

Each establishment is capable of attaining this choice position, but it is difficult to express in global terms. A communication action undertaken last year in cooperation with the MLCP constitutes a first step towards the idea of a common collective image. Outdoor centres must be sensitive to the recreation and vacation needs of the population to be able to adequately meet those needs. In this sense, the years ahead will determine the survival and development of outdoor centres as a unique vacation formula.

THE COMING TOGETHER OF THE PUBLIC AND PRIVATE SECTORS

More and more, the resources of the government and the private sector will have to be pooled to the greater advantage of both parties. With funds becoming harder to come by, people will want their investments - be they from taxes, subsidies or direct costs - to be productive. Unfortunately, we have not as yet understood that spending, for whatever purpose, can be as uncalled for in the public sector as it could be in the private sector. We therefore must increasingly put together our resources - public and private - and we must benefit from the interchange of our reciprocal expertise.

CONCERN FOR CONSERVATION AND LEISURE

We have said it before, outdoor centres must think about the role they have to play in the conservation of the natural environment, and their particular place in environmental education.

Nature must remain accessible, but not at any price.

Parks have created conservation and leisure activity areas. One of these days, outdoor centres will most probably have to do

likewise if we want to ensure the enhancement of the natural environment.

BEING BETTER KNOWN AND MORE ACCESSIBLE

The challenge for outdoor centres in the next few years is to consolidate their facilities and, in particular, to raise their public profile. They must become more readily accessible to all levels of society.

These centres will not develop further if the number of users becomes stagnant.

In closing, it should be noted that outdoor centres, because of their educational approach, have a role to play in making our heritage for tomorrow a rich legacy for our children.

We therefore wish to participate actively in the present and future debate to make the great outdoors occupy an important place in the daily lives of Canadians.

Safeguarding Endangered Species in Quebec

Jacques Prescott

A Global Problem

In 1788 scientists discovered a new species of Anatidae: nesting in Labrador and on the rocky islets in the Gulf of St. Lawrence, the Labrador duck (Camptorhynchus Labradorium) wintered in large numbers along the east coast from Nova Scotia to New Jersey. Within thirty years the islands where these ducks nested were swarming with hunters who killed the birds and harvested the eggs, thereby precipitating the rapid disappearance of the species. The last known specimen was killed in 1875 in the vicinity of Long Island (Félix 1977).

The extinction of animal and plant species has been a part of the evolution of life on earth since the planet's beginnings some 3.6 billion years ago.

Over the millenia species have appeared and disappeared according to their ability to adapt more or less rapidly to changes in the environment. Palaeontologists estimate that more than 1.6 million species of birds have become extinct over the ages, as compared with the approximately 8,700 species that are known today. In fact, at least 90 percent of all species that lived on Earth are now extinct (Myers 1979). Why then should we be concerned about the disappearance of a single living species?

It is not so much the extinction of species that is a source of concern, but rather the significant increase in the rate of disappearance of living species and the causes of these disappearances. Between 1600 and 1900, when humans were learning to hunt more efficiently, one animal species became extinct every four years. From 1900 to 1975, the rate of extinction of species increased to about one per year. Today, biologists estimate that

humans destroy from one to three species daily! (Lavoie 1984a; Versteeg 1984).

The International Union for Conservation of Nature (IUCN) estimates that 25,000 plant species, 1,000 species of vertebrates and 300 species of invertebrates are endangered throughout the world, not to mention all those species about which we know practically nothing.

Although most of these victims are from the tropics, many such extinctions could occur in North America. In the United States alone, scientists estimated in 1979 that 2,614 plant and animal species were endangered. In Quebec the number of vulnerable or endangered wildlife species may be estimated at 500 without risk of error (Lavoie 1984b).

Human Causes

The main causes of this situation are attributable to human activity: modification and destruction of natural habitats, over-exploitation, introduction of non-native species and pollution of ecosystems.

HERE ARE A FEW EXAMPLES

Modification and destruction of natural habitats are the first causes of extinction of living species. The destruction of tropical forests is a striking example. Ecologist Norman Myers recently observed that 14 hectares of tropical forest disappeared from the globe every minute. Since this biome contains more than two-fifths of all known life forms on the planet, it is not difficult to imagine how many species have disappeared and continue to disappear forever as a result of this excessive deforestation (Myers 1984).

In Quebec alarming declines have been observed in the populations of many animal species following the deterioration of their habitat.

The striped bass, which until 1960 was the focus of intense and lucrative sport and commercial fishing, is presently considered endangered (Beaulieu 1984). The decline in stocks of this fish species is attributed to the contamination and adulteration of its spawning and breeding grounds in the St. Lawrence as a result of canalization works for the St. Lawrence Seaway (1954-1959) and the construction of the Expo 67 islands.

Dredging of the St. Lawrence channel has also affected Atlantic sturgeon stocks to the detriment of the commercial fishery (Tardiff 1984a). It is also believed that construction of dams on St. Lawrence tributaries is in part responsible for the decline in Atlantic salmon stocks by preventing breeding fish from reaching their spawning grounds.

In the Gaspé, changes caused by logging, mining and highway construction in the habitat capable of supporting caribou have led to the decline of this species (Trépanier 1984a).

Overexploitation and excessive commercialization are another cause of the disappearance of animal and plant species. The North American passenger pigeon, which numbered in the millions in the nineteenth century, was wiped off the face of the Earth by unrestrained hunting (Hopkins and Blanc 1982).

The great auk and the Labrador duck suffered the same fate, while the wapiti or American elk had disappeared from Quebec by 1830 for similar reasons (Felix 1977; Banfield 1974).

A study conducted recently on behalf of Fisheries and Oceans Canada attributes the initial decline in the St. Lawrence beluga population to commercial hunting.

An estimated 14,500 white whales were caught between 1868 and 1963. It is therefore no surprise that this stock has declined from 5,000 individuals in 1885 to less than 500 in 1983 (Reeves and Mitchell 1984; Trépanier 1984b).

Commercial hunting is also responsible for the near-disappearance of the bowhead whale, the sperm whale, the blue whale and the humpback whale, which were formerly abundant in our waters. And what can we say about the present overfishing of Atlantic salmon?

Plants are not immune to this threat. Two and one half centuries ago, our ancestors came close to eradicating ginseng from our territory; this plant was highly prized for its medicinal qualities (Lamoureux and Dagenais 1984). Today, in the opinion of many botanists, we are performing a similar "feat" with another edible plant, the wild leek (Dagenais 1984).

The introduction of non-indigenous species is another cause - which we tend to underestimate - of the disappearance of species (UICN(IUCN) 1967). The recent history of parrots in the West Indies is a very eloquent example of this type of impact. When Christopher Columbus discovered America in 1492, the West Indies contained at least eight species of macaw, eleven Amazonian parrots and four parakeets. According to zoologist Cameron Kepler, at least 21 species and subspecies of birds have disappeared, among them 13 Psittacidae including all of the macaws and two amazonian parrots. The reasons for this decline are numerous, notably the destruction of forests and hunting; however, rats - the new predators introduced into the islands by man - were among the principal causes of this decline (Kepler, in Sitwell 1974).

The introduction in North America of the house sparrow in 1850 and the common starling in 1890 brought about considerable harm to the indigenous bird population. Aggressive and prolific, they became a threat to birds nesting in natural cavities and birdhouses. Their competition with the eastern bluebird, for instance, is in large part responsible for the eastern bluebird's near-complete disappearance from certain areas (Cayoutte and Grondin 1978).

Environmental pollution by toxic chemicals of all sorts is another serious threat to wildlife. The decline in the peregrine falcon population, and in the numbers of other raptors such as the osprey and the bald eagle, is attributable to the ill-considered use

of the insecticide DDT. This product accumulates in the body tissue of insectivorous birds and is found in high concentrations in the bodies of falcons that feed on such birds. DDT and its byproducts upset the falcon's reproductive system by causing such problems as the thinning of egg shells, which break at the slightest pressure. Although the use of DDT has been banned in North America, many South American countries continue to use it without restrictions. Falcons that migrate as far as these latitudes or feed on birds contaminated by the pesticide continue to be affected by this toxic substance (Tardiff 1984b).

Certain researchers also blame the low reproduction rate of belugas on water pollution in the St. Lawrence River, particularly by mercury, PCBs and organochlorinated pesticides, which are extremely harmful even at trace levels in the aquatic environment (see Mitchell and Reeves 1984).

The aquatic environment is also strongly disturbed by acid rain; in our area, the acidity of precipitation can be 10 to 30 times the level considered normal. The decline in water pH levels has already killed the fish populations in hundred of lakes and could lead to the disappearance of certain vulnerable species.

WHY CONSERVE SUCH ENDANGERED SPECIES?

Before we even consider saving these victims of our carelessness, it is important that we ask ourselves why their survival is essential (in this regard, see Lavoie 1984a; Maldague 1983; and Zinger 1984).

First of all, flora and fauna have a universal value as components of any ecosystems (Maldague 1983). Plant and animal species are, in fact, closely interdependent within ecosystems, each occupying a place in "nature's economy." The elimination of even a single species generally leads to reactions that spread gradually throughout an ecosystem (Hopkins and Blanc 1982). While it is interrelated in the biosphere, human life is ultimately dependent on plants and animal life.

Living species are also of scientific value. According to Michel Maldague, we must first understand the ecological niche of each species before we can understand the balance of nature and make rational use of its resources.

Certain other values are attached to particular living species. A certain number of species, such as emblematic plants and animals, have played and continue to play a significant role in the cultural life of peoples. How sad it would be for a people to witness the extinction of the animal or plant that is their chosen emblem. Such is the possible fate of the American bald eagle and the lady's slipper, which is the floral emblem of Prince Edward Island.

The intrinsic uniqueness and beauty of each life form should also prompt us to conserve all forms of life. We cannot in all conscience allow even one of the 68 rare or endangered species of wild orchids which still grow in Canada to become extinct; neither can we remain insensitive to the slow disappearance of the peregrine falcon - that marvel of aerodynamics (Prescott 1984a).

The recreational value of wild flora and fauna should also not be overlooked. After all, is not wildlife in its most diverse forms at the origin of many outdoor activities (Maldague 1983)?

A vast survey conducted by Statistics Canada on behalf of the Canadian Wildlife Service revealed that, in 1981, some 83.8 percent of the Canadian population participated in an activity related more or less directly to wildlife. Such activities resulted in expenditures totalling some \$4.2 billion. These figures are particularly impressive in that they do not take into account commercial fishing and the \$25 million generated annually through the sale of furs to 40,000 Canadians. In that same year, one out of five Canadians made a trip or an outing for the express purpose of observing, photographing, feeding or studying wildlife, spending some \$2.1 billion in the process. One Canadian in ten was licensed to hunt, and these hunters spent a total of some \$1.2 billion (Canadian Wildlife Service 1983).

The economic value of wildlife species is all the greater, according to Norman Myers, in that they are at the origin of countless commercial products: medicines, oils, resins, food, drinks, building materials, colourings, natural fibres, biological fertilizers or insecticides (Myers 1978 and 1979). The list of such products grows longer each day.

Because of its ecological, cultural, aesthetic, recreational and economic importance, wildlife is therefore intimately related to the durable development of human societies. Accordingly, it is essential that it be protected.

A Conservation Program for Everyone

Safeguarding the diversity of living species is dependent on the application of a four-point strategy, the success of which ultimately hinges upon the involvement of each citizen.

CREATING PUBLIC AWARENESS

According to the Statistics Canada survey mentioned previously, 75.5 percent of Quebecers and 82 percent of all Canadians believe in the importance of protecting endangered species. This positive attitude stems from the improved awareness of Canadians toward the ecology and the quality of life in general.

In recent years, various agencies have conducted an increasing number of information and education campaigns focusing on environmental conservation. At the international level, for instance, UNESCO established the Man and Biosphere (MAB) Programme in 1971 and the International Union for Conservation of Nature (IUCN) published the World Conservation Strategy in 1980.

Nationally, the activities of the Canadian Wildlife Federation and the Canadian Nature Federation, to name only two, have increased considerably, reaching as many as half-a-million people.

In Quebec the recent creation of the Quebec Union for the Conservation of Nature (QUCN) has crystallized the awareness efforts

of many environmental groups. Various government actions, notably by the federal and provincial departments of the environment, support the activities of these agencies. In particular, we should mention the publication in the fall of 1984, by the Direction des réserves écologiques et des sites naturels (ecological reserves and natural sites service) of the ministère de l'environnement du Québec (Quebec department of the environment), of a series of reports on the safeguarding of biological diversity (Lavoie 1984a, b, c, d).

The Canadian postal service even contributed by publishing, between 1977 and 1981, a series of eight stamps depicting endangered species in Canada. Recently, several major private corporations, including the Canada Life Insurance Company, have lent their support to nature conservation programs. Will their example have a snowball effect?

LEARNING MORE ABOUT THESE SPECIES

The acquisition of scientific knowledge about vulnerable or endangered species and the dangers with which they are faced is another condition necessary for their conservation. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC), with the aid of the World Wildlife Fund and the Canadian Wildlife Service, sponsors studies on certain species considered vulnerable or endangered. By September, 1983, after six years of existence, COSEWIC had already produced 114 reports on the status of rare or endangered species and evaluated the status of 54 such species. Among the most endangered in eastern Canada are the Eskimo curlew, the peregrine falcon, the eastern cougar and the bowhead whale. In Quebec, the Association des Biologistes du Québec (Quebec biologists' association) to date has prepared six reports on the status of rare or endangered species (Prescott 1982, 1984b), while researchers at the Jardin Botanique (botanical garden) and Institut Botanique (botanical institute) of Montreal have published a list of rare vascular plants (Bouchard et al 1983). We must hope that these efforts will be continued by other researchers and encouraged by funding agencies.

RENEWING THE POPULATIONS OF ENDANGERED SPECIES

Once a rare or endangered species has been identified, it is essential that every effort be made to restore its population. Managers have three methods at their disposal: legal protection of the habitats of such species, regulation of trade in these species, and enlightened management of stocks of such species within and outside their natural habitat.

To that end Quebec has several legislative instruments available: the Ecological Reserves Act, the Wildlife Conservation and Development Act, the Parks Act and the Cultural Property Act make possible the protection of sites which are important for fauna and flora through the creation of wildlife sanctuaries or reserves, conservation or recreation parks, and historical or natural districts.

The following legislation may be invoked at the federal level: the Wildlife Act, the National Parks Act, the Migratory Birds Convention Act, the Fisheries Act, the Whaling Convention, and the Convention on International Trade in Endangered Species of Wild Fauna and Flora.

Several other Quebec laws, such as the Agricultural Land Preservation Act, the Land Management and Urban Development Act and the Environmental Quality Act, could also be used indirectly to safeguard our biological heritage (Gaudreau 1984).

All of these laws and conventions comprise the elements for the protection of endangered species, but have not proven very effective to date. In fact, current legislative measures do not provide protection for all categories of animals, notably invertebrates. Floristic species can only be protected by protecting their habitat and only when it is possible to create an ecological reserve or a conservation park. Moreover, there is no law to control trade in wild plants and the picking of their fruit and seed (CCRE 1981, p. 4). This situation has led to the Association des biologistes du Québec to point out on numerous occasions, the urgent need for

specific legislation on Quebec focusing on the protection of endangered species, similar to that in several countries such as France and the United States as well as in the provinces of Ontario and New Brunswick.

It should be noted, at this point, that Manitoba, British Columbia, Alberta, Yukon and Northwest Territories hunting laws contain provisions concerning the protection of endangered species (Versteeg 1984).

There is a glimmer of hope for Quebec in that the ministère de l'environnement prepared a complete file in recent months to justify an intervention strategy and a possible law on vulnerable and endangered species. Similarly, the Conseil consultatif des réserves écologiques (ecological reserves advisory council) made public, in 1984, a notice which it issued to the provincial minister of the environment, emphasizing the need to provide Quebec with such a legislative tool (CCRE 1981). Will they succeed in arousing the interest of legislators?

The renewal of endangered species populations also necessitates the implementation of monitoring and controlled exploitation programs, as well as clean-up programs for habitats damaged by pollution. The development of nesting areas and spawning grounds, the installation of nesting boxes and the construction of migration channels are all strong assets. The re-introduction of individuals into their original habitat is undoubtedly the most spectacular of such actions, although it does involve a certain element of risk (Kushlan 1980). We need only consider the peregrine falcon release program in Ontario and Quebec, and the program to release whooping cranes in western Canada.

The need to breed rare and endangered species in captivity makes it possible to anticipate that botanical gardens, zoological parks and specialized breeding facilities will have an increasing role to play in the reproduction and conservation of these species, while continuing to promote a greater appreciation of wildlife through their recreational and educational activities.

PREVENTING THE RARIFICATION OF VULNERABLE SPECIES

Such is the fourth element of our conservation strategy. It is important that we prevent the rarification of so-called vulnerable species in order to ensure that they do not become endangered. For species that are hunted or exploited commercially, such prevention, of course, involves the implementation of monitoring and controlled exploitation programs which take into account the reproductive capacity of such species more than the expectations of hunters or the needs of industry. We must learn to reap only the interest produced by renewable resources and not touch the capital. Recent experiences in beaver and snow goose management should serve as an example to us here.

Enlightened control of the exploitation of living species, however, does not solve the entire problem.

It is also essential that the deterioration and pollution of natural habitats be restricted and, in particular, that vast reservoirs of wildlife be constituted in the form of conservation parks, ecological reserves and sanctuaries.

What Does the Future Hold?

Acceleration of the extinction process among living species is an alarm which signals a global environmental crisis. Just as canaries once were used to detect deadly gases in coal mines, wild plants and animals today are among our most sensitive detectors of pollution (Environment Canada, p. 17) and of environmental deterioration (Newman and Schreiber 1984).

The loss of a single species, no matter how modest, can have major ecological, cultural and economic repercussions. As they disappear, wildlife species leave a clear field to more opportunistic species capable of exploiting the ecological niches that have become vacant. In the absence of competitors or natural predators, some of these species could multiply to the point of

becoming extremely harmful; such is now the case of rats, house flies and weeds (Myers 1984). Although we may have no immediate use for many living species, apparently insignificant plants and animals could suddenly become important for us; this has occurred in the past (Environment Canada, p. 19).

Although it presages a blank future from an ecological standpoint, the problem of the massive extinction of species is not insoluble for all that. Immediate action, however, is required. Will we commit the same mistake as our elders by making future generations responsible for picking up the pieces?

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Nature Interpretation Centres

Michel Drew

Preface

The purpose of this document is to review the nature interpretation centres in Quebec referred to from now on by the abbreviation NIC, and to reveal the problems inherent in their interpretative activities.

To do this, I must point out the fundamental difference between the sites or physical locations of NICs, where this activity takes place and develops, and the activity itself - the process known as "interpretation."

This nuance is fundamental, since the sites or physical locations where interpretation activity takes place are very heterogeneous in Quebec and are not related or coordinated in a system which covers them all. For example, the sites concerned are under various jurisdictions, both public and private, and there are government-managed centres representing both levels of government.

Moreover, since the concept of nature interpretation is very flexible and is not the sole property of any one type of centre more than another, interpretation as a service becomes - either as a priority or as a secondary consideration - a component of the total package offered at several types of centres. These centres vary in degree of service development and represent different abilities among staff assigned to interpretation activity, and the amount of importance attached to the service of interpretation in the total picture differs from one centre to another.

In this situation, to get around the problem of identifying NICs in Quebec, I have elected to limit the subject to physical locations managed by an identified administrative structure and a

management approach which gives a dominant, primary or exclusive role to the interpretation of nature, in whatever form it occurs.

The Nature Interpretation Movement in Quebec: Main Facts

THE CONCEPT, PHILOSOPHY AND TERMINOLOGY OF NATURE INTERPRETATION IN QUEBEC

In discussing nature interpretation in Quebec, I should first of all state that nature interpretation is not a product peculiar to Quebec; it was not conceived of nor invented here.

It is apparent that Quebecers (government agencies and citizens' groups) want to develop nature interpretation in Quebec and give it a uniquely Quebec flavour; however, the concept comes from elsewhere, as indicated by the abundance of American literature on the subject. Moreover, the origin of the concept is uncertain, since it is an area which is subject to different interpretations that are very easily confused with other disciplines or with other types of activity in the fields of education, communications, recreation and museology, to name only a few.

For the same reasons that I have limited my treatment of NICs to places or systems which give priority or exclusive attention to this type of activity, I must now specify the concept and define as objectively as possible, what I mean by "nature interpretation." To understand this requirement, I have merely to examine a few key phrases in the introduction to a document entitled "Concept d'interprétation du patrimoine" ("concept of heritage interpretation"), prepared by the Association québécoise d'interprétation du patrimoine (AQIP) (Quebec association for heritage interpretation) in November, 1982:

The notion of interpretation varies from one agency to another and often from one individual to another within a given agency. The problem is neither local nor regional or even exclusive to Quebec. Nor is it the prerogative of a few protestors having difficulty getting their ideas across. (Trans.)

While we may suspect the perception of all interested groups, of all interested individuals even, the purpose of this paper requires adoption of a definition of interpretation that is as broad as possible but still allows the concept to be defined.

Basically, interpretation is undoubtedly a form, a means or an activity of EDUCATION and, when we speak of nature interpretation, NATURE is the focus and constitutes the central theme of the educational message.

To go further in our definition, another basic factor is added: that of MAN as the receiver or goal of the educational message carried by interpretation.

With respect to this last factor, all the philosophies or variants of the philosophy of nature interpretation agree on a final point concerning the desired effect of interpretation. Nature interpretation must further, or encourage, the development of man's SENSITIVITY to the protection and conservation of his natural heritage; or, to put it another way, awaken his AWARENESS of the need to protect and conserve nature, in the hope that sensitized man will, in the long term, adopt new ATTITUDES in his use of the natural environment, or even that he will become involved, at a higher level of awareness, in the conservation and protection of his natural heritage.

The logic we have just followed to define nature interpretation and to situate the concept is called, in the jargon of nature interpreters, "the interpretation cycle," operating between a repeated action or activity of interpretation and a final result of such activity. This results in a change in the behaviour and attitudes and possibly the taking of a desirable stand by those for whom the interpretation activity was intended, whom we call, again in the jargon of interpreters, the target clients or clientele at whom interpretation is aimed.

To summarize, there are five basic components to be considered when we talk about nature interpretation:

- an EDUCATIONAL action or activity
- a central theme, NATURE
- a receiver of the educational message presented through interpretation, MAN, or the TARGET CLIENTELE, viewed from the specific aspect of each centre
- an effect, the SENSITIZATION or awakening of AWARENESS, of the target clientele who have been stimulated by the interpretation activity
- a desirable long-term result, in the BEHAVIOUR and ATTITUDES of target clientele.

From these basic components a host of nuances and points of view are possible: for example, interpretation is an end or a means; interpretation involves some support or other; or nature interpretation is also aimed at other heritage elements, such as cultural and historical values - in short, all of our heritage.

Now that the NICs are situated in relation to a priority role for nature interpretation, and the interpretation vocation of the NICs is defined, it will be easier to understand and evaluate the problems arising from the NICs, to be dealt with in the second section of this paper.

THOSE INVOLVED IN INTERPRETATION IN QUEBEC

The main interested groups in the field of interpretation in Quebec can be neatly grouped into eight categories:

- groups such as the 4-H clubs, the Cercles des deunes naturalistes (young naturalist clubs) and the Quebec Forestry Association
- the outdoor recreation grounds and centres, holiday camps and so on
- municipal recreational agencies
- the Ministère de l'Énergie et des Ressources (department of energy and resources)
- the Canadian Wildlife Service
- the national parks (Parks Canada)
- private agencies

- the Ministère du Loisir, de la Chasse et de la Pêche (department of recreation, hunting and fishing).

For an overall view of these main actors, the eight categories are briefly analyzed below.

First, there are the groups such as the 4-H Clubs, the Cercles des jeunes naturalistes, the Quebec Forestry Association and others that were created for the purpose of making young people aware of nature or one of its special aspects. Certain activities of these groups are oriented toward some form of interpretation. These activities mostly involve meetings, outdoor classes and document distribution. These groups do not generally operate in relation to a particular area, and when they do have land, it is of limited extent. For the most part, these small areas are scattered here and there and are not integrated into a system. Most of these groups are aimed primarily at young people.

Secondly, we can distinguish the outdoor recreation grounds and centres, holiday camps and so on, whose activities concern the outdoors primarily, but which increasingly incorporate interpretation in their programming. This aspect is often treated rather marginally and not always with the required expertise, but nevertheless it is becoming more important each year and cannot be ignored. With regard to interpretation, on the other hand, there is no coordination among the interpretation efforts of these outdoor recreation grounds, which are found throughout Quebec.

Nature interpretation has also increased to some extent among municipal recreational agencies. In fact, a number of municipalities have used special budgets of all kinds to create interpretation trails and sometimes nature centres, and to hire naturalist counsellors on a seasonal basis. These activities in the interpretation field are becoming more and more common everywhere in Quebec. However, they are isolated, uncoordinated and sometimes lacking in continuity.

Action by the Ministère de l'Énergie et des Ressources, on the other hand, is the result of specific objectives and careful

planning. Its purpose is education in conservation, it is aimed primarily at trees and forests; and it is intended above all, for a school clientele. Nature interpretation centres used by the Ministère de l'Énergie et des Ressources occupy small areas. They have two major components: the interpretation pavilion and the trails. Some private nature centres (such as the interpretation centre on Mount Royal and the Morgan Arboretum) can also be included with this group as far as the philosophy and method of operation are concerned. However, these are separate entities which do not form a system of the kind found in the Ministère de l'Énergie et des Ressources.

The Canadian Wildlife Service offers interpretation activities, particularly in national wildlife reserves and in other regions that are outstanding from a wildlife point of view. These national reserves are created to ensure adequate protection for certain species of migratory birds and for certain parts of their habitat. The general objective of their interpretation program, according to Foley (1980), is to promote and create opportunities favouring awareness, enjoyment, understanding and appreciation of Canada's wildlife heritage and its environment. The interpretation themes and sites, where they are developed, thus reflect this basic concern. However, the areas set aside for this purpose are sufficiently large that interpretation activities affecting all natural resources can be offered. The clientele of these centres is found mainly among school groups and visitors passing through.

Parks Canada manages two natural environment parks in Quebec. These areas are intended for the protection of representative examples of Canadian landscape, and this basic objective is reflected in the interpretation programs. A high proportion of the interpretation activities relates to a carefully chosen theme that focuses on the special nature of the area, as well as its part in a system designed to represent a sample of Canadian landscapes. The National Parks clientele consists mostly of people from the region who are visiting (passing through) and tourists who are staying in the parks. School groups are also received.

Some private centres, such as Mont Saint-Hilaire and Port-aux-Saumons, have developed a carefully structured interpretation program and a concept of nature interpretation from specific objectives and thoughtful planning, in the style of the centres of the Ministère de l'Énergie et des Ressources. In addition, they have hired qualified staff and, although there is no actual system of such private centres, the priority that they give to nature interpretation puts them on a par with the centres of the Ministère de l'Énergie et des Ressources, the Canadian Wildlife Service and the National Parks.

To this list of agencies, I should add the National Capital Commission, responsible for Gatineau Park, where interpretation also plays a major role.

Finally, the Ministère du Loisir, de la Chasse et de la Pêche (MLCP) is a recent actor on the scene of interpretation or, as I should say to comply with the wishes of the MLCP, of education in the natural environment. In its policy on Quebec parks, the MLCP established its terms of reference (including an explicitly educational role in the conservation parks) in the Parks Act, passed by the National Assembly in 1977.

In a document entitled "L'Éducation au milieu naturel," (education in the natural environment) which is part of the series of documents on "Parcs québécois," the MLCP elaborates on the statements of the parks policy concerning education in the natural environment.

Thus, in the system of Quebec parks coming under the Ministère du Loisir, de la Chasse et de la Pêche, nature interpretation, or rather, education in the natural environment, is for the first time being given a prominent place, confirmed by legislation. The concept of education in the natural environment, also for the first time and unequivocally, is taking on full meaning in Quebec.

NATURE INTERPRETATION CENTRES IN QUEBEC

With reference to the nuance introduced in the preface, the centres of interest to us here are those which give priority or exclusive attention to nature interpretation, or, in line with the MLCP philosophy, to education in the natural environment.

The centres concerned, those which satisfy the criterion, are listed below (Figure 1):

The Centres of the Ministère de l'Énergie et des Ressources

The Service de l'éducation en conservation (conservation education service) manages five nature interpretation centres:

- Baie des Chaleurs (in Gaspésie)
- Park (in Kamouraska)
- Les Palissades (in Charlevoix)
- Lac Berry (in Abitibi)
- Duchesnay (near Quebec City).

Three other centres are in various stages of planning:

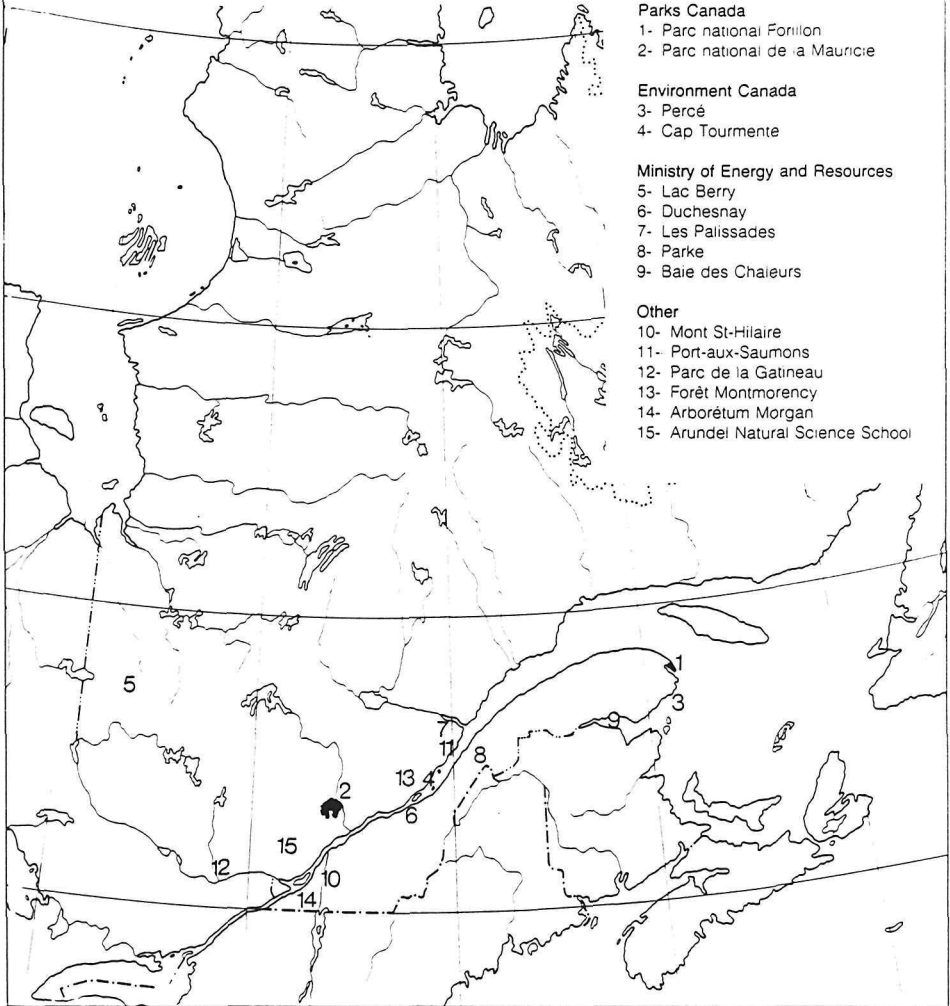
- Argenteuil (in the Laurentians)
- Lac La Blance (in the Outaouais region)
- Macpès (in Rimouski).

Three more centres are being studied in the administrative regions (MER) of:

- Montreal
- the Eastern Townships
- Trois-Rivières.

Figure 1

**PROVINCE OF QUEBEC
MAIN AREAS
WITH NATURE INTERPRETATION ACTIVITIES
(OTHER THAN MLCP, FALL 1979)**



Centres managed by Environment Canada

Parks Canada

In Quebec, Parks Canada manages two national parks in which there is interpretation. These are:

- Forillon
- La Mauricie.

The Canadian Wildlife Service

The Canadian Wildlife Service offers interpretive services at two locations, in the national wildlife reserve at Cap Tourmente and at Ile Bonaventure, although the nature centre itself is in Percé.

Private Centres

Private centres where nature interpretation is a major component of the overall services are:

- the Morgan Arboretum
- the Mont Saint-Hilaire nature centre
- the Port-aux-Saumons centre
- the nature interpretation centre of Lac Boivin (Granby)
- the Arundel Natural Science School
- the Forêt Montmorency (Laval University)
- the mountain centre (Mount Royal)
- the Bois de Belle Rivière centre in Ste-Scholastique.

Others: Gatineau Park.

The Centres (Parks) of the Ministère du Loisir, de la Chasse et de la Pêche

- Iles de Boucherville
- Mont Saint-Bruno
- Paul-Sauvé

- Mont Orford
- Mont-Tremblant
- Jacques Cartier
- Grands Jardins
- Gaspésie.

The interpretation programming in some parks managed by the MLCP is not yet developed to any great extent, although we should expect to see the role of educator in the natural environment develop in the short or medium term in all Quebec parks, according to the department's policy statement.

Problems of Nature Interpretation Centres in Quebec

THE MEANING OF NATURE INTERPRETATION IN THE CONTEXT OF THE PROTECTION OF QUEBEC'S NATURAL HERITAGE

To ascertain the problems peculiar to NICs in Quebec, it is important to distinguish between problems inherent in nature interpretation and those which might relate to centres as geographically defined entities. Therefore, the subject of concern in this section will be the educational role of land areas as opposed to the land areas in which this role is carried out. In other words, within each area we can, by considering the area and its management style, detect a number of problems other than those related to the educational role of the site. Looking at all NICs as having a common educational purpose, I will deal with general problems throughout Quebec in the vocation of nature interpretation.

On the other hand, we must not start by considering this approach as a set of abstract intellectual considerations with only slight tangible impact on the conservation and protection of the areas concerned. On the contrary, the educational role could become, in the medium or long term, a determining factor in the continuing protection and conservation of "protected" environments.

To properly grasp this reality, we need only examine some passages from the document entitled "L'Éducation au milieu naturel" prepared by the MLCP in the series of documents on Quebec parks. On page 21 of that paper, we read the following:

...to educate in the natural environment. By conveying knowledge to individuals about the nature around them, its fragility and its characteristics, we produce, in return, an awareness in these individuals and, possibly an involvement in the protection of this nature. (Trans.)

On page 22 of the same document we read:

Education in the natural environment is therefore aimed at two results: naturally, there is the transfer of objective information to the visitor about elements of the natural environment, but there is also the role of making the visitor aware of protection and conservation of our natural heritage. (Trans.)

We can see from these lines that the movement toward education in the natural environment and interpretation is above all a philosophy - a frame of mind; and the effects of this educational activity are conceivably a determining factor in the protection of NICs, and even in the protection of all of Quebec's natural heritage. In fact, education in the natural environment, whose ultimate objective is to alter behaviour, is not linked to particular sites, but to all sites where nature is represented, to whatever degree.

If there are problems in nature interpretation as presented by NICs, we must look for them in the message or approach and in the methodology used by each interpreter, rather than in the sites, although the type of site has something to do with such problems.

DIVERSITY OF THE APPROACH AND OF THE EDUCATIONAL MESSAGE VS. THE HOMOGENEOUS NATURE OF THE RECEIVER OF THE MESSAGE

When we look at the list of nature interpretation agencies in the preceding chapter and the theme developed by a number of agencies, shown in Appendix I and when we consider that the target or receiver of the educational message and the one for whom the message is designed, is a Quebecer in a recreational context, we may

wonder about how the message will be perceived and interpreted through the jargon that is peculiar to each agency, and about the awareness desired on the part of those persons exposed, theoretically, to all the nuances and all the colours that characterize the broad theme of nature interpretation in Quebec.

IDENTIFICATION AND QUALIFICATIONS OF STAFF ASSIGNED TO INTERPRETATION

The interpretation staff at each centre is probably the most significant carrier of the educational message. The MLCP recognizes this reality in its paper on education in the natural environment and states that, among the principal aids considered in the development of education in the natural environment in the park system, "(Trans.) qualified, attentive staff are involved in establishing the overall support system required to develop education in the natural environment." The same document repeats that each member of the park staff must be very aware of the concern for education in the natural environment and, depending on the role he plays in the visitor's experience, he must be specially trained for the task.

Concerning the training of the interpretation staff, or even of those who may be or may become nature interpreters, there are currently no defined standards or criteria accepted by all parties involved. At the moment, therefore, there is no standard notion of what a nature interpreter is, such that, strictly speaking, a person can become a nature interpreter with only some basic knowledge and an inclination for natural things.

Each centre or system defines its own selection criteria in the hiring of interpretation staff, in accordance with the centre's objectives and its teaching standards.

This is confirmed by the fact that there is currently no specific salary scale in the public service for nature interpreters or natural environment educators, who are usually classified for salary purposes according to their level of education, with no regard for the duties to be assigned to them in a nature

interpretation job. The interpreter technician is classified for salary purposes according to the technician scale for biologists or geographers, and the interpreter teacher is classified according to the scale for teachers. In actual fact all of these candidates may be required to perform the same duties or very similar duties in the context of a nature interpretation course.

While not disparaging the initiative of some CEGEPS, like those of Sherbrooke and Saint-Félicien, which have set up a "nature interpretation" option in their natural science technology programs, I must note that there is presently no professional code defining the nature interpreter.

On the other hand, we must recognize the significant efforts of the Association québécoise des interprètes du patrimoine (AQIP), whose membership consists of people involved or interested in interpretation in Quebec and includes representatives of all Quebec nature interpretation agencies. Since its founding, AQIP has been trying to define itself as an association and pave the way for a nature interpretation movement in Quebec. In the future, this association will probably become the chosen vehicle for clarification of the concept of interpretation and of the profession of nature interpretation in Quebec.

COOPERATION BETWEEN THOSE INVOLVED AND COORDINATION OF NATURE INTERPRETATION CENTRES IN QUEBEC

The NICs, as defined in this paper, regardless of their specific allegiances, will together project their overall image of this process of education, which is one component of each centre's services.

Will the methods currently used, or those to be developed, enable the clientele (the target of the overall movement toward education in the natural environment) to understand both the global message and the relationships between the different kinds of activity? Moreover, will that clientele react accordingly?

As for all advertising whose purpose is to promote a product or a way of doing something, repetition is a determining factor in the acceptance of the product or the idea by the target clientele. By this analogy, what can one make of a product, however valid, which does not belong by nature to any manufacturer or any promoter in particular, and which is promoted by several manufacturers or promoters, each in his own way?

EVALUATION MECHANISMS TO BE DEVELOPED

The interpretation activities of NICs necessarily involve effort and investment in planning, human resources and equipment. The question we must ask, therefore is: how can we evaluate the results achieved relative to the objectives set; or how can we evaluate the effectiveness of the methods used and the performance of the activities relative to the resources committed?

When we are striving for development of autonomy and environmental conscience on the part of individuals, it is, in fact, difficult to measure the real impact of the objectives sought in this field. Are those people, who are contacted by nature interpretation services, protective of the NICs, or do they become so, and do they generally take part in conservation of the natural environment? The answers to these questions are usually found in analysis of the collective behaviour modification of a society, for the most part, a long-term effect.

It is readily apparent, therefore, that we must define all the activities to be performed in measurable terms. Assuming that evaluation mechanisms are identified, it will also be necessary for those involved in interpretation to agree on such mechanisms and on the interpretation of the findings.

In short, as we can see from the foregoing discussion, there is a real or anticipated problem involving a system of means and measurements which is not subject to any discipline, and which is not currently linked to established models that are accepted by all those involved; in other words, a system where everyone is a cook who brings his own special ingredients and combines them according

to his own special recipe. Although not confirmed and difficult to detect, it is logical to assume that certain problems could result from a general educational approach that is random and lacks any coordination or means of adequate control.

While it offers no tangible solution to the problem thus defined, this paper, one purpose of which is to describe the situation, will have fulfilled its mandate if it raises relevant questions about the status of nature interpretation centres in Quebec and stimulates discussion on the questions raised.

Action by Governments and Citizens to Solve These Problems

GOVERNMENT ACTION

The Ministère du Loisir, de la Chasse et de la Pêche, is probably the newest arrival to the field of nature interpretation in Quebec. Nonetheless, the MLCP has just recently made a major contribution to the nature interpretation movement in Quebec by stating its policy on Quebec parks. In its paper entitled "L'Éducation au milieu naturel," which is part of the series of documents on "Parcs québécois," the MLCP has probed the question in depth and seems willing to become the leader in nature interpretation in Quebec through its system of Quebec parks.

In addition, it is the only government agency which has recognized the full importance of nature interpretation (or, in accordance with its own terminology, education in the natural environment). It is the only Quebec agency so far to have explicitly confirmed its educational activity in the natural environment through a statute, the Parks Act, passed by the National Assembly in 1977.

Furthermore, the system of Quebec parks is spread widely enough over the province, and is well enough distributed for the needs of the population and for representation of the natural regions of Quebec, that we may expect the people of Quebec, in the medium term, when the aspirations of the parks have received concrete support, to

be exposed to a fairly homogeneous product (with regard to approach and methodology), although a diversified one with regard to the theme followed by each park in its natural environment educational approach.

ACTION BY CITIZENS' GROUPS

In the area of citizen action, I should mention the Association québécoise des interprètes du patrimoine (AQIP). The interest of AQIP's members and their representation of all interpretation agencies in Quebec suggest that there will be some kind of cooperative effort in the medium term which could conceivably help lead the way for nature interpretation in Quebec, both with regard to the educational message and to the plans for a methodology and for staff recognized as qualified to perform interpretation in the strict sense of the term.

Additional Areas Which Could be Attached to the Present System

Using the definition which I have adopted for the NICs - areas of land, managed by identified agencies, where nature is well enough represented and nature interpretation has priority in the overall service - it is easy to understand how any land entity having a defined management method and possessing a biogeophysical potential could, strictly speaking, become a nature interpretation centre, provided the necessary facilities are developed.

On the other hand, it would probably not be desirable or necessary for all areas falling within the above definition to become nature interpretation centres, although the interpretation of nature is virtually possible wherever there is still a bit of nature or nature potential left to interpret.

It would be desirable for nature interpretation (in the sense of educating the public in natural heritage values) to be provided, in varying degrees, wherever the natural environment is being used for any purpose and is accessible to the public.

However, it would probably be preferable to limit nature interpretation to specific environments wherein the role, location and biogeophysical potential lend themselves to development of this educational activity.

From this point of view, it would be appropriate to define in Quebec, a system of nature interpretation centres identified or recognized as such because of their overall service. Along these lines, nature interpretation could become a national vocation and be identified with specific locations which "specialize" in it. The geographic distribution throughout Quebec and to their complementarity in the national picture.

It would be desirable therefore, in the eventual development of a system for Quebec, that the various agencies involved get together to discuss the question to coordinate distribution of the task of education in the natural environment, or nature interpretation, from an overall, non-sectoral point of view.

Conclusion

In Quebec nature interpretation, or education in the natural environment, as demonstrated in the nature interpretation centres - as defined for this paper - is well under way. The matter seems about to pass through the "brainstorming" stage, with statements of precise policies and orientations in some systems, such as the Quebec park system and the system of centres of the Ministère de l'Énergie et des Ressources.

However, the concept requires experimentation and methods to evaluate program effects on the behaviour of Quebecers toward protected spaces must still be identified.

Provided there is a willingness among the various parties concerned, Quebec does have leaders in nature interpretation, such as the Mont Saint-Hilaire nature centre, the Morgan Arboretum and the Port-aux-Saumons centre which, because of their accomplishments

in this area, have long been viewed as prime examples of interpretation in Quebec.

We must assume that the means exist and we can only hope that interested parties will openly combine their efforts for the purpose of organizing interpretation efforts and activities in Quebec. A positive outcome would be to provide Quebec with a network of centres which - for vacationing Quebecers looking for examples of Quebec's natural heritage - would become places of inspiration, awareness and orientation for the protection and conservation of Quebec's natural environment.

Appendix I

Additional Information on the Main Agencies Involved in Interpretation in Quebec (Excluding the MLCP).

MINISTÈRE DE L'ÉNERGIE ET DES RESSOURCES

Service de l'éducation en conservation

The Service de l'éducation en conservation has, as its name implies, an essentially educational role. Its efforts are aimed at developing, in the individual and in society, an "ecological conscience" ensuring the permanence of natural resources and, specifically, the forest resource. Its activity appears in the creation and operation of nature interpretation centres and in the provision of technical and financial assistance to groups with similar objectives.

Areas

The Service de l'éducation en conservation manages five nature interpretation centres:

- Baie des Chaleurs (in Gaspésie)
- Parks (in Kamouraska)
- Les Palissades (in Charlevoix)
- Lac Berry (in Abitibi)
- Duchesnay (near Quebec City).

Three other centres are in various stages of planning:

- Argenteuil (in the Laurentians)
- Lac La Blanche (in the Outaouasis)
- Macpès (in Rimouski).

Three more centres are being studied in the administrative regions (MER) of:

- Montreal
- the Eastern Townships
- Trois-Rivières.

The land on which these centres are located is usually small in area.

Theme and Content

Trees and the forest are the main themes developed. However, the "forest" theme is quite vast and, in fact, covers all so-called forest resources.

However, not every nature interpretation centre has its own special theme.

Preferred Means of Interpretation

- interpretation pavilions
- short guided hikes
- brochures and folders.

Clientele

The main target clients are schools (upper primary level), although the entire community is addressed.

Management

Management of the nature interpretation centres is on two levels; Quebec and the centres themselves.

Quebec - Overall planning

- orientation and management of programs
- supervision and quality control
- implementation of special projects.

Interpretation Centre - Development and implementation of programs.

There is close working cooperation between both levels.

Planning

Planning is done in two phases; first, a site is selected for the centre, and then the activities are programmed.

Planning now relies on an ecological inventory of the whole area, followed by very detailed inspection of the most likely spots. The content of the interpretive message is defined at this time.

Staff

A team comprising fifteen permanent members and about ten casual employees - professionals and technicians - forms the nucleus of the service in Quebec City. The staff in the centres varies according to the size, nature and duration of the services offered.

ENVIRONMENT CANADA: PARKS CANADA - QUEBEC REGION

Mandate and Objectives

In its interpretive program, Parks Canada's objective is to inform the public on the goals of national parks, and on the way to use, understand and enjoy them. It wishes to make the visitor aware of the natural resources in the parks so as to provide a change in attitude toward management and use of resources.

Areas

In Quebec, Parks Canada manages two national parks and ten historic sites where there is interpretation (Pheneuf 1978). These are:

National Parks

Forillon
La Maurice

Historic Sites

National Battlefields Park
Cartier-Brébeuf Park
Fortifications of Québec
Artillery Park
Les Forges du Saint-
Maurice
Maison Sir Wilfred Laurier
Fort Chambly
Fort Lennox
Coteau-du-Lac
Fort Témiscamingue

Theme and Content

For the historic sites, the theme comes from the site itself and the entire content of the interpretive message is closely related to this theme. The scope of the theme is usually limited (for example, the life of Sir Wilfrid Laurier at the Maison Sir Wilfrid Laurier site in Ville des Laurentides).

Each national park also has a theme of its own (such as "Laurentian heritage" for La Mauricie Park and "harmony between man, earth and sea" for Forillon Park). However, these themes are very broad and provide an opening to all the natural resources in an area.

Preferred Means of Interpretation

- guided hikes
- evening programs
- interpretation pavilion.

Clientele

Variable, mostly vacationers; school groups outside the summer season.

Management

There are three levels in the nature parks, each with a special but complementary role in relation to the other two levels.

Central (Ottawa) - General policies applicable to the entire system.

Region - Transformation of the general policies into operational realities, specifically involving orientation, preparation of operational standards and drafting of interpretation plans and resulting programs. There is also implementation of special projects, such as an interpretation centre and exhibits. Essentially a planning role.

Park - Implementation of the interpretation program.

Active participation in decisions concerning the development of standards, implementation of projects and preparation of the interpretation program.

Planning

The interpretation activities derive from an interpretation plan. This plan may be implemented at different levels, both for a park as a whole and for more limited sectors or areas of interpretation. The interpretation plan follows a complete inventory of resources, an analysis of interpretive potential and identification of the main theme to be developed and messages to be conveyed. (See Anon 1976; and Barry 1977).

Staff

At the regional level:

Four people forming the planning and interpretation section.

At the park level:

In Forillon National Park, 1978:

- 1 Chief Naturalist
reporting directly to the
Superintendent
- 1 Assistant
- 9 seasonal employees.

In La Mauricie National Park, in 1978:

- 1 Chief Naturalist
reporting directly to the
Superintendent
- 1 Assistant
- 6 seasonal employees.

ENVIRONMENT CANADA: CANADIAN WILDLIFE SERVICE

Mandate and Objective

The involvement of the Canadian Wildlife Service in interpretation comes from its mandate which concerns, in particular, the protection of certain wildlife species, especially birds and their habitat.

The main objective in providing interpretation services to visitors is to relate them to a resource - in this case, certain species of birds. The quality of this relationship is also included in the objective itself. Thus the goal is a qualitative relationship between the observer and the observed, between the contemplator and the subject contemplated. For the former, this involves a contact with the real object that is direct and as close as possible, and, for the latter, the guarantee that it will not be bothered or disturbed and that its habitat will not be destroyed.

Areas

The Canadian Wildlife Service offers interpretation services at two locations: in the Cap Tourmente national wildlife reserve and at Ile Bonaventure (although the nature centre itself is in Percé).

Theme and Content

Each centre has a theme of its own, developed from the primary value of area in which it is located. For example, most of the interpretation activities at Cap Tourmente concern the snow goose, its habits and its habitat. At Percé, on the other hand, the theme is much broader, illustrating the entire Atlantic Coast. The gannet has a special place in this theme.

Preferred Methods of Interpretation

In practice, the preferred means of interpretation are:

- guided hikes
- interpretation pavilion (exhibits)
- films.

Clientele

The clientele varies with centre and season. At Percé in the summer, it consists of tourists. At Cap Tourmente, on the other hand, interpretation takes on major dimensions in the fall and spring, although there are also activities in the summer and even in the winter (weekends). The clientele consists essentially of visitors and school groups, the latter in spring especially.

Management

In principle, management is on three levels:

Ottawa - major national policies (not operative)

Region - budgets, coordination, planning

Centre itself - planning and operations

In the Canadian Wildlife Service, the centre itself has much greater autonomy and seems to have far more responsibility than in Parks Canada.

Planning

The interpretation activities are carefully planned and prepared far in advance.

Planning is done essentially by the centre itself.

Staff

At the regional level:

- 1 coordinator

At the centre:

- 1 chief naturalist
- 1 assistant
- 1 technician
- seasonal naturalists, the number of which varies according to season

OTHERS

The three agencies above and the Ministère du Loisir, de la Chasse et de la Pêche do not monopolize the effort in the field of interpretation in Quebec. In fact, there are numerous other interested parties who work in various fields and whose activities also have widely varying forms, depending on the themes developed, the clientele they address and the means at their disposal. The interpretation activities of a number of them are based on reconstructions or take place in somewhat artificial environments. This is the case, for example, in natural science museums or other types of museums, botanical and zoological gardens and even specialized places, such as aquariums and planetariums. In addition, guided visits, such as those prepared by Hydro-Québec on

the sites of the Manicouagan-Outarde complex, include all the elements of interpretation activities.

To the list of agencies working in a "natural" environment, I should add certain private nature centres. The Morgan Arboretum and the Mont St-Hilaire and Port-aux-Saumons nature centres are among the best examples of interpretation in Quebec. I might also mention the Lac Boivin nature interpretation centre (Granby), Arundel Natural Science School and the Forêt Montmorency (Laval University). Most of the outdoor recreation grounds also offer interpretation activities (for example, Jouvence in Mont-Orford park).

In recent years, moreover, with special budgets of all kinds (economic recovery, Young Canada Works Program and so on), many agencies, universities, municipalities and others have established projects in which interpretation has a role of varying importance. Although these are interesting from a local point of view, such activities are entirely lacking in coordination and overall planning. These interpretation activities are often set up and performed with limited knowledge. Created in a rather spontaneous manner, such projects sometimes fall into oblivion when the short-lived budgets which established them are no longer available.

Finally, a number of agencies which neither possess nor manage parcels of land also work in the area of interpretation. Examples of these are the Quebec Forestry Association, the 4-H Clubs and the Cercles des jeunes naturalistes, whose activities, in part, concern interpretation.

Native Heritage

Jacques Kurtness

Introduction

The position which natives occupy on the Canadian multicultural scene will be analysed on the basis of historical, geographical, cultural, economic, legal or geopolitical considerations. Essentially, the fundamental issue is as follows: how can we alter the imbalance of power between a native minority made relatively powerless because it has been territorially and psychologically dispossessed, and a Euro-Canadian majority which crushes this minority under the weight of prejudice and injustice? Indeed, beyond the territorial disputes which must be settled and any immediate contingencies, and beyond the legal, constitutional or political paths involved, the biological and cultural survival of native communities weighs heavily on the Canadian conscience and will determine the legacy of future generations of both native people and other Canadians.

Natives and Other Ethnic Groups

In addition to their immemorial presence and their distribution throughout the American continent, natives are distinguished from other ethnic groups by the fact that their assimilation into Canadian society was forced and not a matter of free choice. This attitude differs, however, depending on the degree, frequency and nature of their contacts with Canadian society.

This movement and passion toward the majority society means that change is perceived as stemming more from the outside than from their own internal dynamics. This perception also probably explains a good deal of their legendary distrust of the majority society.

Unlike the majority of immigrants (except those escaping from an ecological disaster or from persecution in their native lands) who freely chose their adopted country, native people have the persistent impression of being forcibly assimilated into the majority. When such an asymmetrical relationship results from conscious and deliberate planning on the part of a society, it leads not only to absorption or assimilation of the minority group, but also to true ethnocide and culturocide (Morrisset 1980, p. 288).

This fear of assimilation can lead to the opposite extreme: separatism or rejection of the majority society. This option presents itself when a group isolates itself from society and maintains or reaffirms its identity. Later in this report, we will review the various options and models available to native people. For the moment, it is sufficient to note that intercultural and multicultural dynamics are not embodied in the existential vacuum, but in the reality of interpersonal and societal reciprocities. Of course, the solution to various social pathologies does not lie at these extremes (assimilation-separation), although this Ying and Yang mask a deep wisdom: the boundary of the solution lies within the parameters of the problem. Only through an open acknowledgement of the differences that exist by both minority and majority groups can other cultural options be tried within the framework of a new social contract.

Native people also differ from other ethnic groups in that they do not have a strong cultural fulcrum. Throughout the world, except in uninhabited Antarctica, native people come under the yoke of colonialism or under the supervision of an oligarchy tainted by nepotism. Nevertheless, the Algonquin line accounts for approximately 60 percent of the Canadian native population. Twenty-five percent fall into three other language groups (Athapaskan, Iroquoian, and Salishan). The remainder of the native population lives in British Columbia, except for 6,000 Sioux (Canada, Indian Affairs and Northern Development (IAND) 1970, p. 41-42). Not included in these figures are the 12,000 Inuit, 4000 of whom live in Quebec. Thus, without a strongly organized cultural fulcrum, a focus for cultural resourcing - because of their geopolitical fragmentation - they remain more vulnerable to

individual and cultural disintegration and more vulnerable to individual and cultural assimilation. Contrary to other ethnic groups, therefore, native people can rely on no other cultural levers than those of their own fragile internal dynamics. This is quite a long way from the claims made in a confidential Royal Canadian Mounted Police report, as described in the August 6, 1975 issue of The Ottawa Citizen, which stated that while the FLQ and Marxist extremists represented the most serious threat to Canadian national security in 1970, the power and organizational capacity of these groups had declined over the last five years while those of native peoples had increased dramatically. It was also noted that native militants and "Red Power" represent the greatest domestic terrorist threat in Canada (Morrisset 1980, p. 294).

It should be noted that their status as founding peoples is not recognized. It is as though, by removing them psychologically from the consciousness of the majority, territorial and psychological dispossession became justified. This situation is analogous to that in the United States, where blacks necessarily were and are considered inferior to justify their exploitation. The US built its power on the ashes of native peoples and the "genetic inferiority" of Blacks (the last Olympic Games in Los Angeles as well). Native people seem to have struck the Achilles heel of our western conscience. It is in this careful review of initial contacts that present-day relations between natives and Quebecers may be best understood. For example, the claim of "discovery" is fundamentally ethnocentric and implies that Europe is the centre of the world and of civilization. Historically, the Iroquois are considered "bad guys" and the Huron "good guys" and vice versa, depending on their respective military alliances and on which side of the border one stands. The differences in attitude, however, are ascribable to the nature of economic exchanges with natives. Hence, the Iroquois (as they were called by the British) or Haudenosaunee (people of the long house, as they called themselves) were not only allied with the Americans and the British, but had also settled on fertile "lands" in the St. Lawrence valley. It is certainly true that they laid themselves open to the initial territorial and geostrategic conflicts. Relations were therefore more symbiotic with the nomadic tribes, with just enough time taken to trade furs and have a few

swigs of rum, than with agricultural and sedentary tribes in the USA, where the British were busily establishing their colonies. Slavery was not practised solely by the Americans, and the theory that "the imperfect must fall subject to the perfect" is a view borrowed from the Spanish (Jaenen 1976). Finally, it should be noted that, by giving them inferior status, we justify paternalistic and maternalistic treatment (Indian Act), tutelage (Honningman 1963) and analogies between "children and savages" (Hallowell 1955).

All this in order that native people may achieve their full potential, as though a perfect correlation existed between psychological development and cultural development (psychiatric hospitals attest otherwise). It is important to note, however, that each group initially considered itself superior and, consequently, they could treat themselves as equals, despite the ethnocentrism inherent in this formula (Bailey 1937; Bailey 1969). Only later did things spoil because of military, technological, legal, demographic, economic and political disproportions. It is no small wonder, in this context, that some reserves resemble Skinner boxes where members of the majority society observe, correct, reward, punish and model the behaviour of natives, supposedly to bring it more in line with North American standards.

Finally, native people are distinguished from other ethnic groups by the Indian Act, which confirms their special status but may be considered a mechanism for social control and assimilation. Even the Minister of Indian and Northern Affairs, who is responsible for its enforcement, feels that band councils are more administrative extensions of the Department of Indian Affairs than governments accountable to their members (Canada, Indian and Northern Affairs (INA) 1982). Gibbins and Ponting (1980, p. 12) note that the Indian Act makes possible interference by government regulations in virtually all aspects of Indian life - and that, although the Act presented a semblance of Indian autonomy and participation in the direction of their lives, it was no less than illusion. The most severe but also very realistic criticism that can be made of the Indian Act concerns the leveling effect it exerts by placing all native people in a non-person and inferiority situation.

SUMMARY

Native peoples vary according to their traditional culture (Metis, Indian, Inuit) and differ in terms of language and geography (north, middle-north, south), the law (with or without status) and the degree of contact with Quebec society (traditional, transitional and urban-industrial communities). Similarly, Quebec society is multicultural and regionally diversified. Native people are at the bottom rung of the economic, social, educational and political ladder in Quebec.

They differ from other ethnic groups in that they cannot aspire to the status of founding group, they are governed by special federal legislation; they have a deep-seated fear of assimilation, they lack an important outside cultural lever; and they are victims of widespread structural segregation. Their ancestors were the first inhabitants of Quebec and Canada. The first native relations with Quebec in particular and with Canada in general were characterized by ethnocentric and paternalistic attitudes on the part of all groups. Subsequent asymmetrical relations, however, swung the pendulum from assimilation toward segregation. The James Bay and Northern Quebec Agreement, while it is not perfect, is a definite improvement over the previous system of treaties in that it lays the foundation for a new social contract that will inspire future native-Quebec relations. Under its provisions, however, natives have given up an area large enough to contain Great Britain twice over and 60 percent of France. In other cases involving small remaining lands, Quebec in turn will have to share.

Present Situation of Native People

The present situation of natives is characterized by a considerable intracultural and intercultural variance. Intraculturally, there are vast differences among groups according to the nature of contacts with Quebec society and the history of their relations (e.g., treaty versus non-treaty, dissidents, status or non-status, and so on). Interculturally, the Inuit are farther

north, the Indians in the middle-north, the Metis and non-status Indians are near or within urban centres. As a general rule, the social cohesiveness of the more traditional groups is good, but the public has a relatively negative perception of natives because it associates more with the most decultured groups in and around urban centres (Brody 1971). In the city or elsewhere, natives are still colonized people, excluded from Quebec society and dependent on the "welfare state." Often what is considered a challenge - the challenge of the far north - in the south is considered an intrusion by the people of the north. The natives' homeland is perceived as a frontier by the majority society (Berger 1977). The society of Quebec and Canada seems to concern itself with native people only when their usufruct shelters oil, mines, kilowatts, and so on. Native people are economically poor (Hawthorn-Tremblay Report 1967; Canadian Catholic Conference 1975; Canada, INA 1980; Penner Report 1983; Bowd 1977). In fact, they are so low on the job scale that researchers term the situation "structural discrimination" (Lamphier et al. 1980). It is easy to imagine all of the human misery behind these mountains of statistics. Natives live with government policies that keep them separate to a large extent from the majority society. Whether by segregation or apartheid on reserves, or by assimilation (Canada, IAND 1969; Canada INA, 1978), economic, educational, religious and telecommunication policies and programs put them under constant stress.

The attitudes of the population in general and, in particular, of the population encircling their community, are often negative and discriminatory. Thus, it is not surprising that a conflict exists between native people and the majority society. It is manifestly apparent that segregation and assimilation attitudes promote individual and collective deculturation and disintegration.

METIS: BETWIXT AND BETWEEN

Culturally and genetically, the Metis have had the most frequent contacts with Euro-Canadian society. The Metis live nearest to the dominant society. The Inuit have had the least amount of contact and live farthest away. Indians, although their

situation is varied along this continuum, generally occupy an intermediate position.

Recent writings on the Metis as a people (Anderson and Anderson 1977; Sawchuck 1978; Sealey and Lussier 1977) show a desire for "cultural reaffirmation," emphasize the sense of community of the Metis and their self-perception as a "nation." With the "non-status" Indians - not legally recognized as Indians by the federal government registrar - they have organized into several provincial associations governed by a national association: The Native Council of Canada. They want to be a distinct element in the Canadian mosaic, and they have also launched territorial claims against the federal government.

Although they may seem considerably assimilated from certain external standpoints (language and clothing), and although they are decultured (particularly in urban areas), certain signs of a national awakening could lead to their integration rather than their rejection - which is now the case - by the dominant and Indian societies. They continue, however, to be outcasts of both the dominant culture and the Amerindian culture. Under Section 12, those excluded from the Indian Act form the core of the Metis and non-status Indians.

INUIT: FROM SPECIFIC ADAPTATION TO GENERAL ADAPTATION

Conversely, the Inuit are far less exposed to the majority society. Their sense of community, maintained more than regained, is also strong and manifests itself in the administration and management of their cooperatives. Recent inroads or incursions by the federal government, however, have placed them in a highly dependent situation (Brody 1975; Paine 1977). In fact, according to Paine (1977, p. 3), they are currently receiving "colonialist welfare," contrasted against a more traditional form of economy which dates back from the first whalers to the arrival of missionaries and the Hudson Bay Company. Only in major centres, such as Frobisher Bay and Inuvik, are there signs of deculturation and assimilation (Honigmann and Honigmann, 1965; Honigmann and Honigmann 1970).

Although there have been movements advocating a return to traditional life among certain groups (rejection option), the integration option advocated by the national organization Inuit Tapirisat of Canada (ITC 1975), may become the predominant means of adaptation.

INDIANS: A DIFFICULT MIXTURE

As we have already noted, there is a wide variation in the present situation of various Indian groups. In the north, their situation resembles that of the Inuit. Minimal, superficial and often occasional contacts and maintenance of their identity, reinforced by agreements to provide more autonomy (James Bay Agreement), or demands for recognition as a "nation" (Dene Declaration), or as provincial governments (Northwest Territories and Yukon), have contributed in part to this state of affairs. There is no doubt that minerals in their hunting grounds or the waters of their rivers incite governments to be more liberal with regard to their rights as first occupants and some of their more legitimate aspirations.

In the south, among the Iroquois or Hurons, for example, more extensive assimilation has occurred, but is accompanied in some cases by reflex actions that reaffirm the traditional identity and initial cultural values (e.g., the Longhouse movement). In the middle north and in western Canada (e.g., Ontario and the Prairies), an intermediate level of acculturation has created dramatic social and personal adaptation problems. There are also indications or signs of deculturation.

Although the Indian situation is diversified, several common policies are pursued by the Assembly of First Nations, usually in cooperation with the various provincial Indian associations. One of these policies is in the area of education (1972), where a desire to control schools attended by Indian children has been expressed. The argument is that present schools are instruments of assimilation and even deculturation; only through complete control of the school system can the Indian identity be maintained and developed.

Characteristics needed to live with the majority society (official languages and economic roles) are incorporated into memory so that integration is apparently favoured over cultural exclusion and self-segregation.

SUMMARY

In brief, the present situation is one of conflict and domination. According to Berger (1977), what native people essentially consider home is viewed as a frontier by the majority society. On the part of both the federal government and native associations, however, there is an apparent rejection of assimilation and deculturation in favour of integration that is more respectful of the identity, culture and institutions of native people (e.g. multi-culturalism policy 1971; revision of the Indian Act 1978; education policy 1972; Dene Declaration 1975).

What the Majority Society Thinks of Native People

Two national surveys have been conducted to assess the opinions and attitudes of the majority society toward native people. The study by Gibbins and Ponting (1976a) focused exclusively on the attitudes of Canadian society toward Indians. One of their principal scales measured sympathy towards Indians (Indian Sympathy Index: ISI). It comprised nine items and had a satisfactory item-total correlation. Included in this scale are statements such as "Indians deserve better treatment than they are now getting" and "where the concepts of Indian land ownership and white man's law clash, the Indian concept should take precedence." Answers were rated on a five-point Likert scale to arrive at an ISI score.

A sample of 1,832 respondents, 18 years of age and over, was selected at random from the Canadian population living south of the 60th parallel. Personal interviews were conducted in the homes of respondents and in their preferred official language from January to March, 1976.

From the results of their survey, the authors concluded that "Canadian Indians do not face a markedly hostile public" (Gibbins and Ponting, 1976b, p. 40). The mean ISI score was slightly positive and was distributed normally. There were no signs of extremely negative attitudes of white backlash. Moreover, respondents were generally sympathetic toward the pursuit of land claims by Indians. A majority of respondents (60 percent) agreed that "all" or "many" land claims are valid (Gibbins and Ponting 1976b, p. 42). The authors concluded that Canadians are surprisingly in agreement with native arguments and that the conflict between present day native needs and the priorities of Canadians cannot be as acute as is sometimes supposed (1976b, p. 40).

Nevertheless, there are individual and collective differences in this overall picture. By region, Quebecers are more sympathetic to the Indian cause than are persons in Saskatchewan and Alberta (1976a, 1976b).

When asked whether they felt Indians, in their land claims, were mainly interested in land for its own sake or in the money it can produce, 54 percent of Francophone Quebecers felt that Indians were interested in land for its own sake, as compared to 44 percent of the national sample and 40 percent of the Quebec Anglophone sample. According to the authors, this response is consistent with the importance placed on land in the Quebec culture. Ninety percent of Quebec Francophones believed there was a certain validity to native land claims. This validity, however, varied with the intensity of the issue (all claims: 20 percent; many: 57 percent; and few: 13 percent). As a general rule, compared to Anglophones, Francophones have little knowledge of native people but are relatively sympathetic toward their goals and aspirations. Aware of the position of their culture in the Canadian pyramid, they are sensitive to the minority group status of native people and share their interest in territorial control.

Individually, the degree of knowledge about Indians (measured on a scale of seven items) did not cause any significant difference in attitude. Nor does personal contact with native people bring out

attitudinal differences (Gibbins and Ponting 1977); correlations between ISI scores, level of education and income are not equally significant (respectively $-.04$ and $.01$) (Gibbins and Ponting 1976a p. 12). Hence, it would seem that the usual social correlates that normally explain attitudinal differences are not valid in the case of Canadians' attitudes toward Indians.

In the national survey conducted by Berry, Kalin and Taylor (1977), Indians were not the specific subject of the study but served as a sampling target group among other ethnic groups as part of research into multiculturalism and ethnic attitudes. This difference in context is important in that it can influence the orientation of responses. In the first study (Gibbins and Ponting 1976) Indians constituted the sole point of interest; in the second (Berry, Kalin and Taylor 1977), Indians were analyzed within the multicultural context of many other groups. For this reason, care must be exercised in comparing the results of both studies.

Two sections of the second study concern the Indians of Canada. In the first section persons were asked to sort 27 cards into different piles. One card bore the inscription "myself" and others bore the name of a Canadian ethnic group (e.g., Arab-Canadian, Greek-Canadian); three cards carried the inscription designated for native people (Indian, Eskimo and Metis). Persons were asked to sort the cards into particular piles based on the degree of similarity they felt existed between the groups identified on the cards and themselves.

Results were analyzed separately according to the British or French ascendancy of respondents. Among the English-Canadian group, the "myself" card was accompanied by cards marked "English-Canadian," "French Canadian," and "Quebecer" (ranking 1, 2 and 3). Among the sample of French-Canadians, the "myself" card was accompanied by the "Quebecer," "French-Canadian" and "English-Canadian" cards (ranking 1, 2 and 3). While the selection was the same, the order was reversed; the "myself" card constituted the invariable.

Native people were generally grouped quite often with the "myself" card by both samples. For English-Canadian respondents, "Canadian Indians" ranked fourth among 27 groups; "Eskimos" ranked fifth and "Metis" ranked ninth. For French-Canadian respondents, "Indians" ranked fourth, "Eskimos" ranked sixth and "Metis" ranked eleventh. Native people are therefore ranked high by both majority groups; however, there is a difference of one and two ranks respectively between the two samples for "Eskimos" and "Metis." No other group occupies this preferred space around the concept of "self."

A second section of the study evaluates the attitudes and stereotypes of various ethnic groups. The "Canadian-Indians" group is included among eight other groups such as the Chinese, Italians and so on. Researchers asked respondents to evaluate these groups in relation to ten descriptives, using a seven-point scale. In the overall sample, Canadian Indians received particularly positive marks on two points ("Canadians" and "stick together"), but were perceived negatively with regard to the following attributes: "hard worker," "clean," "similar to myself," "rich" and "well known." No other group received evaluations as low or as perjorative.

Thus, English-Canadians and French-Canadians head the hierarchy of prestige ethnic groups, while Canadian Indians are at the bottom of the list; this confirms the fact that they rank last in the totemic echelon of Canadian society. The pejorative evaluation which they receive, however, is not uniform or substantial on all points. For example, although they rank last under the heading of "hard worker," they rank second in their evaluation as "Canadians" (after English-Canadians) and third as "interesting."

Despite these minor variations in the general model, most respondents ranked Indians last on a general evaluation score. The only major exception is the French-Canadian sample, which ranked them sixth (ahead of immigrants in general). People from the Prairies had the most negative attitudes, even though in principle, they had had the most opportunity for contact with Amerindians.

SUMMARY

In brief, different conclusions may be drawn from the selection of cards and the evaluation of attitudes. In one sense, natives are part of the Canadian group or family; in the other sense, they are outside the group. This paradoxical situation may explain the ambivalent attitude of Canadians toward native people. These differences may also be ascribable to the nature of the questions on attitudes and the type of sample selected. It is likely, in fact, that the "Indians" evaluated by the respondents are the urban type and not those from more northern regions, where there is less deculturation and marginalized behaviour, in comparison to the more visible behaviours in "grey areas" (Brody 1972).

In addition to these two Canada-wide studies, which show a transition stage between ignorance and mutual acceptance, smaller studies and policy statements provide us with information on the present status of the White-Amerindian interface. In this regard, we should mention the Indian Act and its many versions and revisions (versions dating from 1976 to 1959, and 1978 revision); the 1969 "White Paper" (Canada 1969), and the "Citizen Plus" of Alberta Indian Chiefs (1970). Studies in the field worthy of note include those by Honigmann and Honigmann (1965; 1970) in two Arctic settlements, the study by Stymeist (1975) and Berry (1976) in a northwestern Ontario settlement.

What Native People Think of the Majority Society

Few studies have attempted to measure the individual and collective attitudes of natives on the basis of formal and standardized attitude scales. In the national study on attitudes toward multiculturalism and ethnic groups in Canada (Berry, Kalin and Taylor 1977), the authors acknowledged that considerable importance had been placed on analyzing the attitudes of the two original groups from Europe and that it had been impossible to do the same for the aboriginal peoples of Canada. Moreover, as in the Canada-wide study by Gibbins and Ponting (1976a), the authors

excluded the Yukon and the Northwest Territories as well as Indian reserves from their sampling. Nevertheless, the literature is not completely salient on the subject and instruments do exist to identify the opinions and attitudes of natives toward the majority society. Among the best sources of information concerning the opinion of native people toward the majority society - excluding the recent Constitutional Conference on Native Rights (March 15-16, 1983), in which native leaders pleaded for recognition as a Nation, native self-government and aboriginal territorial rights - are the hearings concerning the injunction to stop the James Bay hydroelectric project (Richardson 1975) and the public inquiry into the Mackenzie Valley pipeline project (Berger 1977; Watkins 1977). Already the Alaska Native Claims Settlement Act (see Hamelin 1975, p. 315) had set the tone and tempo of the legal and legislative formulas for settling disputes between native people and the majority society. Concerning more policy-oriented declarations, the Alberta Chiefs' "Red Book (1970), the paper on Education by the National Indian Brotherhood (1972) (now the Assembly of First Nations) and the Dene Declaration (1975) are all eloquent statements.

Although there are many variations and nuances in all of these sources, ranging from more radical individual positions (e.g., Cardinal 1969 and 1977; Wuttunee 1971; and Waubageshig 1970) to more moderate positions adopted by native and government negotiators, the general trend is toward integration in order to avoid assimilation, deculturation and marginalization, segregation and ethnocide. There is apparently a sound basis for negotiation of a "New Social Contract" and renegotiation of lands and treaties (Canada 1977).

As to the measurement of native attitudes toward the majority society, a series of studies (Berry and Annis 1974; Berry 1975; Berry 1976), comprising nine varied samples of native populations ranging from the James Bay Cree to the Coast Tsimshian of British Columbia by way of the northwestern Ontario Ojibway and the British Columbia plateau Carrier, found a general preference for the integration option and a non-preference for the assimilation and cultural rejection options. The more acculturated samples (salaried employment and higher levels of formal education) favour

assimilation over rejection, while the less acculturated favour rejection over assimilation. In other words, communities and cultures that most resemble the majority society are relatively more in favour of assimilation than traditionally nomadic and egalitarian communities and cultures. Nevertheless, integration remains the preferred method of relation with the majority society.

The results of our own research, focusing on the Quebec Montagnais population, yield a more complex picture of the configuration of attitudes held by seven Montagnais communities toward Quebec society. Even within a single cultural area, there are many variations in attitude according to the ecocultural position of communities in the acculturation index. Integration is the preferred method of relation with the surrounding society. Such integration can be more or less successful, however, and there is evidence of cultural disintegration among individuals and groups who lose elements of their original culture but fail or are blocked in their attempt to integrate into Quebec culture (e.g., when conflict exists over limited resources such as salmon or caribou).

Cultural options in the Native-Quebecer interface also vary by community. The more traditional settlements prefer rejection, while less traditional communities prefer assimilation. At the urban-industrial acculturation extreme, there is evidence of cultural reaffirmation which presupposes non-linearity in the Native-Quebecer interface process. Hence, the psychological distance between the Montagnais and Quebecers is not so much the "traditional-modern" extremes as between the "disintegration-integration" extremes. The distance between the two cultures is more psychological than it is geographical or ecological. Integration or interface between the two cultures is more successful before and after a period of cultural turbulence.

SUMMARY

There is a remarkable convergence among native people in their views concerning relations with society at large. The tendency is to prefer integration: maintenance and development of their own population as a distinct entity within a multi-cultural environment.

This optimistic conclusion must be tempered by the fact that their attempts to integrate with the Canadian and Quebec majority society can be hampered by ambivalent attitudes toward them (e.g., Stymeist 1975) and by a subtle process of informal exclusion. Cultural reaffirmation is socially difficult and, when possible, is psychologically difficult.

Future Prospects

Based on an overall view of the existing literature on the native-majority society interface, what can be said about the immediate future of the "social contract" between Amerindians and Quebecers? How can the cultures reorganize their relations to improve their mutual situation? What psychological changes are needed to make this transformation a reality?

It is certain that while interethnic relations must improve, they must be rooted in a political and attitudinal convergence. Furthermore, before any agreement is signed, a gigantic effort must be made to solve interface problems during the intermediate period between the start and end of negotiations. The negotiating process is not a game, with a winner and a loser, but an interfacing effort from which both parties emerge winners. Insofar as a majority is judged by the way in which it treats its minority, this effort will determine the credibility of negotiators. The burden of proof, however, does not fall solely on Quebec society; Amerindians must also choose their goals and the direction of their development in Canadian society, and they must organize in accordance with these objectives and make them known to Quebec society.

The lack of equal status between these groups and strong competition over limited resources can only deepen the chasm between them. Two implications may be drawn: a reduction and abolition of inequalities between groups, on the one hand, and a settlement of conflicts surrounding hunting and fishing resources.

This paper does not pretend to be an exhaustive or thorough analysis of the major components of the native issue. Nevertheless,

it is important, within the context of the National Parks Centennial, to outline its cultural dimensions and territorial roots (geopolitical factor). The native issue or problem is essentially intra- and intercultural, and its behavioural manifestation fits into a territorial structure. The territorial dispossession of Canada's native people has led to their psychological dispossession. Consequently, national parks remain their only cathedral and their only sanctuary. The American Indian must identify with his entire country, which was once and should still be, his. Only in this context do politico-cultural and legal institutions hold any significance; otherwise, they are synonymous with bitter resentment and petty accounts.

Recognition of the aboriginal rights in general and the territorial rights in particular of native groups as a whole, should improve the economic and social status of these groups and contribute to the settlement of conflicts over resources (e.g., Attikamek-Montagnais Council 1980). In spite of certain differences, a consensus is emerging as to goals and the methods for achieving them. This is a unique opportunity (Poole 1983) to ask how Amerindians can contribute to Canadian society.

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Historic Sites and Monuments in Quebec

Louis Cabral

Introduction

In 1534 European explorers arrived in Quebec, and the era of French colonization of North America began along the natural navigation corridor formed by the Saint Lawrence. This river, the only communication route for centuries, also became the focus for settlement, shaping villages and cities and influencing the daily lives of the first colonists.

Quebec's history abounds in events and traditions that make our culture unique in North America. Although our heritage is multi-faceted, this study will be limited to the tangible evidence of our past: our historic sites and monuments.

Time restrictions prevent an examination of prehistory and the important legacy of our native people. We will concentrate on the state of historic sites managed by Parks Canada in Quebec as we examine the question of Quebec's heritage resources.

Heritage preservation and promotion is one of the [Quebec] government's principal duties with respect to culture.

Such a concern can be put down to the need to prevent the destruction or abandonment of monuments, as they are both the creation and proof of a national tradition.¹
(Trans.)

The government plays an important role in this area through the powers given it by legislation (which will be discussed later). However, people are becoming increasingly interested in preserving and promoting heritage resources so as to improve their living environment, and because of a desire to learn about important historical facts and curiosity about their roots.

Moreover, the government felt that encouraging a knowledge of history - through teaching and the upgrading of historically significant buildings - was a means of reinforcing Canadians' sense of belonging. Quoting from an order-in-council of the Privy Council of Canada (1949), the Federal Cultural Policy Review Committee stated that: "the Canadian people should know as much as possible about their country, its history and traditions, and about their national life and common achievements."²

Government Action

LEGISLATION

In comparison with foreign governments, Canada and Quebec have been slow to enact legislation regarding heritage preservation and promotion.

It was not until 1885 that Canada became concerned with its heritage. Sweden had begun compiling an inventory of its national heritage resources in 1666, and Rome passed its first law concerning historic monuments in 457....³
(Trans.)

Although Canada had a late start in heritage resource protection, in 1976 it adopted the provisions of the International Convention for the Protection of World Cultural and Natural Heritage (World Heritage Committee, Unesco). Seven of the natural and cultural sites on the Committee's World Heritage List are found in Canada.

PARKS CANADA

It is the task of Parks Canada, which is part of the Department of the Environment, to protect Canadian heritage resources. Its primary objective is:

To protect for all time historic resources at places associated with persons, places and events of national historic significance in a system of national historic

parcs, and to encourage public understanding, appreciation and enjoyment of this historical heritage so as to leave it unimpaired for future generations.⁴

Canadian historic parks form a "system" across the country. However, care is taken to ensure cooperation with provincial governments.

Each of Canada's national historic parks illustrates an important part of the history of Canada. A system of national historic parks can underline the associations among different historic places, periods and themes and thereby encourage a deeper understanding of Canada's past.⁵ (Trans.)

Each national park develops a theme for presentation that is directly related to the history of a building or a person commemorated by the site, and based on fact.

Under the 1953 Historic Sites and Monuments Act, the minister responsible determines the historic sites and monuments to be promoted. The minister has the last word on the selection, but is advised by the Historic Sites and Monuments Board of Canada, established in 1919. This board is composed of seventeen members; the provinces and territories have one representative each, except for Quebec and Ontario which have two.⁶

Parks Canada follows a specific procedure before opening designated monuments and sites to the public:

- inform the public of its programs, activities, policies, plans and management practices
- establish interpretation programs by circulating information on the significance and heritage value of the sites concerned
- provide reception and interpretation services for visitors to properly fulfill the intended educational purpose.

Parks Canada seeks public participation at the national, regional and local levels when developing policies and plans for each site.

QUEBEC

Not until 1922 did Quebec undertake steps to safeguard its heritage, and over the next fifty years it enacted various pieces of legislation confirming this desire to preserve its history:

- 1922 Act respecting the preservation of monuments and objects of art having an historic or artistic interest
- 1951 Historic or Artistic Monuments and Sites Act
- 1963 Historic Monuments Act
- 1972 Cultural Property Act.

In 1961 Quebec created the Department of Cultural Affairs, which made conservation of cultural resources one of its priorities.

Such a concern can be put down to the need to prevent the destruction or abandonment of monuments, and the deterioration or loss of objects or documents, as they are both the creation and proof of a national tradition.⁷
(Trans.)

The Cultural Property Act protects all of Quebec's heritage resources. The cultural property commission, a twelve-member advisory body with a budget of \$271,000, is responsible for advising the Department and submitting recommendations on the classification or recognition of a heritage resource.

Status of Historic Monuments and Sites

NATIONAL HISTORIC PARKS

In 1885 the federal government's purchase of a small parcel of land near Banff for the enjoyment of vacationers laid the foundation for a system that today includes more than twenty-nine national parks and some sixty-nine historic parks of national interest administered by Parks Canada.

Although "Rocky Mountains Park" was the first government-protected nature site to be called a national park, it was not until 1917 that the government established the first national historic park at Fort Anne in Annapolis Royal.

QUEBEC NATIONAL HISTORIC PARKS

In addition to managing two national parks in Quebec (Forillon and La Mauricie), Parks Canada oversees the operation of fourteen national historic parks, two historic sites and four major heritage canals:

National historic parks:

- Sir George-Étienne Cartier House
- Sir Wilfrid Laurier House
- Fort Chambly
- Fort Lennox
- the Saint Maurice forges
- Artillery Park
- Cartier-Brébeuf Park
- National Battlefields Park, Quebec City
- Fort No 1 (Lauzon)
- Battle of Châteauguay Park
- Côteau-du-Lac
- Louis S. St Laurent Park
- Battle of the Restigouche Park

National historic sites:

- the Fortifications of Quebec
- Fort Témiscamingue

Heritage canals:

- Chambly Canal
- Carillon Lock
- Ste-Anne-de-Bellevue Lock
- Lachine Canal.

QUEBEC PROVINCIAL INVENTORY

The list of heritage resources under Quebec authority is as follows.

Monuments and sites:

The more than four hundred monuments and sites cannot be listed here.

Historic districts:

- historic district of Beauport
- historic district of Charlesbourg
- historic district of Laprairie
- historic district of Sainte-Famille (Ile d'Orléans)
- historic district of Saint-François (Ile d'Orléans)
- historic district of Saint-Jean (Ile d'Orléans)
- historic district of Sault Pétronille (Ile d'Orléans)
- historic district of Saint-Laurent (Ile d'Orléans)
- historic district of Trois-Rivières
- historic district of Quebec City
- historic district of Montreal
- historic district of Sillery

Quebec and Heritage Protection

Ecological and environmental concerns emerged in the period of ferment that marked the Quiet Revolution, a period which opened Quebec to international trends. As a result of these concerns, a whole series of acts were adopted to regulate the physical environment:

- 1969 - Wildlife Conservation Act
- 1972 - Environment Quality Act

- 1974 - Ecological Reserves Act
- 1977 - Parks Act
- 1978 - Preservation of Agricultural Land Act
- 1979 - Land Use Planning and Development Act.

The Cultural Property Act of 1972 which created natural districts, should also be included here.

Collectively these circumstances led to a major change in the way heritage conservation and promotion was regarded. Protection and promotion of Quebec's heritage property began to mean more than the strict conservation of monuments that represented traditional life or national identity, and a different and much more comprehensive vision of cultural development and land use planning was required.

In the cities, towns and villages, various citizens' groups invoked the Cultural Property Act to protect built-up areas to which they attributed a qualitative importance that was far different from the plans of some developers, whose vision of progress ignores the heritage of centuries.⁸ (Trans.)

Today, a building must be considered part of its surroundings and not an element in itself. Drawing on a European concept, the focus has shifted to "historic settings," which involve the protection of an area around designated buildings for the purpose of preserving the architectural and aesthetic unity of the site.

Emphasis is also placed on the importance of the historic core formed by the centre of a town or city. This centre, a phenomenon that developed in the Middle Ages, is composed of a system of streets, squares and boulevards and is really the expression of a socio-economic system essential to human activity.

Heritage and Development

Protection and promotion of our heritage is presently understood as an attempt to improve our living environment. The government must view heritage regulations from a broader perspective:

Heritage conservation shall henceforth be considered a major objective of land use planning and development.⁹
(Trans.)

Therefore, Bill 125 concerning land use planning becomes an important instrument, enabling the government to harmonize our living environment and allow historic sites and monuments to assume their true value:

Heritage protection or promotion is possible only by incorporating it into coordinated land use planning. If all the instruments provided in Bill 125 are used in the spirit intended, and for the purpose of achieving proper development that respects the regions' special features, heritage will be better protected and can be better promoted.¹⁰ (Trans.)

The regional county municipalities (RCMs) responsible for preparing land use plans must ensure that:

- proper conservation objectives are included in an RCM's land use policy; further specifications regarding these objectives can be made for the zones identified in the next point
- zones of historic, cultural, aesthetic or ecological interest to the RCM are identified and marked
- there is an integration of the policy and the development and construction projects of the government, its agents and public bodies which affect the conservation and promotion of areas with heritage value.

Public consultation is to take place throughout this process. The groups concerned (historical societies, heritage committees and others) are beginning to understand just what this bill entails. Those involved in culture are well aware of which heritage resources need to be preserved; however, it is the means of perserving them that must be worked out. The Laurentian cultural council has published an excellent document on the subject.¹¹

Restoration and its Economic Impact

The matter at hand is not simply to discuss aesthetics or fidelity to the building's original concept, but to determine the economic impact of restoration.

A historic monument is no longer perceived as merely a decoration but as a cultural facility that will be given new life and increased usefulness through restoration, since loss of its purpose leaves it vulnerable.

Lack of an economic purpose renders the building much more vulnerable: it is no longer maintained and thus deterioriates quickly.¹² (Trans.)

Restoration of a building often gives a run-down neighbourhood a new beginning, and this makes restoration of historic buildings a very attractive venture for building developers:

In some instances, restoration of a building will set an example for the type of development hoped for in a run-down or deserted neighbourhood in an area such as Old Montreal....Renovations can lead to improved public services to meet the needs of new residents and administrative and professional offices.¹³ (Trans.)

Municipal governments will participate in the preparation of their cultural development master plans. On June 20, 1985, the Quebec National Assembly approved Bill 43 which amends the Cultural Property Act and allows:

- a municipality to designate historic monuments within its boundaries or to declare certain areas heritage sites

- a municipal council to take action to conserve or to protect the architectural characteristics of a designated historic monument or a building located on a heritage site.

This new power for local governments raises some questions. Will it guarantee the protection and promotion of historic buildings and sites of national importance? Will it protect these places from shortsighted projects and land use plans?

Cooperation

Since 1983, the Quebec Department of Cultural Affairs has maintained a policy of administrative decentralization which - as a result of a ministerial tour in 1982 - has widespread support and would meet the regions' needs.

As of 1983, the Department will concentrate its various sources of assistance to create a single, open and all-purpose program that will assist in the renovation and construction of cultural facilities. The program will respect the decisions of the municipalities and agencies regarding the type of facility.¹⁴ (Trans.)

Municipal governments and the Department of Cultural Affairs have cooperated on joint ventures to promote historic sites.

This desire to encourage widespread participation has found concrete expression in over thirty agreements since 1978; these formal agreements led to the signing of a memorandum, they generally concern several aspects of heritage protection and promotion and often cover a period of several years. Agreements which dealt with protected sectors were made possible through amendments to the Cultural Property Act in June 1978. These amendments concerned improvement of master plans and municipal regulations as well as the development of promotion programs. Agreements were also reached to carry out specific projects. There are already agreements for most of the nine historic districts of Quebec as well as several areas with many heritage features, such as Côte-de-Beaupré, Cap-Rouge, Deschambault, Lotbinière, Cap-Santé near Quebec City, Boucherville, Laval, LaSalle, Lachine, Longueuil and the Richelieu Valley in the Montreal area, Val d'Or in the Abitibi, Sherbrooke in the Eastern Townships, Chicoutimi in the Saguenay, Paspébiac

in the Gaspé and the municipality of Basse-Côte-Nord.¹⁵
(Trans.)

The desire to restore historic monuments and sites to their proper state has enabled citizens concerned with heritage issues to share in a very important formative experience. This direct participation in the improvement of living conditions among communities is also a good means of awakening people to the significance of history and heritage.¹⁶

OTHER QUEBEC GOVERNMENT PARTICIPANTS

Department of Recreation, Fish and Game (MLCP)

The MLCP is not greatly involved in heritage matters. Care of heritage buildings is not part of the Department's mandate. However, there are historic and heritage buildings among the facilities located in some parks. The Department appears to respect the recommendations of the Department of Cultural Affairs regarding historic buildings.

In the texts accompanying the Parks Act, the MLCP discusses land use planning and examines the case of buildings already standing on a site. It is clear that there is danger that buildings which do not fit into the physical framework envisaged by planners will be demolished:

When a park is created, there are often a variety of buildings within its boundaries. These may be former logging camps, cottages, or sometimes even spacious homes. If the condition and locations of these buildings are suitable, they will be restored for the purposes of the park;(Ile d'Orleans)

- historic district of Saint-Francois (Ile d'Orleans)
- historic district of Saint-Jean (Ile d'Orleans)
- historic district of Sault Petronille (Ile d'Orleans)
- historic district of Saint-Laurent (Ile d'Orleans)
- historic district of MLCP is concerned about the match between these important buildings and others:

Inspired by traditional architecture and designed with the setting in mind, the architectural style of all the buildings in the park will be uniform. Any new structures built will blend with the old.¹⁸ (Trans.)

Lastly, it is regrettable that the Department is not able to provide a list of the historical buildings located in the parks, referring us instead to regional authorities better informed about local resources.

QUEBEC PLANNING AND DEVELOPMENT OFFICE (OPDQ)

Although its primary concerns are economic, the OPDQ has nevertheless undertaken activities with a cultural impact. It has contributed to intelligent re-use initiatives and the development of large-scale historic areas.

The OPDQ profited from a cooperative venture between the Department of Cultural Affairs and certain municipal authorities to develop high-density heritage areas while increasing the amount of housing stock, making it profitable for everyone. The agreements, between Cultural Affairs and the Cities of Quebec and Montreal, are good illustrations of the extent of its influence.

ASSOCIATION OF CULTURAL AND COMMUNICATIONS INDUSTRIES (SODICC)

In 1983 this association established a heritage building section to encourage the efforts of private groups to restore heritage buildings. After an initial venture with the RDP group at Place Royale, SODICC was given responsibility by the Department of Cultural Affairs for restoring the Thibodeau-Amyot warehouses for residential and commercial purposes.

An assessment of this new means of government involvement in heritage matters work will have to be done at the time of SODICC's next annual report.

NON-GOVERNMENT AND CITIZEN'S GROUPS

Canada

The Heritage Canada Foundation was created by the federal government in 1973 to promote conservation of heritage buildings and contribute to their restoration. To achieve its objectives, the Foundation must also promote heritage concerns, increase public awareness and initiate programs illustrating its plans.

One of the Foundation's more interesting activities is the "Main Street" project, designed to upgrade city thoroughfares. Aware of the deterioration of business areas in small cities, Heritage Canada has developed such ideas as restoring building facades, allowing paved areas to incorporate more green space, coordinating store windows and so on.

Aside from serving business interests, a main street should reflect the cultural dimension of the community and once more take its place as the heart of the city:

The vital role played by the street must be underlined.

Although it allows for movement and provides access to buildings, the street is also the main place to meet, obtain information and interact with others, and it facilitates the mixing of various social levels.

Therefore, historic settings seem to play an essential role as a part of collective life since they symbolize the organized community.¹⁹ (Trans.)

However, Heritage Canada is not particularly active in Quebec.

QUEBEC GROUPS

Of all the groups involved in heritage conservation and promotion in Quebec, the local historical societies and heritage committees deserve special mention. In 1984 there were over 165 active groups established (not including corporations involved in commemorating the anniversary of a city or parish), and their high

degree of sensitivity regarding regional heritage resources is noteworthy.

These organizations possess an undisputed knowledge of their areas (history and heritage inventory) and they are also considered the main custodians of this heritage. The influence of their activities on the collective consciousness helps promote cultural resources. The number of volunteers and the degree of involvement in these groups - as well as the quality of their work - is absolutely remarkable.

The Quebec federation of historical societies was founded in 1965. It channels various groups' efforts and information, and it has provided twenty years of constant support to organizations which work for the conservation of heritage resources. In the fall and winter of 1984-85, the federation sponsored a series of regional symposiums on the state of heritage resources in Quebec. They were held to examine regional issues of particular interest to local groups.

The Quebec monuments and sites board (CMSQ), an organization composed mainly of professionals, has helped provide Quebecers with sound information on the importance of conserving the province's heritage buildings. The CMSQ's headquarters are in Quebec City, where it carries out most of its activities. Unfortunately, its affiliated regional groups have become somewhat disaffected.

Pierre Mayrand stated that this situation was caused by a tendency to overspecialize:

The board is having difficulty making the public aware of its purpose, which was expressed in the objectives it set for itself in 1975. It has too many people taking action, it is overspecialized - due to the professionals who direct it - and local groups have become disaffected.

Cut off from its base and having reached the limits of its potential, the board risks becoming cut-off and losing itself in a multitude of projects which, however worthwhile, threaten to take up all its energy and cause it to neglect its basic role as representative of the heritage groups.²⁰ (Trans.)

On the occasion of the National Parks Centennial, Parks Canada has set up twelve citizens' committees to encourage the private sector and all Canadians to participate in activities celebrating this one hundredth birthday. There will be various events to mark the anniversary. In this year of commemoration, would it not have been better to devote the resources given to this group - which will have no purpose after 1985 - to provincial heritage protection organizations with a proven organizational structure and popular support?

HISTORIC SITE AND BUILDING CORPORATIONS

These organizations are very often the product of combined economic and cultural forces in the community which work together to determine a building's purpose, restore it, and put it to use.

This type of joint action promotes regional cultural development and tourism. The following are examples of such corporations:

- Ile des moulins corporation
- Bagatelle foundation
- Société du vieux presbytère de Deschambault.

Mention should also be made of the historical societies which, through their work in managing museums and exhibition centres, are also active in this field:

- Gaspé historical society
- Richmond County Historical Society
- Lennoxville-Ascot Historical and Museum Society
- Missisquoi Historical Society.

Current Problems with Historical Sites and Monuments

There is an obvious lack of heritage and heritage conservation legislation at the federal level. The government has no real policy concerning historical buildings:

Although the federal government sometimes designates areas as "national historical sites" under the Historic Monuments Act (1952), these classifications have no legal effect.

The federal government's authority extends only to property that belongs to it outright or belongs to an agency regulated by it.²¹ (Trans.)

Beyond this legislative grey area, the federal government must equip itself with the means necessary to protect Canadian heritage, if only to comply with the provisions of the International Convention for the Protection of World Cultural and Natural Heritage, which it has adopted.

NATIONAL HISTORIC PARKS

One irritating aspect of the historic sites and monuments situation in Canada is the constant presence of military themes in the interpretation concepts. The network of national historic parks has a great many sites that feature this aspect of Canadian history. Just recently, encouraging attempts have been made to focus on other subjects of interest to the public (the fur trade at the Lachine canal, industrial activity at the Saint Maurice forges).

The moratorium imposed on developing Parks Canada's system is not likely to be of comfort to Canadians. This situation is disconcerting despite management's reassurances:

As the development of our region is very important, the moratorium declared on new facilities has had a major impact on our organization.

We will have to adapt to a new style of management and to objectives which, from now on, will be oriented toward

consolidation of our assets and recapitalization of our facilities. In addition, we will have to use our imagination to find other ways of operating our public services with maximum efficiency despite reduced resources.²² (Trans.)

Quebec

In its latest report the cultural property commission pointed out the lack of a comprehensive act to protect heritage resources. Although it is agreed that heritage resources must be considered in the organization of space, true coordination cannot be established as long as several departments are involved and are carrying out separate activities. This situation is partly responsible for the lack of cohesion of cultural development. The commission made this plain to the government in the following terms:

What remains to be done in Quebec is to give a meaning, content and clear direction to all aspects of cultural property conservation. Something must be done soon, given the serious and often constant threats facing some heritage resources.²³ (Trans.)

This recommendation is made in response to a situation we deplore: the government's lack of interest in marine, agricultural and industrial heritage resources.

Only recently has the need to promote other facets of heritage been realized in Quebec. Areas of human endeavour, such as trades that developed during the industrial era, have produced cultural property and left important evidence of these occupations (farm buildings, mills, factories, old boats and so on). The commission's action in this regard is welcome and deserving of support.

Taxes seems to contribute to heritage conservation problems. There is a dearth of restoration incentives, despite calls for them. In the United States, the government is aware of the value of heritage buildings and promotes their restoration through tax breaks or reductions in land taxes.

Training and staffing are also important points. There are no programs available to teach heritage promotion and conservation concepts. The University of Quebec at Montreal and Laval University offer courses in the subject by distance teaching. However, this is not enough. Heritage studies should be an undergraduate degree program like art history.

In the city heritage conservation is linked with a utilitarian, primarily residential purpose. Thanks to pressure from heritage protection groups, old neighbourhoods lacking in ambience and slated for demolition have recovered their dignity. They are now undergoing a resurgence of community life; Montreal provides typical examples (Milton park, Plateau Mont-Royal, Petite Bourgogne). Jean-Claude Marsan speaks of this type of approach as a marriage of consumerism and heritage conservation.²⁴

At the heritage symposium entitled, "Patrimoine québécoise de demain," held in Montreal in November 1984, Mark London suggested that heritage buildings be divided into three categories to make it easier to determine heritage conservation and promotion possibilities. Jean-Claude Marsan discusses the idea:

1. Heritage buildings of significance to Quebec if not all of Canada. Two examples in this category would be the Notre Dame basilica and Old Montreal. The Quebec government would be responsible for their conservation and promotion, and would rely on the present Cultural Property Act, with a few amendments.
2. Regional heritage buildings of importance to the Montreal area. Such is the case of the Saint-Joachim church, the mill in Pointe-Claire and some areas of Lachine. Heritage conservation and promotion would be the responsibility of the Urban Community (for lack of an administrative structure covering the entire urban region). The instruments it would use to fulfill this task are still to be determined.
3. Local heritage resources, which would include neighbourhood features, such as in the Plateau Mont-Royal. This would be the responsibility of the municipalities, and they would protect and promote resources simply through town planning.

Whatever classification system is adopted, it would be worthwhile to develop vigorous incentives for heritage conservation and promotion. So far, most of the measures developed through the Cultural Property Act and through zoning have been restrictive. They often have the disadvantage of presenting heritage building conservation from a negative and difficult perspective and making it very costly for individuals or corporations which own property or are responsible for it.²⁵ (Trans.)

Future Perspectives, or the Strategy for the Year 2000

It is obvious that heritage conservation has gained little prominence and that people have not become interested in this aspect of culture, partly for economic reasons. After an initial assessment of a building's historic importance, restoration projects are examined in terms of immediate economic benefits for the community concerned (tourism, larger assessment roll, effect on other buildings in the area and so on). Despite the intrinsic value of the building to be restored, the principal parties involved must battle endlessly to prove their project's merit.

Less interested in large-scale projects, protection groups operate on a more community-oriented level. They are more concerned with promoting local heritage and resources that are more identifiable with their community. The activities of the Department of Cultural Affairs and the major development groups, cities or corporations are also based on this approach, in that they operate on the level of "consumer conservation" by providing a municipality with cultural facilities and buildings serving more than one purpose.

Groups concerned with saving an area building that characterizes their way of life guarantee that this awareness of past values will survive, although not everyone may fully share the same concern. However, local historical societies are in the best position to ensure that future generations will be able to enjoy the cultural property that is characteristic of Quebec.

The new authority over heritage resources given to municipalities by Bill 43 does not appear to please groups active in the field. Of the many regional county municipalities that have begun to draw up their master plans, some have settled for simply transcribing the sites already classified and recognized. In many instances, the requests of historical societies have been swept aside.

I believe that the societies that have run up against the intransigence, if not indifference, of municipal authorities are sceptical of the merits of this amendment to the Cultural Property Act which will have so much influence on the future.

RECOMMENDATIONS

The following are the main recommendations which we feel should be made here:

- the Government of Quebec should develop an overall policy and clear goals for all areas affected by cultural property conservation
- the Government of Quebec and the public should become more aware of and promote marine, agricultural and industrial heritage resources
- universities should offer undergraduate programs in such areas as heritage conservation, interpretation and management. These courses could be aimed at members of historical societies, managers of heritage facilities and municipal officials
- in drawing up their master plans, RCMs should consider and directly consult heritage groups when defining areas to be protected and restored
- the Government of Quebec should adopt a fiscal policy on the American model to encourage conservation and restoration of heritage buildings
- the Government of Quebec should recognize the quality and extent of the public information work done by historical societies. This recognition could take the form of financial support for their operating structure

- the Government of Quebec should step up its publicity campaigns promoting heritage resources. The Department of Cultural Affairs could follow the example of the Department of Agriculture and associate itself with organizations to promote social ideals
- Parks Canada's current system should expand and include more national historic parks
- Quebec should include the creation of "historic parks" in its legislation.

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Appendix I

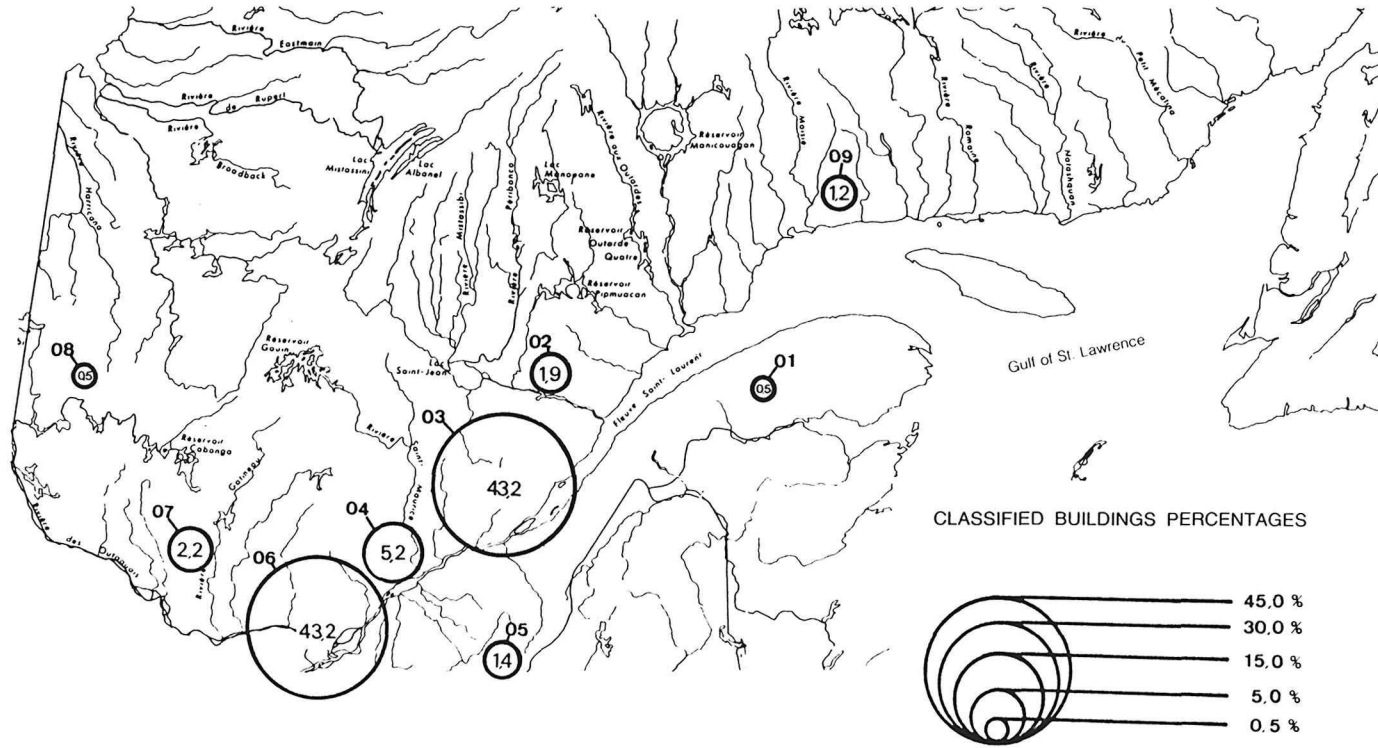
Map Appendix

FIGURE

- 1 Location of Classified Buildings by Administrative Region
- 2 Agricultural and Horticultural Heritage, Interpretation and Conservation
- 3 Agricultural and Horticultural Heritage, Interpretation and Conservation

Figure 1

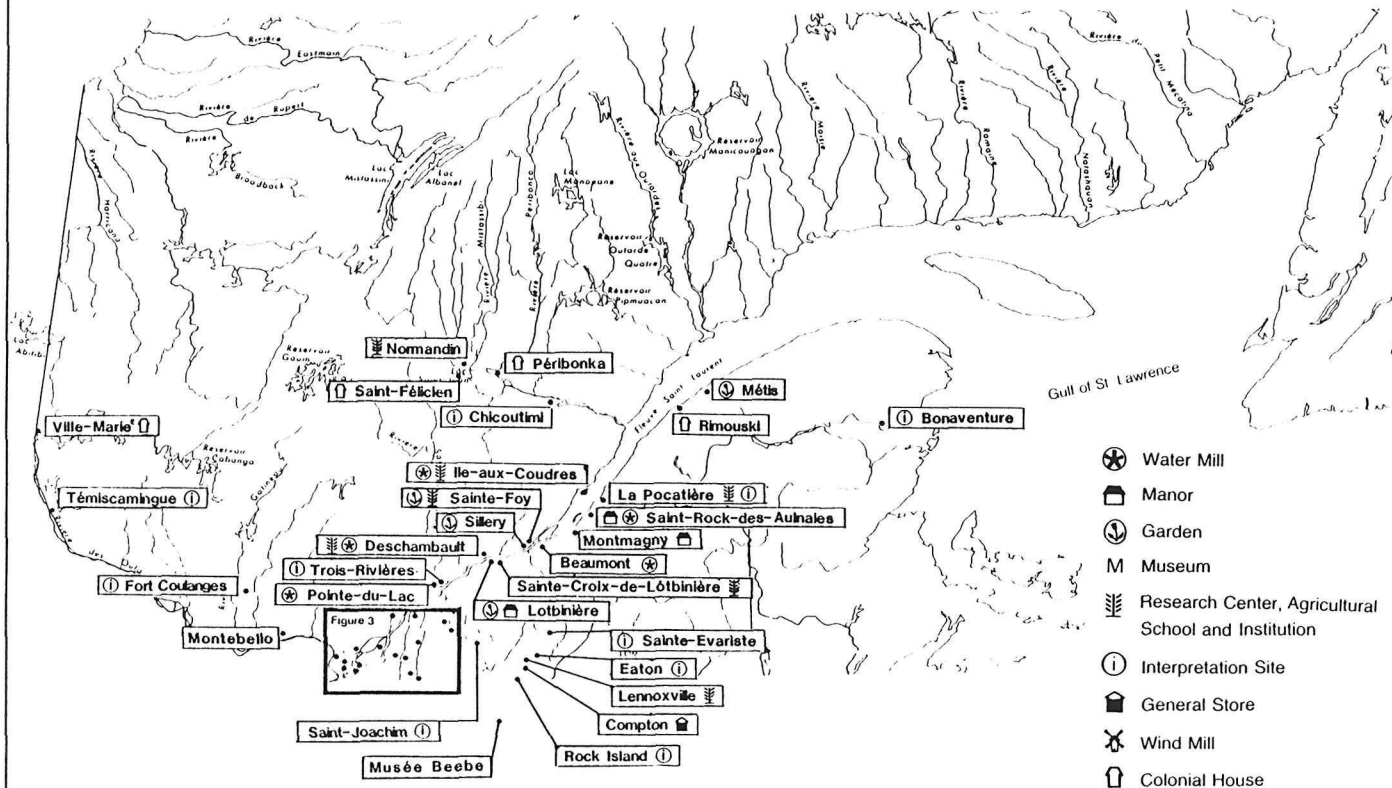
LOCATION OF CLASSIFIED BUILDINGS
BY ADMINISTRATIVE REGION



Source: Institut québécois de recherche sur la culture, Québec, 1985.

Figure 2

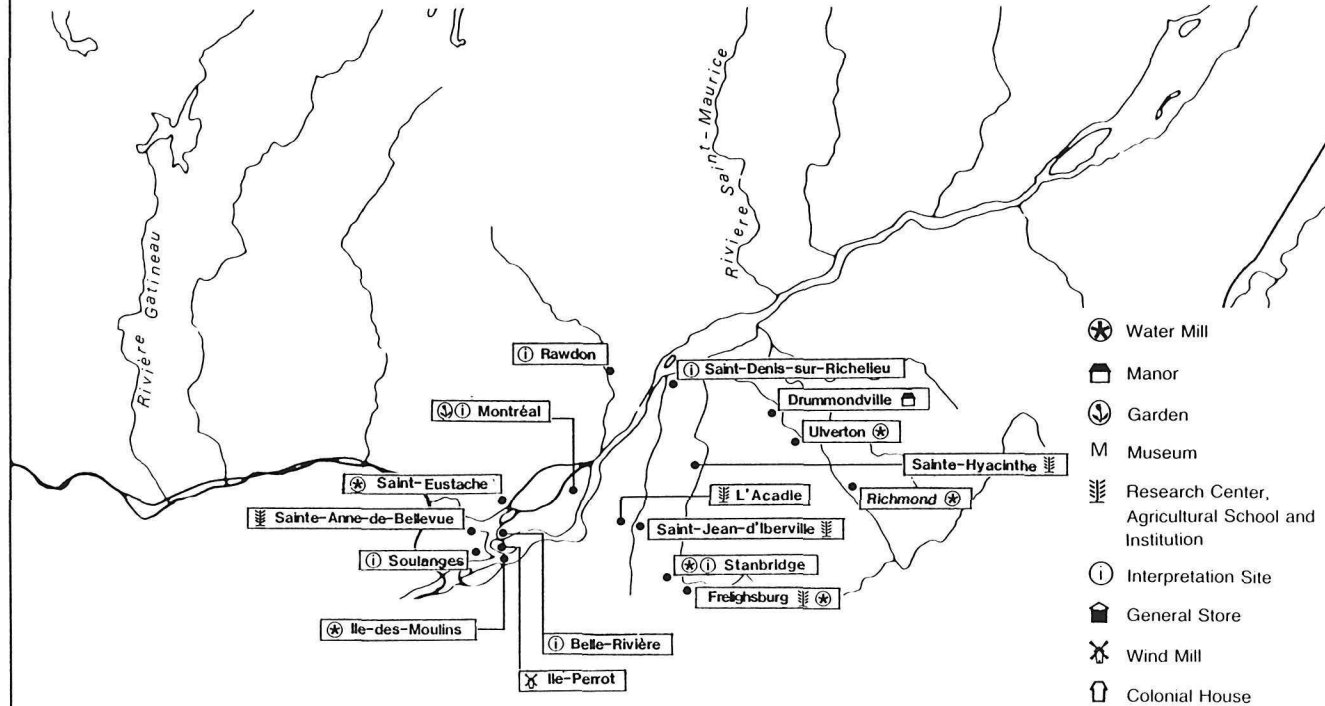
AGRICULTURAL AND HORTICULTURAL HERITAGE Interpretation and Conservation



Source: Fédération des sociétés d'histoire du Québec

Figure 3

AGRICULTURAL AND HORTICULTURAL HERITAGE Interpretation and Conservation



Source: Fédération des sociétés d'histoire du Québec

Conservation Awareness¹

Harvey Mead

Introduction

The sound operation of democratic societies is largely dependent - at least according to popular wisdom - on the level of public awareness. For some years now, groups and individuals concerned about conservation have taken on the task of informing the public.

In Quebec, the public awareness campaign began not much earlier than the 1970s. Since then there has been a dramatic increase in the number of environmental groups and government programs pertaining to the environment (an example being the creation of the Ministère de l'Environnement du Québec).

During this same period, the public became aware of issues of global significance resulting from accelerated industrial expansion and resource development since World War II. It is therefore unclear whether progress in the area of conservation awareness-raising represents a significant asset. It remains to be seen whether the various groups and governments will be able to respond adequately to the pressures exerted by "developed" societies on the world's ecosystems and resources.

Too often, as discussed in the report on the Ministère de l'Énergie et des Ressources below, the departments responsible for conservation have much lower profiles and much less power than the sectoral departments responsible for development and the economy in general. With regard to the public, there is no evidence that consumer habits have been altered by the awareness campaign, now under way for two decades.

This report is an overview of the ongoing initiatives in the area of conservation awareness-raising. To determine the impact of

these initiatives one must take into account all the issues discussed in this document, including forestry and agricultural management, the quality of provincial waters, and the network of parks and ecological reserves.

Government Participation

QUEBEC GOVERNMENT

Ministère de L'Énergie et des Ressources (MER)

The MER's Direction de l'éducation à la conservation is responsible for raising the public's awareness of the forest. Among its responsibilities is the administration of a network of forestry education centres. The Direction has based its policy on the World Conservation Strategy. Its publications and the slide shows it produces in conjunction with the Ministère de l'Éducation are of very good quality. One such publication is L'arbre en tête, aimed mainly at primary school teachers.

The problem at this level can be illustrated by one of the Direction's publications on forest productivity, which argues in favour of selective cutting. It would seem that the Direction and the MER are not in tune with regard to the management of Quebec forests because the department almost invariably opts for clear cutting.

Furthermore, the long-standing debate over the spraying of insecticides against spruce budworm revealed no flexibility in the MER's policy on development with regard to an approach that would take into account long-term effects, even though these are at the very heart of all conservation-oriented planning and management.

The MER's approach is thus contradictory: on one hand, it conveys a message explicitly founded on the World Conservation Strategy, while on the other hand, it acts irrationally in the management of forest resources for the future.

Ministère de l'Environnement (MENVIQ)

The Direction des communications coordinates the MENVIQ's many initiatives in the area of education. For several years the MENVIQ aimed at raising the awareness of teachers and youths with regard to the constituent elements of the environment. Recently, it has been shifting toward raising an awareness of the life environment. Four different approaches have been developed based on the target audience in question: adults, youths of school age, industry and the municipalities.

In an attempt to make environmental issues part of the daily life of the public, the department plans to establish a structure for cooperation with groups concerned about the quality of the environment, participate in the numerous advisory and interdepartmental committees on education, strengthen ties with the Union des producteurs agricoles, and identify means of heightening awareness of and improving training for private industry.

The latter initiative is likely a replacement for the round tables held in 1984 by the Bureau d'audiences publiques sur l'environnement, in which both private industry and the conservation groups participated.

The Direction also publishes the Répertoire environnemental, a listing of environmental groups and agencies operating in Quebec. This facilitates coordination between the various agencies.

Lastly, the MENVIQ is responsible for activities held during the annual "environment month." Although the event has changed considerably over the years, it represents a significant attempt to raise public awareness, often in cooperation with volunteer groups.

The Environmental Advisory Committee, which reports directly to the Quebec minister of the environment, publishes many excellent documents containing advice given to the minister by the Committee on a wide variety of current environmental issues.

Ministère du Loisir, de la Chasse, et de la Pêche (MLCP)

The MLCP has two major concerns with regard to conservation, recreation and wildlife. The Regroupement des organismes nationaux de loisir du Québec (RONLQ) promotes an awareness of conservation among recreational agencies through an infrastructure established by the MLCP. The recreation sector of the MLCP recently identified ecological awareness-raising as one of its five priorities. The RONLQ operates independently of the MLCP, and participates in the area of conservation-oriented recreation in many ways.

Most of the MLCP's responsibilities in the wildlife sector relate to traditional hunting, fishing and trapping activities. A structure for cooperation between the MLCP and participants in the wildlife sector is currently being developed. The Direction général de la faune plans to use the World Conservation Strategy as the basic policy for this cooperation, which involves the thirty or so member organizations of the Union québécoise pour la conservation de la nature.

With regard to traditional activities, the department signed an agreement in 1980 with the Quebec Wildlife Federation for the development of an educational program on wildlife protection and conservation (PESCOF). The purpose of the program is to integrate conservation awareness-raising into various technical courses for hunters and fishermen.

In itself, the program has considerable potential. As tested over the past four years, it does not reach members of the general public other than the target clientele. Furthermore, the program focuses largely on the technical aspect of traditional activities. Although some basic documents have been prepared, the conservation awareness-raising aspect of the various courses remains to be developed.

The MLCP is also responsible for a provincial "wildlife conservation week." The documents produced in connection with this

activity are of good quality and the event seems to achieve its public awareness objective.

Ministère de L'Éducation (MEQ)

The MEQ is responsible for the natural sciences program in primary schools. The MEQ intends to introduce a program aimed at youths in the latter half of primary school and the first half of secondary school, in keeping with the hypothesis that these students are in their formative years. Results to date have been mixed.

Secondary schools offer courses in ecology (first year) and geography (third year). The success of these courses seems hindered by the lack of teacher training. It is clear, however, that efforts should be made to improve, rather than change, the situation.

Télé-université de l'Université du Québec (TELUQ)

This branch of the Université du Québec offers correspondence courses in association with special television programs. Several courses aimed at conservation awareness-raising have recently been developed.

- "L'Environnement, un bien collectif menacé?" is an excellent course which could very well be offered to a larger audience. It begins with an introduction to the basics of environmental awareness, then discusses consumer-related issues in relation to three themes: luxury goods (the example being cottages); useful goods (the example being cars); and essential goods (the example being food)
- "Les pesticides et l'environnement" analysis three aspects of pesticides: the various types available; pesticide controls; and target insects and plants
- "L'Exploration du milieu physique" is a geography course which discusses environment themes from a global perspective. Several aspects of the course, however, focus on land in Quebec, in particular, its forestry and agricultural uses

- "La municipalité: un vécu, un projet" gives an overview of the role of municipal governments in the province's administration. This course (like many of the courses offered in normal university calendars) can serve to raise public awareness
- "L'Utilisation rationnelle des pesticides dans les bâtiments" is a specialized course for exterminators. This is a technical course which offers little information on the environmental aspects of the problem.

Through a major grant, the Université du Québec is also responsible for the publication of a magazine entitled Québec Science, which regularly contains articles on environmental issues.

FEDERAL GOVERNMENT

Environment Canada

The federal government's participation in Quebec is through a program oriented toward four major themes: acid rain, toxic wastes, forestry and rivers. Environment Canada maintains close contact with the Réseau des groupes écologistes in the nine regions.

Twice annually the department publishes a conservation-oriented journal entitled Milieu for the general public.

Non-Government Participation

YOUTHS

Cercles de jeunes naturalistes

These clubs were begun over fifty years ago. There are currently more than 120 clubs throughout Quebec. Adult volunteers lead the youths in these groups through a process designed to heighten their awareness of the natural sciences through more and more experience "in the field."

Environnement jeunesse (ENJEU)

The groups affiliated with Environnement jeunesse are spread throughout the province. These differ from the Cercles de jeunes naturalistes in that their concerns are of a global nature. Furthermore, their aim is to involve youths in activities relating to problems faced by society.

The groups publish Journal l'Enjeu six times a year. In 1984 ENJEU organized a seminar on environmental consciousness-raising, which is the association's major area of activity.

4-H Clubs

4-H clubs have existed for decades. From the outset their major area of involvement has been the forest, and this is still the central theme of their activities.

4-H clubs have several publications aimed at youths. The program responsible for these publications recently has increasingly incorporated global themes. As a result the 1985 project plan covers all environmental issues.

ADULTS

Union québécoise pour la conservation de la nature (UQCN)

Some thirty agencies belong to the UQCN, most of them composed of naturalists. The UQCN's major concern is the sustained utilization of resources. The various committees (protected parks and sites, conservation, education and publications) make frequent representations to government authorities to ensure the rapid processing of the many conservation-related matters. The UQCN also attempts to make the members of its affiliates aware of conservation in relation to the World Conservation Strategy, the scope of which exceeds their involvement. Lastly, the group publishes Franc-Nord for the general public in an effort to raise conservation awareness.

Réseau des groupes écologistes

The Réseau comprises a considerable number of groups with highly diverse interests and varied involvement. Most of these groups seek changes in lifestyles that would reflect a respect for limited resources and the quality of life. The participation of these groups is often social; most operate on a local level.

Le bouquet écologique serves to maintain contact between groups. Another publication entitled Contretemps serves a similar purpose, but is aimed at a fairly well-informed audience.

Every year the Réseau takes part in provincial and national meetings organized by Environment Canada.

Forêt-Conservation

This journal is published ten times yearly by the Association québécoise forestière. This association, which also sponsors the 4-H clubs, focuses on issues relating to forest management in Quebec. However, articles on other environmental issues are published on a regular basis.

Research in Conservation

University and government research in the areas of science and technology is undeniably extensive. However, it is very difficult to assess the impact of this research on conservation. A study on research at Laval University will complement this preliminary overview and will propose steps that could be taken to better assess the situation.

Overall, there appears to be very little research oriented specifically toward conservation objectives. Research generally has either an academic objective, with no view to economic impacts, or a specific profitability objective relating to a given field of resource development or utilization.

For example, it is likely that the MER and the Ministère de l'Agriculture, des Pêcheries et de l'Alimentation (MAPAQ) have a great deal of data on the use of pesticides in forestry and agricultural development. On the other hand, during the recent BAPE hearings the MER revealed an almost total lack of regard for sustained development in the face of economic problems in the forestry sector.

The MAPAQ's data on the status of fisheries seem limited, and the entire sector is of secondary importance in relation to land reclamation for agricultural production. To facilitate cereal production, the province's major swamps are being drained with no regard for the ecosystems involved.

Furthermore, the operations of these two sectoral departments in the area of resource development are not subject to the regulations governing impact assessments in the Environment Quality Act. As a result, there is no incentive to take conservation issues into account; these usually require that medium and long-term impacts be considered, and are therefore less cost-effective in research aimed at short-term profitability.

Lastly, industrial plans are also excluded from regulations governing impact assessments. The entire pollution and toxic wastes problem is thus left in the hands of a government that feels a need to plan for the short term.

In summary, some of the research currently under way without a specific economic orientation or with a focus on resource development could perhaps be applicable to a conservation-oriented program. However, there is little reason to believe that there could be a reasonable concordance between such research and conservation. All research is conducted according to predefined objectives; unless the governments make a firm commitment to participate, research will be oriented toward other objectives.

THE INTERNATIONAL ASPECT

In the economic field government participation has international repercussions. The world market is such that economic and political decisions made in Quebec are often based on foreign situations.

Here again, and perhaps to an even greater degree, conservation is becoming a vitally important but almost unbroachable issue.

NOTES

1. Editors' note. Portions of this paper were unavailable for inclusion in the Proceedings, including a section on "Education in Schools."

