Environment Canada Environnement Canada

Environment Update

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Canada

A Word from the Editor

Our business is the environment. All around the world, there are people, just as concerned as we are, working for the improvement of their territory as surely as we are for Canada. It has not been enough, so far. There has been a shortage, if not an absence, of co-ordination that has hindered our efforts until now. One great result of the Brundtland Commission has been to bring the subject into the open: not just as a book by an individual as, *Silent Spring*; not just as the work of a think-tank, as *The Limits to Growth*; but as the considered opinion of a group of international standing.

Canada has been quick to respond. Our economy continues to be dominated by resource industries: fisheries, forestry, mining . . . Not all of it is renewable; not all of it has been harvested with any thought for the future. But, now that the warning has been sounded beyond all dispute, the idea of sustainable development has taken hold, and Canada's proposals for international co-operation have been put before the United Nations General Assembly. The proposals relate not only to resources, whether renewable or not, but also to the basic elements of life – land, water and air.

Continuing this theme, and specifically the outer atmosphere, Canada is among the 36 nations that have already signed an international treaty designed to prevent any further damage to the ozone layer, that protective screen against the more harmful rays of the sun: the ultraviolet radiation. The treaty is something of a triumph for Canada; our delegation, by a mixture of diplomacy and innovation, reconciled the often sharply opposing views of different nations – even during the signing conference, held here in Canada. The document is called the Montreal Protocol, largely for that reason.

As if to re-iterate our concern with our own environment, our parks system has acquired two outstanding additions: one in British Columbia, one in Ontario. South Moresby, at the southern end of the Queen Charlotte Islands, is significant not only for unique flora and fauna, as well as black bear, sea lion, and bald eagle, but also as the heartland of the Haida culture. The other acquisition, on the Bruce Peninsula in Ontario, will incorporate Canada's first national marine park.

Even designated parks may not be able to save some endangered species or halt their exploitation for trade, whether as live creatures for collectors or as souvenirs (ivory tusks, crocodile skins . . .). The Convention on International Trade in Endangered Species (CITES), which exists for that purpose, recently held its first North American meeting in Ottawa.

Direct damage to fish in the Fraser River, B.C. was identified as being due to unexpectedly high concentrations of chlorophenols. These toxic chemicals in use in the lumber industry are applied on cut lumber as protection against sapstain. A departmental team finally deduced that during certain very heavy storms, tide levels blocked off the storm sewers; the rains leached off the chlorophenols from the lumber in the millyards to form pools; the pools ultimately drained into the Fraser. The federal and provincial governments have announced joint plans to guard against its recurrence.

Turning eastwards, to the Bay of Fundy, New Brunswick, Canada and the province have dedicated Shepody Bay as our first hemispheric shorebird reserve. Shepody Bay will be twinned with a similar hemisphere shorebird reserve in Surinam: the two reserves are linked by the semipalmated sandpiper, a species that flies the 4000 km between the two in 3-4 days, each fall and spring. The dedication was part of Wildlife '87, celebrating 100 years of wildlife conservation here in Canada.

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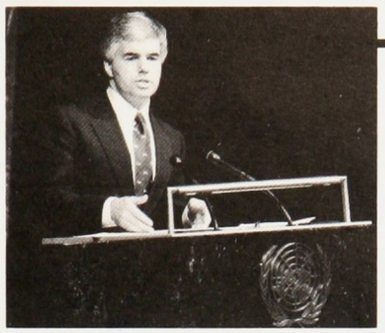

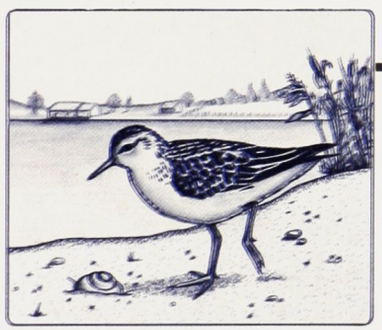

Update
Each issue of *Update* features a variety of topics on our environment and heritage and contains articles from all parts of the country in order to highlight the accomplishments of the Department. Anyone wishing to reproduce articles may do so. We ask that credit be given to this publication.

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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''U.S. Assessment of Acid Rain Science out of Step''

Federal Environment Minister Tom McMillan dismissed a U.S. government report on acid rain as incomplete and misleading.

''Any report that waffles about the seriousness of the acid rain problem and about the urgency to control that destructive pollutant is awkwardly out of step both with prevailing scientific judgment on the subject and with the broad public demand for action in this area,'' Mr. McMillan said.

The Minister was responding to the mid-term assessment report of the U.S. National Acid Precipitation Assessment Program. The report, to the U.S. Congress and the President, was released in September in Washington. The document concludes that, because there is still considerable uncertainty on most aspects of the acid rain problem, further research is required before control measures can be justified.

Review of Environmental Assessment Process

Environment Minister Tom McMillan released a Green Paper calling for reform of the federal government's Environmental Assessment and Review Process (EARP). The discussion paper will be sent to groups, individuals and provincial governments for comment. Consultative meetings will be held across Canada later this year.

''The government will consider all feasible improvements in the scope, application and administration of the existing process,'' said Mr. McMillan. ''We are eager to ensure federal environmental planning and assessment meet the highest standards of openness and efficiency.''

Following consultations, the Minister will submit recommended reforms to cabinet.

Development of Ellesmere Island National Park Reserve

The federal cabinet approved a five-year, $4.6 million program to develop and operate Ellesmere Island National Park Reserve in the Northwest Territories.

The development program calls for:

- Visitor and interpretation facilities at Grise Fiord and Resolute Bay;
- Accommodation centre at Tanquary Fiord;
- Inuit from Ellesmere Island communities to staff many of the park reserve positions;
- A radio communications system for park wardens, and
- Extensive research and planning to safeguard the natural and cultural resources of the area.

The national park reserve, located about 800 kilometres from the North Pole, was established in 1986 to protect almost 40,000 square kilometres of Canada's most northerly lands.

Canada-U.S. Agreement to Conserve Porcupine Caribou Herd

A bilateral agreement for the conservation of the Porcupine caribou herd was signed last July by federal Environment Minister Tom McMillan and United States Secretary of the Interior Donald Hodel. The herd, one of the world's largest, migrates between Alaska, the Yukon and the Northwest Territories, and numbers about 180,000 animals.

The agreement was developed in co-operation with External Affairs Minister Joe Clark and Indian Affairs and Northern Development Minister Bill McKnight, and in consultation with the governments of the Northwest Territories and the Yukon and native peoples.

The signing of the agreement reflects the mutual recognition that actions taken in one country can greatly affect a transboundary wildlife resource shared with another country.

The agreement will be administered by an eight-member International Porcupine Caribou Board, with representation from federal, territorial and state governments, and user groups in each country.

The board will seek information from management agencies, users of the herd, scientific and other interests and will make recommendations to Canada and the United States on matters relating to the herd or its habitat.

Automated Weather Station for Swan River

A new automated weather observing station near the Swan River Airport, Manitoba, was inaugurated this summer.

The weather station becomes part of a large national network which provides critical weather information to Canadians through the department's Atmospheric Environment Service.

The new facility provides enhanced local weather information in an area previously served by stations at Dauphin, Hudson Bay and The Pas.

More Stringent Heavy-Duty Motor Vehicle Emission Standards

New exhaust and evaporative emission standards for heavy trucks and buses will be effective December 1, 1988.

The new standards will be among the toughest in the world. They will reduce harmful emissions of oxides of nitrogen, carbon monoxide, unburned hydrocarbons, and diesel particulates from affected vehicles by 31.1, 4.4, 15.6, and 18.8 % annually.

It is estimated that the average cost of these measures will be $560 per diesel vehicle and $170 per gasoline vehicle, spread over the twelve year expected life of the vehicle.

The decision to implement the tougher standards was preceded by several studies and consultations held among governments, industry, consumer, health and environmental organizations.

Monitoring Environmental Changes

Environment Canada and Statistics Canada have formally agreed to develop an environmental reporting system to keep Canadians fully informed about the state of their environment.

The two departments jointly will gather, process and publish information on how Canadians interact with their environment. The information will help identify how fast and to what extent human activities and natural processes are causing environmental change. It will shed light on the impact of those changes to the life-support capabilities of the environment, and to the economy and individuals.

Under the environmental reporting system, a national report will be provided every five years. A series of short reports on particular aspects of the environment will be published more frequently.

Management Plan for Prince Albert National Park

Approval has been given to the Prince Albert National Park Management Plan to guide the park's general development and operations into the 1990s.

The plan is based on extensive public consultation, a thorough analysis of issues and costs, and a study of the park's socio-economic impact on local communities. It calls for the building of more cross-country ski trails and shelters, the reconstruction of the Narrows Scenic Drive, and the banning of houseboats on Lake Waskesiu in favour of less intensive and environmentally more compatible activities.

A detailed plan is underway governing development and management of visitor services in the community of Waskesiu, located within the park's boundaries.

Prince Albert National Park covers 3,875 square kilometres of lakes and forest in central Saskatchewan, about 65 kilometres north of the city of Prince Albert.

Quebec Joins Heritage Rivers System

Federal Environment Minister Tom McMillan and Quebec Minister of Recreation, Hunting and Fishing Yvon Picotte announced that Quebec has joined the Canadian Heritage Rivers System.

The Canadian Heritage Rivers System is a joint program established in 1984 to recognize the nationally significant rivers of Canada and to ensure conservation of their natural, historical and recreational values through long-term management plans.

Quebec also announced that the Jacques Cartier River has been declared a Candidate Canadian Heritage River. The 177-kilometre Jacques Cartier River rises in the Laurentian Mountains north of Quebec and drains into the St. Lawrence River at Donnacona.

Meanwhile, Manitoba's Bloodvein River was formally proclaimed a Canadian Heritage River. The Bloodvein flows 306 kilometres from its headwaters in northwestern Ontario to Lake Winnipeg in central Manitoba.

$11 million for Mingan Archipelago National Park Reserve

The federal government has approved a five-year, $11 million program to further develop and operate the Mingan Archipelago National Park Reserve in Quebec.

The national park reserve, located about 200 kilometres east of Sept-Îles, was established in 1984 and includes about 40 islands near the north shore of the Gulf of St. Lawrence.

These funds will be used for park operations and for development of picnic and camping sites, trails and interpretation displays.

Pesticide Monitoring Program

The program to assess the environmental impact of pesticides has been expanded.

Beginning with an additional $2.3 million in 1987-88, and $3.2 million each year thereafter, the program will increase Environment Canada's capability to evaluate the significance of new pesticides in the environment and in particular their potential effects on wildlife. The program also will strengthen the department's current research and monitoring efforts to identify the adverse environmental effects of pesticides currently in use.

The entire program will be a significant contribution to pesticide management in Canada, and provide environmental managers with substantive information for developing environmental protection measures.

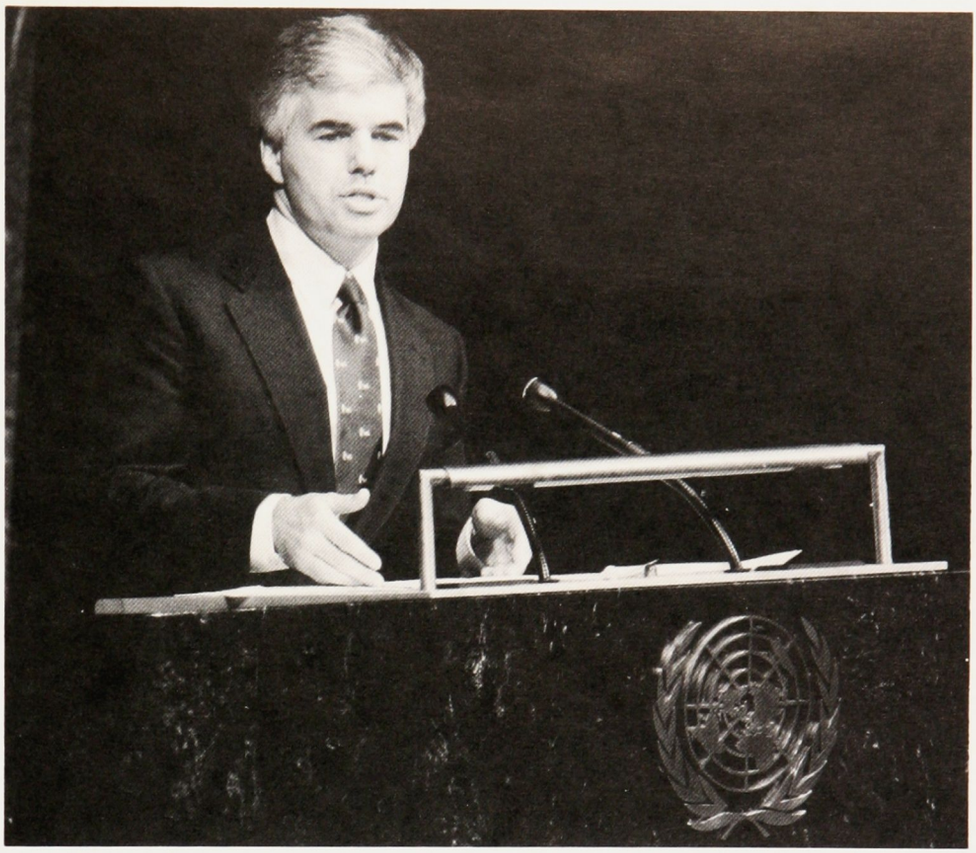
La Grande Maison at Les Forges du Saint-Maurice National Historic Park

''La Grande Maison'' sector of Les Forges du Saint-Maurice National Historical Park, at Trois-Rivières, will be developed.

For more than 150 years, ''La Grande Maison'' was the administrative centre of Les Forges du Saint-Maurice ironworks. Development includes construction of ''La Grande Maison'', stabilization of the remains, interior furnishings and the enhancement of the interpretative exhibits.

Canada's Response to the Brundtland Commission

The World Commission on Environment and Development, more commonly referred to as the Brundtland Commission, last April published the report *Our Common Future* which advocates sustainable development – meeting the needs of the present without compromising the ability of future generations to meet their own needs.



Environment Minister Tom McMillan at the UN General Assembly

At the United Nations General Assembly in October, Environment Minister Tom McMillan responded, on behalf of Canada, to the issues raised in the Brundtland report. At the same time, he tabled two documents, *Report of the National Task Force on Environment and Economy* and *Environment and Development: A Canadian Perspective*, which outline the action taken by Canada to promote sustainable development.

Report of the National Task Force on Environment and Economy

The Canadian Council of Resource and Environment Ministers (CCREM) created the National Task Force on Economy and Environment in October 1986 as a direct follow-up to the May visit of the Brundtland Commission on Environment and Development.

The Task Force's mandate has been to foster and promote environmentally sound economic growth and development in Canada. In September the Task Force released its report and recommended 36 actions to be taken by governments, industry, trade associations and environmental organizations to establish the mechanisms for obtaining sustainable development.

The major recommendations from the report are:

- multisectoral "Round Tables on Environment and Economy" be established throughout Canada and nationally by September, 1988. These round tables are to provide a permanent forum for senior decision makers working towards a consensus on the fundamental issue of sustainable development;
- environment/economy issues discussed at the round table discussions receive "top level" consideration, by government and industry. Environment/economy issues should be discussed by Canada's first ministers at provincial-federal conferences, and by cabinet and key economic development committees;
- all federal, provincial and territorial jurisdictions have a conservation strategy by 1992 which represent blueprints for the sustainable economic development of renewable resources. The national strategy would integrate provincial and territorial strategies and link them to the international scene. Progress would be reviewed at a national conference on sustainable development in 1989 or 1990;
- governments harmonize environmental standards and legislation, and streamline Canadian environmental assessment procedures to ensure uniform application across Canada;
- companies should adopt and implement environmental codes of practice "to govern and guide industrial decision making." In addition, industry associations should form task forces to provide leadership to the business community on environment-economy integration, and
- the creation of a program to promote public understanding of the importance of sustainable development and the designation of 1989 or 1990 as the Year of the Environment in Canada.

To follow up on the 36 recommendations, the Task Force further recommended:

- each government, federal, provincial and territorial, should develop an action plan on how it will implement the recommendations;
- the Task Force mandate be extended until 1988 so it can review progress by all sectors in implementing the recommendations in this report, and
- CCREM should prepare an evaluation of the effectiveness of the Task Force's recommendations and their implementation by the 1989 annual meeting.

The Minister said the world is living on borrowed time.

The Minister cited some existing and potential international and Canadian environmental problems and said the world is living on borrowed time. He noted, however, that the recent accomplishment of the Montreal Protocol on ozone reinforces the message that through global co-operation, humankind's common future can be secured.

Mr. McMillan also said richer nations will have to assist the poorer ones to achieve the global goal of sustainable development. He stated Canada now will be considering environmental concerns in its Third World development projects.

The Minister said some of the recommendations from the National Task Force on Environment and Economy outline the mechanisms to obtain sustainable development in Canada. He mentioned the report has been unanimously endorsed by the federal government, all the provinces and the territories, and has widespread support from industry, media and the public.

Mr. McMillan said the principle of sustainable development is already taking root in Canadian soil, and cited the recent success story of South Moresby National Park in B.C. The Minister said the park is an example of an economic development strategy, based on the sustainable development concept, which resulted in a long-term conservation interest winning over a short-term economic interest, logging.

In his concluding remarks, the Minister recommended that the United Nations General Assembly support the concept of sustainable development called for by the Brundtland Commission, and UN agencies and affiliates should ensure their programs reflect that concept. He also recommended the UN hold an International Conference on Environment and Sustainable Development in 1992 to review progress by member countries in implementing the Brundtland Report. Mr. McMillan said Canada is prepared to host such a conference. ■

(Paul Hess)

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Environment and Development: A Canadian Perspective

This document outlines the strategies Canada is following to promote sustainable development at home and abroad. The Government of Canada's strategy is to anticipate and prevent environmental degradation by encouraging institutional change, demonstrating leadership and improving the information basis on which decisions are made.

The Canadian economy still is dominated by resource-related industries. The need to implement economic development strategies that are environmentally sustainable can clearly be recognized in agriculture, forestry, fisheries, and energy.

The combined effects of soil erosion, acidification, salination and compaction have resulted in reduced crop yields, and the use of pesticides and fertilizers have polluted surface and groundwater.

Forestry, Canada's most important resource, faces serious difficulties in matters of supply, use, allocations to increasingly-diverse demands and the sale of products in the international marketplace.

Surrounded by three oceans, Canada has a vested interest in the sound management and conservation of its coastal fisheries in a world facing hunger and poverty.

Energy-efficient technological innovations and the use of alternative fuels are required to reduce pollution.

Developing national and regional strategies for these resources in Canada are only a partial solution to achieving sustainable development. There is a need for stronger commitment to international co-operation because actions and conditions in one country often affect the social and economic well-being of another. Canada is playing an important role in international co-operation on environmental issues, and issues of concern include the atmosphere, the oceans, genetic diversity and the Great Lakes.

The atmosphere is very vulnerable to development. Two major concerns, acid rain and the depletion of the ozone layer, can have adverse effects on agro-ecosystems, forests, water resources, energy, transportation, and global and national economies.

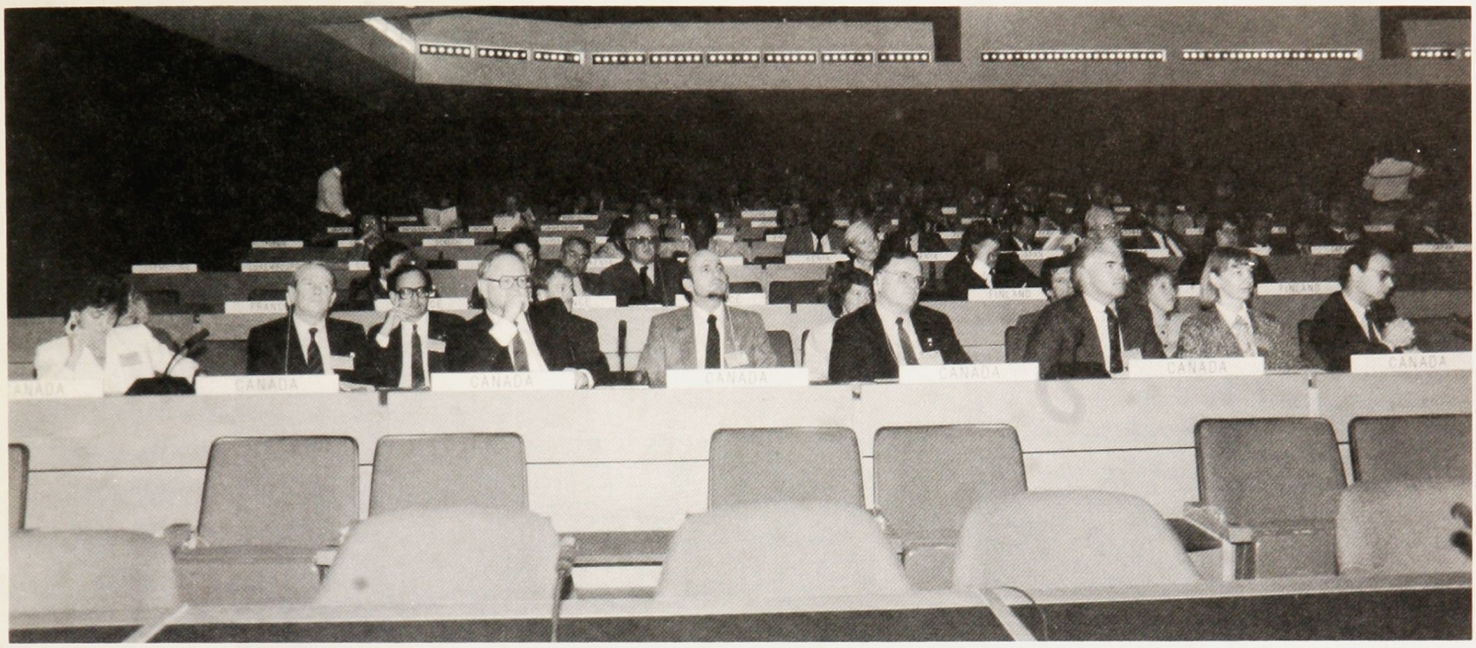
Concerns already exist about the international seas, and new ones continue to arise. Emerging issues are the conservation of whales, the consequences of the use of drift nets, and the disposal of radioactive and other toxic wastes at sea.

The preservation of genetic diversity is important and entails much more than simply rescuing threatened species. It requires that an abundance of wildlife be secured in the right places, to ensure the social and economic benefits of wildlife are sustained and to maintain the health of our ecosystems.

Although the Great Lakes are not part of a global concern, rather a bi-lateral concern between the Canada and the U.S., shared management is required if they are to be developed in an economic and environmentally sustainable manner. Although the 1909 Boundary Waters Treaty has not prevented the occurrence of environmental problems, it does provide some basic principles that guide water use along the boundary and serves as a model of international co-operation in shared-resources management.

To achieve sustainable development globally, Canada also recognizes that responsible donor agencies in developed countries, such as the Canadian International Development Agency (CIDA), have to strengthen their efforts to promote sound environment projects in their foreign aid programs to Third World countries. CIDA's strategy for sustainable development parallels the Brundtland Commission's ''Alternative Agenda'', which focuses on the sources of environmental problems rather than on the effects.

The Montreal Protocol



The Canadian delegation in plenary session

The Montreal Protocol, as the treaty will be known, is expected to come into force January 1, 1989.

Environmental history was made in Montreal September 16, 1987 with the signing of an international agreement to save earth's protective sun screen, the ozone layer. It was the first time nations collectively anticipated a potential global environmental disaster and took action to prevent it. Environment Canada in the name of Canada hosted the high-level conference sponsored by the United Nations Environment Programme (UNEP). Some 250 diplomats and technical and legal experts from some 50 nations, half of them developing countries, took part.

The treaty was signed immediately by Canada, the United States, the 12-nation European Economic Community and 22 other countries. Other nations, including the Soviet Union, announced their intention to sign at a later date.

The Montreal Protocol at a Glance

The Protocol, once ratified, will:

- Freeze CFCs at 1986 levels and reduce by 50 % atmospheric releases of CFCs by 1999;
- Freeze at 1986 levels the release of halons, another chemical compound with ozone-depleting properties;
- Provide developing countries with access to CFCs in vital areas such as refrigeration, until alternatives are available;
- Enable co-operation among nations in sharing information and research on the ozone layer;
- Enable nations to examine all new data and to review scientific findings as the basis for further negotiations and possible controls;
- Provide trade sanctions against countries not party to the Protocol and which could try to undermine the environmental protection actions of the Protocol, and
- Encourage government/industry co-operation in developing environmentally safe alternative chemicals and technologies.

Signing of the Protocol by Environment Minister Tom McMillan

The Montreal Protocol, as the treaty will be known, is expected to come into force January 1, 1989. According to the agreement, this requires the ratification of the Protocol by at least 11 countries accounting for more than two-thirds of the 1986 global use of chlorofluorocarbons (CFCs) and halons, a group of ozone-depleting chemicals. Ratification requires the deposition of a legal document by a participating government formally stating that it accepts and agrees to adhere to the terms and conditions of the treaty. To do this, Canada must have in place the necessary domestic laws to implement and enforce the terms of the agreement.

Canada to Ratify Protocol Quickly

Canada will be among the first nations to ratify the Montreal Protocol. Currently, Parliament is studying the Government's new Canadian Environmental Protection Act (CEPA) – the toughest piece of environmental legislation this country has ever proposed. Under the new Act, CFCs will be among the first chemicals to be regulated. The CEPA will permit Environment Canada to regulate production levels and control imports and exports of these chemicals. Passage of the Act is expected early in 1988.

Environment Minister Tom McMillan, who signed the Protocol for Canada, called the treaty: ''As strong a piece of international law as it is possible to have.'' But he suggested that it was just the beginning. ''The Protocol itself does not stop the locomotive of planetary destruction, but the initial freeze closes the throttle. And the 50% reduction in ozone-depleting chemicals we have imposed on ourselves by 1999 applies the brakes. The task remaining is to stop the locomotive altogether.''

Chlorofluorocarbons and Halons

The chemicals targeted by the Protocol are a group of synthetic compounds known as chlorofluorocarbons (CFCs) and halons. They are composed of chlorine, fluorine and carbon

atoms, and, in the case of halons, include bromine atoms in addition to or in place of chlorine. At ground level CFCs are non-toxic and extremely stable.These and other characteristics have made them very popular in refrigeration and air-conditioning products; as blowing agents in the manufacture of hard and soft foam products such as polystyrene and furniture padding; as propellants in spray cans, and as cleaning solvents in the electronics industry. Halons are used in fire-fighting equipment.

While one chlorine atom can remove about 10,000 ozone molecules from the stratosphere, bromine is ten times as powerful.

Scientists world-wide, however, have linked these chemicals to the depletion of the ozone layer. They are very unstable in the upper atmosphere. Under the sun's powerful ultraviolet rays, the CFC and halon molecules are broken apart releasing chlorine and bromine which attack ozone. While one chlorine atom can remove about 10,000 ozone molecules from the stratosphere, bromine is ten times as powerful. These chemicals also can be active for more than 100 years. In other words, if the annual release of the nearly one million tonnes of CFCs and halons was suddenly stopped, the depletion of the ozone layer would continue for at least 100 years.

Effects on Health and the Environment

The fragile ozone layer absorbs most of the sun's damaging ultraviolet radiation. A depletion of ozone would lead to increased skin cancer and eye disease, such as cataracts, and could adversely affect the body's immune system. Ozone depletion would seriously affect the world's ability to feed itself. Increased ultraviolet light would reduce crop yields world-wide and damage small organisms at the base of aquatic food chain, affecting fisheries. CFCs and halons also contribute to the global warming trend (greenhouse effect) and all its attendant consequences.

Years of Hard Bargaining

The Montreal Protocol is the fruit of many years of intense scientific and diplomatic effort. The idea of international control of these chemicals first emerged around 1981. An important achievement milestone was the signing of the Vienna Convention in 1985, which Canada was the first to ratify in June 1986. The Convention provided a framework for international co-operation on matters related to the ozone layer, but did not contain control measures.

UNEP continued to sponsor meetings of technical and legal experts to find agreement on controls. Negotiations turned a corner in Leesburg, Virginia, U.S.A. in September 1986. For the first time many nations recognized that Canada, the United States, Denmark, the Nordic countries, Australia and New Zealand were very serious about protecting the ozone layer, and were not just reflecting economic self-interest.

Canada Plays Key Role

During this period, the Canadian delegation achieved a reputation for developing compromise positions and helpful and innovative ideas that brought together dissenting camps. It was largely in recognition of Canada's key role in these long negotiations to finalize a control protocol that the conference was held in Montreal.

Agreements on many critical articles came only in the final hours of the diplomatic conference.

Tense Moments

Final negotiations by the UNEP working group of technical and legal experts began in Montreal on September 6 and continued to September 14, the official start of the diplomatic conference. Negotiations continued to be long and difficult. Agreements on many critical articles came only in the final hours of the diplomatic conference. There were some tense moments when it seemed that the necessary compromises would not be forthcoming, and that no treaty would be signed.

Co-operation Needed on Many Fronts

Environment Minister Tom McMillan headed an 18-member Canadian delegation composed of Environment Canada officials, scientists and regulatory experts, representatives of the provinces, members of opposition parties, and industry and environmental groups. The make-up of the delegation spoke of the need for co-operative effort by all sectors of Canadian society to set aside differences of views and come together to adopt a treaty to protect and enhance the environment. ''Notice has been served to all concerned that products and technologies that threaten the earth's sun shield are no longer acceptable. We have signalled to industry that safer alternatives will need to be developed. I am confident that the marketplace will respond accordingly,'' Mr. McMillan said.

Follow-up

Departmental officials already have begun to develop control options for meeting Canada's obligations under the Protocol. Consultations with industry have begun in order to build the necessary information base (production, imports, exports, numbers of companies and jobs affected) to determine the costs and benefits associated with each control option. Discussions with environmental groups and other concerned stakeholders will follow.

In addition, departmental officials are keeping abreast of similar activities in the U.S. and elsewhere to ensure that Canada's control activities do not work at cross purposes to those of other countries.

Conference on Substitutes to CFCs and Halons

From a technology transfer perspective, Environment Canada is co-sponsoring with the U.S. Environmental Protection Agency and the Conservation Foundation, a conference on substitutes to CFCs and halons in Washington, January 13-15, 1988. The conference will bring together producers and users of CFCs and halons to discuss state-of-the-art advances in substitute technology and to promote the forthcoming required transition. ■

(Gordon Harris)

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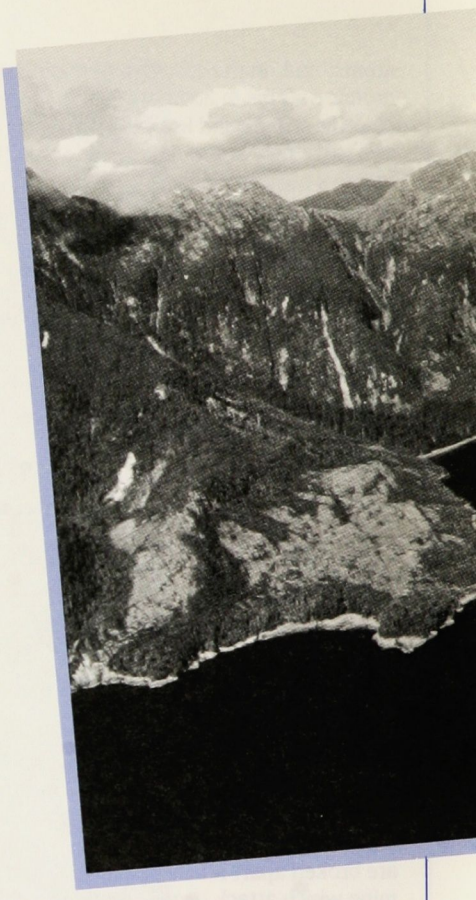
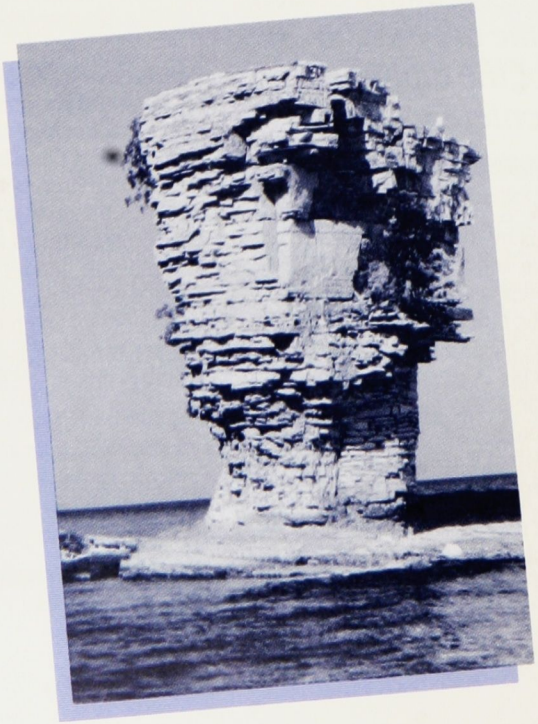
Two New National Parks

Flowerpot Island, Bruce Peninsula



Pockett Inlet, Moresby Island



Canada's national park system gained two outstanding additions this summer with the signing of federal-provincial documents with British Columbia and Ontario.

Prime Minister Brian Mulroney and British Columbia Premier William Vander Zalm signed a memorandum of understanding to establish a national park and a national marine park in the South Moresby area of the Queen Charlotte Islands, the most internationally significant wilderness area in Canada.

The national park will include more than 145,000 hectares in the southern part of the Queen Charlotte Islands archipelago. The waters surrounding South Moresby, representative of two distinct marine regions, will become a national marine park.

The Queen Charlottes have been called Canada's Galapagos, and with good reason. The black bear guards its forests, the sea lion stands watch on the coast, the bald eagle soars in the sky, and there are also flora and fauna unique in the world.

West Coast, Moresby Island

The Queen Charlottes have been called Canada's Galapagos, and with good reason.

South Moresby is the heartland of the rich Haida culture. The Ninstints Haida site has already been designated by UNESCO as a World Heritage Site of international cultural significance.

Prime Minister Mulroney said the agreement is about preserving our heritage; about protecting our environment, and about a new climate of co-operation in our federal-provincial system.

The Prime Minister said the Haida community will be involved in a meaningful way in park planning, development and operation.

''This agreement reflects a new philosophy of regional development, in which programs are not imposed by a government thousands of miles away, but developed in response to the needs and desires of the people in each region of the country.''

Nine days later, federal Environment Minister Tom McMillan and Ontario Natural Resources Minister Vincent Kerrio signed an agreement to establish a new national park on the Bruce Peninsula, about 300 kilometres northwest of Toronto, encompassing Canada's first national marine park.

The ministers hailed the agreement as an example of federal-provincial co-operation that will protect nationally-significant heritage resources, and contribute in a positive way to the economic development of the region.

Ontario is providing 7,000 hectares of land and capital investments valued at $8.5 million to the national parks system. Environment Canada, Parks is expected to commit up to $14 million to development of the new park over the next 10 years.

''This is a proud day for Canada,'' said Mr. McMillan. ''Located within driving distance of large population centres, the Bruce Peninsula National Park will be an outstanding addition to Canada's national park system and has the potential to become as world-famous as our national parks at Banff, Jasper and Prince Edward Island.''

The 270-square-kilometre national park will incorporate two existing provincial parks – Cyprus Lake and Fathom Five, an underwater park. Flowerpot Island, in Georgian Bay Islands National Park, also will be included in the new Bruce Peninsula park. ■

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Canada Hosts Wildlife Trade Conference

The plight of more than 100 mammals, birds, reptiles, fish, plants – even medicinal leeches – was discussed in Ottawa when Canada hosted the biennial conference of the world's foremost wildlife trade and conservation organization.

The sixth general meeting of the Convention on International Trade in Endangered Species (CITES) was held in July for the first time in North America, reflecting Canada's leading role in the conservation of the world's wildlife.

Canadian representatives at the conference: John Heppes, Barry Turner, M.P. and Doug Pollock.

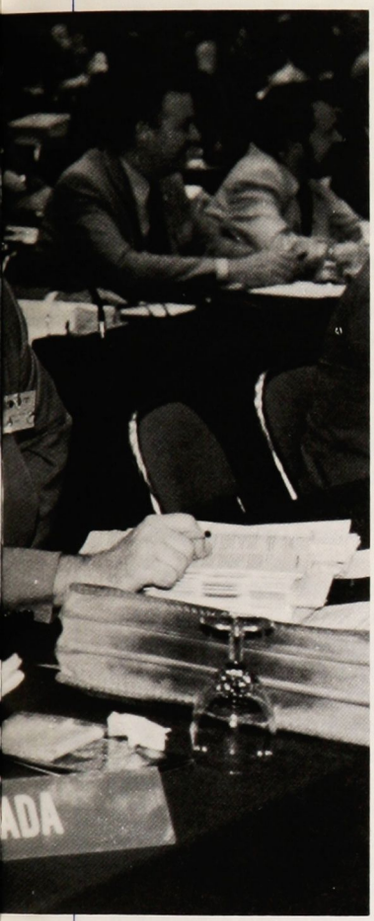
CITES regulates the international trade of more than 2,000 wild animal and plant species.

CITES regulates the international trade of more than 2,000 wild animal and plant species. The organization governs the export and import, and controls the exploitation for trade of threatened species as well as the products made from them. Formed in 1975 and based in Lausanne, Switzerland, CITES has 95 member nations and is the largest organization of its kind in the world.

The conference was opened officially by Pauline Browes, M.P., parliamentary secretary to the Minister of the Environment. In her opening remarks Mrs. Browes said: "We are all aware of why CITES came into being, but there is no harm in reminding ourselves since the reasons are as valid now as in 1975 when this organization was founded. It was recognized then as it is today that wild fauna and flora, in their many beautiful and varied forms, are an irreplaceable part of the earth's natural systems and must be protected for both present and future generations."

At this year's conference, 700 wildlife experts, including representatives from the Canadian federal and provincial governments and environmental groups, debated a wide range of pressing wildlife conservation issues: trade in ivory of African elephants; quotas on international trade in crocodile hides; status change of vicunas; the status of leopard populations and trade in rhinoceros products. Among the 150 proposals presented, three were of special interest to Canada – the walrus, the North American hummingbird, and the North American pitcher plant – all species found in Canada.

Under CITES, species are divided into three categories, or lists, according to their degree of endangerment.



Conference Highlights

- The opposition of Canada's Inuit helped to defeat a proposal to place walruses on Appendix II. Backed by Denmark, the United States and Canada, the Inuit lobbied effectively, pointing out that the Pacific walrus population was stable or growing and that international trade was not a threat or a consideration.
- Solid backing for an 18-month-old African elephant ivory quota system that gives the profits from the legal sale of the tusks to African governments and people, instead of to poachers and illegal traders.
- Overwhelming agreement to allow trade in vicuna wool taken from a live animal. The vicuna, a smaller cousin of the Andean llama and an Appendix I species can now be sheared, its wool woven outside Peru and Chile.
- One of the most important discussions centered on the rhinoceros of which fewer than 10,000 survive today in Africa and Asia. A resolution was passed banning all trade in rhino horns, not just in international trade but in domestic commerce within a country. The resolution also called for the destruction of all existing stocks of rhino horns.
- The leopard report by Rowan Martin, of Zimbabwe, and Tom de Meulenaer, of Belgium, says there are 700,000 to 850,00 leopards in sub-Saharan Africa, many more than commonly believed.
- Among the animal and plant species added to appendices I and II were:

Appendix I
hyacinth macaw
palm cockatoos
European viper
orchid (1 species)
cactus (1 species)
pitcher plant (1 species)

Appendix II
fruit bats (9 species)
medicinal leeches
poison arrow frogs
bustards
pitcher plant (1 genus)

Appendix I species, such as large spotted cats and African crocodiles, are considered rare or endangered. Import or export of these species is allowed only for non-commercial or propagation purposes, and requires permits from both the exporting and importing nation.

Species listed under Appendix II are not currently rare or endangered, but could become so if over-exploited through trade and require a special CITES export permit. Permit requirements are the same for Appendix III species, which also are not endangered, but are being managed within the boundaries of the listing nation. Any species on the CITES control list can be moved between appendices or dropped entirely, as its situation improves or worsens.

Environment Minister Tom McMillan spoke to the conference delegates after signing an historic wildlife agreement with the United States to manage caribou herds sharing the Yukon/Alaska border. He emphasized the need for humanity to recognize its place in nature saying, ''We must stop seeing nature as merely an extension of ourselves and begin understanding the limits of our right to exploit it.''

He asked: ''Can we make that kind of leap in our thinking? Are we capable of the spiritual generosity – not to say the enlightened self interest – needed to regard other species with the degree of concern we expend on ourselves? I do not know the answer. The extent of violations makes one pessimistic. But by the same token, the resolve shown by so many at this conference leads one to hope.''

With relatively few species on the three CITES appendices, Canada has played a major role in the organization since joining as a charter member in 1975. In all but two of those years, Canada has sat on the Standing Committee, CITES' equivalent of an executive board. Canada also has chaired a working group on the International Air Transport Association (IATA) Live Animal Regulations, and has been North American Regional Coordinator on the CITES Technical Committee. Canada's commitment to CITES' goals is evident from a number of recent key initiatives. Mr. McMillan introduced into Parliament amendments to the National Parks Act that will help stop the slaughter of Canada's wildlife at the hands of poachers. The amendments call for the stiffest parks-related penalties in the world: a maximum fine of $150,000 and/or imprisonment for up to six months for the illegal hunting of specific trophy and endangered species.

Tony Clark, Director General of CWS, and Environment Minister Tom McMillan discussing the sale of products from endangered animals

Environment Canada also recently announced a major $2.5 million, five-year program intended to increase the populations of Canada's endangered wildlife species. The program will include the development of recovery plans for species near extinction, habitat studies, reintroductions and emergency protection measures.

In a closing statement, Eugène Lapointe, a Canadian lawyer who heads the CITES secretariat, noted that the Ottawa conference had had the largest participation of Third World countries. "This was important," he said, "for two reasons. First, the developing countries own most of the world's wildlife, and, secondly, their presence brings developed country delegates and environmentalists closer to the realities of endangered species problems in Africa, Asia and Latin America."

CITES is administered domestically by Environment Canada's Canadian Wildlife Service (CWS). The CWS reviews the status of Canada's endangered species; examines proposed changes to the CITES appendices; issues all import permits, and scientific and transit certificates, and issues export permits for species under federal jurisdiction. Under CWS guidance, the provinces and territories issue export permits for species originating in their jurisdictions. Export permits for plants are issued by Agriculture Canada's Plant Quarantine Office, except in Quebec, where they are available from the ministère du Loisir, de la Chasse et de la Pêche.

In addition to issuing permits and reviewing the plight of endangered species, the CWS provides technical assistance to the domestic agencies that enforce the CITES regulations. Seminars are presented to Canada Customs and RCMP officers.

Many vacationers unwittingly break CITES regulations by bringing in prohibited items.

Jewelry, crafts, handbags, shoes, belts, and coats are just some of the products affected by CITES. Many vacationers unwittingly break CITES regulations by bringing in prohibited items such as elephant ivory carvings or crocodile skin products, or by failing to get an export permit when purchasing certain other goods. Without proper permits these products are seized by customs officers, and in some cases violators can be fined or prosecuted.

Important decisions were made at the Conference regarding quotas for both leopards and crocodiles. The quota system, combined with requirements from CITES that must be met for these quotas to be allowed, has resulted in increased attention being paid to the status of these animals in the field. More surveys of populations have been instituted in recent years.

The crocodiles, leopards and vicuna are cases where CITES is permitting commercial trade under carefully specified conditions, rather than prohibiting it under Appendix I. These cases are also prime examples of countries and an international convention operating in line with one of the principles of the World Conservation Strategy, namely the sustainable use of the earth's genetic resources.

At the conference's closing ceremonies, Mr. Barry Turner, M.P., said: "The end of this year's meeting is really only the beginning of the next biennial meeting, and the challenges facing our nations will be just as daunting. But the threats against our wildlife can be reversed if we rise to the challenges by taking action and making hard decisions as you did at this meeting."

Conservationist activities noted at the meeting, along with strong enforcement of the CITES regulations, help to ensure the continued protection and propagation of wildlife throughout Canada and the world. ■

(Paul Hempel)

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Chlorophenols or the Mystery of Midnight Dumping

"Fraser Hit by Night Polluters" – The news report on Dec. 4, 1986, gave an air of intrigue to the findings of Westwater Research on the mysterious peaks in concentrations of chlorophenols that had been occurring between midnight and five a.m. in the north arm of the Fraser River. The reports conjured up visions of someone stealthily sneaking down to the river's edge in the cover of night to dispose of deadly toxic chemicals, and created alarm that the Fraser River was being deliberately polluted.

J. Shrimpton setting up sampling station

A team of engineers and biologists from Environment Canada, Peter Krahn, Julie Shrimpton and Richard Glue, were involved at the time in monitoring the release of chlorophenols in storm water runoff from wood protection sites. In the report on their findings, released in September 1987, the team was able to provide the scientific data that demonstrated a likely cause of the mysterious peaks in chlorophenols during the night.

Chlorophenols rank as one of the most toxic industrial chemicals in widespread use in British Columbia. Chlorophenates have been in use for the last forty years. In B.C., the forest industry relies heavily on the use of chlorophenate fungicides to protect freshly-cut lumber from sapstain and mould fungi. These fungi cause unsightly staining of lumber and can help other decay organisms to damage the wood.

The chemicals sodium tetrachlorophenate and sodium pentachlorophenate are used to stop sapstain growth by "poisoning" the wood food source. More than 80 % of the lumber currently shipped overseas is unseasoned and requires chemical protection against sapstain and mould attack. The total value of lumber treated with chlorophenates during 1985 was $2 billion. Much of this vital B.C. export market would be lost if something was not done to prevent sapstain.

Although the use of chlorophenates is important to the B.C. economy, the release of chlorophenates into the environment from wood protection facilities at sawmills and lumber export terminals is of great public concern. Chlorophenates are highly toxic to fish and other aquatic organisms. Natural degradation of chlorophenates is slow and consequently they can accumulate in the environment and in the tissues of aquatic organisms. These facts, plus the potential threat to human health, make chlorophenates difficult and dangerous chemicals to deal with.

The resistance of tetrachlorophenol and pentachlorophenol to natural breakdown in the environment has led to its widespread dispersal in trace quantities. Chlorophenol presence has been detected and documented in winter snowpacks, water, landfill leachates, sewage effluents, and sediments. Studies also show chlorophenols present in plant and animal life adjacent to chlorophenate wood protection facilities on the Fraser River and on the lower east coast of Vancouver Island. This contamination is caused by releases of chlorophenate solution from the sapstain control operations.

Between December 1972 and January 1986, Environment Canada documented approximately 33 chlorophenate spills in British Columbia. Some of these incidents resulted in fish kills, others in contamination of soil and groundwater.

In 1978, approximately 18,000 litres of 1% chlorophenate solution, leaked from a newly constructed dip tank, contaminated groundwater near Penticton, B.C. In March 1984, release of chlorophenate sapstain solution into Hyland Creek and the Serpentine River in Surrey, B.C., killed thousands of fish. Fish and invertebrates were killed in Duncan Bay on Vancouver Island when 117 litres of concentrated chlorophenate solution overflowed from a storage tank in June 1985.

Although there are accidents, the efforts of many people from government, industry and labor have gone into developing ways to prevent and control the release of chlorophenates into the environment.

In 1981, a task force consisting of representatives from federal and provincial governments, the industry and the labor unions was formed. The task force investigated the use of chlorophenates at lumber mills in B.C., and in 1983 published the report *Chlorophenate Wood Protection – Recommendations for Design and Operation* (commonly referred to as the "Code"). The Code contained recom-

mendations for the improved design and operation of facilities using the fungicidal chemicals to protect both the environment and workers from possible harmful side effects. Since 1983, voluntary implementation of many of these measures by the industry has resulted in considerable reduction in environmental and health risks.

The suggestion of deliberate "midnight dumping" brought the problem of chlorophenates to public attention again.

The Environment Canada study underway looking into the chlorophenates in storm water runoff consisted of measuring the concentration of chlorophenols that came directly off the lumberstacks, the concentration of chlorophenols that actually flowed into the storm drain, and measurements of the flow of water leaving the site through the storm drains. Sampling was carried out over a four-month period at five sawmills and two lumber export terminals. Through these measurements the team was able to calculate the loading of chlorophenols into the receiving water bodies – the Fraser River and the Burrard Inlet.

Team member Julie Shrimpton explained the monitoring process. "We couldn't rely on automatic samplers to do the work because they wouldn't reflect site activity and storm conditions accurately. Manual sampling was the only way to ensure the collection of good samples."

The team's dedication to scientific process was put to the test as most of the sampling took place on dark, cold winter nights, when the rain was at its heaviest. As Shrimpton explains: "Prior to monitoring, we'd arrange for security guards or mill foremen to call us when it started to rain on site. The calls usually came around one or two o'clock in the morning. We got very used to jumping out of bed, grabbing our gear and heading for the sites as fast as possible. We monitored the site continuously every 7 to 15 minutes, for 24 hours or until the rain stopped (whichever came first)".

Her colleague Krahn explains that the significant rise in levels of chlorophenates at specific periods alerted the scientists to look at certain other factors. "By charting the peaks in chlorophenates in the river, the rainfall and tides during that period, we were able to suggest the reason for the peaks in chlorophenols during the night."

J. Shrimpton measuring rainfall during test

The midnight culprit was revealed, and Krahn describes what happened: "During the heavy rainstorms, rainfall combined with the tide levels blocking off storm sewers. As tide levels rose above the storm sewer outfalls, outflow from the millyard was blocked off. The rain leached off chlorophenates used to treat the lumber stacked in the millyards and export terminals. A toxic chemical pool collected in blocked drainage systems and then backed up into the yards. When tide levels dropped, this contaminated water, concentrated with chlorophenates, discharged in toxic plumes into the river."

Krahn also explains the ramifications of the toxic discharge: "These plumes, which migrate down the shoreline and gradually dissipate in the river, can be extremely toxic to fish. Shorebirds, such as the great blue heron, feeding on injured or contaminated organisms, move the toxic chemicals up the food chain."

Exposure of fish to sapstain treatment solution can rapidly cause harmful effects and death at chlorophenate concentrations as low as 30-100 parts per billion. This would be equivalent to taking an eye dropper and putting one drop into 30 - 100 barrels of water.

The results of the departmental study on the runoff of storm water provided conclusive evidence that contaminated runoff is a major source of chlorophenates entering the lower Fraser. The report confirmed that all mills could be in compliance with the "Code" and still be contributing to the toxic storm water runoff.

A joint federal and provincial action plan to control the release of chlorophenates in storm water runoff was announced in September 1987. The joint action plan includes:

- interim, maximum allowable levels set for storm water discharged and for runoff from storage areas;
- compliance by industry by September 1988, and earlier for facilities next to major fishery streams;
- field visits and negotiations with the operations using antisapstain chemicals, and
- revision of "Code of Good Practice."

While stricter control measures are being implemented, there are three problems that must be addressed: the control of leaching of the lumber once it has been treated, the development of new chemicals for use as fungicides, and the reconditioning of contaminated soils.

The Department continues to work with the forest industry and the province to prevent the release of chlorophenols in storm water runoff. It also will be examining other potential routes that chlorophenols may be entering the environment. As Peter Krahn points out, "The release of the storm water report has given the forest industry a new impetus to find a cost-effective solution soon to combat the problem of chlorophenols." ■

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Shorebird Reserve
A Canadian First

Canada's first hemispheric shorebird reserve for the protection of migrating shorebirds has been officially inaugurated at Shepody Bay, New Brunswick. Shepody Bay, in the upper Bay of Fundy, is crucial to the annual migration of more than half a million semipalmated sandpipers between their Canadian Arctic breeding areas and their wintering sites in Surinam, South America. Shepody Bay attracts more southward migrating birds than any other place in North America.

Malcom Macleod, Pauline Browes and Stanley Malone (Head of Forest Service in Surinam) unveiling the plaque

Shepody Bay attracts more southward migrating birds than any other place in North America.

Pauline Browes, Parliamentary Secretary to the Environment Minister, and Malcolm MacLeod, New Brunswick Minister of Natural Resources, dedicated the pioneering reserve and unveiled a plaque at the site last August.

In addition, an international agreement was signed by officials from Surinam and Canada to create a hemispheric shorebird reserve in Surinam, and to twin that reserve with the one at Shepody Bay. The two reserves are directly linked by the semipalmated sandpipers which each fall fly non-stop for three to four days over the 4,000 kilometres from Shepody Bay to Surinam. The agreement provides for the exchange of research and other information about shorebirds.

The newly-designated reserves are the second and third ones of a planned network of fifteen sites. Their creation confirms the importance of protecting shorebird feeding and roosting sites for future migrations. Industrial and recreational developments as well as pollution easily can endanger crucial shorebird habitats. Their dependency on a few unique sites at critical stages in their yearly cycle makes the semipalmated sandpipers and other shorebird species very vulnerable to environmental change. Although their numbers seem large, their periodic concentration in relatively small areas means that the loss of a key habitat could threaten the whole species with extinction.

In response to such realities, a voluntary association of government and non-government organizations created the Western Hemispheric Shorebird Reserve Network in 1985. It is actively supported by the World Wildlife Fund and the International Association of Fish and Wildlife Agencies. The purpose of the Network organization is to evaluate the seasonal habitats of migratory shorebirds and to encourage governments to accord protected status to those of crucial importance.

Each member country manages designated sites in their own way, but all members are morally committed to protecting and preserving their sites. Environment Canada's Canadian Wildlife Service is responsible for managing the Shepody Bay reserve, and for coordinating the Network in Canada.

The inauguration of the new reserve was part of the celebration of Wildlife '87, a year of commemoration of 100 years of wildlife conservation in Canada. ■

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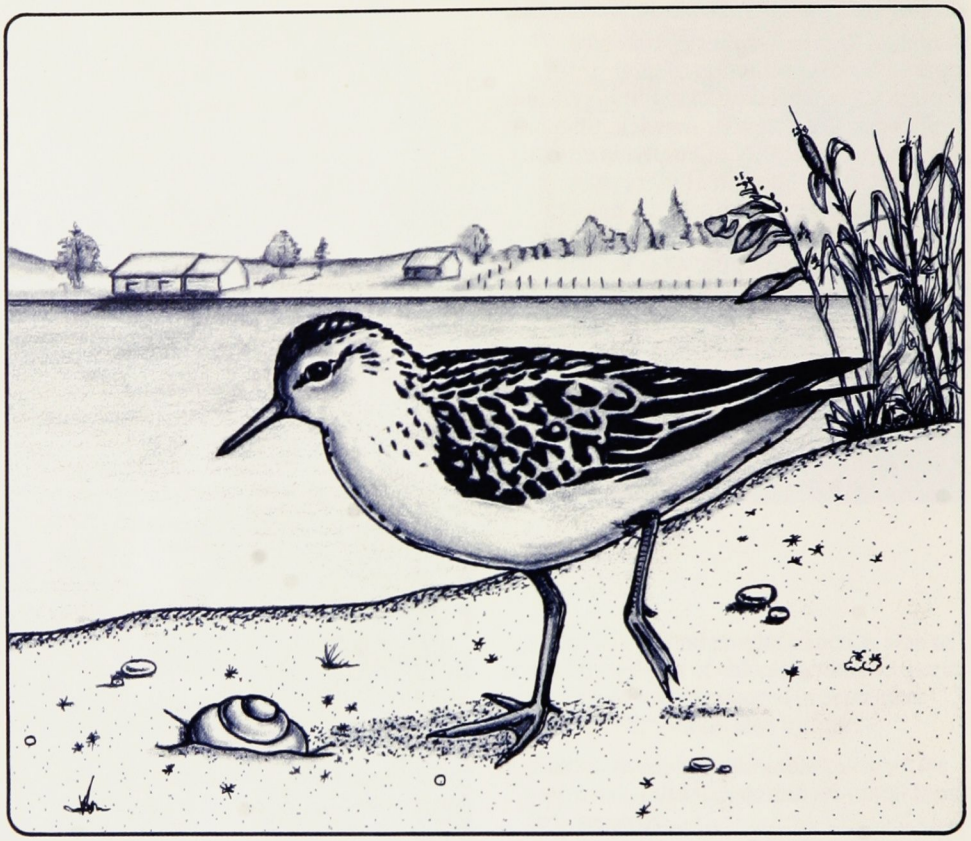


Semipalmated sandpiper

New Canadian Ramsar Sites

Shepody Bay was also among the 11 new Canadian wetland sites which were officially recognized at the fourth meeting of the Convention on Wetlands of International Importance (Ramsar) held in Regina last May.

This brings to 28 the number of sites designated in this country since Canada became a signatory to the Convention in 1981. Almost every province and territory has contributed one or more wetland area. Canadian sites total more than 13 million hectares, which is a larger area than the combined wetlands of all other nations.

The designated wetland areas represent diverse ecological regions across Canada serving as rich and unique waterfowl habitat. The sites provide critical nesting, breeding, staging or stop-over areas for a wide variety of migratory birds. In addition to waterfowl and shorebirds, these areas support other flora and fauna of national interest and concern.

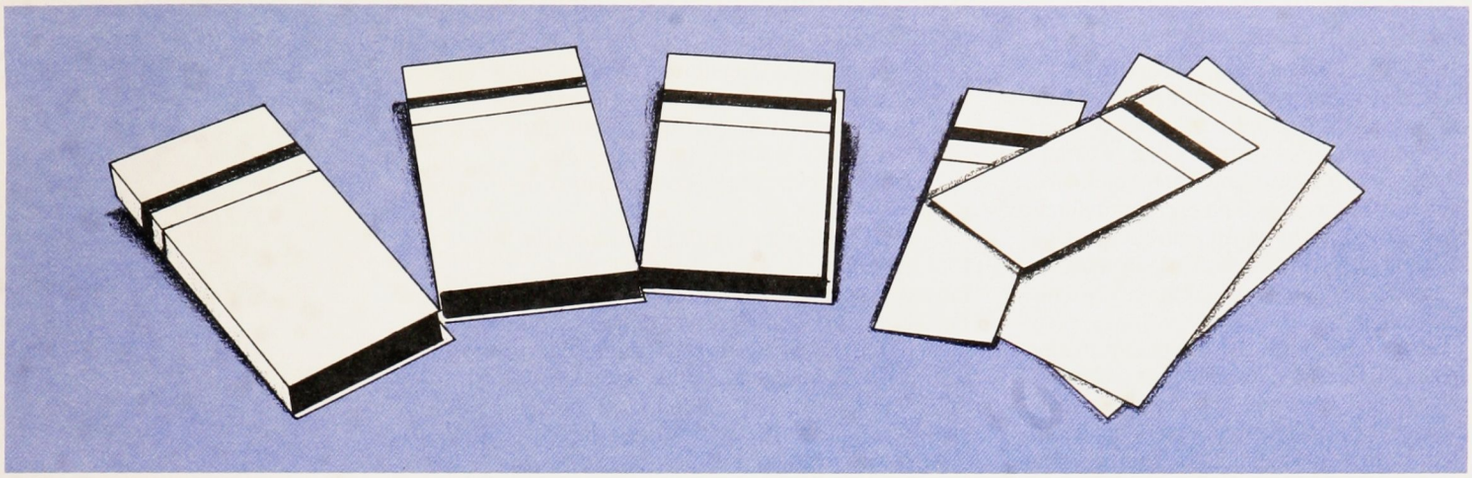
Canadian wetlands of international importance are protected under the Canada Wildlife Act, Wildlife Area Regulations, the Migratory Birds Convention Act and Migratory Bird Sanctuary Regulations, and where appropriate, provincial and territorial acts and regulations. The Ramsar Convention does not override national legislation to protect wetlands, but helps to support that legislation by drawing international attention to threats of serious damage to listed wetlands.

Environment Canada's Canadian Wildlife Service carries out the obligations of the Convention for Canada. It identifies and secures the designation of sites of international importance and ensures that these are adequately protected.

New Ramsar Sites

- Grand Codroy Estuary (Nfld.)
- Musquodoboit Harbour Outer Estuary (N.S.)
- Shepody Bay (N.B.)
- Baie de l'Île-Verte National Wildlife Area (Que.)
- Lac Saint-François National Wildlife Area (Que.)
- Point Pelee National Park (Ont.)
- Southern James Bay Migratory Bird Sanctuaries (Ont.)
- Polar Bear Provincial Park (Ont.)
- Oak-Hammock Marsh Wildlife Area (Man.)
- Quill Lakes (Sask.)
- Beaverhill Lake (Alta.)

Update Reviews



Birds of Ontario

An atlas which took five years to complete has been published recently on the breeding birds of Ontario.

Fieldwork began in 1981 for the *Atlas of the Breeding Birds of Ontario*, which documents the range and distribution of the more than 300 birds that breed in this province. The completed atlas, compiled almost entirely by volunteers, was sponsored by the Federation of Ontario Naturalists and the Long Point Bird Observatory. It was supported financially by Environment Canada and the Ontario Ministry of Natural Resources, universities, museums and several private organizations.

The atlas is the first of its kind to be published in North America. Through the extensive coverage by the large network of volunteers, the atlas provides a snapshot of the present distribution and abundance of bird species breeding in Ontario. It will serve as a base for measuring and assessing future population changes and trends.

More than 1,400 naturalists – some from the United States and Great Britain – volunteered a total of 180,000 hours to the project over five years.

The 600-page atlas devotes two pages to each of the species found in Ontario, and includes a drawing, detailed map and an explanation of the distribution of the bird throughout the province.

It can be ordered for $53.50, from the University of Waterloo Press, University of Waterloo, Waterloo, Ontario, N2L 3G1. ■

Enhanced Protection for Outstanding Wilderness Areas

A national task force report on park establishment calls for the creation of ''Canadian Heritage Lands''.

The new designation, if accepted, would enhance protection of nationally-significant areas. Through inter-governmental and private sector co-operation, these areas would be managed to national standards and receive protected status regardless of ownership.

Among other recommendations in the report, entitled *Our Parks – Vision for the 21st Century*, are the following:

- publication of federal goals and strategies for the protection of natural areas of Canadian significance;
- establishment of new national parks and Canadian Heritage Lands in the North, respecting outstanding aboriginal land claims and in co-operation with territorial governments;
- re-allocation of 5 % of the total Environment Canada Parks service budget over the next five years for new national parks, and
- establishment of an endowment fund, supported by the public and private sectors, to enhance awareness of Canadian Heritage Lands and strengthen the effectiveness of non-government heritage conservation organizations. ■

Atlas of the Great Lakes

The Great Lakes: An Environmental Atlas and Resource Book is the result of a two-year binational effort by Environment Canada and the United States Environmental Protection Agency. It was produced to increase the awareness of all citizens of the Great Lakes Basin of their unique heritage, economy, and ecosystem. It is intended for use by the general public as well as an educational resource for the children.

The atlas includes text, graphics, photographs and maps on a wide range of topics. They cover: natural history; climate; water levels; settlement and economic development; pollution and land use concerns, and environmental management. All but one of the 13 page-sized maps plus the fold-out wall map were commissioned for this publication. ■

Climate Change Report

Different forms of pollution seriously endanger the future of society, according to the fourth annual report on *Understanding Carbon Dioxide and Climate*.

Statistics reveal we are among the world's highest per capita producers of carbon dioxide (CO_2). The report says a worldwide doubling of CO_2 emissions would likely increase global temperatures 3.5 to 4.2 degrees Celsius. This would be the greatest climatic change since the ice age 10,000 years ago. Consequences of global warming on that scale would include lower crop yields, lower Great Lakes levels, decreases in hydro-electric production and rising sea levels that could threaten Canadian coastal cities.

The report examines the contribution of other gasses and chemicals to the greenhouse effect, such as methane, nitrous oxide and chlorofluorocarbons (CFCs). ■

Rare Plants of the Mingan Archipelago

Environment Canada's Parks Service has published a superb work entitled *Rare Plants of the Mingan Archipelago*. It is written by Line Couillard and Pierre Grondin, of Groupe Dryade, and illustrated by water-colour artist Denise Pelletier. This is an excellent reference book for visitors to the Mingan Archipelago National Park Reserve, and is indispensable for specialists in botany and those who enjoy Canadian flora.

The book contains a wealth of information on the Archipelago, its geography, climate, geology and, above all, the treasure hidden there over the millenia, an exceptional flora.

The authors present details of these plants with respect to their growth and habitats. The last part of the volume describes 24 species, giving the scientific name, characteristics, habitat and geographical distribution for each one. Each description is accompanied by an illustration by the artist.

The book is available from the Canadian Government Publishing Centre, Supply and Services Canada, Hull, Québec, K1A 0S9, priced $10.95. ■

Environmental Atlas for Beaufort Sea Oil Spills

Environment Canada has released a new publication entitled *Environmental Atlas for Beaufort Sea Oil Spill Response*. The atlas provides environmental information relevant to the planning and implementation of year-round oil spill counter-measures, in both coastal and offshore areas of the Beaufort Sea.

The atlas will be used to link environmental characteristics of the region to the practical considerations of providing an effective response to marine oil spills. It is hoped this work will lead to better utilization of available resources and to reduced environmental impact in any actual Beaufort Sea spill incidents.

The atlas presents selected physical, biological and sociological information in a concise graphic form with supporting text. The information is intended for a wide variety of groups, including government scientists, Coast Guard and industry response teams, policy makers and regulatory agencies. ■

B.C. Environmental Assessment Simplified

Environmental assessment with its array of processes, agencies, approvals, plans and regulations can be very confusing. Many proposed activities are subject to scrutiny by dozens of agencies of the federal and provincial governments.

A recent publication entitled *Protecting the B.C. Environment: A Catalogue of Project Review Processes* summarizes project review procedures and environmental impact assessment in the province. The catalogue also provides a list of sources for further information for those involved in activities requiring environmental assessment. Among the 36 or more subject areas, information can be obtained on procedures related to such areas as ecological reserves, aquaculture and pesticide uses.

This popular catalogue can be obtained by contacting Bob Sherwood, Environment Canada, Pacific and Yukon Region, (604) 666-5925. ■

Urban Air Improving Significantly Nation-wide

Analyses of urban air pollution data show improvements across the country.

Data contained in the latest report, *National Urban Air Quality Trends – 1974 to 1985*, forms part of Environment Canada's state of the environment reporting. This is the sixth report on urban air pollution levels in Canada since 1977.

Assessment of urban air quality depends largely on an accurate knowledge of trends. Results from 1974 to 1985 indicate that much progress was made in the 1970s. While improvements in the 1980s appear less dramatic, they demonstrate that continuing efforts to reduce air pollution are successful.

Results now show that nitrogen and sulphur dioxide levels are within the acceptable range nation-wide. While traditional pollutants such as lead, total suspended particulates, carbon monoxide, sulphur and nitrogen dioxide have decreased significantly over the last decade, ground-level ozone remains unchanged.

These gains in urban air quality over the years are attributable to a number of factors including:

- increased use of cleaner fuels such as natural gas;
- more efficient fuel use practices that resulted from high world energy prices, and
- the introduction of emission controls for automobiles and in industrial sectors generally. ■