Environment Canada
Environnement Canada

Environment Update

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Canada

A Word from the Editor

''The environment is where we all live, and development is what we all do. The two are inseparable.'' These are the words of Gro Harlem Brundtland, chairman of the World Commission on Environment and Development, and they effectively convey the importance of environmental factors in decisions of an economic nature.

Last April, the Commission published a document entitled *Our Common Future*, the most comprehensive study ever conducted on the environment and development. It maintains that human activity poses a serious threat to the planetary systems and that it is essential to take the necessary measures to reconcile human activity with the laws of nature in order to safeguard the resource base which will sustain future generations.

In Canada, the federal government has taken other initiatives to tackle the serious problem of acid rain. Agreements have been signed with five provinces to reduce acid rain emissions and negotiations are under way with two others to conclude similar agreements. The national objective is to reduce sulphur dioxide emissions in eastern Canada to 2.3 million tonnes by 1994, about half the 1980 level.

In another important area, the federal Environment Minister has taken advantage of a number of open forums to review Canadians' attitude on water issues and to propose solutions. In his view, Canada should completely change its approach to water management, beginning with a realistic pricing policy which would promote conservation, raise the funds required to deliver pure water and stimulate research that will reduce costs and make our water systems more effective.

In 1978, archeologists with Environment Canada, Parks, discovered the wreck of an ancient ship in the icy waters of a small bay on the coast of Labrador, thereby confirming the presence of Basque whalers in North America in the 16th century. With this discovery, the archeologists were able to collect a considerable amount of new material on the history of the Basques, particularly about 16th century shipbuilding techniques and the Basque material culture.

The leak of toxic substances into the St. Clair River near chemical plants in Sarnia has been much publicized. We take this opportunity to review the various initiatives taken to clean up the ''Blob'' and to prevent similar accidents in the future.

Canada is, for the most part, a northern country. To develop this vast area without jeopardizing the environment, it is essential to acquire knowledge about the region. Environment Canada has therefore developed a unique research and mapping program covering over three million square kilometres of land in northern Canada. The maps provide information on wildlife and fish resources, native land-use activities, ecological land classification and resource development activities.

Furthering public awareness and understanding of our environment requires the co-operation and participation of all groups and individuals across the country. Environment Week is the ideal opportunity to achieve this common goal. This year, more than 400 events and activities were held across the country to heighten public awareness and encourage Canadians to take concrete steps to protect their environment.

Table of contents

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Update
Each issue of *Update* features a variety of topics on our environment and heritage and contains articles from all parts of the country in order to highlight the accomplishments of the Department. Anyone wishing to reproduce articles may do so. We ask that credit be given to this publication.

Readers who wish to comment or require further information can write to the Editor, *Environment Update*, Communications Directorate, Environment Canada, Ottawa K1A 0H3.

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Environment News

National Consultations on New Environmental Protection Legislation

Three hundred representatives of labour, business, environmental groups and government took part in a two-day series of consultations on the draft Environmental Protection Act (EPA).

During that meeting, participants examined the scope, and legal and constitutional aspects of the EPA, the policies needed to ensure proper compliance with the legislation and how it can be enforced against violators, the appeal mechanisms, a framework for when and how biotechnology research and use should be regulated, and the development of a national strategy for the testing and control of existing toxic chemicals.

The two-day meeting follows 30 regional sessions and about 40 bilateral meetings with provincial and municipal governments, industry, labour and public interest groups since the Minister released the draft EPA for consultation last December.

Mr. McMillan promised the participants that consultations would continue and that the draft EPA was not his only effort to bring order to environmental protection legislation.

Clean-up of Windermere Basin

The federal government has agreed to provide $1.25 million towards the clean-up of the Windermere Basin in Hamilton Harbour.

The Province of Ontario, the Region of Hamilton-Wentworth, the City of Hamilton and the Hamilton Harbour Commission will provide the remainder of the $4.5 million required to dredge Windermere Basin, identified as one of the most contaminated areas within the Canadian Great Lakes.

The partial dredging and filling proposal will benefit the environment and may also alleviate problems associated with dredging contaminated sediments from the adjacent federal shipping channels in the harbour.

New Painting for Conservation Stamp Unveiled

At a ceremony which took place last April at the Museum of Natural Sciences as part of National Wildlife Week, Environment Minister Tom McMillan unveiled the new painting from which the 1987 Canadian Wildlife Habitat Conservation Stamp will be produced.

The painting, *On the Wing – Canada Geese*, is by Canadian wildlife artist George McLean.

Over the past three years, Wildlife Habitat Canada has committed $10 million to 80 habitat and conservation projects using the revenues from stamp sales. Wildlife Habitat Canada works closely with Environment Canada through the Canadian Wildlife Service to promote wetland conservation and maintain wilderness habitat.

Since 1984, the stamp has been required to validate the federally issued Migratory Bird Hunting Permits. Stamps and permits will be available from Canada Post in August 1987.

Rideau Canal Policy Guide for Public Discussion

A policy guide to future use and development of the Rideau Canal was released last March.

The policy guide follows a year-long controversy about house-boat traffic on the waterway. It examines heritage conservation, tourism and recreation, land use, water management, and pollution abatement. Public consultation has already begun and, once the public consultation process is complete, all options will be studied before approving policy for the Canal.

Stretching some 200 kilometres between Ottawa and Kingston, the Rideau Canal is internationally famous as a historic site, visited yearly by several hundred thousand people who boat, swim, skate, picnic and sightsee in the area.

Environment Canada consulted the Government of Ontario, municipal governments, community and heritage groups, cottagers' associations and commercial interests along the canal system in preparing the discussion paper.

Forest Fire Management in British Columbia

Federal Environment Minister Tom McMillan and B.C. Forests and Lands Minister Jack Kempf announced last February a five-year agreement to enhance weather forecasting information for use in fighting forest fires in British Columbia.

Under the agreement, a team of forest meteorology specialists from Environment Canada will work in the six B.C. forest region offices in order to provide information and consultation services for the province's forest fire suppression and prescribed burning operations.

The costs of these enhanced services will be borne by the provincial government. This five-year agreement will strengthen the partnership between the federal and provincial governments in an area crucial to the health of the province's economy and to the safety of residents and property threatened by forest fires.

Great Lakes Water Quality Agreement Review

The International Joint Commission has presented its *Third Biennial Report on the 1978 Great Lakes Water Quality Agreement* to the governments of Canada and the United States. Under the terms of the Agreement, Canada and the United States, as signatories, are now required to review its operation and effectiveness.

The Government of Canada is committed to the goals of the Agreement, the principal bilateral instrument through which Canada and the United States endeavour to resolve pollution problems in the Great Lakes.

The actual review of the Great Lakes Water Quality Agreement will entail an internal assessment of the International Joint Commission's recommendations as well as bilateral discussions with the United States on our respective performances under the terms of the Agreement. Consultations will begin among interested departments of the federal government and other consultations will be conducted with provincial authorities and the public, and in due course with the Government of the United States.

New Chairman of Canadian Environmental Advisory Council

Last April, Environment Minister Tom McMillan appointed Dr. Robert Page as chairman of the Canadian Environmental Advisory Council.

The Council, made up of a cross-section of environmentally concerned Canadians, was established in 1972. It serves as an independent source of advice on environmental issues for the Minister.

The new chairman was first appointed to the Council in 1985, and has been a faculty member of Trent University since 1967. He has appeared before a number of boards of inquiry and has served as a consultant to public interest groups, corporations and governments.

Dr. Page has written articles on a range of environmental, northern and energy themes, as well as four books, most recently *Northern Development: The Canadian Dilemma*, published in 1986.

Cavendish Task Force

Federal Environment Minister Tom McMillan and Prince Edward Island Tourism Minister Gordon MacInnis announced last March the establishment of a federal-provincial Task Force as part of co-operative effort to protect the quality of the environment and ensure the continued growth and prosperity of the tourist industry in Cavendish, PEI. Among the items to be studied will be the possibility of setting up a provincial Visitor Services Centre on National Park land at Cavendish Corners.

The Task Force, which includes representatives from both governments and the general public, will study three major issues: traffic, land use and the protection of the regional water supply. It will recommend a direction for future development that will enhance and protect the environment of this international tourist destination.

Clean-up Accord on Niagara River

government agencies responsible for environmental protection along the Niagara River signed a bi-national agreement during an international symposium held in Toronto last February.

The United States Environmental Protection Agency, Environment Canada, the New York State Department of Environmental Conservation and the Ontario Ministry of the Environment agreed to work together over the coming years to fully implement the actions and programs outlined in the Niagara River Toxics Management Plan, and to issue a report to the public every six months on the progress being made to reduce persistent toxic chemicals of concern entering the river.

The agreement calls for a target reduction level of 50% for loadings of persistent toxic chemicals of concern, from sources on both sides of the Niagara River, by 1996, taking into account applicable technologies available, siting issues, laws, regulations and established environmental quality and health standards.

Pacific Rim Park Boundaries Confirmed

Final boundaries for Pacific Rim National Park on Vancouver Island, including the spectacular Nitinat Triangle wilderness area, were confirmed under an agreement signed last February in Vancouver by the Environment Ministers for Canada and British Columbia.

At the signing ceremony, Federal Environment Minister Tom McMillan presented a cheque for $8 million to B.C. Environment and Parks Minister Stephen Rogers. The money is the first installment of a payment of $25 million, honoring a federal commitment to pay 50% of the cost of timber rights associated with the establishment of the park.

The agreement calls for final land transfer to Canada by 31 December l987, and for payment by the federal government of the remainder of the $25 million, plus any interest by 31 March 1989.

The park comprises three distinct components: Long Beach between Tofino and Ucluelet where visitor facilities are concentrated; the Broken Group Islands and surrounding waters; and the West Coast Trail between Port Renfrew and Bamfield, to which the Nitinat Triangle wilderness has been added.

Following transfer of the remaining lands to Canada, Pacific Rim will be formally established by Parliament under the National Parks Act.

Almost $6 Million to be Invested in Forillon National Park

A special improvement program to upgrade tourist and visitor services in Forillon National Park, at a cost of almost $6 million, was announced last March.

The program will be implemented during the next three years under the Federal Development Plan for Eastern Quebec, which is administered by the Department of Regional Industrial Expansion. About 30 new projects of a promotional, cultural and recreational nature will be funded. The planned improvements reflect the results of public hearings held in October 1985 to discuss the revision of the Forillon National Park management plan.

Research Balloon into Arctic Ozone Layer

Last March, in Saskatoon, Environment Canada launched a large research balloon into the ozone layer to gather valuable data on the earth's protective ozone shield in the upper atmosphere over northern Canada.

Over the past decade, the ozone over the south pole has thinned at the end of each winter, by more than 4% annually. The resulting "hole," which currently reduces the layer by 40%, covers an area about the size of the continental United States. It lasts for approximately two months during the polar spring and then fills in. There has also been a minor thinning in the ozone over the Arctic, but with a decrease of only about 1.5 – 2% each year, covering an area only one third the size of that in Antarctica.

Scientists do not yet fully understand why the ozone layer becomes thinner. It may be due to pollution collecting over the poles, or there may be natural causes related to the extreme cold and unusual weather conditions in polar regions.

The information obtained from the research balloon should contribute significantly to Canada's efforts to analyze and protect the global ozone layer. The helium-filled balloon, which is almost as high as a 10-storey building (28m), carries measuring instruments that send radio data back to earth as it rises through the atmosphere.

The balloon data will be compared with measurements taken using ground-based instruments. Scientists hope the findings may help to determine, among other things, whether certain air pollutants, particularly man-made freon gases (chlorofluorocarbons or CFCs), are, indeed, damaging the ozone layer.

Canada to Host Conference on Ozone Layer

The United Nations Environment Program has accepted Canada's offer to host a diplomatic conference in Montreal, 10-18 September 1987, to finalize negotiations and sign an international treaty to control the release of chlorofluorocarbons and other substances that damage the ozone layer. Canada was chosen as the site of the conference in recognition of its extensive contribution to the resolution of this global concern.

The treaty, in the form of a control protocol, will specify the regulatory measures to be taken under the Vienna Convention for the Protection of the Ozone Layer, signed in March 1985. Canada was the first country to ratify that agreement, in June 1986. Now, under the auspices of the United Nations Environment Programme, the diplomatic conference to be held in Canada will bring together most of the concerned nations of the world to agree on collective actions.

Canada Takes Lead on International Action Plan for Existing Toxic Chemicals

Member countries of the Organization for Economic Cooperation and Development (OECD) have responded enthusiastically to a Canadian initiative to host a meeting of experts to develop an international action plan for testing and evaluating existing toxic chemicals. The meeting will take place this fall.

The offer was made during a two-day high level meeting of the OECD Chemicals Group that took place in Paris last March. Participants have also strongly supported an OECD Act which would commit member countries to share information and to strengthen their national programs to identify, assess and control existing toxic chemicals.

Mr. McMillan described the meeting results as "a real step forward, crucial to the success of Canadian domestic strategies for the management of existing toxic chemicals, particularly in the context of the Environmental Protection Act I intend to re-introduce to Parliament soon."

Members of the Canadian delegation included senior federal officials from the departments of Environment, Health and Welfare, and External Affairs; Jim Bradley, Ontario Minister of Environment; Keith Graham, B.C. Government Employees Union; Daniel Green, Société pour vaincre la pollution; and Bill Neff, Canadian Chemical Producers Association.

Our Common Future

''The most important document of the decade on the future of the world,'' is how the United Nations World Commission on Environment and Development described its Report, *Our Common Future*, released in London on 27 April 1987.

Unquestionably the most comprehensive study ever undertaken on the issues of environment and development, *Our Common Future* declares that current human activity threatens to radically alter planetary systems. It underscores the urgent need to change our activities to reflect the mutual dependence of the environment and the economy.

Mrs. Brundtland with young delegates from the five continents.

Canada is a strong supporter of the Commission, and was instrumental in its creation. Our government contributed $1 million, 14% of the Commission's working budget. Two Canadians, Maurice Strong and Jim MacNeill, were members of the independent Commission, headed by Norwegian Prime Minister Gro Harlem Brundtland.

In London, two Canadian students received the Report from Chairman Brundtland along with 10 other young delegates representing five continents. They later presented copies to the Canadian government in Ottawa at the second meeting of the National Task Force on Environment and Economy – a federal, provincial, public and private sector body set up to improve the co-ordination of economic and environmental decision making.

A Global Agenda for Change

The Commission was created by a resolution of the United Nations General Assembly in 1983. Its mandate was to re-examine the critical issues of environment and development, to propose innovative, concrete and realistic ways to deal with them, and to raise public awareness of these issues.

The outcome of three years of a broad process of analysis, learning and debate, *Our Common Future* is not a scientific report but rather a political document.

The Report offers new insight into the integrative nature of environment and development. Twelve chapters thoroughly cover the concept of sustainable development, the role of the international economy, population and human resources,

The Report offers new insight into the integrative nature of environment and development.

food security, threats to species and ecosystems, energy, industry, urban growth, the global commons, arms and the environment, and proposals for institutional and legal changes.

The underlying theme binding these issues is the concept of sustainable development, which the Commission defines as ''paths of progress which meet the needs and aspirations of the present generation without compromising the ability of future generations to meet their needs.'' Sustainable development, says the Commission, is a practical ethic, and must become the overriding goal of all governmental and international agencies. Mr. MacNeill, Secretary-General of the Commission, explains: ''We're dealing with basic survival issues. Development in the future must be economically viable and ecologically sustainable.''

The Report calls for a new era of economic growth which ''must be based on policies that sustain and expand the environmental resource base.''

A New Approach

Our Common Future is unique in several respects. Firstly, solutions are approached from the premise that the issues of environment and development are inherently linked. The point is made clearly by the Chairman, Mrs. Brundtland: ''The environment is where we all live, and development is what we all do. The two are inseparable.'' The Commission forcefully recommends the melding of environment and development policies.

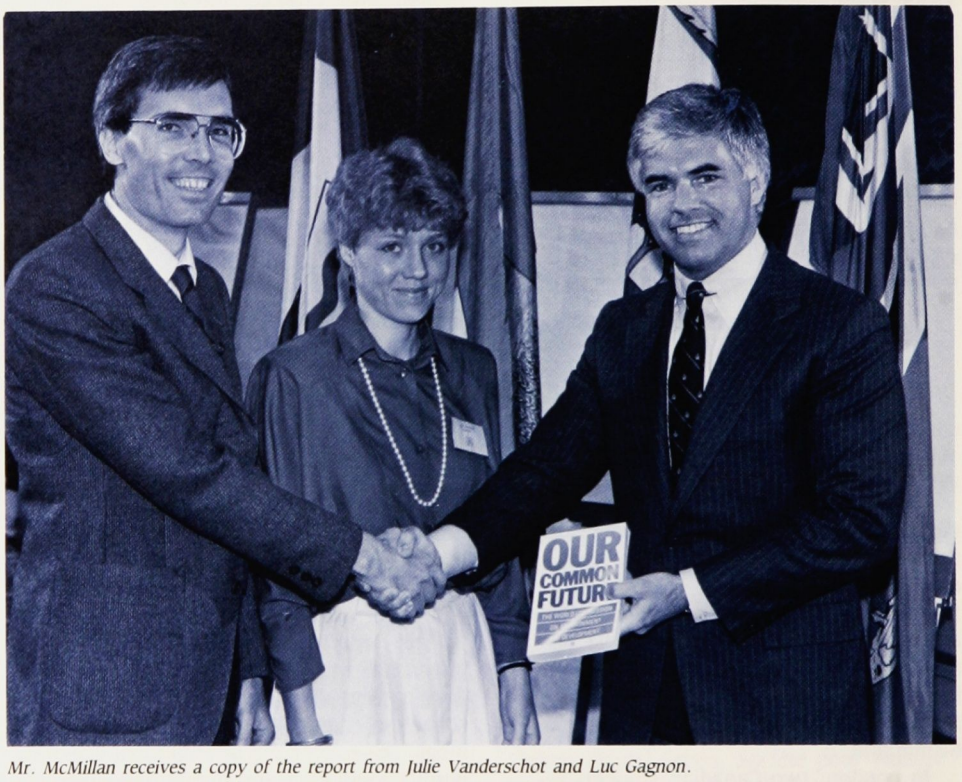
Secondly, the Report is a consensus document formulated by people with differ-

ent views and perspectives, different values and beliefs, and very different experiences and insights. It represents the opinions of 22 men and women, including cabinet ministers, economists, finance and planning officials, from 21 capitalist, socialist and communist nations. The Commissioners' unanimous conviction to change current irresponsible practices and policies adds immense credibility to the Report.

The most significant distinction, however, is the process by which the Report was formed. Throughout the information-gathering process, the Commission sought the participation, testimony and involvement of governments, industry, academia and ordinary citizens. In addition to numerous commissioned studies, the Commission held public hearings in towns and cities on five continents.

Over a period of 900 days, the Commission listened to the concerns of thousands of people across the globe, against a backdrop of such environmental tragedies as the African famine, the Bhopal chemical accident, the explosion of gas tanks in Mexico, and the Chernobyl nuclear disaster.

Last May, Environment Canada, with the co-operation of the governments of British Columbia, Alberta, Ontario, Quebec and Nova Scotia, hosted the Commission's fifth meeting and only North American visit. The Commissioners travelled across the country and witnessed the concerns of hundreds of Canadians in places such as Vancouver, South Moresby, Fort McMurray, Edmonton, Toronto, Quebec City, James Bay and Halifax. Ottawa was the scene of two days of public hearings, where the Commission received a submission from Environment Minister Tom McMillan as well as 124 written submissions and presentations from representatives of labour, environmental groups, natives, the volunteer sector, industry and the provincial and federal government departments.



Mr. McMillan receives a copy of the report from Julie Vanderschot and Luc Gagnon.

Environment Minister Seeks Stronger Economy/Environment Links

Environment Minister Tom McMillan accepted a copy of *Our Common Future*, on behalf of Canada, at a special ceremony in Ottawa on 29 April 1987. Julie Vanderschot and Luc Gagnon, the two Canadian students who had earlier travelled to London to receive copies of the Report from Chairman Brundtland, made the presentation to Mr. McMillan.

The Minister said his initial review of the recommendations contained in the report suggested that the Commission "by and large, tends to reflect the overall priorities and approach of this government in dealing with domestic, regional and global environmental issues."

He added that, as well as affirming the government's domestic priorities, the report underscores the importance of continued Canadian government leadership in ensuring that foreign aid and trade programs reflect environmental realities, and in dealing with "planetary mega-issues" such as atmospheric warming and ozone depletion.

Further, the Minister said the emphasis which the Commission places on incorporating environmental values into economic decision making by public and private sector authorities "directly reflects the approach this government has taken to promoting better co-ordination among federal and provincial policy-makers and private sector interests, particularly as it applies to natural resources".

Mr. McMillan said the federal government is particularly encouraged the Commissioners stressed that more co-ordination between economic and environmental authorities is essential "if we are to make the leap from being preoccupied with undoing environmental damage to planning and managing our affairs so that economic development efforts are environmentally sound and sustainable in the first place."

The Minister pledged to consult his Cabinet colleagues to examine new mechanisms "to ensure that environmental impacts are routinely considered when economic and resource decisions are made at the federal level." He will begin with the key federal ministries which establish policies or administer programs that influence how industry operates and how our natural resources are used.

The Minister is looking forward to hearing the response of Canadian environmental and business groups to the Report's main recommendations and to participating in the international debate on the Commission's findings.

What next?

The Report is now being debated at the international level by heads of government, the scientific community, non-governmental organizations and the press. The Commission is undertaking an extensive information campaign to familiarize governments with the Report so that they can be informed participants in the General Assembly debate at the United Nations in the fall. They also aim to build public awareness and support.

The Honourable Tom McMillan, federal Minister of Environment will participate in these debates. After discussions and consultation with Cabinet colleagues, departmental representatives, members of the National Task Force on Environment and Economy, and non-governmental participants, the Minister will present a formal, detailed Canadian response to the Report at the UN General Assembly.

The Commision has repeatedly stressed that its Report is not a final blueprint, but instead a challenging agenda which offers strategies and motivation for adopting new policies. Commissioner Maurice Strong considers the Report to be "the real gospel and road map to a safe and secure next century for the human species."

The Commission directs its message towards people, and in its commitment to broad-based public participation, encourages Canadians to continue the discussion and debate of the Report at the local level. "The process that produced this unanimous Report proves that it is possible to join forces, identify common goals and to agree on common action."

The External Relations Directorate of Environment Canada is co-ordinating follow-up activities leading to the debate at the General Assembly.

Anyone wishing to contribute to discussions or propose suggestions is encouraged to contact Ned Lynch, Director of National Affairs, External Relations Directorate, Environment Canada at (819) 994-1516.

Oxford University Press has published the Report of the World Commission on Environment and Development, and copies can be purchased at book stores for approximately $13.50 per copy. ■

Messrs. Roy Aitken, Tom McMillan and Gerard Lecuyer, members of the National Task Force on Environment and Economy.

National Task Force on Environment and Economy

The National Task Force on Environment and Economy was established by the Canadian Council of Resource and Environment Ministers to promote dialogue among Canada's environment ministers, key corporate decision makers and representatives of environmental groups and the academic community. Its principal objective is to foster environmentally sound economic development in Canada.

The Task Force is studying ways to integrate environmental quality considerations into economic development decision making and to support the development and implementation of environmental conservation strategies in Canada. The group will also review the report of the World Commission on Environment and Development and contribute to the Canadian response.

The Task Force has already held two productive meetings and members are looking forward to building on that success at their third and final meeting, to be held on 14 August 1987, in Toronto.

The final report of the Task Force will be submitted to the Canadian Council of Resource and Environment Ministers at its next annual meeting, scheduled in Quebec City on 23 and 24 September 1987.

The Task Force is composed of the following individuals:

- Tom McMillan, Environment Minister, Canada.
- Laird Stirling, Environment Minister, Nova Scotia.
- Clifford Lincoln, Environment Minister, Quebec.
- James Bradley, Environment Minister, Ontario.
- Gerard Lecuyer, Environment and Workplace Safety and Health Minister, Manitoba, Task Force Chairperson.
- Ken Kowalski, Environment Minister, Alberta.
- David Porter, Renewable Resources Minister, Yukon.
- Roy Aitken, Executive Vice-President, INCO Ltd.
- Dave Buzzelli, Chairperson, President and Chief Executive Officer, Dow Chemical Canada, Inc.
- Dr. Donald Chant, Chairperson and President, Ontario Waste Management Corporation.
- Dr. Margaret Kerr, Vice-President, Environmental Affairs and Occupational Health and Safety, Alcan Aluminium Ltd.
- Lloyd McGinnis, President and Chief Executive Officer, Wardrop & Associates Engineering Consultants, President, Canadian Chamber of Commerce.
- I.R. Smith, Executive Director, Canadian Petroleum Association.
- Adam Zimmerman, President and Chief Executive Officer, Noranda Ind.
- Susan Holtz, Senior Researcher, Ecology Action Centre.
- Charles Mallory, Past President, S.T.O.P. (a Montreal citizens' environmental group).
- Dr. Peter Larkin, Vice-President, Research, University of British Columbia.

For information about the National Task Force, contact: Mark Stefanson, Chairperson, National Task Force Secretariat, telephone: (204) 945-4742.

Acid Rain Agreements

Effect on maple trees

Lake trout from non-acidified lake

This spring, federal Environment Minister Tom McMillan signed acid rain agreements with the governments of Newfoundland, Prince Edward Island, Quebec, Ontario and Manitoba.

The agreements formalize the commitments made in 1985 to reduce eastern Canada's sulphur dioxide (SO_2) emissions to 2.3 million tonnes per year (about half the 1980 level) by 1994. The agreements specify 1994 provincial emission objectives; they require regular progress reports on emission reduction initiatives and on the results of co-operative research and monitoring activities.

Mr. McMillan described the agreements as ''solid progress towards the completion of Canada's acid rain clean-up.''

The Canada – Quebec agreement confirms the comprehensive acid rain regulations which will cut annual provincial emissions to 600,000 tonnes by 1990, four years ahead of the national timetable.

Mr. McMillan described the agreements as ''solid progress towards the completion of Canada's acid rain clean-up.''

The governments of Canada and Quebec also agreed on a cost-sharing agreement with Noranda Inc. to subsidize the construction of an acid gas plant at Noranda's copper smelter in Rouyn-Noranda. At a cost of $125 million, the plant will allow Noranda to reduce its SO_2 emissions by 50% as required by provincial regulation. Quebec and Canada will each provide up to $41.7 million on a repayable basis. Noranda will invest an additional $41.7 million and cover all the operating costs of the plant.

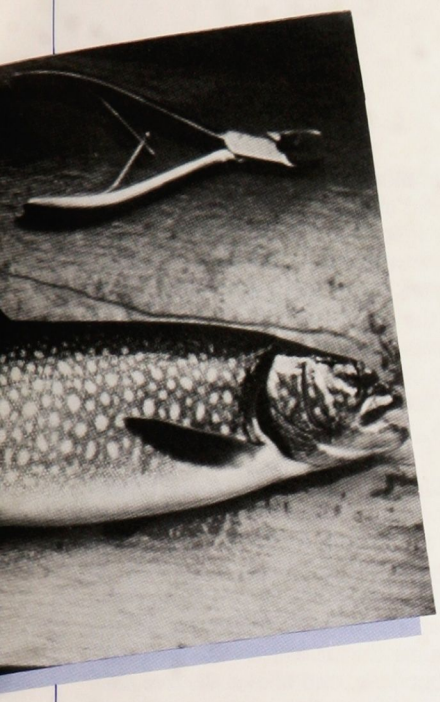
The federal-provincial agreement in Ontario is based on the Ontario Countdown Acid Rain program, which will reduce the province's SO_2 by 60% by 1994. Ontario's emission reductions represent more than 50% of the entire Canadian acid rain abatement program. Joint financial assistance, up to $85 million from each government, will be available as necessary to cost-share the implementation of abatement measures.

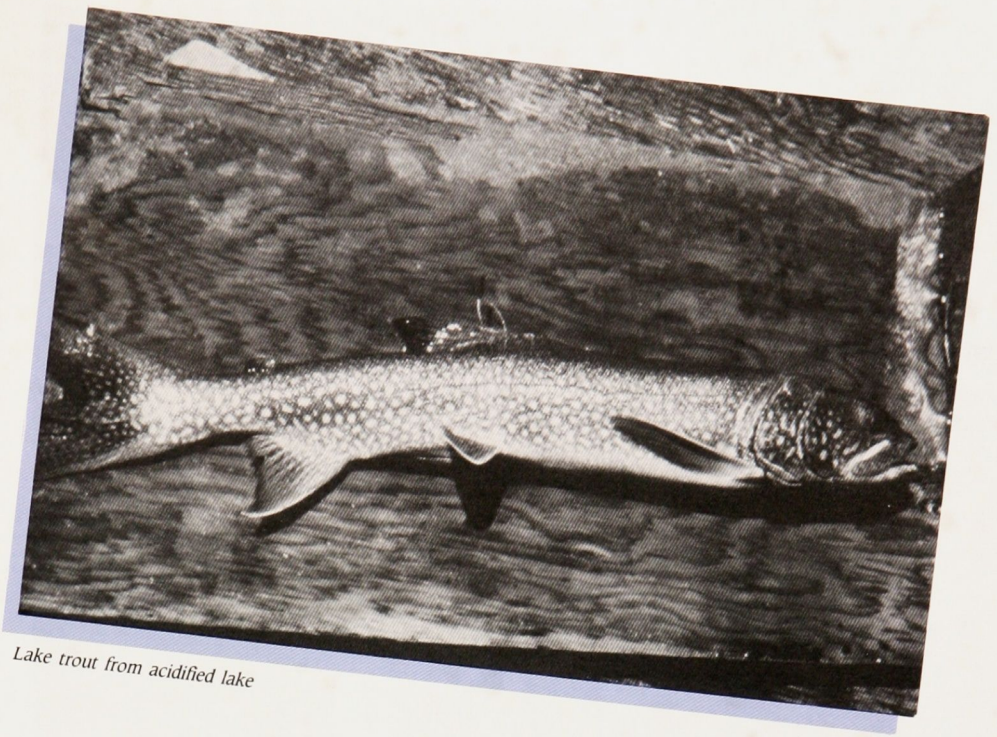
Manitoba's agreement pledges the province to reduce annual allowable emissions from the 1980 level of 738,000 tonnes to 550,000 tonnes by 1994. Two non-ferrous smelters operated by Hudson Bay Mining and Smelting in Flin Flon, and Inco in Thompson account for 95% of the province's SO_2 emissions. The federal government has committed up to $20 million to assist with modernization/pollution abatement measures at these facilities.

Prince Edward Island is already meeting its 1994 SO_2 emissions objective under the agreement not to exceed 5,000 tonnes per year. PEI will continue to maintain the downward trend in emissions.

The agreement with Newfoundland requires that all new industries use state-of-the-art emission control technology to minimize air pollution. Newfoundland's 1994 emissions objective, as specified in the agreement, is 45,000 tonnes.

Mr. McMillan noted that the Atlantic provinces are ''at the end of the exhaust pipe,'' of acid rain that originates in central Canada and the United States. However, the region produces 10% of the SO_2 emissions in eastern Canada, and thus, he said, it is a vital part of the acid rain program. Negotiations to conclude emission reduction agreements with New Brunswick and Nova Scotia are in progress.





Lake trout from acidified lake

Sulphur Dioxide Emissions
(tonnes)

	1980	1994
Manitoba	738,000	550,000
Ontario	2,194,000	885,000
Quebec	1,085,000	600,000
New Brunswick	215,000	185,000
Prince Edward Island	6,000	5,000
Nova Scotia	219,000	204,000
Newfoundland	59,000	45,000
Total	**4,516,000**	**2,475,000**

The agreements signed with the provinces are a key component to addressing the acid rain problem.

However, Canadian emission reductions alone cannot protect our environment from the damage caused by acid rain. Over 50% of the acidic air pollution that falls in Canada originates at sources located in the United States. To resolve the acid rain problem in Canada, the Canadian acid rain abatement program must be supplemented by emission reductions at U.S. sources. Canada's objective is to secure an agreement with the United States to reduce the flow of SO_2 from the U.S. into eastern Canada, from four million tonnes to two million tonnes by 1994, to coincide with the Canadian acid rain abatement program. ■

- Acid rain is caused by emissions of sulphur dioxide (SO_2) and nitrogen oxides (NO_x). Released into the atmosphere, these substances are carried hundreds of kilometres, undergo chemical transformation and return to earth in acidic form in rain, snow, fog, or dust.
- Acid rain increases the acidity of lakes and streams to the point where aquatic life is depleted, and is increasing the acidity of soil and shallow groundwater.
- Scientists suspect that acid rain may affect groundwater and surface water supplies. Acidified water can dissolve or leach metals such as aluminum and mercury from surrounding soils and bedrock. Both of these metals can be toxic to humans.
- Acidified drinking water may pose health risks by corroding toxic metals from water pipes and cisterns.
- During spring snow melt, intense doses of acid can be flushed into rivers and streams. This acid shock phenomenon coincides with the most sensitive period in fish spawning cycle, killing fish, eggs and fry.
- Recent studies have pointed to a correlation between declining populations of waterfowl, such as black duck, common goldeneye and merganser and acidification of lakes. Loss of food species, a result of acidification, increases competition between fish and birds for food.
- Acid rain is suspected of having a variety of negative impacts on forests. Seedlings can be damaged by even moderately acidic rain. Acidity may make trees more vulnerable to disease and insects, damage foliage and affect growth.
- Acid rain corrodes buildings and statues resulting in costs for repair and protection estimated at billions of dollars every year.
- Acid rain is suspected of contributing to respiratory problems in people. More than 80% of Canadians live and work in areas where acidic deposits are high.

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Water Pricing Policy

For a people otherwise well informed about environmental matters, we Canadians are surprisingly ignorant about our water. How many of us can say for sure where our drinking water comes from, what happens to it along the way, and where it goes when it leaves the sink?

We Canadians are surprisingly ignorant about our water.

We Canadians take our water for granted. We assume that it will always be there – clean, abundant, and above all, free. In short a bottomless well.

The truth is, we don't have as much fresh water as we think. True, Canada has 9% of the world's water – but we also occupy 7% of the world's land mass, leaving us, as Tom McMillan pointed out in his March address to the Association québécoise des techniques de l'eau, ''just about our fair share.'' However, about 60% of Canada's water drains north, while 90% of the population is clustered along our southern border. And when an abundance of water does coincide with a large population it is often polluted, for example, the Great Lakes and the St. Lawrence River Basin.

Canadians must begin to look long and hard at our water supply before continuing to draw from it at the rate we have done in the past. Our water withdrawals increased by more than 50% from 1972 to 1981 although our population increased by less than 5% in the same period. Our water use is expected to continue to outstrip population gains in the coming years.

''Our approach to the pending water shortage,'' said Environment Minister McMillan, ''is as typically Canadian as it is fundamentally flawed. It's based on the false premise that there is an easy fix. Just as in the 1970s we thought the answer to energy shortages was increased supply, so also we are repeating the mistake with water. Hardly anyone is looking at the demand side of the equation. Need more

Water prices for industrial use by selected country, 1983 ($/m^3)

Country	Price	Country	Price
Australia	1.65	U.S.A.	0.53
Germany	0.99	Sweden	0.50
France	0.75	U.K.	0.50
South Africa	0.75	Canada	0.25
Belgium	0.70	Italy	0.17

Municipal domestic water use per capita-day by selected country, 1983

Country	Litre
United States	425
Canada	360
Sweden	200
United Kingdom	200
West Germany	150
France	150
Israel	135

water? Construct a pipeline; dig a canal; build an irrigation system. Need a waste sink for an industry? Dump the water untreated, or inadequately treated into the nearest waterway; we can always get clean water from somewhere else.''

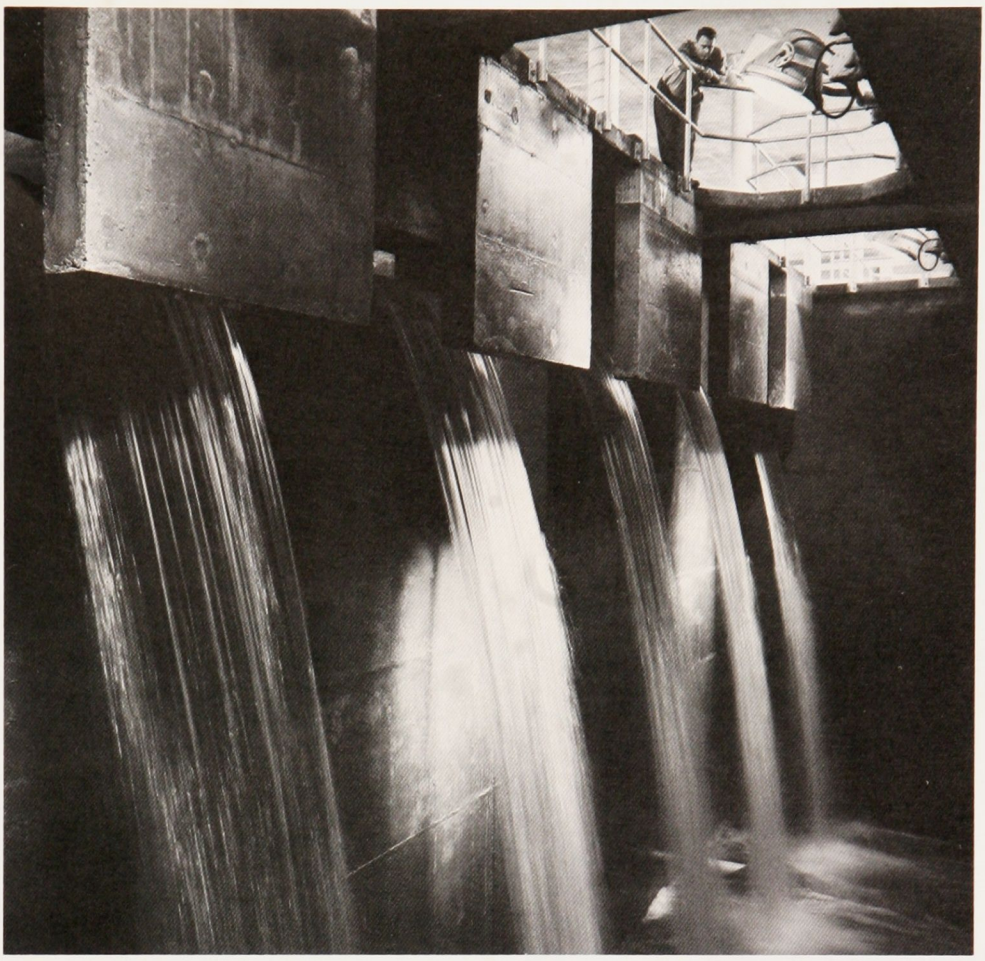
Instead, we need to stress water conservation, efficiency and recycling. Speaking to the Ontario Municipal Water Association, Mr. McMillan said, ''In no part of Canada is fresh water so plentiful that it can continue to be over-used and abused in the way it has been in recent decades. We must start viewing it as a scarce commodity that has real value. And we should begin managing it accordingly.''

Part of the federal government's ''demand side'' solution to our water problems is for water users to start paying the true cost of maintaining, rehabilitating and building treatment and delivery systems.

The value of our water treatment and delivery systems now totals $100 billion. The bill for the next five years to repair underground pipes alone is estimated at $3 billion, with an additional $3 billion needed to improve water and sewage treatment facilities. Worse, many communities have no wastewater treatment. Raw sewage is dumped into our rivers, lakes and harbours. This situation must be improved; the question is how to pay the bill.

The Environment Minister pointed out that in the past the majority of Canadian municipalities have promoted inefficient water use by levying inadequate charges to customers; few people pay close to the real cost of water. Canadian industry pays about one quarter of what European industry pays for water, and about one half the American rate.

''Canadian water is at once the world's best bargain and the worst delusion, for we pay dearly in the long run for such short sightedness. By under pricing our water in such a fashion, we undervalue it. And by undervaluing water we encourage its waste. What is more, we are foregoing a source of revenue badly needed to ensure that water is, in fact, delivered pure to our homes and businesses and places of recreation.''



By under pricing our water in such a fashion, we undervalue it.

Speaking at the first Canadian Conference on Urban Infrastructure, Mr. McMillan urged municipalities to join with the federal and provincial governments to come to grips with the real water issues facing Canadians, which include:

- examining water pricing to determine the real cost of supplying water and wastewater services;
- assessing relevant experience in other utility sectors such as garbage collection and hydro;
- evaluating more efficient ways to organize water and sewage treatment, including alternatives to public sector service;
- finding a way to develop and apply policies and regulations to reduce industrial discharges to sewers;
- evaluating and developing technologies for water and wastewater systems and the rehabilitation of their underground works; and
- assessing policies that provide incentives to conserve water resources.

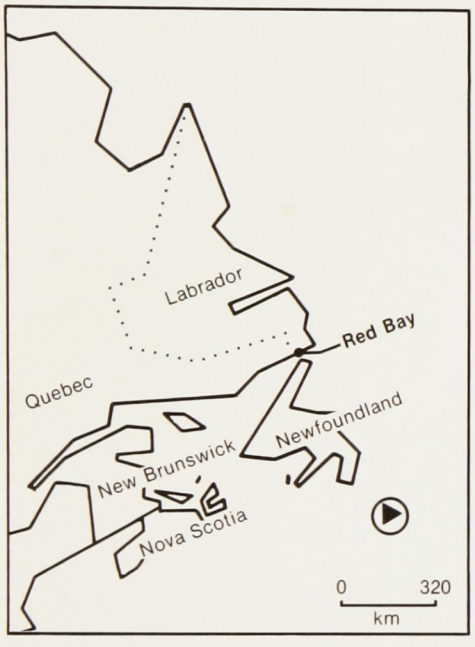
Mr. McMillan said that the federal government is already carrying out technology development programs in wastewater treatment that will result in more efficient and less costly delivery of high-quality water to all Canadians.

''We have to admit that the solutions of the past – subsidies and an emphasis on supply, while turning a blind eye to controlling demand – have not solved anything,'' he said.

We in Canada must revolutionize our approach to water management, beginning with a realistic pricing policy for consumers that encourages conservation, raises the cash needed to deliver pure water, and stimulates research that will bring costs down and make our water systems more effective.

Speaking to the Canadian Conference on Urban Infrastructure, Mr. McMillan offered to co-sponsor a high-level meeting that will move beyond debate to agreement on a national action plan to address Canada's ''emerging water crisis.'' ■

Basque Whalers in Labrador



In 1978, Environment Canada, Parks archeologists discovered the remains of an ancient ship in the cold waters of a small bay on the coast of Labrador. Buried in silt some 30 metres from shore in the shallow waters of Red Bay, the wreck apparently confirmed the presence of 16th century Basque whalers in North America.

This discovery did not come about by chance. After long and painstaking research through Basque archives in France and Spain, historian Selma Barkham successfully identified the principal bays in Labrador visited by Basque fishermen, including Red Bay. One particular document contained a mass of detail about the wreck in 1565 of a vessel called the *San Juan* which, she had good reason to believe, had foundered in this small Labrador harbor. The Basques had been attracted to this part of the New World by the pods of whales which flourished in the glacial North Atlantic waters. These whales represented a considerable source of income at the time, since whale oil fueled the lamps of most of Europe.

Mrs. Barkham managed to convince National Historic Parks and Sites archeologists to take an interest in Red Bay. The results of preliminary excavations were immediate and revealing. At the mouth of the bay, on tiny Saddle Island, the remains of ancient structures were still visible and, on a nearby beach across the harbor, whale bones lay scattered. Also, some 30 metres from the beach in shallow water, a few perfectly preserved timbers of an ancient vessel protruded from the silt. Closer inspection revealed a cargo of wooden casks, still coated with a heavy, viscous residue.

These discoveries gave clear evidence of the activities described in the ancient archives and set in motion an intensive archeological research operation that ran from 1978 to 1985. Directed by Robert Grenier, the excavations sought initially to uncover the wreck of the presumed *San Juan* and to learn more about the Basque whaling expeditions in the New World.

The research confirmed that the wreck was in fact a merchant vessel used for whaling in the second half of the 16th century – the most complete and well-preserved of its kind to be discovered.

Denis Pagé

The ice-cold waters, at temperatures rarely rising above 0°C, were partially responsible for the state of preservation; Saddle Island, located nearby, sheltered the wreck from the scouring action of ice and tides. A thick covering of fine silt provided a stable, oxygen-free environment which also helped to preserve the timbers.

The hull lying on the bottom of the harbor was far from intact, having been split open like a clam, undoubtedly as a result of pressure exerted by ice. Raising the wreck was neither practical nor economically feasible.

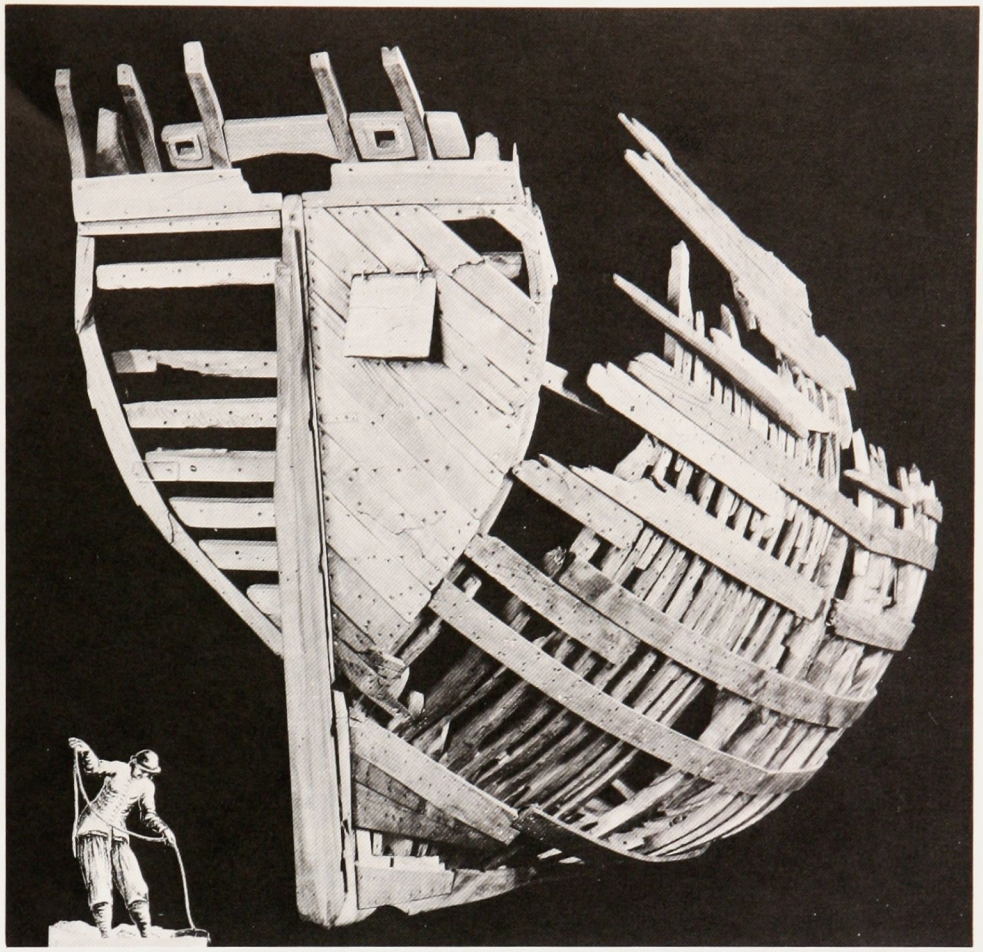
Initially the solution was to record in minute detail each individual timber, then slowly and carefully dismantle the wreck where it lay. Recording took place underwater as much as possible, making use of traditional measuring, graphic and note-taking methods, and photogrammetry. All key timbers were then brought to the surface for more thorough analysis.

On the basis of these various analyses, Marcel Gingras, a skilled craftsman recruited specifically for this purpose, fashioned an exact scale model of each timber and subsequently assembled the whole in order to reconstitute the vessel as it lay in the shallows before being crushed and flattened.

This model is in all respects faithful to the actual finds: no missing timbers have been replaced and none of the superstructure – main deck and masts – is present. The wreck itself, even if raised, could never have been restored to such a degree of perfection.

In addition, this reproduction work afforded researchers a unique opportunity to examine more closely the various shipbuilding techniques used by the Basques. This ship, which the Basques most likely classified as a galleon, measured approximately 21 metres long and eight metres wide at the water line, with a draft of about three metres. The frame was of oak, as were the planks of the hull, held edge on edge, or carvel-built, by treenails and iron nails sealed with pitch. The vessel had three masts, two decks, a sterncastle and a forecastle.

The vessel had three masts, two decks, a sterncastle and a forecastle.



Like the Spanish galleons used at that time to haul the fabulous riches of the New World back to the mother country, the Basque galleons transported a cargo scarcely less valuable: whale oil. Divers found the remains of hundreds of casks that were used as containers for processed whale oil.

The *San Juan* was thus a cargo vessel used for oil transportation. Unlike modern whalers who hunt their prey on the high seas, the Basques hunted for whales close to shore. For this purpose, they used small, open boats powered by rowers and sail. Red Bay harbor yielded remains of three such "chalupas," one of which lay beneath the wreck of the *San Juan*.

Approximately eight metres long, two metres wide and 80 centimetres deep, this craft was fitted with six benches that would seat the same number of rowers, one of whom was also the harpooner. An open boat, it had a single, central mast for a square sail.

A fourth boat was also found inside the bay, away from the wreck site.

In addition to the *San Juan* and these "chalupas," research resulted in the discovery of two wrecks of what were most likely galleons by all appearances of similar construction and date. Other remains of Basque origin were uncovered in underwater surveys.

The underwater research now completed thus yielded a considerable amount of new information about Basque maritime history in eastern Canada, particularly about 16th century shipbuilding techniques and the Basque material culture. Studies of the Basque presence in Labrador are continuing, and it is hoped that even more can be learned about these little-known entrepreneurs during the time of the great discoveries. ■

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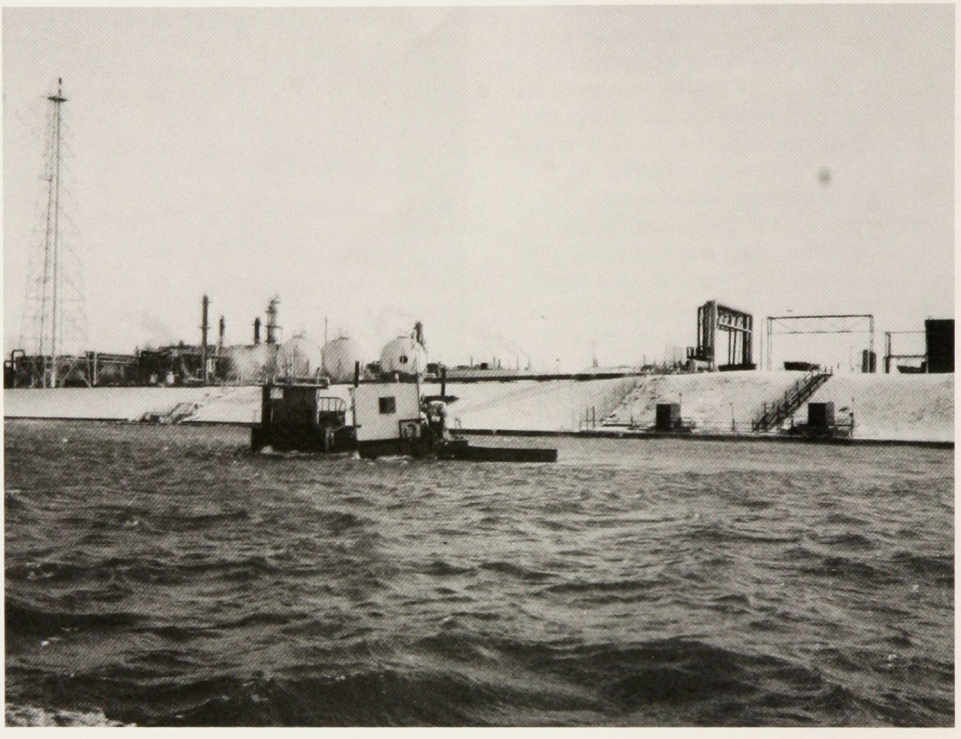
What's Happening to the "Blob"?

Sarnia, Ontario is an industrial community, nestled along the St. Clair River. Known for its heavy chemical production, the community has always enjoyed the fruits of its products. But 1985 gave rise to a new and ominous dimension both for business and the city. The issue concerned chemicals in and on the river sediments beside the large chemical industries in that area.



The issue concerned chemicals in and on the river sediments beside the large chemical industries in that area.

The first development occurred in August 1984. What started out as an experiment by the University of Windsor, led to the discovery of a mysterious black tarry substance. The researchers gave the material to the Ontario Ministry of the Environment and to Environment Canada for analysis. The data indicated a historical and likely still extant leakage of chlorinated organics associated with varying amounts of perchloroethylene and carbon tetrachloride. These are industrial solvents which are manufactured by one of the companies in the area where the chemical was found.

In August 1985, residents of Sarnia were shocked and alarmed when Dow Chemical announced the accidental spill of 11,000 litres of perchloroethylene (PCE) into the St. Clair River system. The news of the now infamous leak became an instant "headline grabber" and radio and TV stations descended on the scene within days.

The publicity unleashed a chain of events that would bring together a large body of investigators from a number of government levels in Ontario. In Ottawa, Federal Environment Minister Tom McMillan urged his scientists to come up with a report on the spill and all the other contaminants in the same area of the St. Clair River, to be presented to the House of Commons.

About 11,000 litres of toxic chemicals had escaped via a drain into the river over a three-day period.

It was determined that about 11,000 litres of toxic chemicals had escaped via a drain into the river over a three-day period. Dow found the source of the spill and shut it off. The river bottom close to the source was vacuumed by Dow divers and an estimated 900 litres of the perchloroethylene was recovered. The material was in a dense liquid that formed puddles in the depressions on the river bottom in an area of about 50 square metres.

Despite initial clean-up efforts by Dow Chemical and the Ontario Ministry of the Environment, these puddles kept coming back. Dow then proposed a more thorough mopping up of the chemical, which called for removing of the river sediments containing chemicals.

By this time, a team of research specialists from the National Water Research Institute (NWRI) in Burlington, Ontario had assembled. Technical operations staff from NWRI offered valuable assistance on the spill site.

NWRI divers and crew operated a unique underwater, submarine-like mechanized vehicle which roamed the bottom of the river bed sending back video pictures of the ''Blob''. The pictures gave investigators their first candid look at the offensive material and enabled the team to trace the flow of the puddles as well as gauge the size and magnitude of the problem.

Dr. Keith Rodgers, a science manager at the NWRI, was charged with the leadership of the clean-up operation on behalf of Environment Canada. ''Environment Ontario and Environment Canada set up a three-man task force which consulted on a daily basis,'' says Rodgers. When Environment Minister McMillan called for an emergency study in November 1985, nearly 50 people including scientists, chemists, technicians and engineers from NWRI were quickly brought together. They were dubbed appropriately, the ''Blob Busters''.

Hydrologists at NWRI provided valuable advice on the likely potential for leaks from the underground source. Samples gathered from the spill area were sent to Burlington where research chemists analyzed the substance in the laboratories. The nature of the material found in the puddles was then characterized, leading to the conclusion that it was most likely a waste product from solvent production on the Dow Chemical site.

Dr. Rodgers stated, ''Dow Chemical dug up soil around the pipes, fairly close to the waterfront. The Dow divers uncovered the source of the leakage and cut off the sewer, shutting down the route by which the material seeped into the river.''

In the Hydraulics Division of NWRI, staff were busy conducting experiments on the rate at which this material dissolved. This information would later assist in the scheduling of the clean-up, to guarantee a minimum loss of material into the river. Although the source was cut off in February 1986, camera and diving crews monitoring the area revealed the continued reappearance of the puddles, now at a very low rate.

Once again the underwater camera was utilized, combined with divers, to discover the chemical was seeping out of coarse sand and gravel on the river bottom.

To pick up the remainder of the chemical, Dow eventually installed a regular vacuuming hose system with three sump holes. The material collected at these points by gravity. Dr. Rodgers says this process is still being used by the chemical company to collect any puddle material that leaked out of the sand and gravel.

To date, in response to the spill, Dow has spent millions of dollars undertaking major renovations of its drainage systems from catch basins (where the chemicals may be spilled and collected on site) as well as cutting off all connections with the sewers and re-routing the material from loading bays.

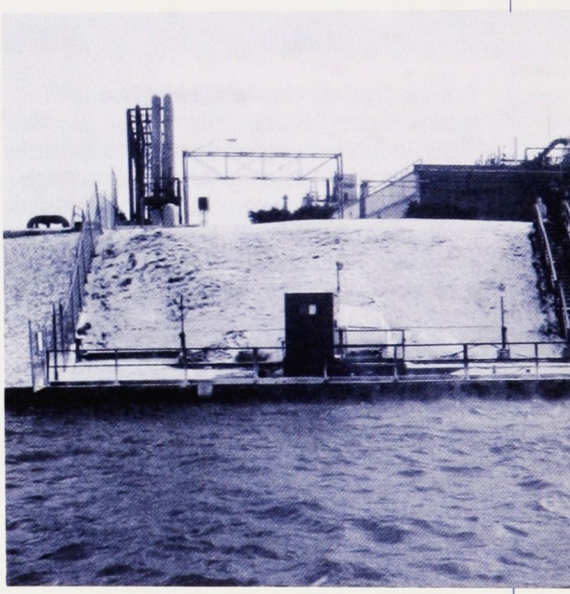
The company has also introduced an impressive $12 million prevention program for the future. This includes many engineering improvements along with better monitoring systems, training for staff, education and management practices within the plant itself. Dow is currently preparing the second stage of a three-stage report to government, leading to the development of a remedial action plan, if required, to deal with any remaining contaminants on the river bottom.

The International Joint Commission for the Great Lakes, through its Water Quality Board, has identified 42 ''areas of concern,'' where established water quality objectives or standards for water, sediments or biota are not being met. The Great Lakes connecting channels, such as the St. Clair River, are a major area of concern as a potential for disputes could erupt because of damages to one country due to contaminant discharges by the other.

Looking back, we can now fully appreciate how the spill of PCE into the waters of the river became an international news item. A great deal of debate resulted from the spill. The community had to cope with a negative image; but many new lessons have been learned through this emergency effort.

Dr. Rodgers suggests, ''Industry in the 'Chemical Valley' has now been strongly sensitized to public concern about their operations. Major initiatives were undertaken by both federal and provincial governments, in research and enforcement. New stiffer legislation has been given stronger support.''

The lessons learned can surely be applied to prevent future environmental accidents in Canada.



The ''Blob'' issue was a large co-operative effort, involving a wide range of research expertise. Although there were many problems and many differences of opinion, the lessons learned can surely be applied to prevent future environmental accidents in Canada. ■

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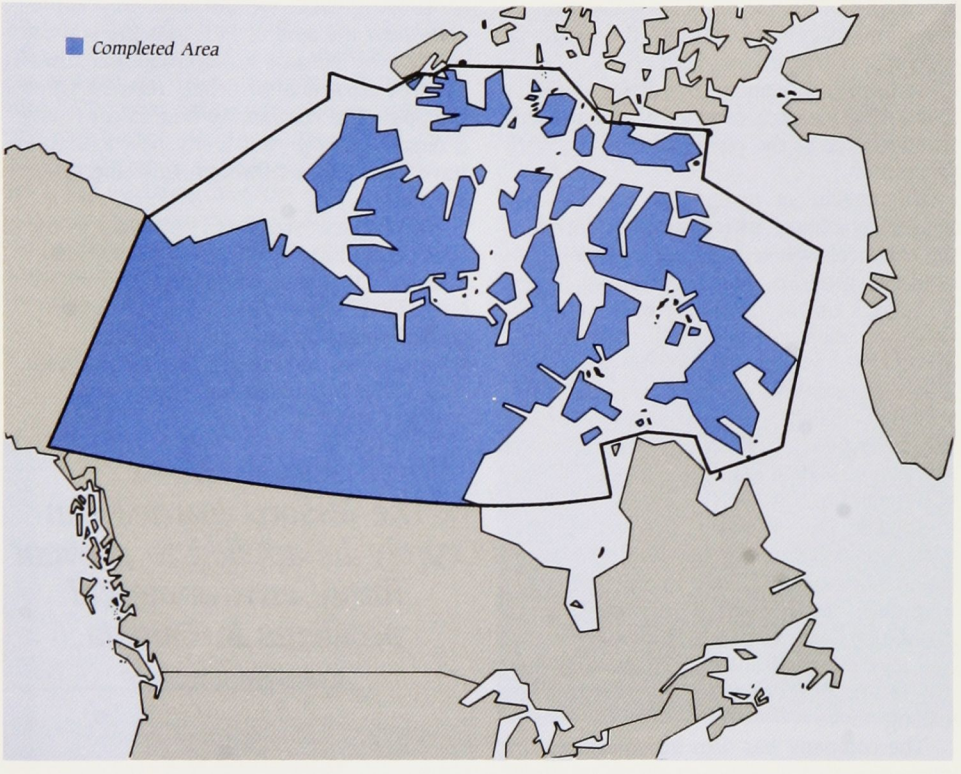
Northern Land Use Information Series



The 16-year-old Northern Land Use Information Series (NLUIS) Program will be fulfilling its primary objective in 1989 when it publishes the last set of land use maps for Canada's North. Upon completion of this publication, just over 3,000,000 square kilometres in Canada's North will have been researched and mapped.

Just over 3,000,000 square kilometres in Canada's North will have been researched and mapped.

Starting in 1971, the objective of the program has been to produce an integrated, regional overview of the main environmental and social concerns, and current land use patterns in Northern Canada.

The program, jointly funded by the Department of Indian Affairs and Northern Development (DIAND) and Environment Canada, was designed to be a relatively rapid, low-cost survey to meet specific user needs, in particular the issuing of land-use permits by DIAND. Lands Directorate of Environment Canada has been responsible for providing the overall management of the program, some program personnel, and operational funding, while DIAND has provided the resources for field research and logistics.

In addition, the federal Department of Fisheries and Oceans and the Northwest Territories Department of Renewable Resources have been major participants. The program also has relied on the co-operation and assistance of other federal and territorial government departments and agencies, private research groups and local residents of the Yukon and the Northwest Territories.

''The NLUIS Program is the major multi-disciplinary, environmental-social research and information program for Northern Canada,'' says Environment Canada's Program Co-ordinator Garry McLean. ''The wide variety of topics covered by the program make it a unique tool for managing development activities and protecting natural resources in the Canadian North.''

A unique tool for managing development activities and protecting natural resources in the Canadian North.

Information topics presented on the maps include: wildlife and fish resources, an ecological land classification, coastal classification, native land-use activities, resource development activities, historical sites, conservation areas, and other socio-economic and cultural data.

Research was compiled from literature reviews, airphoto and satellite interpretation, and field surveys. Research for the map series often resulted in new baseline data for large areas of the North where such data previously did not exist.

Annually, since 1972, about 30 (1:250,000 scale) maps, covering about 200,000 square kilometres, with accompanying texts have been produced. To date approximately 400 maps have been published. The program first focused on the Western Arctic, where development activities were centred, and then progressed eastward and finally northward. All the research and mapping for the program has been completed, except in the High Arctic.

The maps are used by a number of agencies in both the public and private sectors. The maps assist federal administrators of the Territorial Land Use Regulations for initial evaluation of proposals for development activities. They also assist administrators in processing Land Use Permit Applications, alert managers to topics which require special study and help physical and social scientists plan or evaluate impacts on northern development.

''Although the maps cannot provide full answers to everyone's needs, they do provide a means to highlight concerns, and portray information essential for responsible management,'' says McLean.

''At Petro-Canada, we use the Land Use Information Series to assess the likely impact on wildlife and on community activities which our exploration and development work will have . . . We try to take mitigative steps on our own to avoid problems. I find the maps very useful for this purpose,'' says the director of Environmental and Social Affairs, Petro-Canada.

In addition to the maps, the program has published 14 reports and produced another 13 unpublished reports and papers.

To ensure ongoing usefulness of the program, managers have been making changes to better meet clients needs. Periodic questionnaires and a major workshop with clients helped update and improve the program. In addition, an annual review by the Arctic Land Use Research section at DIAND was made to ensure that their specific departmental needs were being met.

As the mapping part of the program comes to an end, the data obtained over the years will be used for other upcoming projects.

''We've got so much information on the North, it's just a matter of selecting it and applying it to other departmental priorities such as State of the Environment reporting,'' McLean replied upon being questioned whether all aspects of the program will be terminated. ''A series of overview perspective maps on the North at a scale of 1:5,000,000 has been initiated by the Lands Directorate recently, and will continue well into the 1990s.''

To date, these overview maps have focused on natural resources, caribou herds, and hunting and trapping activity in the North, and others are in the planning or conception stages. Although 1989 will mark the end of a useful environmental mapping program for Canada's North, the results from the work will be beneficial for years to come. ■

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Environment: It's Up to You and Me

Communities across the country marked Environment Week, June 1-7, with recycling drives, clean-up campaigns, tree planting, bird watching, exhibits and seminars. Canadians are getting the message: it's up to all of us to protect the environment!

The federal government invited Canadians to play a stronger role in the celebration of Environment Week '87. This year over $500,000 went directly to the regions to fund local activities.

Over 400 projects, events and activities took place across Canada during Environment Week. The sponsors were nature clubs, environmentalists, youth groups, business and industry, and community groups, as well as municipal, provincial and federal governments. In fact, one of the positive by-products of Environment Week has been the strong alliances formed between these groups. The high level of co-operation contributed to the success of this year's campaign, and will help to expand the network of environmentally committed Canadians for future campaigns.

Over 400 projects, events and activities took place across Canada during Environment Week.

Many months of preparation went into Environment Week '87. The process began

with groups and individuals across Canada submitting project proposals to regional committees.

The projects had to meet the following criteria: building awareness, fostering public participation, conserving/protecting the environment, and having lasting value.

The recommendations of the regional committees were then reviewed by a National Environment Week Advisory Committee who made the final decisions on funding. This committee, made up of government, business, union, consumer, youth, and health representatives, was responsible for setting the objectives, establishing the guidelines and providing a broad perspective to the campaign.

Although the national committee did not want to limit the choice of projects to a particular theme, the emphasis this year was on wildlife conservation, and toxics. By strategically linking its activities to these pressing environmental concerns, greater public attention was focused on the campaign.

Environment Week is an excellent opportunity for Canadians to make a contribution to the environment.

Many Environment Week activities were held in co-operation with Wildlife '87 – a year-long series of activities to mark the hundredth anniversary of Last Mountain Lake in Saskatchewan, the first wildlife sanctuary in North America. The highlight of both Environment Week and Wildlife '87 was the visit by His Royal Highness the Duke of Edinburgh to Regina on June 5, World Environment Day, to declare Last Mountain Lake a National Wildlife Area.

Environment Week is an excellent opportunity for Canadians to make a contribution to the environment – by picking up litter, starting a compost pile, making a conscious effort to use non-chemical alternatives in the home and garden or by joining a local environmental or conservation group.

Our Minister launched the national campaign by participating in a roadside clean-up in his home province, Prince Edward Island, on May 30. From there, he travelled across the country to officiate at various Environment Week ceremonies, including the designation of Last Mountain Lake in Saskatchewan.

Environment Week '87 broke new ground. It was the first time that many provinces and various private sector groups co-operated closely with government so early on in the planning stages. Also for the first time, an array of exciting events were held in the National Capital Area: boat tours, live animals on display, unveiling of parks paintings and exhibits.

The national committee is now evaluating Environment Week '87. Even before the final results are in, it looks like the campaign has been a success. But there is no time for complacency. Plans for Environment Week '88 have begun.

It is not too early to start thinking about projects for next year. Look around your community and see what you can do for the environment and drum up some interest among your friends and neighbors. Protecting and conserving the environment is up to all of us! ■

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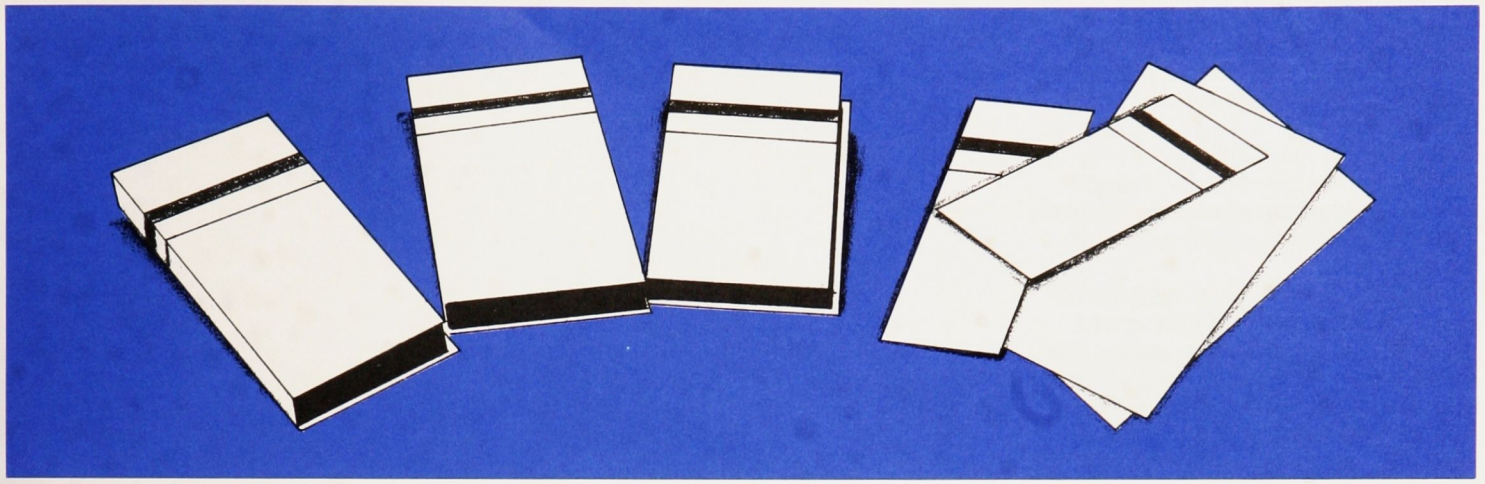
Update Reviews



Canada/U.S. Acid Rain Report

Environment Minister Tom McMillan released last April a joint Canada/U.S. report on research into acid rain. ''There are no startling new findings,'' said Mr. McMillan. ''The report confirms Canada's position that specific emission reduction targets and schedules are required in both countries to prevent damage caused by the transboundary flow of sulphur dioxide.''

Canadian and U.S. scientists have agreed:

- U.S. emissions are responsible for a large amount of the acid rain problem in eastern Canada;
- sulphur dioxide emissions, not natural acidity, are responsible for the acidification of lakes; and
- the environment shows signs of an ability to recover when excessive acid fallout is reduced by emission reductions.

The report was prepared by the National Acid Precipitation Assessment Program of the United States and the Canadian Federal/Provincial Research and Monitoring Coordination Committee.

The full report contains a description of federal research programs in Canada and the United States and joint research programs being carried out between the two countries on forest and aquatic effects, deposition monitoring, atmospheric chemistry and modelling studies. ■

A Warmer Climate Now Inevitable

The international scientific community now agrees that over the next 50 years, changes in global climate are inevitable. Temperatures will likely increase, rainfall patterns shift, and sea level rise – all because of the effect of human activities on the atmosphere.

At first glance, a warmer climate would appear to be beneficial to a cold northern country like ours. Warmer temperatures would bring longer growing seasons for farmers, lower home heating costs, increased ice-free naviation for shipping, and generally a more comfortable climate. However, changes in rainfall patterns could have major effects on Canadian agriculture and water resources. In southern Canada severe droughts may become more frequent, while increased flooding may occur in the north.

If you want to know more about climate change, a series of three fact sheets has been produced by the Atmospheric Environment Service:

- *Climate Change and Variability*
- *The Greenhouse Gases*
- *The Impacts of Global Warming*. ■

Town Halls of Canada

A collection of five essays on pre-1930 town hall buildings, *Town Halls of Canada*, has just been published by Environment Canada, Parks. This study discusses the architectural roots of town hall buildings; their relationship to architectural design and Canadian history; their development from simple, one-room structures to complex, monumental buildings; the thorny problem of construction costs; and the value of a town hall as a symbol of the community. An appendix briefly describes the 459 town halls built before 1930 that were still standing in 1981.

This book is available from the Canadian Government Publishing Centre, Supply and Services Canada, Hull, Quebec, Canada K1A 0S9 ($21.95 in Canada, $26.35, Canadian funds, outside Canada). ■

A Brief History of Canada's National Parks

For those interested in national parks, Environment Canada, Parks, has published *A Brief History of Canada's National Parks*. The author William Fergus Lothian, is a former employee of the public service and worked for 40 years in Parks. In this book, he relates the events which led to the creation of each national park and the national park system. *A Brief History of Canada's National Parks* is a revised and expanded edition of the first of a series of four volumes published from 1976 to 1983. ■

Ottawa River Water Quality

Although some problems persist, water quality in the Ottawa River is gradually improving, according to the first annual report of the Co-ordinating Committee for Water Quality. The committee was set up in 1983 by the governments of Quebec, Ontario, and Canada to co-ordinate monitoring of the interprovincial section of the river.

The first report includes analyses of monitoring data from the past several years, proposes some water quality objectives for the river and recommends measures to the three governments to help manage water quality in the Ottawa River. ■

Other publications

- Conservation and Protection has published a fact sheet entitled *The Metal Mining Industry: Contributing to Canadians' Well-being*. Metal mining has very positive effects on the Canadian economy; however, it can also have a negative impact on the environment, in particular water. The challenge facing the mining industry is to reduce and control any potential harmful effects on the environment by applying appropriate technology to the treatment of mine and mill effluents.

- A series of fact sheets are being produced on waste management-related activities in several categories. These categories are waste clarification, recycling & reduction, transportation, storage, treatment, disposal and general information. Five fact sheets are now available: *Hazardous Wastes*; *Transporting Hazardous Wastes: It's only Common Sense*!; *Recycling*; *The Waste Exchange*; and *Waste Paper Recycling: A Resource Conservation Opportunity for Canada*.